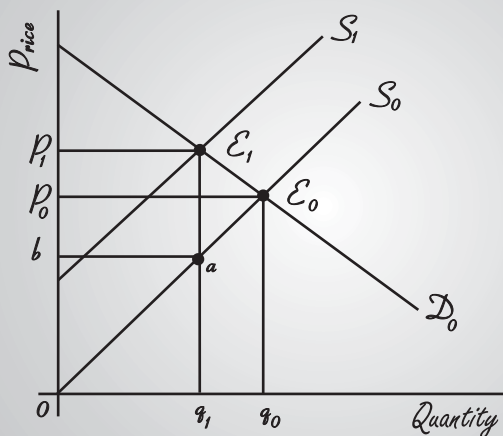


AS
Level

Understanding **Economics**

*Useful for
Economics Essays
Topical MCQs
(2002 Onwards)*



Read & Write
PUBLICATIONS

Muhammad Kamran Malik

UNDERSTANDING ECONOMICS

AS Level

- * Complete Textbook
- * Topical MCQs (2002 – 2016)
- * Useful for Economics Essays

Muhammad Kamran Malik

MBA, MA Economics
Keynesian Institute of Management & Sciences (KIMS)

Amna Ansari

M. Sc. Development Administration and Planning
University College London (UCL)



9-F, Main Market Gulberg II, Lahore.
Tel: 042-35714038 Cell: 0336-5314141
E-mail: readandwrite.publications@gmail.com
Facebook page: [readandwritepublications/Shop](https://www.facebook.com/readandwritepublications/Shop)

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the Publisher.

Cambridge International has not provided these questions or answers and can take no responsibility whatsoever for their accuracy or suitability for the examinations.

Title	Understanding Economics (AS Level)
Author	Muhammad Kamran Malik Cell: 0300-8488585 E-mail: kamran.kims@gmail.com
Edited by	Amna Ansari
Published by	Read & Write Publications
Printed by	Sadaat Printers, Urdu Bazar, Lahore.
Composed by	Rashid Mehmood
Title designed by	Rashid Mehmood
Legal Advisor	Mian Tariq Ahmad (Advocate Supreme Court) Room No. 10, 11, 12 Al-Majeed Centre 1-Mozang Road, Lahore. Tel: 042-37236145, Fax: 042-37241367
Edition:	2016-17
Price	Rs.575/-

DISTRIBUTORS

LAHORE

- **BOOK WISE**
12-Urdu Bazar, Lahore

Tel 042-37112265, 042-37361468
- **BOOKLAND**
16-Urdu Bazar, Lahore
Tel 042-37124656, 042-37223210
- **NATIONAL BOOK SERVICE**
22. Urdu bazar lahore.
Ph. 042-37247310, 042-37355262

KARACHI

- **BURHANI BOOK CENTRE**
Shop # 6 Hashmi Trust Building Rotson
Road
New Urdu Bazar Karachi
Tel 021-32212640
- **MARYAM ACADEMY**
Mool Chand Diya Raam Building Sindh
Karachi.
Tel: 021-32214243 , 021-32634243

ISLAMABAD

- **BOOK VALLEY**
Shop No. A-P-4, China market 5 Brothers
Plaza College Road Rawalpindi
Tel: 051-35770894, 051-35551630

PREFACE

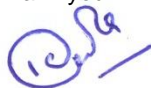
I had always resisted the idea of writing an Economics book for A Level students on the grounds that other good quality textbooks flooding the market would render my book redundant. However, with the passage of time, I realized that the need for a book meeting the exact requirements of the CIE AS syllabus was still unfulfilled. CIE questions demand a variety of higher order skills like analysis, evaluation and judgment. Needless to mention, quality of expression is key to a decent score in these exams. This book emphasizes the skills Cambridge examiners look for and helps students write logical, coherent and comprehensive essays. Helping students attain full grasp on syllabus topics and preparing them for Paper 1 and 2 are precisely the objectives of this book.

There is, however, much more that goes into the creation of this book. With my institute, KIMS, completing 23 years of imparting knowledge, it expresses my gratitude towards all my students who patiently listened to my lectures all these years and gave me the confidence that I was capable of doing much more. I am particularly grateful to my brother, Muhammad Nauman Malik, who having written nine books (on Accounting) himself, always pushed me to write one of my own.

I am delighted to present the seventh edition of my book as apart from other useful changes it includes exercises that augment students' ability to tackle tricky examination questions. At the same time, however, I wish to emphasize the need to compliment this book with *An Easy Approach to AS Economics*, another of my books containing completely solved Paper 2 essays and data response questions. CIE questions are challenging in that they require the application of existing knowledge to novel and unfamiliar situations. Touching upon all of them was beyond the scope and objective of *Understanding Economics AS Level*. Hence, I strongly urge students to consult both the books while preparing for their CIE exams. Once familiar with the contents of these two, students can better comprehend the concepts discussed in the third book of the series, *Understanding Economics A2 Level*, and have a strong foundation to build on in their second year of Advanced Level.

I am thankful for the extremely encouraging feedback on previous editions of this book and respect the criticism that they were too brief. Indeed, a concise and comprehensive text is the sole objective this book aims to achieve. I hope my readers will be satisfied with the content this book has to offer them and look forward to their criticism and suggestions.

Thank you.



Muhammad Kamran Malik
Principal, KIMS.



Keynesian Institute of Management & Sciences

(Cambridge International Fellowship Centre)

3-C, Zahoor Elahi / Maratab Ali Road, Gulberg II, Lahore. Phone: 35715467

Email: kamran.kims@gmail.com, kamranmalik69@yahoo.com

HOW TO USE THIS BOOK

This book covers the entire AS syllabus designed by Cambridge International Examinations. It has been divided into 26 sections according to the sequence mentioned in the syllabus, with only slight alterations where needed.

- Apart from the relevant text, every section contains a topical arrangement of **MULTIPLE CHOICE QUESTIONS** from 2002-2011's examination papers (Both May/June and October/November sessions). Students are advised to read the text before attempting them.
- Students must use a lead pencil to answer all questions and avoid writing in the margins, so that repeated attempts can be made without clues to the correct answers.
- Every section ends with a student evaluation card. Students must make use of it by making entries for the question numbers they get wrong in each attempt. The correct answers for each section are listed at the end of the book, so that students can compare them with their own answers and evaluate their performance.
- Repeated mistakes in each successive attempt in the evaluation card signal that a student has trouble with topics that those particular questions concern. He must therefore, refer to the text again for a better understanding of those topics.
- Essay questions have been answered within the text provided to students. A careful study of the text will yield, either directly or indirectly, the answers to the toughest of essay type questions in past examination papers.
- Lastly, this book is by no means the only source of a comprehensive AS Level text. We therefore recommend that students complement its use with other reputed textbooks.

Note: In case students desire to locate them in the yearly past papers, all **MULTIPLE CHOICE QUESTIONS** have been assigned labels, such as J/02/1/01. It provides information about the session, the year of examination, the paper number and the question number respectively. J/02/1/09 implies that the selected question is the ninth in June 2002's Paper 1. Similarly, N/07/1/12 signals to the twelfth question in November 2007's Paper 1.

For feedback and suggestions, please write to kamran@kims.edu.pk

ACKNOWLEDGEMENTS

I wish to acknowledge the help I received from the following sources in writing sections 4, 17 & 21 of this book:

Sloman, John. Economics. Prentice Hall, 1999.

McConnell, Campbell R., and Stanley L. Brue. Economics. McGraw-Hill, Inc, 1996.

Biz/ed

I would like to thank Cambridge International Examinations (CIE) in particular, for the guidance obtained from past examination papers.

CONTENTS

PREFACE	3
HOW TO USE THIS BOOK	4
SECTION 1 BASIC ECONOMIC PROBLEM	9
SCARCITY AND OPPORTUNITY COST.....	9
MULTIPLE CHOICE QUESTIONS.....	10
SECTION 2 PRODUCTION POSSIBILITY CURVE	14
PPC AND SCARCITY	15
PPC AND OPPORTUNITY COST	15
PPC AND ECONOMIC EFFICIENCY	16
SHIFTS IN PPC	16
CONSUMER GOODS AND CAPITAL GOODS.....	18
MULTIPLE CHOICE QUESTIONS.....	19
SECTION 3 ECONOMIC SYSTEMS	32
FREE MARKET ECONOMY	32
COMMAND ECONOMY	34
MIXED ECONOMY.....	35
MULTIPLE CHOICE QUESTIONS.....	36
SECTION 4 POSITIVE AND NORMATIVE STATEMENTS	39
MULTIPLE CHOICE QUESTIONS.....	40
SECTION 5 DEMAND	43
LAW OF DEMAND	43
DEMAND SCHEDULE.....	43
DEMAND CURVE.....	43
FACTORS CAUSING SHIFTS IN THE DEMAND CURVE (DEMAND DETERMINANTS).....	46
MULTIPLE CHOICE QUESTIONS.....	48
SECTION 6 SUPPLY	56
LAW OF SUPPLY	56
SUPPLY SCHEDULE.....	56
SUPPLY CURVE.....	56
MULTIPLE CHOICE QUESTIONS.....	59
SECTION 7 MARKET EQUILIBRIUM	63
CHANGES IN THE EQUILIBRIUM PRICE.....	63
MULTIPLE CHOICE QUESTIONS.....	65
SECTION 8 ELASTICITY OF DEMAND	86
PRICE ELASTICITY OF DEMAND (P.E.D)	86
Total Revenue (TR) or Total Expenditures (TE) method	89

Graphical Method	92
POINT ELASTICITY OF DEMAND.....	93
INCOME ELASTICITY OF DEMAND (M.E.D).....	100
Cross price elasticity of demand (C.E.D)	102
Limitations of demand elasticities	104
MULTIPLE CHOICE QUESTIONS.....	105
SECTION 9 PRICE ELASTICITY OF SUPPLY	129
DETERMINANTS OF PRICE ELASTICITY OF SUPPLY	130
MULTIPLE CHOICE QUESTIONS.....	133
SECTION 10 CONSUMER AND PRODUCER SURPLUS	139
CONSUMER SURPLUS.....	139
Changes in Consumer Surplus	140
PRODUCER SURPLUS.....	142
Changes in Producer Surplus	142
PRICES AS RATIONING AND ALLOCATIVE MECHANISMS.....	144
MULTIPLE CHOICE QUESTIONS.....	146
SECTION 11 TAXES AND SUBSIDIES	156
TAXES 156	
1) Specific tax	156
2) Ad valorem tax (percentage tax)	156
SUBSIDIES.....	161
Specific subsidy	161
Ad valorem subsidy (percentage subsidy)	161
MULTIPLE CHOICE QUESTIONS.....	164
SECTION 12 MAXIMUM AND MINIMUM PRICES	175
MAXIMUM PRICE	175
Impacts of a maximum price	175
MINIMUM PRICE	176
MULTIPLE CHOICE QUESTIONS.....	180
SECTION 13 PUBLIC AND PRIVATE GOODS	198
PUBLIC GOODS	198
PRIVATE GOODS.....	199
MERIT GOODS	199
DEMERIT GOODS.....	199
MULTIPLE CHOICE QUESTIONS.....	200
SECTION 14 FACTORS OF PRODUCTION	207
(1) LAND	207
(2) CAPITAL.....	207
(3) LABOUR.....	208
(4) ENTREPRENEURSHIP	208

DIVISION OF LABOUR	208
MULTIPLE CHOICE QUESTIONS.....	209
SECTION 15 UNEMPLOYMENT	214
COSTS OF UNEMPLOYMENT.....	215
REDUCING UNEMPLOYMENT.....	215
MULTIPLE CHOICE QUESTIONS.....	216
SECTION 16 MONEY	224
EVOLUTION OF MONEY.....	224
FUNCTIONS OF MONEY.....	225
MULTIPLE CHOICE QUESTIONS.....	227
SECTION 17 AGGREGATE DEMAND & AGGREGATE SUPPLY	229
AGGREGATE DEMAND (AD).....	229
AGGREGATE SUPPLY (AS).....	231
MULTIPLE CHOICE QUESTIONS.....	234
SECTION 18 GENERAL PRICE LEVEL: PRICE INDICES	244
LIMITATIONS OF PRICE INDEX.....	246
NOMINAL AND REAL CHANGES.....	246
MULTIPLE CHOICE QUESTIONS.....	248
SECTION 19 INFLATION	255
TYPES OF INFLATION.....	255
CAUSES OF INFLATION.....	256
CONSEQUENCES OF INFLATION.....	257
MULTIPLE CHOICE QUESTIONS.....	260
SECTION 20 PRINCIPLES OF ABSOLUTE & COMPARATIVE ADVANTAGE	270
THEORY OF ABSOLUTE ADVANTAGE.....	270
THEORY OF COMPARATIVE ADVANTAGE.....	271
EXCEPTIONS TO THE THEORIES OF ABSOLUTE & COMPARATIVE ADVANTAGE.....	275
LIMITATIONS TO THE THEORIES.....	276
CHALLENGES OF INTERNATIONAL TRADE.....	277
MULTIPLE CHOICE QUESTIONS.....	278
SECTION 21 TERMS OF TRADE	291
MULTIPLE CHOICE QUESTIONS.....	292
SECTION 22 ARGUMENTS FOR FREE TRADE & MOTIVES FOR PROTECTION	296
ARGUMENTS FOR FREE TRADE.....	297
TYPES (METHODS) OF PROTECTION AND THEIR EFFECTS.....	297
MULTIPLE CHOICE QUESTIONS.....	301
SECTION 23 ECONOMIC INTEGRATION	312
FREE TRADE AREA.....	312

CUSTOMS UNION	312
COMMON MARKET	312
FULL ECONOMIC UNION.....	312
POLITICAL UNION	312
MULTIPLE CHOICE QUESTIONS.....	315
SECTION 24 BALANCE OF PAYMENTS	319
(i) CURRENT ACCOUNT	319
(ii) FINANCIAL (CAPITAL) ACCOUNT.....	319
BALANCE OF PAYMENTS PROBLEMS	321
Why is a trade deficit bad?	321
Why is a trade surplus bad?	322
MULTIPLE CHOICE QUESTIONS.....	323
SECTION 25 EXCHANGE RATES	335
NOMINAL EXCHANGE RATE.....	335
REAL EXCHANGE RATE.....	335
PURCHASING POWER PARITY THEORY	335
MANAGED FLOATING	336
FLEXIBLE OR FLOATING EXCHANGE RATES	336
CHANGES IN EXCHANGE RATES	337
FIXED EXCHANGE RATES.....	338
MANAGED FLOAT	339
ADVANTAGES & DISADVANTAGES OF FIXED & FLOATING EXCHANGE RATES	340
POLICIES TO CORRECT BALANCE OF PAYMENTS DISEQUILIBRIUM.....	341
POLICIES TO CORRECT A TRADE SURPLUS	345
IMPACTS OF CHANGES IN INTEREST RATE	347
MULTIPLE CHOICE QUESTIONS.....	349
SECTION 26 FISCAL POLICY	377
MONETARY POLICY	380
SUPPLY SIDE POLICIES AND NATURAL RATE OF UNEMPLOYMENT.....	381
SYSTEMS OF TAXATION	382
MULTIPLE CHOICE QUESTIONS.....	386
ANSWERS	393

SECTION 1

BASIC ECONOMIC PROBLEM

Economics is a social science that studies human behavior as a relationship between unlimited wants/ends and scarce means with alternative uses. This basic economic problem called scarcity constrains all individuals, firms and governments. Scarcity can be reduced but not eliminated essentially because resources have multiple uses and are bound to fall short of limitless wants.

SCARCITY AND OPPORTUNITY COST

Consider a student contemplating the possibility of enjoying his weekend with friends. Time, the limiting factor, can be put to various uses- preparing for class projects due in the coming week, working overtime for his part time job at the pizza parlor, visiting relatives living in another town or gaming and shopping with friends all weekend. The scarcity of time necessitates trade offs and choice, causing the individual to incur a cost no matter what he eventually decides to do. This cost of choice in terms of the next best alternative forgone is the opportunity cost.

Opportunity cost is the real cost measured in terms of goods and services which must be given up in order to obtain something else. Every decision involves a cost and an optimal resource allocation is where the consumer's opportunity cost is at its minimum. Put another way, it is where the utility/satisfaction of a consumer is maximized with the given amount of resources. Imagine that a household decides to earn interest on money by saving it in a bank. Three banks, A, B and C, offer it a rate of return (ROR) of 10%, 9% and 8% respectively. The following table lists the different rates of return that three banks, A, B and C, offer and the opportunity cost involved in choosing each:

Decision	Rate of Return (ROR)	Opportunity Cost
Bank A	10%	9%
Bank B	9%	10%
Bank C	8%	10%

The opportunity cost of putting money in Bank A is 9% i.e. the next best alternative given by Bank B's rate of return. Similarly, the opportunity cost of depositing money in Bank B is 10%. This is because the next best alternative is not to deposit money in bank C but Bank A. Thus, a rational household will deposit money in Bank A as it maximizes the rate of return and minimizes the opportunity cost.

Perhaps the most profound example of opportunity cost is current consumption versus investment. Consumption involves the direct use of consumption items like foods and beverages, household items etc. Investment on the other hand, is the allocation of current resources to produce more goods in the future. The opportunity cost of a decision to accumulate capital for better living standards in the future is therefore the satisfaction one derives from (immediate) consumption.

MULTIPLE CHOICE QUESTIONS

J/02/1/02

- 1 What is the opportunity cost to society of employing workers who would otherwise have no alternative employment?
- (A) the wages they are paid
 - (B) the social security payments they would otherwise receive
 - (C) the value of the goods and services they produce
 - (D) zero

N/02/1/03

- 2 Given a rate of interest of 10% per year, what is the opportunity cost to an individual of saving an additional \$100 in year 1?
- (A) an increase in consumption of \$110 in year 2
 - (B) an increase in consumption of \$10 in year 2
 - (C) consumption of \$100 in year 1
 - (D) consumption of \$110 in year 1

J/03/1/01

- 3 A student decides to stay in her room to do some work rather than going to the cinema. What is the opportunity cost of her decision?
- (A) the enjoyment she would have derived from a visit to the cinema
 - (B) the improvement in the mark she obtains for her assignment
 - (C) the cost of the extra electricity she uses
 - (D) the money she would have spent in the cinema

N/03/1/01

- 4 The steel required for the construction of a new car-assembly plant in a fully employed economy is obtained by increasing the output of the domestic steel industry. What is the opportunity cost of producing the steel?
- (A) the alternative benefits for gone by diverting additional resources to steel manufacture
 - (B) the alternative benefits for gone by increasing the capacity of the car industry
 - (C) the alternative benefits that would have been obtained by putting the steel to other uses
 - (D) zero, since there is no reduction in the steel supplied to other steel users

J/05/1/01

- 5 What is the main economic problem facing all societies?
- (A) how to reduce unemployment
 - (B) how to reduce poverty
 - (C) how to allocate scarce resources
 - (D) how to control inflation

J/05/1/02

6 What is the opportunity cost to an unemployed worker who becomes employed?

- (A) the leisure they would otherwise have had
- (B) the value of the goods and services they produce
- (C) the wages they are paid
- (D) zero

N/05/1/04

7 The workers in a factory currently earn \$240 for a 40-hour week. The management offers them a choice between either a 10 per cent wage increase or an increase in the weekly wage to \$260 along with a reduction from 40 to 39 hours.

Disregarding the value of leisure time, what is the opportunity cost to each worker of opting for the 39-hour week?

- (A) \$4
- (B) \$6
- (C) \$20
- (D) \$24

J/06/1/01

8 A consumer allocates his expenditure over time.

What would cause an increase in the opportunity cost of current consumption to the consumer?

- (A) a decrease in his current income
- (B) a decrease in interest rates
- (C) an increase in his current income
- (D) an increase in interest rates

J/07/1/04

9 A farmer can produce both beef and lamb. The opportunity cost of a kilo of beef is three kilos of lamb. The price of a kilo of beef is twice that of lamb.

What should he do if his aim is to maximise his revenue?

- (A) concentrate on beef production
- (B) concentrate on lamb production
- (C) produce beef and lamb in the ratio 3:2
- (D) produce twice as much beef as lamb

N/08/1/01

10 Why is scarcity the central feature of the economic problem?

- (A) People's needs are limited.
- (B) Resources have alternative uses.
- (C) Economic resources are finite.
- (D) Consumers have limited choices.

J/10/1/03

- 11** A worker can make 10 hats or 5 pairs of shoes in a day. In the market three hats can be sold at the same price as two pairs of shoes.
The worker should make
- (A) 4 hats and 3 pairs of shoes daily.
 - (B) 6 hats and 2 pairs of shoes daily.
 - (C) hats only.
 - (D) shoes only.

N/11/1/01

- 12** An individual has an appointment with his bank manager.
He has a choice between travelling to the appointment by car, or leaving the car at home and travelling by bus and then by train. The costs of the journey are given below.

	\$
bus fare	2
train fare	3
car parking charge	4
petrol	2
car wear and tear costs	1

Given this information, what is the opportunity cost to the individual of travelling by car rather than by bus and train?

- (A) \$2
- (B) \$4
- (C) \$7
- (D) \$12

N/13/1/02

- 13** What is the correct order of these economic concepts?

A	B	C	D
inevitability of choices	opportunity costs	opportunity costs	scarce resources
↓	↓	↓	↓
opportunity costs	inevitability of choices	scarce resources	inevitability of choices
↓	↓	↓	↓
scarce resources	scarce resources	inevitability of choices	opportunity costs

key
↓ = leads to

N/13/1/03

- 14** A farmer can produce both beef and lamb. The opportunity cost of a kilo of beef is three kilos of lamb. The price of a kilo of beef is twice that of lamb.
What should he do if his aim is to maximise his revenue?
- A concentrate on beef production
 - B concentrate on lamb production
 - C produce beef and lamb in the ratio 3:2
 - D produce twice as much beef as lamb

J/14/1/01

15 By 2030, as the human population grows, the world will need at least 50% more food, 45% more energy and 30% more water from the same resources. What does this statement directly indicate?

- A** comparative advantage
- B** merit goods
- C** negative externalities
- D** the economic problem

N/14/1/01

16 Which statement about the problem of scarcity is correct?

- A** Continually rising productivity will increase output and solve scarcity.
- B** Future inventions will introduce new products that remove scarcity.
- C** Government printing of money will raise incomes and eliminate scarcity.
- D** Human nature will make the solution of scarcity impossible.

N/14/1/02

17 A firm is considering whether to buy a piece of capital equipment which will cost \$2000. It estimates that the equipment will last for two years. The alternative is to lend the money to a finance company at a compound rate of interest of 5%. What is the minimum increase in revenue the firm must expect to make it worthwhile buying the equipment?

- A** \$101
- B** \$206
- C** \$2001
- D** \$2206

N/15/1/01

18 Which question does not directly refer to the basic economic problem?

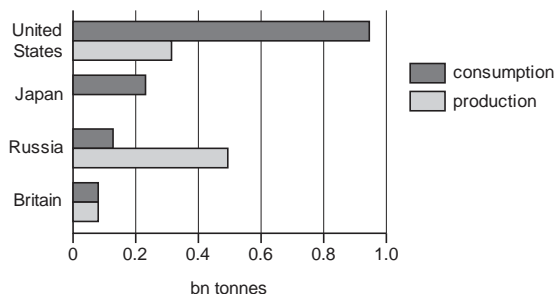
- A** What goods and services should a firm produce?
- B** What price should a firm charge?
- C** What production methods should a firm use?
- D** Who should receive the goods and services that a firm produces?

J/16/1/01

19 In 2007 there was a worldwide shortage of oil. The diagram shows the consumption and production of oil (billion tonnes) in 2007 for selected countries.

What can be concluded from the diagram?

- A** In Britain, oil had zero opportunity cost.
- B** In Japan, there was self-sufficiency in oil.
- C** In Russia, there was no shortage of oil.
- D** In the United States, rationing was the only solution to oil shortage.



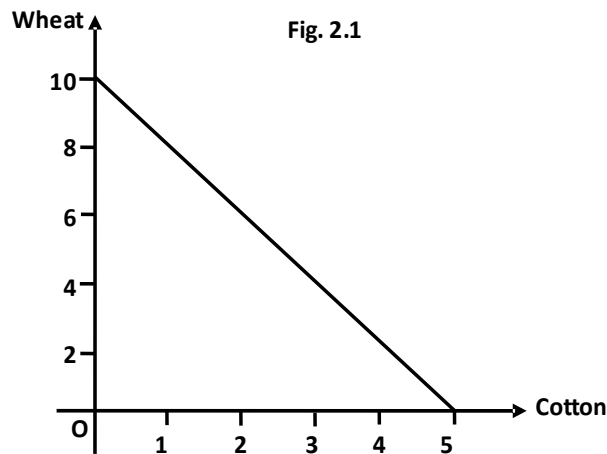
SECTION 2 PRODUCTION POSSIBILITY CURVE

The concepts of scarcity and opportunity cost are best explained through what is called a Production Possibility Curve (PPC) or Production Possibility Frontier (PPF). "A PPC shows combinations of two or more goods and services that can be produced using all available factor resources efficiently, with the given state of technical knowledge."

Consider a farm which has 10 labour hours available to devote to wheat and cotton production. Each unit of wheat and cotton requires 1 and 2 labour hours respectively. Thus, all the following combinations of the two agricultural commodities are attainable with the given amount of resources:

Wheat	Cotton
0	5
2	4
4	3
6	2
8	1
10	0

The production possibility curve can be represented by a linear equation assuming constant costs. Considering the resource constraints in the example above, the linear equation of the PPC is given by $Y = 10 - 2X$ (where Y shows output of wheat and X, that of cotton) and is graphically represented as:



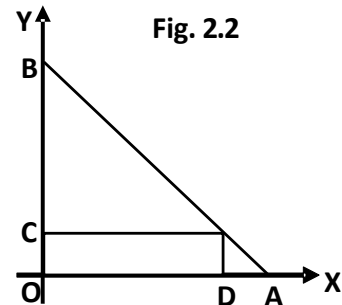
PPC AND SCARCITY

A PPC always possesses a negative slope. The negative sign depicts scarcity and that having more of one good necessitates sacrificing the other. A labour hour can either be devoted to wheat production or cotton production but not both at the same time. Choice is inevitable.

A PPC also incorporates scarcity in a different light. It creates a divide between what is attainable and what is not with the given amount of resources. All points outside the domain of the PPC are unattainable whereas those inside are feasible and attainable. Had resources been plenty, higher target outputs for both wheat and cotton could have been achieved but scarcity constrains total farm production within the given PPC.

PPC AND OPPORTUNITY COST

In the example above, the opportunity cost of 1 unit of cotton is 2 units of wheat. Note that the slope of the PPC is -2. In general therefore, the slope of the PPC is the opportunity cost of 1 unit of the product shown along x-axis in terms of the product along y-axis. Also, the inverse of a PPC's slope is the opportunity cost of 1 unit of the product shown along y-axis in terms of the product shown along x-axis. Consider the diagram below and observe that the opportunity cost of OA units of X is OB units of Y and vice versa. Can you determine the opportunity cost of OC units of Y in terms of X?

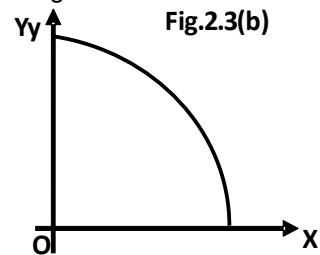
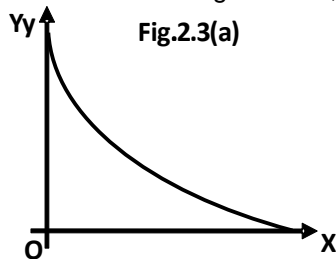


The opportunity cost of OC units of Y is DA units of X since the firm must give up DA units of X to produce OC units of Y. Similarly, the opportunity cost of OD units of X is CB units of Y.

Another link between a PPC and opportunity cost is established by the shape of the curve. A PPC doesn't always have to be straight line, with a constant slope and constant opportunity cost.

It may be convex to the origin (Fig.2.3 a), where the

opportunity cost of X in terms of Y decreases all along or concave to the origin (Fig.2.3 b), where the opportunity cost of X in terms of Y rises continuously. In reality, we usually have a concave production possibility frontier. This is because as any economy concentrates more and more on the production of one good, it has to give up ever increasing amounts of others and use resources that are less and less suitable- resources that are better suited to the production of other goods. Consider a two-good world facing a trade off between fish and coconut production and with only one resource, labour, at hand. Any increase in coconut output can only be achieved when more and more fishermen devote their energy to planting coconut trees. However, opportunity cost increases as additional fishermen join the coconut club because they are better suited to catching fish than growing coconuts. The increase in opportunity cost is attributed to the fact that resources are not perfectly mobile between different uses and re allocating them involves costs such as wastage of time, expenses on re training etc.

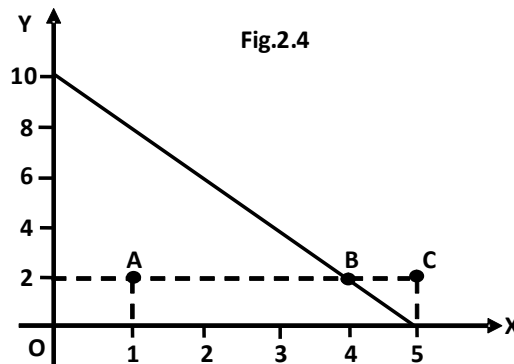


PPC AND ECONOMIC EFFICIENCY

Economic efficiency refers to the optimal utilization of scarce resources such that maximum wants of the society can be satisfied. It incorporates both productive and allocative efficiency.

Productive efficiency results when it is impossible to increase the output of one commodity without reducing that of the other.

Allocative efficiency occurs when an economy produces a combination of goods and services most desired by society.



Consider Figure 2.4. Point A and all other points within the PPC are productively and allocatively inefficient as moving to a combination on the PPC both increases the output of X and Y and the welfare of society at large.

Point B and all other points on the PPC are productively efficient as any increase in X is impossible to achieve without reducing the quantity of Y and vice versa. Note that productive efficiency only implies full utilization of resources and does not guarantee their best possible allocation. The optimal combination considers other aspects like utility, desirability and demand and it is these preferences of society that determine that single allocatively efficient point along the PPC. The PPC is only a supply side tool answering 'what can be made' but does not address the question of 'what should be made'.

Point C and all points outside the PPC are unattainable with the given resources and technology.

SHIFTS IN PPC

An outward shift in the PPC signifies an expansion in an economy's productive potential and long term economic growth. It implies that additional quantities of one or more goods can be produced. However, scarcity still exists as the slope is negative and the divide between the attainable and unattainable still remains. The following factors cause an outward shift in the PPC:

1. Advancements in the state of technology.
2. Increase in the stock of factor inputs. An increase in the stock of capital for instance, shows that more machinery and equipment is available for production of other goods. Labour stock can increase with increases in working population through demographic changes and migration.

3. Increase in factor efficiency. Note that this is not the same as increase in the amount of the factor itself. A good example is the increase in labour productivity where the same input of labor hours achieves greater output targets or fewer hours are employed in producing the same quantity of goods. Such labour productivity increases can be won through education and training.

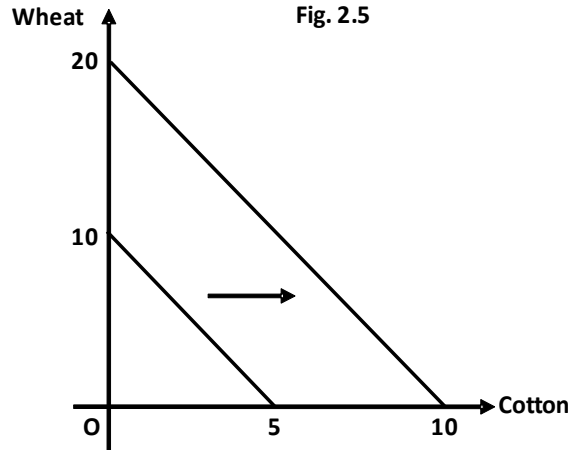
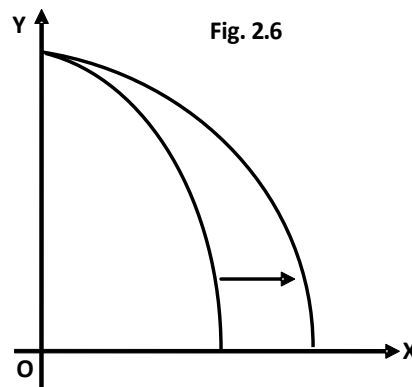


Figure 2.5 depicts a rightward shift in PPC, implying an increase in production possibilities. Consider the initial example of the farm facing a trade off between wheat and cotton production. If labour hours are doubled from 10 to 20, the production possibilities of cotton and wheat are doubled from 5 to 10 and 10 to 20 respectively. If, alternatively, improvements in technology made it possible to produce one unit of cotton in one hour (instead of 2 hours as initially assumed) and one unit of wheat in half an hour (instead of 1 hour as initially assumed), the PPC would have shifted in the same manner.

Sometimes, the shifts in PPC are such that they alter the production possibilities of only one commodity while those of the other remain unchanged. Figure 2.6 shows how a rightward shift in the PPC is suited to increase the production possibilities of commodity X but not Y.



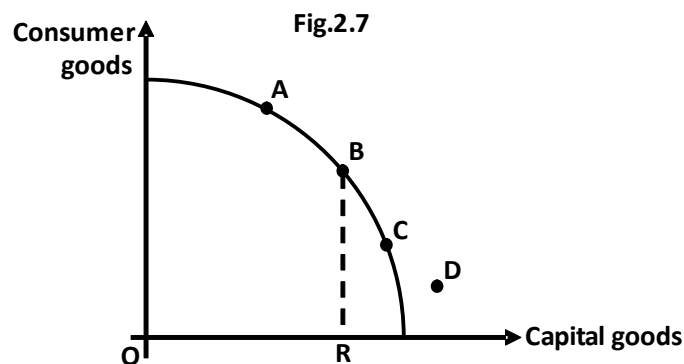
A leftward shift in the PPC shows decreased productive potential and results when resources die out due to one or more of the following reasons:

1. Depletion of natural resources such as non renewable sources of energy.
2. Over exploitation of scarce renewable resources e.g. collapse of fish stock.
3. External shocks like earthquakes and other climatic disasters that destroy factor resources.
4. Capital stock decreases when new investment falls short of capital consumption (as explained in the following paragraphs) and labour may deplete when birth rates fall short of death rates (increased dependency).

Once again, the decrease in productive capacity may apply to either commodity X or Y or both.

CONSUMER GOODS AND CAPITAL GOODS

Recall the popular example of consumer and capital goods from Section 1. Consumer goods like food and beverages, household goods, vacations etc are meant for direct use and provide immediate satisfaction to consumers. They include both durable i.e. furniture, jewelry etc and non durable items like food and fuel. Capital or investment goods on the other hand, are intended to generate more resources in the future e.g. plant and machinery.



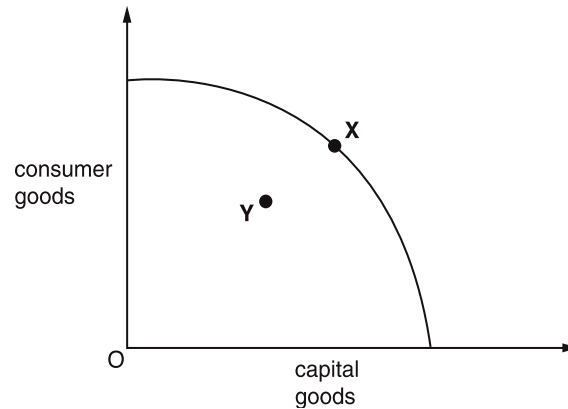
Consider Figure 2.7. Choosing to produce at point C rather than A or B implies that the economy allocates more resources to the production of capital goods compared to consumer goods. Capital goods generate more goods in the future and increase the resources available for future consumption. Thus, an economy's decision to produce output C is likely to shift its PPC outwards and make D attainable with increased resources at hand.

Capital goods have a finite life and require replacement after a certain time. However, economic growth does not only involve replacing worn out capital but also calls for new investments. Capital stock only grows when total investments exceed capital consumption or replacement capital. Assume that the rate of capital consumption for the economy in consideration is given by OR in the above diagram. Point C lies beyond this rate of capital consumption (depreciation) and is therefore likely to result in a rightward shift in the PPC. Likewise, point A shows a level where the generation of fresh capital falls short of capital consumption and is likely to shift the PPC inwards.

MULTIPLE CHOICE QUESTIONS

J/02/1/01

1 The diagram shows an economy's production possibility curve.

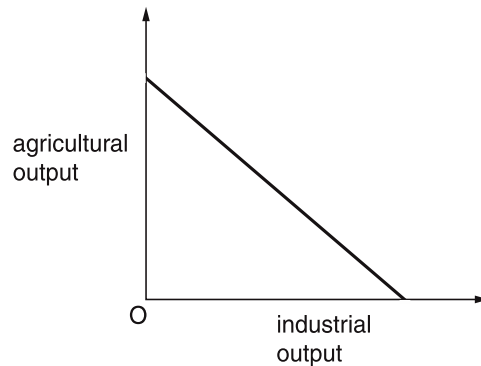


What will cause a movement from point **X** on the production possibility curve to point **Y** within the curve?

- (A) an increase in unemployment
- (B) a fall in the size of the labour force
- (C) a reduction in the availability of land for industrial production
- (D) an improvement in technology in consumer good production

N/02/1/01

2 The diagram shows an economy's production possibility curve.

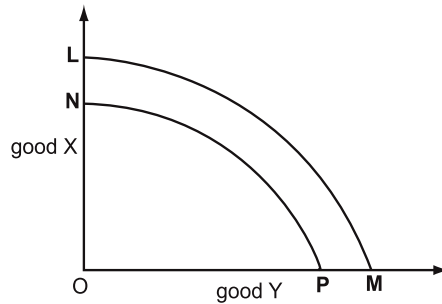


Why does the curve slope downwards?

- (A) Agriculture and industry are subject to decreasing returns to scale.
- (B) Agriculture and industry are subject to increasing returns to scale.
- (C) Resources are shared equally between industrial and agricultural production.
- (D) Total resources available to the economy are limited.

J/03/1/02

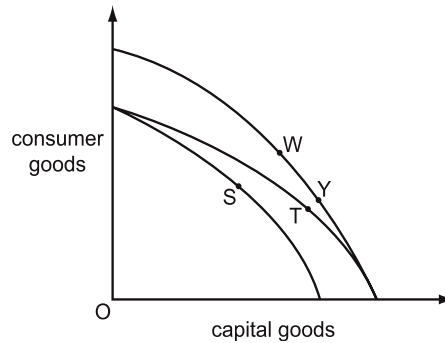
- 3 The diagram shows a production possibility curve **LM**.
 What might cause the curve to shift to **NP**?



- (A) technological progress
 (B) unemployment of resources
 (C) the depletion of natural resources
 (D) a reallocation of resources

N/03/1/02

- 4 The diagram shows shifts in an economy's production possibility curve.



Which change could have come about as a result of an improvement in technology?

- (A) S to Y (B) T to S (C) W to T (D) W to Y

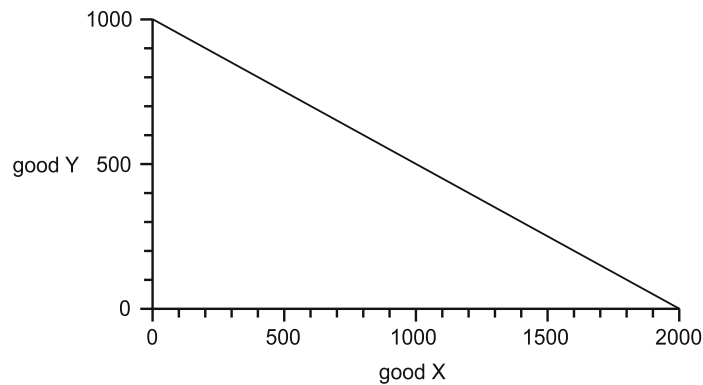
J/04/1/01

- 5 What is the opportunity cost to a fully employed economy of increasing capital investment?

- (A) a fall in consumption (B) a fall in income
 (C) a rise in saving (D) a rise in the rate of interest

J/04/1/02

- 6 The diagram shows a production possibility curve for an economy which produces only two goods, X and Y.

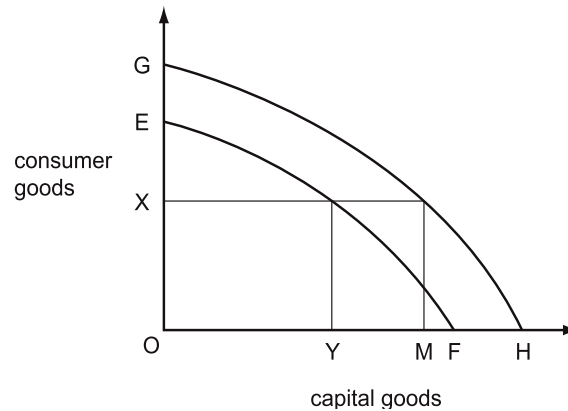


The economy produces 400 of good Y and produces on its production possibility curve. Which quantity of good X is given up?

- (A) 600 (B) 800 (C) 1200 (D) 1600

N/04/1/02

- 7 The diagram shows two production possibility curves (EF and GH), before and after technological progress has taken place.

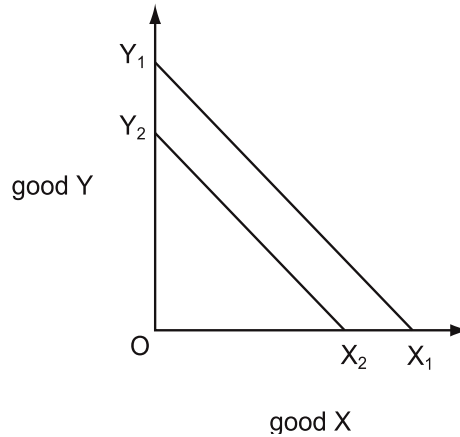


After technological progress has taken place, what is the opportunity cost in capital goods of producing OX consumer goods?

- (A) MH (B) OH (C) OM (D) YF

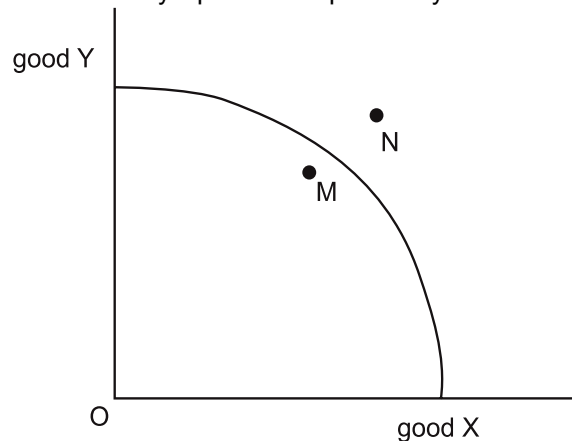
J/05/1/03

- 8 The diagram illustrates the production possibility curves for an economy in Year 1 (X_1, Y_1) and Year 2 (X_2, Y_2)



What can be deduced from the diagram?

- (A) The cost of production was lower in Year 2 than in Year 1.
 - (B) The full employment level of output was lower in Year 2 than in Year 1.
 - (C) The opportunity cost was lower in Year 2 than in Year 1.
 - (D) Unemployment rose between Year 1 and Year 2.
- N/05/1/02
- 9 The diagram shows a country's production possibility curve.

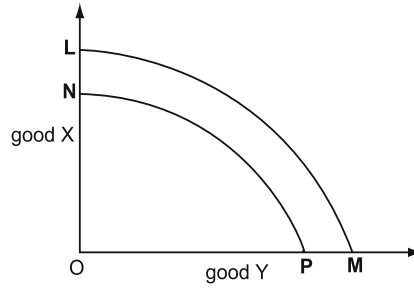


What could allow the economy to move from M to N?

- (A) an increase in consumer spending
- (B) an increase in demand for exports
- (C) an increase in government spending on pensions
- (D) an increase in investment

J/06/1/02

10 In the diagram the original production possibility curve is **LM**.

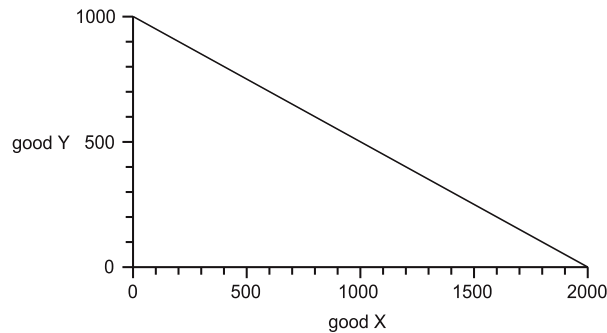


What might cause the curve to shift to **NP**?

- (A) technological progress (B) unemployment of resources
(C) the depletion of natural resources (D) a reallocation of resources

J/07/1/01

11 The diagram shows a production possibility curve for an economy that produces only two goods, X and Y.



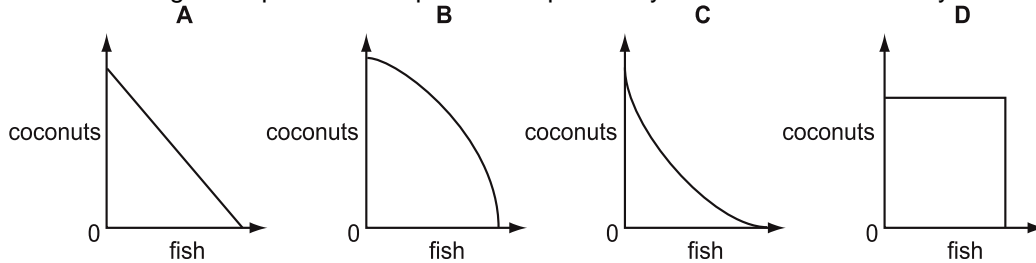
The economy produces 400 of good Y and produces on its production possibility curve. Which quantity of good X is given up?

- (A) 600 (B) 800 (C) 1200 (D) 1600

N/07/1/01

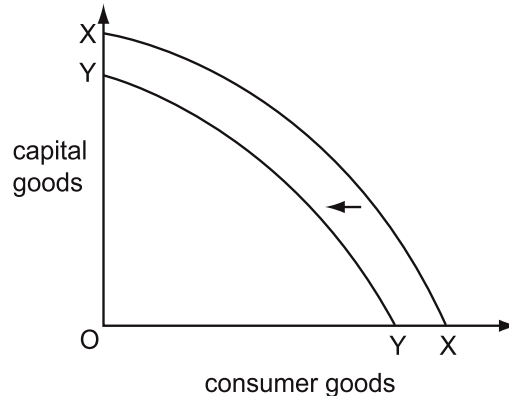
12 Some people are shipwrecked on a tropical island and allocate their time between gathering coconuts and fishing. Each individual is equally productive in collecting coconuts or catching fish.

Which diagram represents the production possibility curve of this community?



J/08/1/01

13 A country's production possibility curve moves from XX to YY as shown in the diagram.

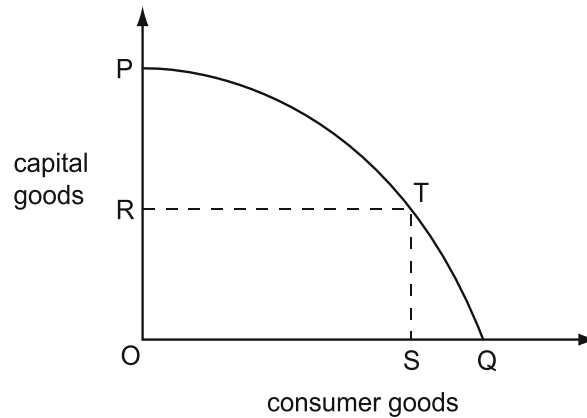


What could have caused this movement?

- (A) a rise in the retirement age
- (B) an increase in investment
- (C) an increase in net emigration
- (D) a rise in technological progress

N/08/1/02

14 The production possibility curve for an economy producing capital and consumer goods is represented by the line PQ.

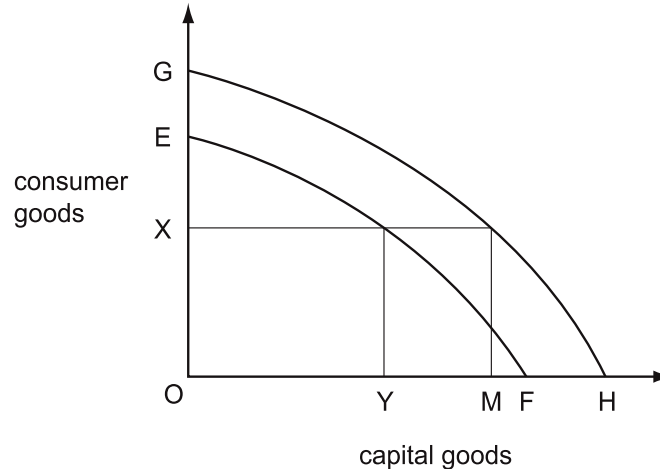


What is the opportunity cost of producing OS of consumer goods?

- (A) OR of capital goods
- (B) PR of capital goods
- (C) SQ of consumer goods
- (D) SQ of consumer goods + PR of capital goods

J/09/1/02

- 15 The diagram shows two production possibility curves (EF and GH), before and after technological progress has taken place.

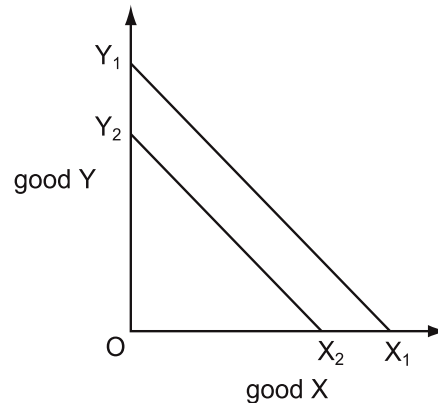


After technological progress has taken place, what is the opportunity cost in capital goods of producing OX consumer goods?

- (A) MH (B) OH (C) OM (D) YF

N/09/1/01

- 16 The diagram illustrates the production possibility curves for an economy in Year 1 ($X_1 Y_1$) and Year 2 ($X_2 Y_2$).

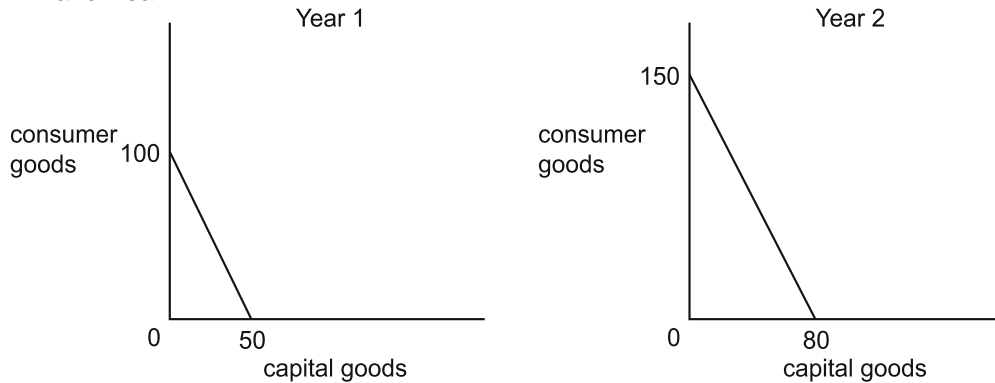


What can be concluded from the diagram?

- (A) The cost of production was lower in Year 2 than in Year 1.
 (B) The full employment level of output was lower in Year 2 than in Year 1.
 (C) The opportunity cost of production was lower in Year 2 than in Year 1.
 (D) Unemployment rose between Year 1 and Year 2.

J/10/1/01

17 The diagrams show the change in a country's production possibility curve between Year 1 and Year 2.

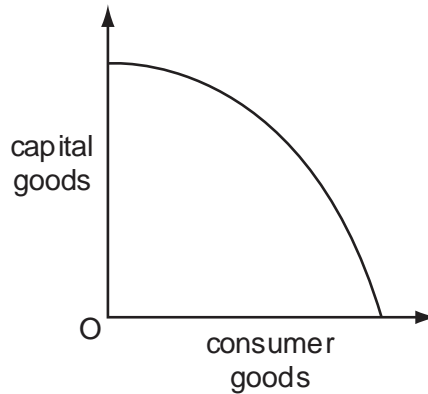


What can be deduced from the diagrams?

- (A) Future growth prospects have been harmed.
- (B) The level of unemployment has fallen.
- (C) The opportunity cost of consumer goods has risen.
- (D) The proportionate growth in production is greater in consumer goods.

N/10/1/03

18 The diagram shows the production possibility curve of an economy.

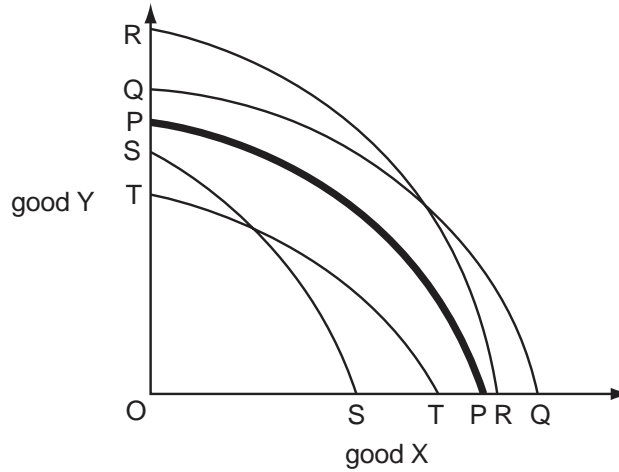


Which statement explains the shape of this curve?

- A More efficient workers are drawn away from the production of consumer goods.
- B Resources cannot be switched between producing capital and consumer goods.
- C The economy is more efficient at producing capital than consumer goods.
- D The opportunity cost of producing capital goods increases the more capital goods are made.

N/11/1/02

19 The curve PP in the diagram is the production possibility curve for a country producing goods X and Y. The production of X is more labour intensive than the production of Y.

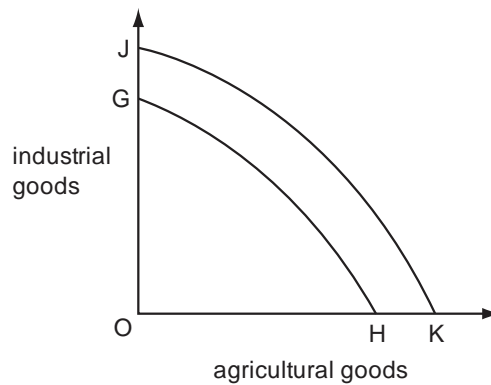


The working hours of the labour force are reduced by law. Which curve could be the country's new production possibility curve?

- (A) TT (B) SS (C) QQ (D) RR

J/12/1/02

20 In the diagram, JK is an economy's production possibility curve.



What could cause the curve to shift to GH?

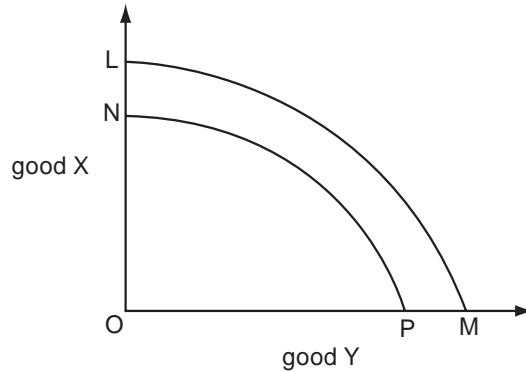
- A** a decrease in innovation
B an increase in the retirement age
C an increase in the price of energy
D an increase in the unemployment rate

N/12/1/02

21 In the diagram the original production possibility curve is LM.

What might cause the curve to shift to NP?

- A** a higher retirement age
- B** a reallocation of resources
- C** the depletion of natural resources
- D** the underemployment of resources

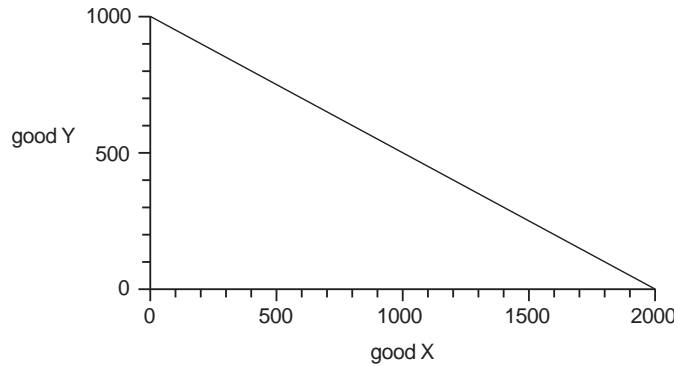


N/12/1/03

22 The diagram shows a production possibility curve for an economy that produces only two goods, X and Y.

The economy produces 1200 of good X and produces on its production possibility curve. Which quantity of good Y is given up?

- A** 400
- B** 600
- C** 800
- D** 1000

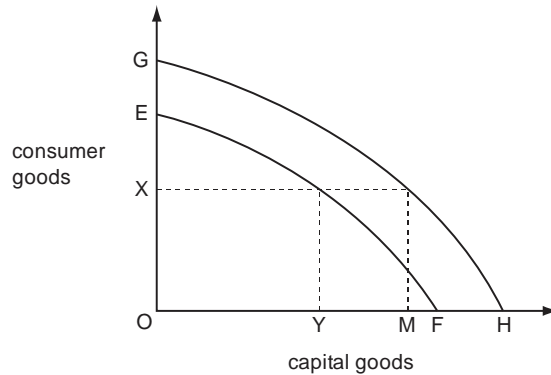


J/13/1/02

23 The diagram shows two production possibility curves (EF and GH), before and after technological progress has taken place.

After technological progress has taken place, what is the opportunity cost in capital goods of producing OX consumer goods?

- A** MH
- B** OH
- C** OM
- D** YF

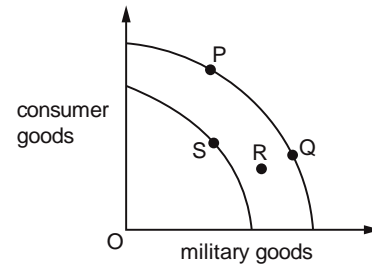


J/14/1/02

24 A country was at point P on its production possibility curve. Following the threat of invasion it prepared for war. The war then reduced the country's infrastructure.

What are the most likely changes on the production possibility curve diagram that are consistent with these events?

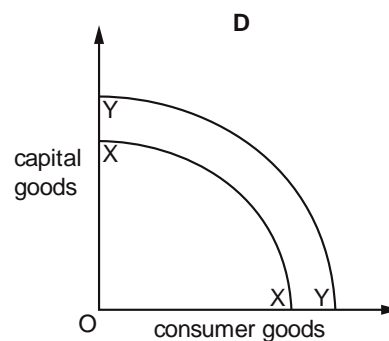
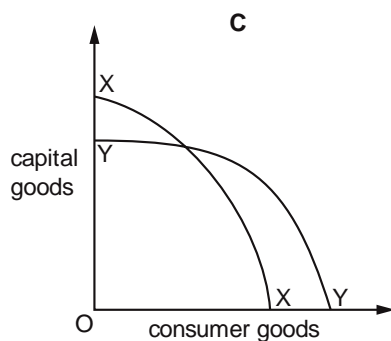
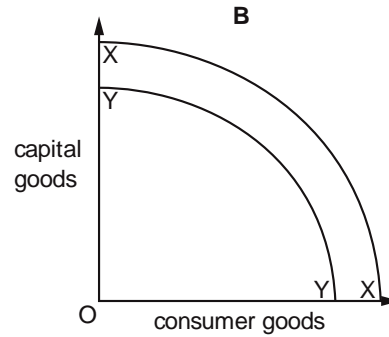
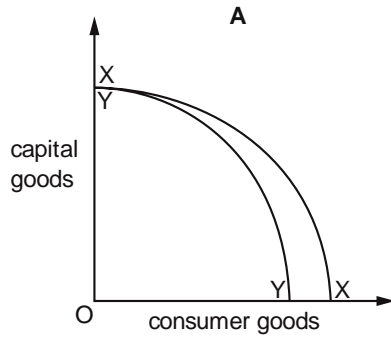
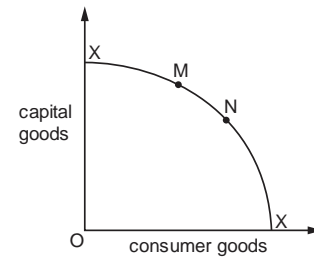
- A** P to Q followed by Q to R
- B** P to Q followed by Q to S
- C** P to R followed by R to Q
- D** P to R followed by R to S



N/14/1/03

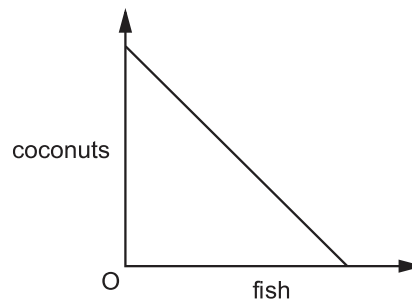
25 The diagram shows the production possibility curve XX of an economy that produces both consumer goods and capital goods.

If the economy moves from point M to point N, which diagram represents the most likely position of the production possibility curve YY in the future?



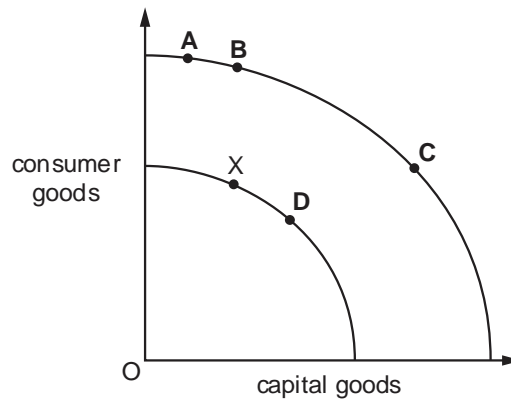
J/15/1/03

- 26** The diagram shows the production possibility curve of a desert island economy where the inhabitants live off just two commodities, coconuts and fish.



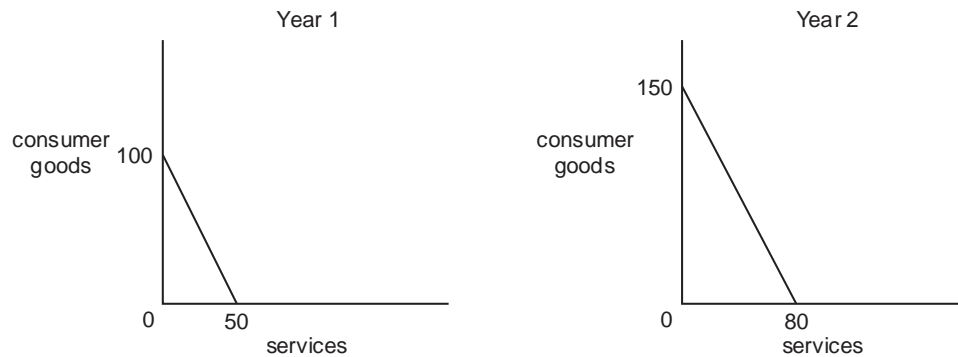
What explains the shape of the production possibility curve?

- A** Coconuts and fish are in joint demand.
 - B** Coconuts and fish are perfect substitutes when consumed.
 - C** Fishing and coconut growing are equally efficient.
 - D** The opportunity cost of fish falls as more time is devoted to fishing.
- N/15/1/02
- 27** The diagram shows the change in an economy's production possibility curve as it grows in the long run. Which movement from point X is most likely to show the highest potential for growth?



N/15/1/03

28 The diagrams show the change in a country's production possibility curve between Year 1 and Year 2.

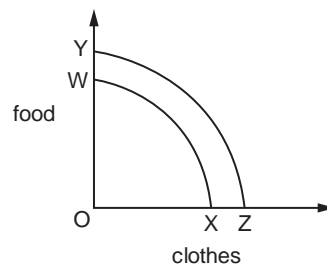


What can be concluded from the diagrams?

- A** Future growth prospects have been harmed.
- B** The level of unemployment has fallen.
- C** The opportunity cost of consumer goods has risen.
- D** The proportionate growth in production is greater in consumer goods.

J/16/1/03

29 The change from WX to YZ in a country's production possibility curve is shown.



What could have caused this shift?

- A** an increase in employment among the existing labour force
- B** an increase in the rate of interest
- C** the closing of an inefficient factory
- D** the discovery of a new resource

SECTION 3

ECONOMIC SYSTEMS

Microeconomics focuses on the economic behavior of decision makers-consumers and producers, and is concerned with explaining the mechanism which leads to the allocation of limited resources among competing uses. While allocating resources, there are three main questions any economy has to answer:

- How to produce
- What to produce
- For whom to produce

How to produce

This question is crucial to answer, as scarcity calls for employing resources such that maximum wants are satisfied. It addresses the production function of the economy- how to organize factors of production etc.

An economy can either opt for self sufficiency, where its people try to fulfill their needs and wants in a more direct manner or use division of labor, which calls for a high degree of specialization. This approach obviously yields productive advantages, as there is better utilization of the given amount of resources. The result is enhanced output, reducing the problem of scarcity.

Moreover, specialization makes available a much wider range of goods and services, raising the standard of living and improving quality of life. It is for reasons such as these that the world has advanced from the primitive self sufficiency approach to specialization.

What to produce

This calls for deciding upon the allocation of resources between different goods and services e.g. should an economy concentrate on the provision of education or sacrifice that in the way of increased defense expenditures?

For whom to produce

This question addresses the distribution function of the economy- who gets what and how much? For instance, goods and services may be allocated to those who afford to pay for them or those who desire to have them, e.g. should a university prefer a talented but poor student over one who affords the fee?

The institutional framework which answers these fundamental questions regarding the organization, distribution and exchange of goods and services is called an economic system. Three economic systems have evolved over time, namely:

Free market economy, Command economy, Mixed economy

FREE MARKET ECONOMY

An economy that allocates resources through the decentralized decisions of many firms and households as they interact in markets for goods and services is called a free market economy.

Characteristics of a free market economy

- There is private ownership of non human resources. Private individuals or groups that own resources may rent them out to firms for the production of goods and services. Ownership can be delegated in this way.
- A free market economy calls for high levels of competition, where nearly every market is perfectly competitive- with numerous buyers and sellers and no barriers to entry or exit.

- The role of the government is restricted to upholding property rights of individuals, so that contractual agreements between consumers and producers are made possible. The government only facilitates the provision of a smooth environment for the operation of demand and supply forces.
- Price mechanism is the allocative mechanism in a free market economy. It is the channel through which consumers signal to producers about goods and their respective quantities which they want them to produce. Consumers signal to producers through demand forces whereas the latter respond through supply.
- Self interest is the driving force for consumers and producers in a market economy. Consumers strive to maximize their satisfaction or welfare whereas producers concentrate on maximizing their profits or rate of return.
- Consumers enjoy independent decision making- they consume what they want, given their limited money income and dictate producers about the goods and their respective quantities that they want them to produce. Producers likewise, are free to utilize resources in producing whatever they desire to produce and sell it in markets of their own choice. There is free mobility of resources-land, labour and financial capital are free to be sold in any market.

Free market economy and the fundamental economic questions

How to produce

The high level of competition forces factors of production to be organized efficiently. Firms specialize and tend to be productively and allocatively efficient in the long run

What to produce

Consumers dictate what is to be produced, through money votes.

For whom to produce

Whoever has a larger number of money votes consumes more of goods and services.

Assessment of the free market economy

Free market economies may be desirable for the following reasons:

- They function automatically. Economic decisions need not be coordinated, yet the economy responds quickly to changing demand and supply conditions.
- High level of competition ensures that prices remain reasonable and that no single firm has great market power. Moreover, competition implies there is an ever lasting incentive for firms to be efficient.
- People pursuing their own self interest through buying and selling in competitive markets help minimize the central problem of scarcity. Firms employ resources efficiently, producing goods in line with consumers' wishes. Greater efficiency leads to greater profits. On the other hand, consumers maximize their satisfaction from consumption-meaning they decide more carefully about what to buy and increase the value for money that they receive.

In practice however, markets can fail in a number of ways, such as:

- The provision of public goods - public goods are goods that cannot be provided under a market system, as it is not possible to charge a price for them. This is because it is impossible to exclude those who do not pay for the benefits. For example, how could the provision of a defense system, that by definition protects all citizens, be charged for

- individually? If just one person pays, then it won't be possible to exclude all others from the protection - what reason does he have to pay if they are all being protected anyway?
- The provision of merit goods - merit goods are goods and services that could be provided by a market system but if they were, there is a possibility that some people who need these services would either not afford them, or would not believe that they need them. There is a danger, therefore, that such goods and services would be under-consumed. Examples of merit goods are health and education.
 - Income inequalities - market systems tend to throw up individuals who become very rich whilst there are others that struggle to survive. Those who have more, gain at the expense of those who have less. Such wide income inequalities may lead to a range of social and economic problems and tensions.
 - Existence of shortages and surpluses - imperfect information tends to lead to shortages and surpluses not being erased. A classic example is unemployment. In theory, unemployment should not occur because wages would adjust to get rid of the surplus labour; in reality, wages may not adjust in this way. In addition, there may be a number of factors preventing labour resources moving from one type of job to another.
 - Competition between firms is often limited. A few giant firms may very well dominate an industry, enjoy greater profits, use aggressive advertising etc. Low levels of competition also reduce the incentive for firms to be efficient.
 - The existence of externalities - externalities are the effects of decision making on third parties - individual and groups who are not involved in the initial decision.
 - Ethical objections- the fact that free market economies reward self interested behavior may encourage selfishness, greed and materialism.

COMMAND ECONOMY

A command economy is one, where all the decisions about what, how and for whom to produce are made through a centrally planned authority i.e. the state. In contrast to a market economy, the government virtually takes control over all the economy's resources.

Characteristics of a command economy

- Private ownership is disallowed in a command economy and the government enjoys collective ownership of all resources
- As far as the allocative mechanism is concerned, the government answers questions of resource allocation, runs the system and sets prices and outputs. It tries to ensure low prices for goods and services but there can be excess demand and long queues.
- The driving force in a command economy is the welfare of society. Government, consumers, workers, everyone is assumed to be working for the common good.
- Neither consumers, nor producers are free to consume and produce goods the way they want. There is no freedom of enterprise.
- The government plans the allocation of resources, so that demand can be budgeted accordingly. The prices set are only artificial ones, based on budgeted demand.

Command economy and the fundamental economic questions

How to produce

The planners direct resources based on their estimated budgets of goods. Methods of production may be inefficient but the government involves wider goals e.g. in order to reduce unemployment, it may employ additional workers where they're not even required.

What to produce

Unlike the free market economy, consumers have no say in what is to be produced. Planners decide upon that too.

For whom to produce

The government decides on how much each individual is to consume. It aims at a more equitable distribution of goods and services.

Assessment of the command economy

Free market economies may not always be in the interest of society as a whole, whereas command economies take an overall view. They establish national goals and adopt resource allocations in line with them. The social repercussions of production and consumption are taken into account. So, the government may very well decide to distribute national income more equitably or reduce unemployment in various sectors of the economy if it feels the need.

Not surprisingly though, command economies have their own disadvantages. Some of them are given below:

- It takes considerable imagination to understand the complexity of tasks carried out by planning authorities. Of course, the larger the economy, the greater the task of collecting and analyzing information.
- The assumption that everyone works for the common good doesn't however always manifest itself in reality. People don't have any incentive to work hard and be more productive. They don't have the freedom to choose their place of work, the goods they buy and the quantities in which they buy them.
- Arbitrary prices set by the state do not reflect the true scarcity of resources, hence causing inefficient allocations. How can a rational decision be made between a petrol run car and a diesel one, when the prices of petrol and diesel do not reflect their true relative scarcity?

MIXED ECONOMY

An economy where economic decisions are partly made by the government and partly through the market is called a mixed economy. Because of the problems associated with both the free market and the command economy, all real world economies are a mixture of the two systems.

Characteristics of a mixed economy

- Some factors of production are owned by the state and others, by private individuals.
- The market is motivated by self interest whereas the government seeks to maximize society's welfare. Owners of factors of production are free to rent out resources and producers are free to produce and sell whatever they want.
- Like the free market economy, price mechanism is the allocative mechanism in mixed economies, except for a few sectors, such as education and health. Production and consumption patterns may involve some degree of legislation and there may be direct provision of some goods and services by the government.

Even with the existence of both a planned and a market element to an economy, there can still be problems, including aspects of market failure and government failure. The latter is where the government attempts to intervene markets and solve problems that are caused by the market mechanism. In so doing, it creates other problems that do not ensure an efficient allocation of resources.

MULTIPLE CHOICE QUESTIONS

J/02/1/04

- 1 In principle, which of the following is an advantage of a planned economy?
- (A) Decisions are taken on the basis of social costs and social benefits.
 - (B) The government always balances the budget.
 - (C) The pattern of production reflects the preferences of consumers.
 - (D) There is perfect substitutability between capital and labour.

N/04/1/01

- 2 In a market economy, what is the basis for determining the allocation of factors of production?
- (A) the market share of companies
 - (B) the needs of the country
 - (C) the pattern of consumers' spending
 - (D) the wealth of entrepreneurs

N/05/1/01

- 3 What is an essential feature of a pure market economy?
- (A) Buyers and sellers have perfect knowledge.
 - (B) External costs are taxed.
 - (C) Prices respond to the demands of consumers.
 - (D) The government provides public goods.

N/06/1/02

- 4 What is present in a mixed economy but **not** in a planned economy?
- | | |
|--------------------------|------------------------|
| (A) capital goods | (B) consumer surplus |
| (C) government borrowing | (D) private production |

J/07/1/02

- 5 Planned economies had a history of failing to produce enough consumer goods. Which method of allocating these goods in short supply involved a market system approach?
- (A) equal rationing to people according to their family size
 - (B) official sale to people according to their ability to queue
 - (C) selective distribution to people according to their occupation
 - (D) unofficial sale to people according to their willingness to pay

J/08/1/02

- 6 A Southern African government was concerned about the market influence of a large producer and was keen to take control of the company. What might be the possible result of this?
- (A) an increase in the role of the market
 - (B) an increase in public ownership
 - (C) an increase in the role of the consumer
 - (D) an increase in the amount of competition

N/08/1/03

- 7 In which types of economy might a government control prices?
- | | |
|-------------------------------|-----------------------------|
| (A) market a mixed only | (B) market and planned only |
| (C) market, mixed and planned | (D) mixed and planned only |

J/10/1/30

- 8** In a command economy, what is the basis for determining the allocation of production?
(A) the pattern of consumer's spending
(B) the perceived needs of the country
(C) the revenue from taxes
(D) the size of public sector companies

N/10/1/01

- 9** What is the central problem for an economy?
A to achieve maximum growth in production
B to allocate resources between alternative uses
C to ensure all resources are fully exploited
D to overcome inequalities in income distribution

N/10/1/02

- 10** What are most likely to be disadvantages found in a market economy?
A economic growth and state-owned companies
B merit goods and free competition
C public goods and economic specialisation
D unemployment and external costs

J/11/1/02

- 11** What is likely to be greater in a planned economy than a market economy?
(A) efficiency **(B)** flexibility
(C) innovation **(D)** stability

J/12/1/1

- 12** What is a characteristic of a planned economy?
A All property is owned privately.
B All resources are allocated centrally.
C Supply and demand always determine prices.
D There is competition in most markets.

N/12/1/1

- 13** What is the defining characteristic of a mixed economy?
A one in which the allocation of resources is determined partly by the state and partly by individual producers and consumers
B one in which there are both monopolies and purely competitive industries
C one in which there are features of both more economically developed and less economically developed economies
D one which produces a mixture of agriculture and industrial products

J/13/1/03

- 14** The table shows indicators for four countries undergoing a transition to a market economy.
 Which country has achieved the most indicators of a successful transition?

	prices	exchange rate system	stock exchange	inward investment
A	administered	managed	yes	allowed
B	administered	floating	no	controlled
C	liberalized	floating	no	allowed
D	liberalized	managed	yes	controlled

J/15/1/02

15 The transition of the former Soviet Union from a planned economy towards a market economy was accompanied by a reduction in the proportion of incomes that households saved.

What could explain this?

- A** an increase in income inequality
- B** an increase in job insecurity
- C** increased availability of consumer goods
- D** the introduction of charges for hospital treatment

N/15/1/30

16 In a time of recession, a government decided to sell a loss-making state-owned industry to a foreign private company.

What is the most likely immediate result?

- A** an improvement in the financial account of the balance of payments
- B** an improvement in the level of unemployment
- C** an improvement in the rate of inflation
- D** an improvement in the trade account of the balance of payments

J/16/1/18

17 A government decides to privatise a nationalised company by transferring ownership directly to its managers and workers.

What is its most likely motive for this decision?

- A** to increase the amount of innovation
- B** to increase the level of competition
- C** to increase the level of incentive
- D** to increase the scale of production

SECTION 4 POSITIVE AND NORMATIVE STATEMENTS

Government economic policies have various outcomes, some of which can be measured whereas the rest concern welfare and are hence, difficult to measure. In order to evaluate economic policies, it is necessary to distinguish between positive and normative statements.

A positive statement is a statement of fact and it concerns the factual outcomes of an economic action. Positive statements may be true or false and their validity and accuracy can be tested by empirical evidence. 'Increased money supply accelerates inflation', 'An increase in the rate of inflation will lead inevitably to an increase in unemployment', 'Increased interest rates discourage consumption and investment', 'Exchange rates decrease when inflation increases', 'A tax cut encourages people to work more' are all examples of positive statements.

A normative statement is a statement of value and it examines the desirability of government economic policy. Such statements usually talk of what ought to be, about welfare, desirability and utility. Since welfare cannot be measured accurately, verifying these statements with facts and figures is not possible. 'Taxing oil is more harmful for the poor', 'It is right to tax the rich more than the poor', 'Unemployment is more harmful than inflation', 'Taxes are the best way to discourage smoking' are all examples of normative statements.

MULTIPLE CHOICE QUESTIONS

J/02/1/03

- 1 Which of the following is a normative statement?
- (A) Inflation can be reduced only by increasing the level of unemployment.
 - (B) An increase in the rate of inflation will lead inevitably to an increase in unemployment.
 - (C) Unemployment is more harmful than inflation.
 - (D) If unemployment is reduced below a certain level, this will lead to higher inflation.

N/02/1/02

- 2 Which of the following statements about trade unions is normative?
- (A) Since trade unions exist to safeguard the interests of their members, they deserve the legal protection of the state.
 - (B) In countries where trade unions are strong, income distribution is more equal.
 - (C) Uneven trade union membership has resulted in a widening of the wage gap between different industries.
 - (D) In industries where trade unions are powerful, technical progress tends to be much slower.

N/04/1/04

- 3 Doctors should be paid highly because they have to undertake a long period of training. What can be concluded about this statement?
- (A) It is a normative statement because high pay does not always result from lengthy training.
 - (B) It is a normative statement because it expresses an opinion.
 - (C) It is a positive statement because doctors do have to train for a long period.
 - (D) It is a positive statement because greater skill results in higher pay.

J/05/1/04

- 4 Which is a normative economic statement?
- (A) Money is the least liquid form of wealth.
 - (B) Some firms are subsidised by the government.
 - (C) Some workers earn more than others.
 - (D) Taxes are the best way to discourage smoking.

J/06/1/03

- 5 A government proposes to introduce a road congestion charge which would require private motorists to pay a toll for road use. Which statement relating to the proposal is normative?
- (A) Bus passengers will benefit at the expense of motorists.
 - (B) Motorists with higher incomes will be prepared to pay the charge in return for reduced journey times.
 - (C) Motorists with lower incomes will not be able to afford to use the roads.
 - (D) The proposal will be unfair to motorists who have no alternative means of transport.

N/06/1/03

- 6** In economics a statement is positive if
- (A) it assumes current economic conditions remain unchanged.
 - (B) it concerns the factual outcomes of an economic action.
 - (C) it examines the desirability of government economic policy.
 - (D) it is based upon the opinion of an economic adviser.

N/07/1/02

- 7** Which is a normative statement?
- (A) Inflation can be reduced only by increasing the level of unemployment.
 - (B) An increase in the rate of inflation will lead inevitably to an increase in unemployment.
 - (C) Unemployment is more harmful than inflation.
 - (D) If unemployment is reduced below a certain level, this will lead to higher inflation.

J/08/1/03

- 8** Which of the following is a normative statement?
- (A) If firms spend more on advertising, sales volume may not rise.
 - (B) If firms raise prices, profits will rise.
 - (C) The government should reduce taxes on spending so that economic welfare will rise.
 - (D) Export volumes will rise if the government lowers the exchange rate.

J/09/1/03

- 9** What must be true of a positive statement?
- (A) It is one that can be shown to be correct or incorrect.
 - (B) It is one that deals with positive changes in economic well being.
 - (C) It is one that is true by definition.
 - (D) It is one with which everyone is in agreement.

J/10/1/02

- 10** Which statement about trade unions is normative?
- (A) Science trade unions exist to safeguard the interests of their members, they deserve the legal protection of the state.
 - (B) In countries where trade unions are strong, income distribution is more equal.
 - (C) Uneven trade union membership has resulted in a widening of the wage gap between different industries.
 - (D) In industries where trade unions are powerful, technical progress tends to be much slower.

J/11/1/03

- 11** Which is a normative statement?
- (A) An increase in the rate of inflation will lead inevitably to an increase in unemployment.
 - (B) A reduction in unemployment below a certain level will lead to higher inflation.
 - (C) Inflation can be reduced only by increasing the level of unemployment.
 - (D) Unemployment is more harmful than inflation.

J/14/1/03

12 Which is a normative statement?

- A** A reduction in unemployment below a certain level will lead to higher inflation.
- B** An increase in the rate of inflation will lead inevitably to an increase in unemployment.
- C** Inflation can be reduced only by increasing the level of unemployment.
- D** Unemployment is more harmful to economic welfare than inflation.

SECTION 5

DEMAND

Effective demand is the willingness to have something, supported by an adequate purchasing power.
Effective demand = willingness + affordability

LAW OF DEMAND

“Assuming other factors constant (*ceteris paribus*), an increase in price is followed by a contraction in quantity demanded and a decrease in price leads to a rise in quantity demanded”.

In simple words, people buy less of relatively expensive goods and more of cheaper ones, assuming all other factors such as their income, prices of other commodities and quality of product etc constant.

DEMAND SCHEDULE

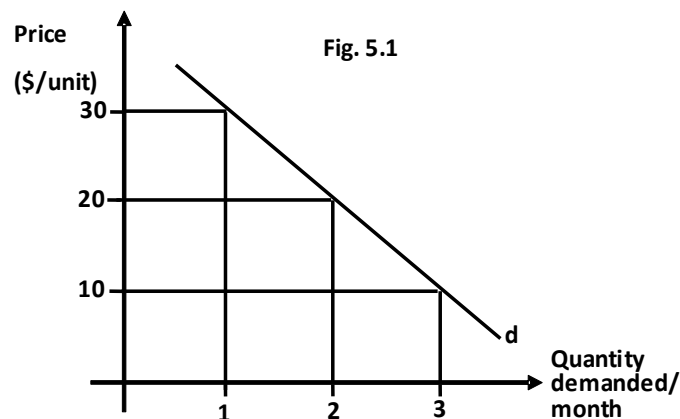
Following is a demand schedule showing different quantities of a product which a consumer plans to purchase at a certain price, in a given period of time.

Price (\$/unit)	Quantity demanded/month
30	1
20	2
10	3

DEMAND CURVE

A demand curve always slopes downwards, showing the inverse relationship between price and quantity demanded.

Plotting price along y-axis and quantity demanded along x-axis, the demand curve for the given schedule looks like this:



The height of the demand curve shows the maximum price a consumer is willing to pay. The consumer pays no more than \$30 for the first unit and no more than \$20 for the second.

Exception to a Mathematical Rule

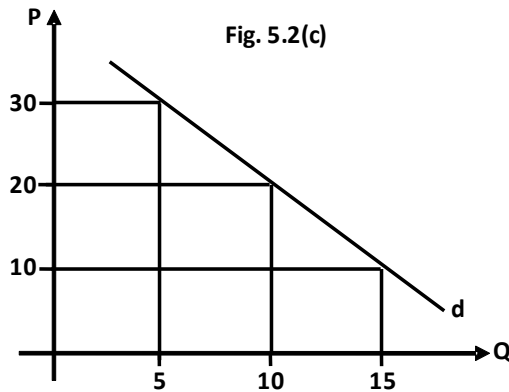
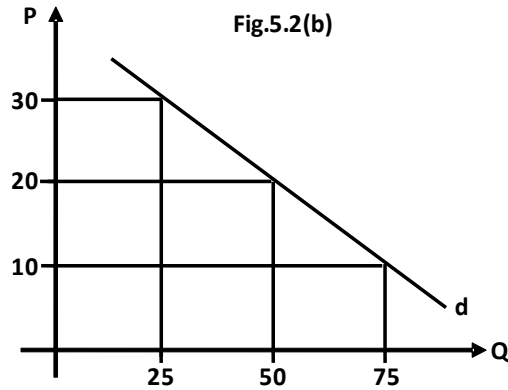
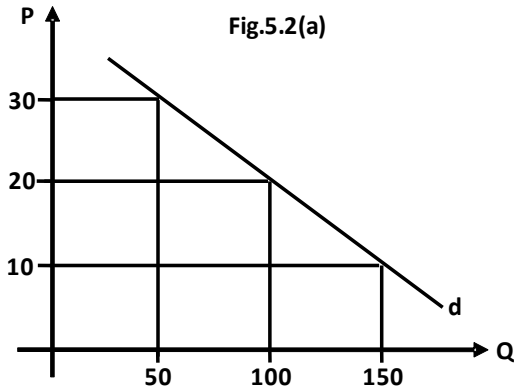
To show a function i.e. a relationship between two variables graphically, the independent variable is taken along x-axis and dependent along y-axis but in the case of a demand curve (and in the case of supply curve as well) the dependent variable i.e. quantity demanded is shown along x-axis.

Market demand curve

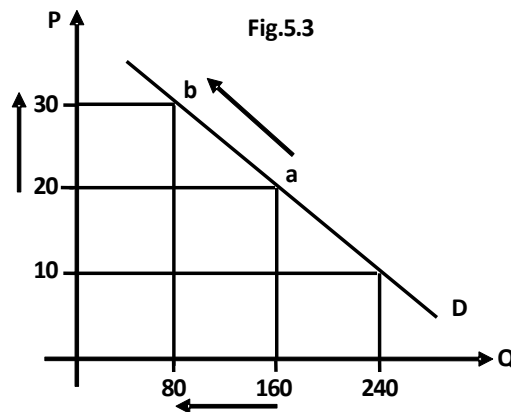
Market demand curve is the total demand of all individuals in a market. The following example assumes only three buyers of a product: A, B & C. The market demand curve can be derived by adding the individual demand curves of A, B & C.

Price (\$/unit)	Quantity demanded			Market Demand
	A	B	C	
30	50	25	5	80
20	100	50	10	160
10	150	75	15	240

The demand curves in Fig. 5.2(a), 5.2(b) and 5.2(c) show the different quantities A, B & C demand at different prices, respectively.



The market demand curve shown below is the horizontal summation of the individual demand curves. In the figures above, letter 'd' represented the individual demand curves whereas here, market demand is represented by 'D'.



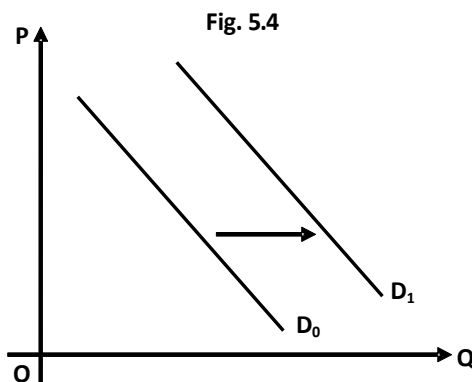
Movement along the (same) demand curve

Changes in price are graphically represented by movements along the same demand curve e.g. if the price of the product rises from \$20 to \$30, the quantity demanded falls from 160 units to 80. This is shown in Fig.5.3 by a movement along the same demand curve from point a to point b.

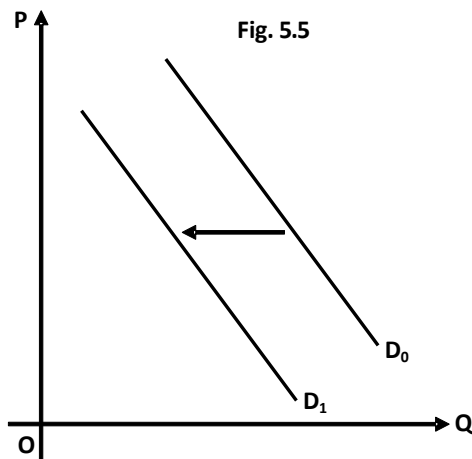
Shifts in the demand curve

A change in factors, other than the own price of the product change demand (not quantity demanded) and is graphically shown through a shift in demand curve.

For example, a successful advertising campaign can convince consumers to purchase more of a product, even at an unchanged price. For instance, as shown in Fig.5.4, D_0 is the original demand curve and D_1 is the new demand curve showing that at every given price, consumers demand a higher quantity. Thus, a rightward (or upward) shift in demand curve shows an increase in demand.



Similarly, a decrease in demand can be shown by a leftward or downward shift in the demand curve. (Fig.5.5)



FACTORS CAUSING SHIFTS IN THE DEMAND CURVE (DEMAND DETERMINANTS)

Income

Increase in income raises the purchasing power, allowing consumers to buy more at the same price level. Such a change is shown by a rightward shift in the demand curve. However, demand of all goods may not rise with increases in income. Goods whose demand rises with an increase in income are known as NORMAL GOODS and those whose demand falls with an increase in income are INFERIOR GOODS. In Fig.5.4, the rightward shift in demand curve might be due to an increase in consumers' income, assuming that this product is a normal good. For inferior goods, demand curve shifts towards left if income rises, as shown in Fig. 5.5.

The difference between inferior and normal goods arises due to consumers' own perceptions and not because of any intrinsic characteristic of the product. One product could be normal for one group of customers but inferior for others.

Prices of other commodities

Other commodities can be categorized into at least two groups:

- (i) Substitutes
- (ii) Complements

(i) Substitutes

Substitutes are goods which have a similar use and can be used in place of each other e.g. Pepsi and Coke, Honda and Toyota etc. Increase in the price of a product increases the demand of its substitutes, shown by a rightward shift in their demand curve.

For instance, the price of Pepsi rises and its quantity demanded falls, causing a movement along the demand curve for Pepsi. The demand for Coke, i.e. a substitute of Pepsi automatically increases as people find Coke relatively cheaper. This shifts the

demand curve for Coke rightwards. Thus, the demand of a product moves directly with the price of its substitutes.

(ii) Complements

Complements are jointly demanded goods which complete each other's use e.g. car and fuel, pen and ink, CDs and a CD player etc.

Increase in the price of a product not only contracts the quantity demanded of that product but also reduces the demand of its complements.

For example, the price of fuel rises causing a contraction in quantity demanded of fuel and a movement along the demand curve of fuel. The increased price of fuel forces people to demand lesser number of private cars, causing a leftward shift in the demand curve of cars.

Thus, demand of a product usually moves inversely with the price of its complements.

Taxes

Taxes are of two types:

- (i)** Direct Taxes
- (ii)** Indirect Taxes

(i) Direct Taxes

Direct taxes are imposed on income, being directly paid by the tax payers to the government. Income tax is an example of a direct tax. Increase in direct taxes reduces the disposable income and hence, the demand for normal goods. It is shown by a leftward shift in the demand curve.

(ii) Indirect Taxes

Indirect taxes are imposed on expenditures, being indirectly paid by the tax payers to the government. Sales tax, value added tax (VAT), excise and custom duties are examples of indirect taxes. Consumers are made to pay them indirectly to the government when producers include these taxes in the price of products. Indirect taxes shift the supply curve upwards (leftwards) and cause a movement along the demand curve.

Interest rates

Increased interest rates lower demand and shift demand curve leftwards, as households save more and borrow less at higher interest rates.

Advertising

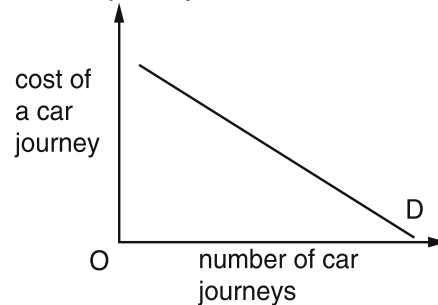
As mentioned earlier, a successful advertising campaign shifts the demand curve towards right whereas news about harmful consequences associated with the use of a product shifts its demand curve leftwards. For example, the publication of a news item that excessive use of cellular (mobile) phones can cause brain tumor shifted the demand curve for cellular phones towards left.

Population rise, expectations of a price increase, fear that the product will disappear from the market could also shift the demand curve rightwards.

MULTIPLE CHOICE QUESTIONS

J/02/1/08

- 1 The demand curve in the diagram shows the relationship between the number of car journeys and the cost of a car journey.



Which of the following would cause the demand curve to shift to the left?

- (A) a reduction in car tax
 - (B) a reduction in petrol prices
 - (C) a reduction in public transport prices
 - (D) the introduction of tolls on motorways
- J/03/1/06
- 2 How would an economist establish the market demand curve for a private good?
- (A) by adding consumer surplus to total expenditure
 - (B) by combining the price elasticity of individual demands
 - (C) by horizontally combining individual demand curves
 - (D) by multiplying price by quantity demanded

N/03/1/03

- 3 What is meant by the ceteris paribus assumption?
- (A) an assumption that is not supported by the facts
 - (B) an assumption that consumers act rationally
 - (C) an assumption that two factors are in equilibrium
 - (D) an assumption that other factors are held constant

J/04/1/07

- 4 During a certain period, 10 000 units of a normal good are sold at a price of 20c. During a later period, 12 000 units are sold at a price of 22c. What could explain this change?
- (A) a reduction in consumers' incomes
 - (B) an increase in the cost of raw materials
 - (C) an increase in the price of a substitute commodity
 - (D) an increase in the productivity of factors of production

N/04/1/03

- 5 What is meant by 'ceteris paribus' in economic analysis?
- (A) A normative approach is being adopted.
 - (B) The effect of a change of one variable is being considered in isolation.
 - (C) One good has to be sacrificed to obtain more of another.
 - (D) One factor of production is fixed.

N/04/1/05

- 6 What ensures that demand for a product is effective?
- (A) The consumer must be in the private sector of the economy.
 - (B) The consumer must have sufficient income to buy the product.
 - (C) The consumer must receive consumer surplus.
 - (D) The consumer must want to buy the product.

N/04/1/06

- 7 What would cause the demand for holiday accommodation in Mauritius to shift to the left?
- (A) a fall in the exchange value of the Mauritian rupee
 - (B) poor holiday weather in Mauritius
 - (C) relaxation in planning controls on hotel construction in Mauritius
 - (D) removal of sales tax on hotel accommodation in Mauritius

J/05/1/05

- 8 What could **not** cause a shift in an individual's demand curve for Good Z?
- (A) a change in the price of Z
 - (B) a change in the individual's income
 - (C) a change in the individual's tastes
 - (D) a change in advertising expenditure on Z

N/05/1/05

- 9 The table shows the levels of demand for silver in millions of ounces for different uses between 1999 and 2001.

	1999	2000	2001
Industrial use	340.6	377.1	338.5
Photography	225.9	219.5	210.2
Jewellery and silverware	273.3	281.4	287.6
Coins and medals	27.6	29.8	27.2

What can be concluded about the different demands for silver between 1999 and 2001?

- (A) All types of demand followed the same trend.
- (B) Industrial use had the greatest fall in demand.
- (C) Jewellery and silverware had a continuous increase in demand.
- (D) Total demand increased.

J/06/1/05

- 10 Which piece of information would enable you to construct the market demand curve for a product?
- (A) the equilibrium price of the product
 - (B) the number of consumers who would purchase the product at each price
 - (C) the number of firms in the industry
 - (D) the quantity that each consumer would be willing and able to buy at each price

J/06/1/06

- 11 What is most likely to increase the demand for compact disc players?
- (A) a fall in disposable incomes
 - (B) a fall in the price of cinema tickets
 - (C) a fall in the price of compact discs
 - (D) a fall in the price of video recorders

J/07/1/05

- 12 What ensures that demand for a product is effective?
- (A) The consumer must be in the private sector of the economy.
 - (B) The consumer must have sufficient income to buy the product.
 - (C) The consumer must receive consumer surplus.
 - (D) The consumer must want to buy the product.

N/07/1/03

- 13 In which situation would an economist assume ceteris paribus?
- (A) when calculating the retail prices index
 - (B) when deciding what to include in a cost benefit analysis
 - (C) when making normative statements to advise the government
 - (D) when studying the effect of a price rise on demand

N/07/1/05

- 14 The following might influence the demand for a good.
Which would **not** cause a shift in the demand curve for the good?
- (A) a change in the price of a complement
 - (B) a change in the price of a substitute
 - (C) a change in the price of the good itself
 - (D) a change in consumers' incomes

J/08/1/05

- 15 The demand for a product is affected by a number of influences.
What will cause a movement along its demand curve?
- (A) a rise in consumers' income
 - (B) a rise in the popularity of the product
 - (C) a rise in the population
 - (D) a rise in the price of the product

J/08/1/06

- 16 Good X is a substitute for good Y and a complement to good Z.
What would happen after a fall in the price of good X?
- (A) Only the demand for X will rise.
 - (B) Demand for X, Y and Z will rise.
 - (C) Demand for Y will fall and for Z will rise.
 - (D) Demand for Y will rise and for Z will fall.

N/08/1/05

- 17** A change in the price of a good causes an increase in the quantity of the good demanded.
What would be the nature of the good and the direction of price change for this to be certain to happen?

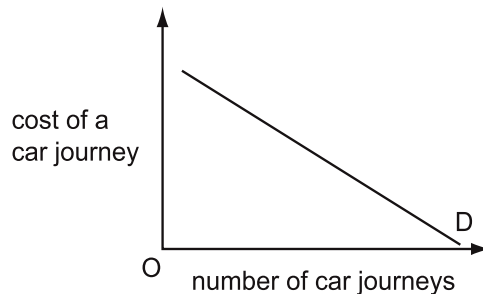
	nature of	price change
(A)	Inferior	fall
(B)	Inferior	rise
(C)	Normal	fall
(D)	Normal	rise

N/09/1/02

- 18** What does the concept of ceteris paribus allow economists to do?
(A) calculate the monetary value of consumer surplus
(B) distinguish between economic and free goods
(C) distinguish between normative and positive statements
(D) isolate the effect of one variable on another variable

N/09/1/11

- 19** The demand curve in the diagram shows the relationship between the number of car journeys and the cost of a car journey.



What would cause the demand curve to shift to the left?

- (A)** a reduction in car tax
(B) a reduction in petrol prices
(C) a reduction in public transport prices
(D) the introduction of tolls on motorways
- J/10/1/05
- 20** In 2008 the demand curve for new cars in the European Union shifted to the left.
Which change could have caused such a shift?
(A) an increase in real disposable income
(B) an increase in the cost of borrowing
(C) an increase in the price of new cars
(D) an increase in the price of train travel

N/10/1/05

21 What might shift an individual's demand curve for petrol to the left?

- A** a fall in the price of parking
- B** a fall in the price of petrol
- C** a rise in the price of cars
- D** a rise in the price of public transport

J/11/1/04

22 What is consistent with an individual demand curve that slopes down from left to right?

- (A)** As price falls, a person switches away from rival products towards the product.
- (B)** As price falls, a person's willingness and ability to buy the product will decline.
- (C)** As price rises, a person becomes less sensitive to price changes.
- (D)** As price rises, a person's opportunity cost of purchasing the product falls.

J/11/1/05

23 What will cause the demand curve for domestically produced cars to shift to the left?

- (A)** an increase in the costs of production of domestically produced cars
- (B)** a reduction in taxes on the purchase of cars
- (C)** a reduction in the tariff on imported cars
- (D)** a reduction in the tax on petrol

N/11/1/05

24 During a period of falling incomes in Germany in 2009, demand for jewellery declined. There was, however, a rise in demand for frozen foods. How would the effect on the demand for the two products be illustrated?

	jewellery	frozen food
(A)	a movement downwards along the demand curve	a movement upwards along the demand curve
(B)	a movement upwards along the demand curve	a shift to the right of the demand curve
(C)	a shift to the left of the demand curve	a shift to the right of the demand curve
(D)	a shift to the right of the demand curve	a movement upwards along the demand curve

J/12/1/05

25 What is a market demand curve?

- A** the demand for all of a country's products
- B** the total sum of individual demand curves for a product
- C** the output of all the firms in an industry
- D** the stocks of a particular good available for sale

N/12/1/05

26 What does not cause the demand curve for a good to shift its position?

- A** advertising expenditure **B** consumer tastes
C the price of substitute goods **D** the price of the good

J/13/1/05

27 What will cause a shift in the demand curve for a computer?

- A** a change in the cost of production of the computer
B a change in the price of the computer
C a change in the performance of the computer
D the imposition of a specific tax on the computer

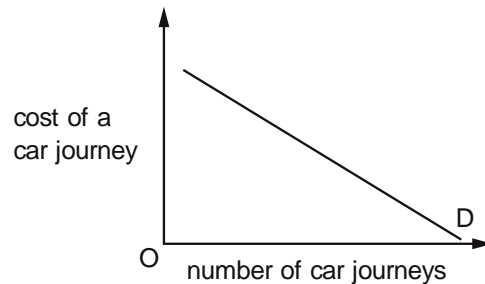
J/13/1/06

28 If the price of maize rises, the quantity of maize demanded should fall.
If the demand for maize decreases, the price of maize should rise.
What can be said about these two statements?

	first statement	second statement
A	correct	Correct
B	correct	incorrect
C	incorrect	correct
D	incorrect	incorrect

J/14/1/05

29 The demand curve in the diagram shows the relationship between the number of car journeys and the cost of a car journey.

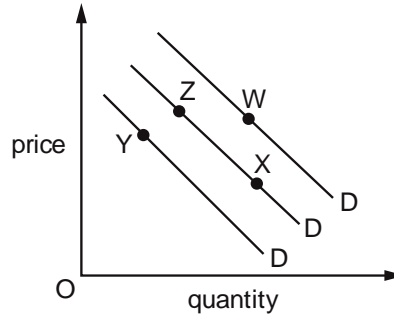


What would cause the demand curve to shift to the left?

- A** a reduction in car tax
B a reduction in petrol prices
C a reduction in public transport prices
D the introduction of tolls on motorways

J/14/1/06

30 The diagram shows the market for milk. Two conditions change. The cost of cattle feed rises sharply and this is followed by the government raising the tax on cheese which uses milk in its production.



Which changes in position on the diagram of demand curves for milk are consistent with these events?

- A** from W to X, followed by X to Z
- B** from W to Z, followed by Z to X
- C** from X to Z, followed by Z to Y
- D** from Z to X, followed by X to Y

J/15/1/06

31 Assume that Tiger Woods, a famous golfer, announces that his final golf appearance will be at the next US Open Tournament. How might this affect the demand for tickets for the tournament?

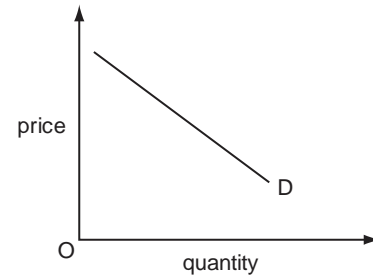
- A** It will cause a movement downward along the demand curve.
- B** It will cause a movement upward along the demand curve.
- C** It will cause a shift to the left in the position of the demand curve.
- D** It will cause a shift to the right in the position of the demand curve.

N/15/1/05

32 The diagram shows the demand curve for housing.

What is not assumed to remain constant when drawing this curve?

- A** consumer incomes
- B** expectations about future house prices
- C** the price of houses
- D** the rate of interest charged on loans for house purchase



N/15/1/06

33 What does not cause the demand curve for cars to shift to the right?

- A** a fall in the price of petrol (gas)
- B** a fall in the price of public transport
- C** an advertising campaign by car manufacturers
- D** an economy-wide increase in incomes

J/16/1/06

34 The demand curve for new cars in a country shifted to the left. Which change could have caused such a shift?

- A** an increase in real disposable income
- B** an increase in the cost of borrowing
- C** an increase in the price of new cars
- D** an increase in the price of train travel

SECTION 6

SUPPLY

Supply is the willingness and ability to supply a quantity at a certain price, during a given period of time.

LAW OF SUPPLY

“Assuming other factors constant (*ceteris paribus*), an increase in price is followed by an expansion in quantity supplied and a decrease in price leads to a fall in quantity supplied”.

Put another way, producers are willing to sell more of relatively expensive goods and less of those which are cheaper, assuming all other factors such as the cost of production, indirect taxes and future expectations etc constant.

SUPPLY SCHEDULE

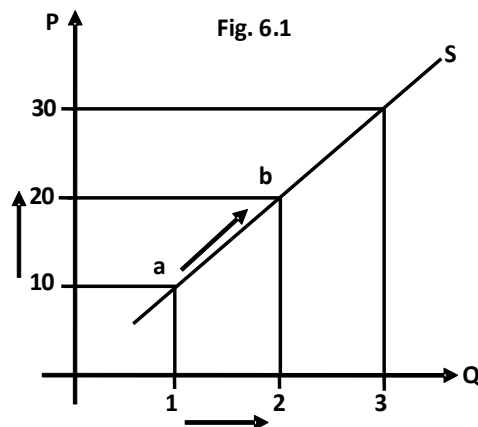
Following is a supply schedule which shows different quantities of a product a producer plans to sell at a certain price, in a given period of time.

Price (\$/unit)	Quantity supplied /month
10	1
20	2
30	3

SUPPLY CURVE

A supply curve always slopes upwards, showing a positive relationship between price and quantity supplied.

Fig. 6.1 shows a supply curve derived using the supply schedule above. Price is shown along y-axis and quantity supplied is along x-axis.



The height of the supply curve shows the minimum price a producer is willing to charge. This producer sells the first unit only if price is \$10 or higher.

Market supply curve

Market supply curve shows the total supply of all individuals in a market.

As in the case of market demand, market supply curve is the horizontal summation of individual (supply) curves.

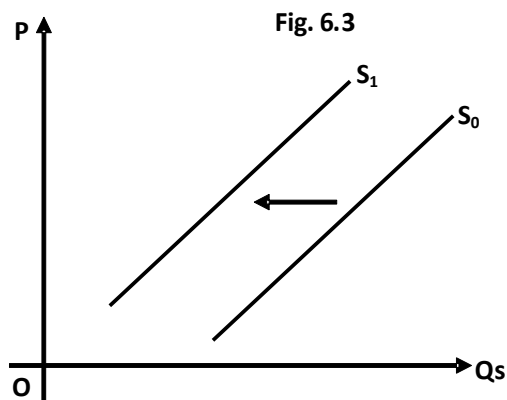
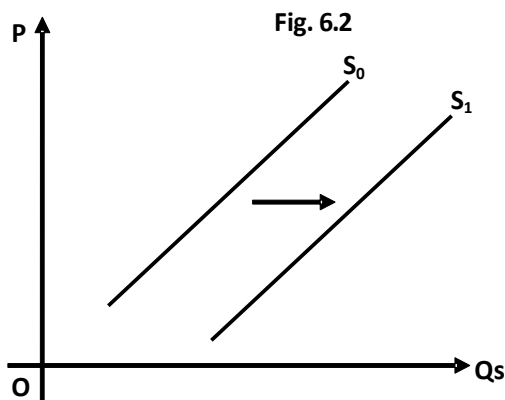
Movement along the (same) supply curve

A change in price either causes an expansion (rise) or a contraction (fall) in quantity supplied and is graphically shown by a movement along the same supply curve e.g. Fig. 6.1 shows that if the price of the product rises from \$10 to \$20, there is a movement from point A to point B along the same supply curve and quantity supplied rises from 1 to 2 units.

Shifts in the supply curve

Changes in factors, other than the own price of the product alter supply (not quantity supplied) and are graphically shown through a shift in the supply curve.

For example, Fig. 6.2 shows that if the cost of production decreases, a producer is willing to supply more, even at an unchanged price. This increase in supply is shown by a rightward (or downward) shift in the original supply curve, S_0 . Thus, S_1 becomes the new supply curve where at each price level, the producer is willing to sell more than before. A leftward (or upward) shift in supply curve means decrease in supply (see Fig. 6.3).



Factors causing shifts in supply curve: Determinants (conditions) of supply

- **Cost of production**

Higher input prices lower profitability and the incentive to supply. Such an increase in cost of production causes an upward (or leftward) shift in the supply curve, the vertical distance between the two supply curves showing the increase in cost of production.

- **Indirect taxes and subsidies**

Indirect taxes such as VAT (value added tax), excise duty, sales tax, custom duty etc are levied on expenditures and shift supply curve upwards by the amount of tax. Subsidies are negative taxes and shift the supply curve downwards.

- **Future expectations**

Foreseeing a product's shortage, suppliers hold back supply with the intention of charging higher prices and earning greater profits in the future. Such a move shifts the supply curve leftwards.

- **Climatic conditions**

The output of few goods like agricultural commodities is subject to climatic conditions. Crop bumper years are a result of favorable climatic conditions such as timely rains and are shown by a rightward shift in the supply curve. Crop failure, on the other hand, due to droughts or floods for instance, results in an output lower than expected. Crop failure is graphically shown by a leftward shift in the supply curve.

- **Joint Supply**

Production and consequently supply of a product automatically increases with increased production of a jointly produced item. For example, increasing meat supply involves slaughtering a greater number of sheep, thus increasing the production of wool as well.

- **Productivity of factors of production**

Increased productivity of production factors lowers production cost and shifts the supply curve rightwards. Labor productivity, for example, increases when the workforce involved in production is provided effective training.

- **Technology**

Technological advancements lower production cost and shift the supply curve rightwards.

- **Number of firms**

Higher the number of firms, greater is the market supply. Thus, market supply curve shifts rightwards when more firms enter the market.

MULTIPLE CHOICE QUESTIONS

N/02/1/10

- 1 What would cause a movement along an industry's supply curve?
- (A) a change in the price of raw materials
 - (B) a change in the price of a substitute good
 - (C) an improvement in technology
 - (D) the imposition of a sales tax on the industry's product

J/03/1/11

- 2 The table gives the short-run supply schedules of three firms X, Y and Z, which comprise an industry.

Price (\$)	quantity supplied (units)		
	firm X	Firm Y	firm Z
1	100	-	-
2	150	50	-
3	200	80	70
4	250	150	100

Which is a point on the short-run supply schedule of the industry?

	Price (\$)	Units
(A)	2	300
(B)	3	350
(C)	3	450
(D)	4	1 150

N/03/1/08

- 3 In calculating the short-run supply schedule for a firm, what is assumed to remain unchanged?
- (A) the number of consumers
 - (B) the price of the good
 - (C) the quantities of all factors
 - (D) the state of technology

N/05/1/09

- 4 Which of the following will **not** cause a shift in the market supply curve of a commodity?
- (A) a rise in the price of the commodity
 - (B) a rise in the price of a factor input
 - (C) a change in technology
 - (D) the introduction of a specific tax on the commodity

N/07/1/07

5 What is correct about market supply?

- (A) Market supply can increase only when all individual firms increase their output.
- (B) Market supply is effective when consumers have sufficient income to buy the good.
- (C) Market supply is the result of aggregating the supply of all individual firms.
- (D) Market supply of an inferior good falls as price increases.

N/08/1/09

6 There are three firms (X, Y and Z) supplying a market. The table shows their supply at four different prices.

price (\$)	firm X's supply	firm Y's supply	firm Z's supply
10	50	40	10
20	60	60	20
30	85	80	35
40	120	100	55

Which price change is required for market supply to double?

- (A) \$10 to \$20
- (B) \$10 to \$30
- (C) \$20 to \$30
- (D) \$20 to \$40

J/09/1/05

7 What is **not** held constant when aggregating individual firms' supply curves to give the market supply curve?

- (A) the number of firms in the industry
- (B) the price of the product
- (C) the prices of factors of production
- (D) the state of technology

J/09/1/12

8 Between 2006 and 2007, the price of skimmed milk powder on the world market rose from \$1000 per tonne to \$2400 per tonne.

Assuming that the market is a free market, what will result from the price change?

- (A) Consumers will buy more complements to skimmed milk powder.
- (B) Farmers will increase the size of their dairy herds to supply more milk.
- (C) Firms processing milk into skimmed milk will switch to producing substitutes.
- (D) Governments will introduce a system of rationing.

J/12/1/06

- 9 The table gives the short-run supply schedules of three firms X, Y and Z, which comprise an industry.

price (\$)	quantity supplied (units)		
	firm x	firm y	firm z
1	100	-	-
2	150	50	-
3	200	80	70
4	250	150	100

Which is a point on the short-run supply schedule of the industry?

	price (\$)	quantity supplied (units)
A	2	300
B	3	350
C	3	400
D	4	1150

J/13/1/09

- 10 A supply curve is represented by the equation, quantity supplied = 10 + 5P, where P = the price of the product.

Which price rise would cause the quantity supplied to double?

- A** \$1 to \$2 **B** \$1 to \$3 **C** \$1 to \$4 **D** \$1 to \$5

J/13/1/10

- 11 Firm Z is one of a number of firms producing televisions.

What would cause firm Z's supply curve to shift to the left whilst the market supply curve for televisions shifts to the right?

- A** Firm Z benefits more from advances in technology than the other firms in the industry.
B Firm Z experiences a strike whilst more firms enter the industry.
C Firm Z passes on more of a tax to its customers than the other firms in the industry.
D Firm Z reduces its costs of raw materials whilst other firms in the industry lower their wage costs.

N/13/1/07

- 12 How is the market supply of a product in a competitive market obtained?

- A** by aggregating the supply of all firms producing the product
B by averaging the supply of all firms producing the product
C by calculating the supply of the typical firm producing the product
D by estimating the supply of the largest firm producing the product

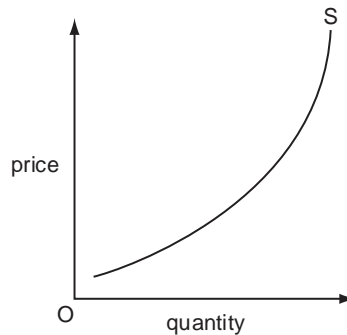
J/14/1/09

13 What might cause a market supply curve to shift to the right?

- A** increased government subsidies
- B** increased labour costs
- C** increased product advertising
- D** lower income tax rates

N/15/1/09

14 The diagram shows a supply curve for beef.



What explains why the supply curve for beef slopes upwards?

- A** An increase in the demand for beef will bring about an increase in supply.
- B** Farmers' productivity rises as the price rises.
- C** Increased production leads to a reduction in costs.
- D** The cost of additional beef production rises as output increases.

J/16/1/05

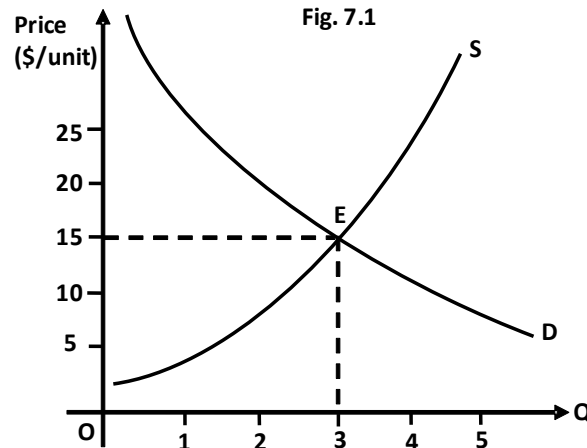
15 What describes a market supply curve?

- A** It is downward sloping.
- B** It is the same as the aggregate supply curve.
- C** It is the sum of all firms' supply curves for a product.
- D** It is the supply of all products within an economy.

SECTION 7

MARKET EQUILIBRIUM

A market is said to be in equilibrium when buyers' plan to buy (i.e. quantity demanded) exactly equals the plans of producers to supply (i.e. quantity supplied). Graphically, market equilibrium occurs at the point where a downward sloping market demand curve intersects an upward rising supply curve.



In the figure above, the demand curve, D intersects supply curve, S at point E. The equilibrium price is \$15 and equilibrium quantity, 3 units. At all prices above the equilibrium price, supply exceeds demand and few units remain unsold. The excess supply pushes prices downwards, forcing few producers to leave the market and encouraging consumers to demand larger quantities. Price continues to fall till the point where demand equals supply. These reactions of producers and consumers to a price change are shown by movements along the demand and supply curves.

At all prices below equilibrium, demand exceeds supply and the resulting shortage pushes prices upward to the equilibrium price.

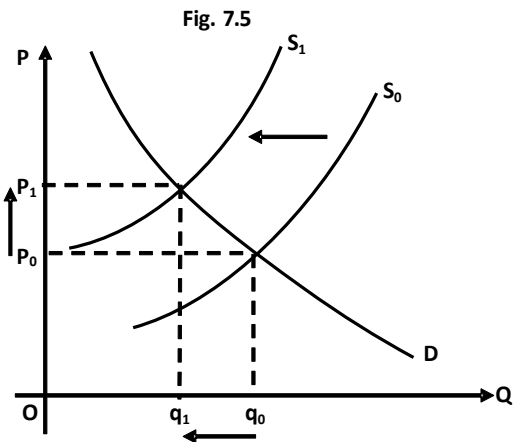
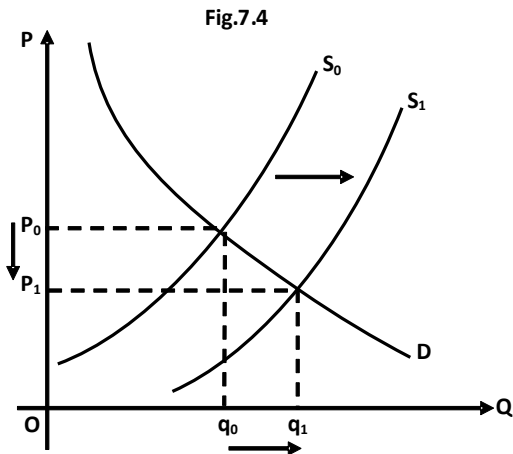
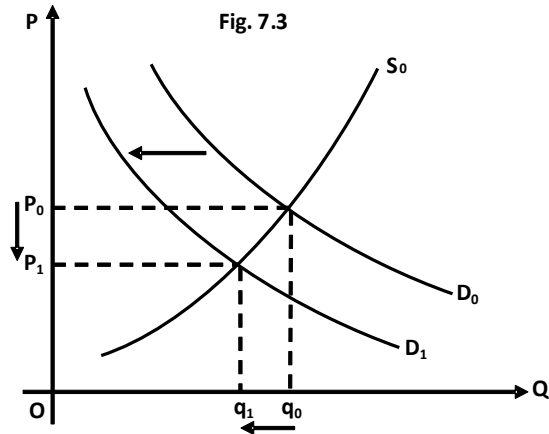
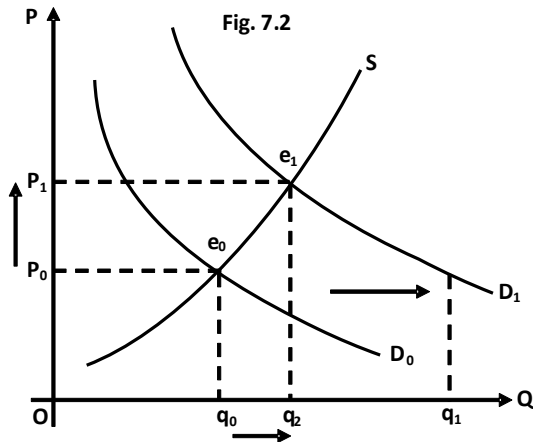
The price at which demand exactly equals supply is the equilibrium price and remains unchanged as long as demand and supply curves do not shift.

CHANGES IN THE EQUILIBRIUM PRICE

A shift in either the demand curve, or supply curve, or both can change the equilibrium price and/or quantity.

In Fig.7.2, D_0 and S_0 are original demand and supply curves. The equilibrium price is P_0 and equilibrium quantity, q_0 . Assuming a rightward shift in demand curve to D_1 , price P_0 no longer stays the equilibrium price, since it is off the supply curve. There exists a shortage (excess demand) of $q_1 - q_0$ which pushes prices upwards. The rising price attracts new supplies and forces few customers to leave the market, causing movements along the supply and demand

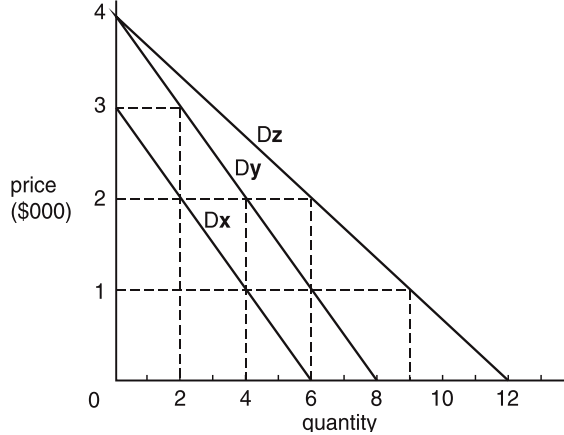
curves. The price continues to rise till the point demand equals supply again at point e_1 . New equilibrium price is P_1 and new equilibrium quantity, q_2 . Increase in demand increases market price as well as quantity traded (Fig.7.2) whereas decrease in demand decreases both (Fig.7.3). So, changes in demand change market price and quantity traded in the same direction. However, changes in supply change market price and quantity traded in opposite directions. An increase in supply increases quantity traded but reduces market price (Fig. 7.4). A decrease in supply decreases quantity traded but raises market price (Fig.7.5).



MULTIPLE CHOICE QUESTIONS

J/02/1/10

- 1 An eighteenth century Swiss clockmaker made a total of 12 identical carriage clocks. There are currently just three collectors of these clocks, X, Y and Z. The diagram shows their respective demand schedules.



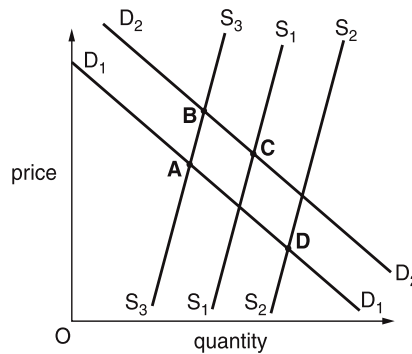
X, Y and Z initially possess 4 clocks each. They come together to trade between themselves.

At the market clearing price (or equilibrium price), which of the following is correct?

	buyer(s)	seller(s)
(A)	X	Y and Z
(B)	Y and Z	X
(C)	X	Z
(D)	Z	X

N/02/1/05

- 2 In the diagram, S_1 and D_1 are the initial supply and demand curves for tea. Which point could represent the equilibrium position in the tea market following a failure in the coffee harvest of a major coffee producer?



N/02/1/09

- 3 Goods X and Y are complements. What will be the effect on the equilibrium price and quantity of good X of an increase in the supply of good Y?

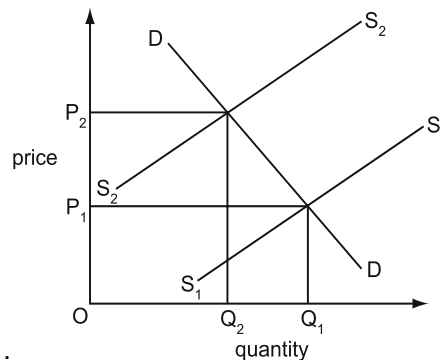
	Equilibrium price of X	Equilibrium quantity of X
(A)	Decrease	Decrease
(B)	Decrease	Increase
(C)	Increase	Decrease
(D)	Increase	Increase

J/03/1/07

- 4 Other things being equal, which of the following would result in an increased demand by private motorists for petrol (gasoline)?
- (A) an increase in the price of second-hand cars
 - (B) an increase in road toll charges
 - (C) a reduction in the price of steel
 - (D) a reduction in bus fares

N/03/1/10

- 5 The diagram represents the market for diamonds

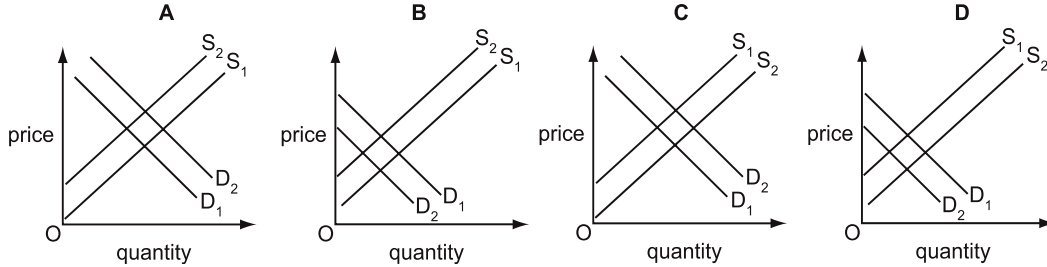


Which of the following could have caused an increase in price from P_1 to P_2 ?

- (A) a fall in the price of substitute gems
- (B) a fall in the tax on diamonds
- (C) a rise in the productivity of diamond miners
- (D) a rise in the wages of diamond miners

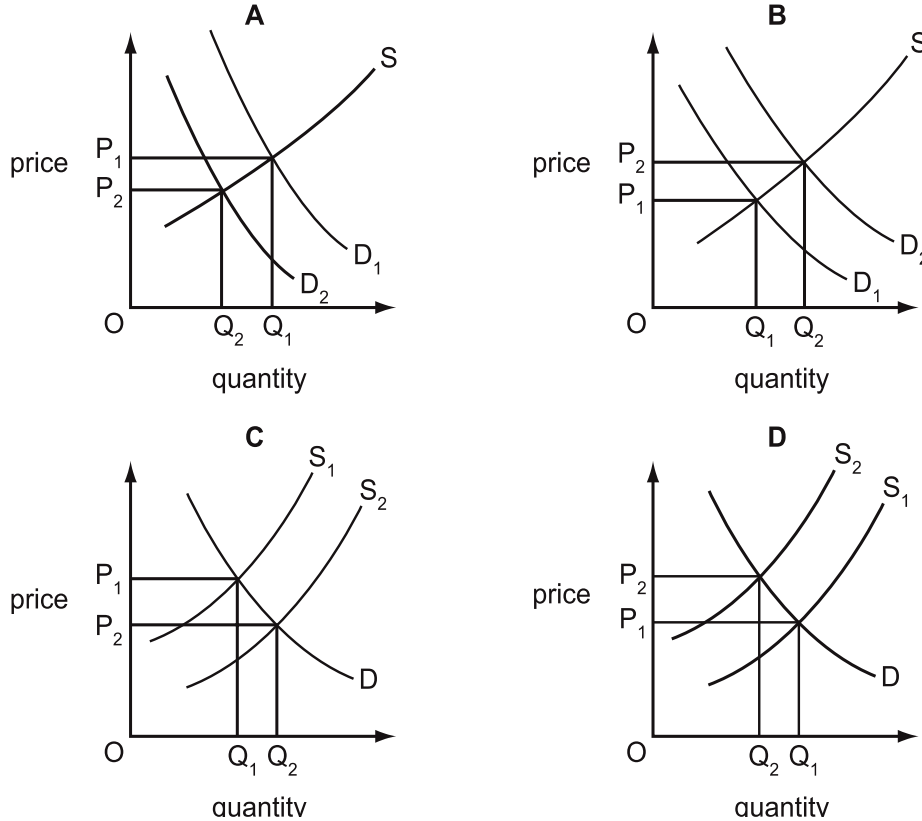
N/03/1/11

- 6 The diagrams show a change in demand from D_1 to D_2 and a change in supply from S_1 to S_2 for four different goods.
 Which diagram illustrates the good for which new uses have been found and which receives an increase in government subsidy?



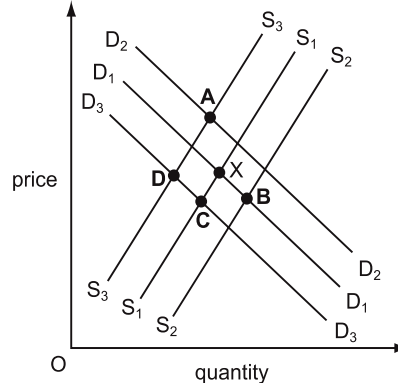
J/04/1/05

- 7 In the last ten years e-mail has increasingly been used in preference to postal services.
 Which graph shows the changes in the market for postal services?



J/04/1/08

- 8** In the diagram below D_1 and S_1 represent the demand and supply curves of a Malaysian industry in its home market. Equilibrium is at X.
 The industry has to pay a large wage increase and at the same time faces increased competition from imported substitutes.
 Which point, **A**, **B**, **C**, or **D**, on the diagram could represent the new equilibrium?

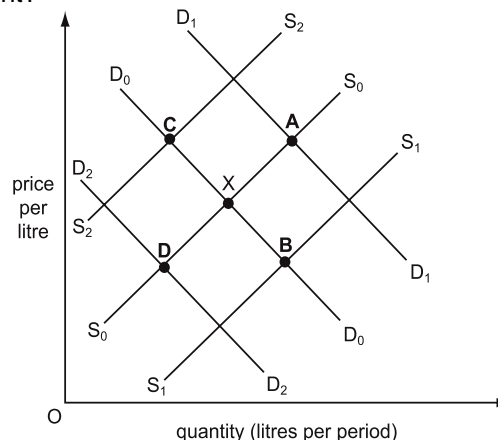


N/04/1/11

- 9** Assume that rice is a substitute for potatoes.
 If there is a decrease in the supply of potatoes, what is likely to happen to the market for rice in the short run?
 (A) Demand will decrease and the price will decrease.
 (B) Demand will increase and the price will increase.
 (C) Supply will decrease and the price will increase.
 (D) Supply will increase and the price will decrease.

N/04/1/12

- 10** In the diagram, point X shows the equilibrium price and quantity for a fruit drink.
 The government announces that the ingredients used in the drink can be harmful.
 Which point, **A**, **B**, **C** or **D**, is most likely to represent the new equilibrium after consumers hear this announcement?



N/04/1/13

11 The table shows observations of a competitive market in equilibrium in two periods.

Period	Market price	Quantity traded
1	50 cents	10 000 units
2	60 cents	12 000 units

What could explain the change from period 1 to period 2?

- (A) an increase in the price of a complement
- (B) an increase in the price of a substitute
- (C) the imposition of an indirect tax on suppliers
- (D) the imposition of a minimum price of 60 cents by a government

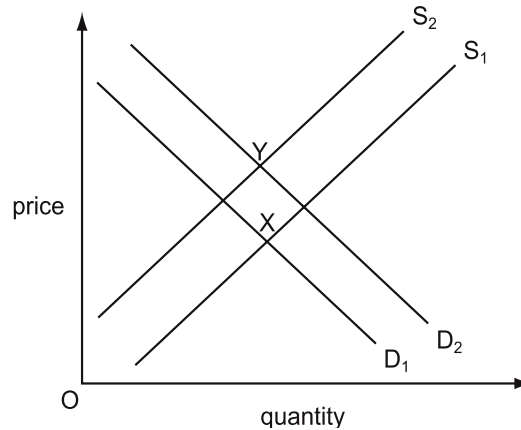
J/05/1/09

12 Good X is a substitute for Good Y and a complement to Good Z. What would be the effect of a fall in the price of Good X?

- (A) Only the demand for X will rise.
- (B) Demand for X, Y and Z will rise.
- (C) Demand for Y will fall and for Z will rise.
- (D) Demand for Y will rise and for Z will fall.

J/05/1/11

13 The diagram shows the market for new houses.



What would cause the change in the market equilibrium position from X to Y?

- (A) a fall in income tax and a rise in building costs
- (B) a fall in interest rates and an increased efficiency in house-building
- (C) a fall in population and a rise in taxes on building materials
- (D) a rise in building subsidies and a fall in incomes

J/05/1/12

14 The market demand equation for a good is given by $Q_d = 310 - 20p$ and the supply equation $Q_s = 10 + 10p$, where p denotes the price of the good.

What is the equilibrium price?

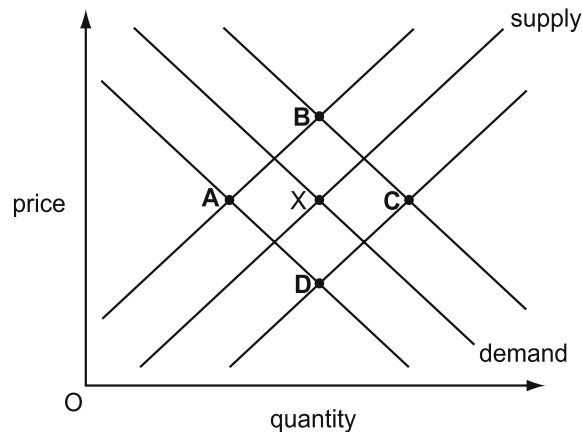
- (A) 5 (B) 10 (C) 15 (D) 20

N/05/1/10

15 In 2003 the outbreak in Asia of the SARS virus had a significant effect on the demand for travel to holiday destinations in the region. The response of airlines was to reduce the number of flights to Asian destinations.

The original market equilibrium was at point X.

Which point represents the new equilibrium in the market for travel to Asia?



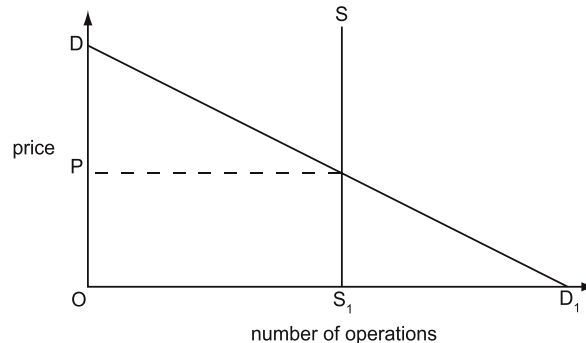
N/05/1/11

16 The diagram shows the demand curve, DD_1 , and the supply curve, SS_1 , for eye operations.

The operations are provided free.

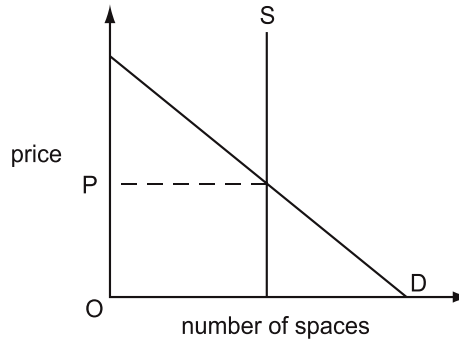
Which statement is true?

- (A) The equilibrium price is zero.
 (B) The equilibrium price is P .
 (C) The equilibrium price is indeterminate, because the supply curve is vertical.
 (D) Consumer surplus from the operations is ODD_1 .



J/06/1/13

- 17 The diagram shows the demand and supply curves for parking spaces in a hospital car park.



The managers decide to rely on the price mechanism to allocate parking spaces at the hospital most effectively.

What is required in order for this to work?

- (A) Alternative means of transport must be provided for those unable to afford price OP.
- (B) A survey will be needed to find out the amount users are willing to pay.
- (C) The capacity of the car park will need to be expanded.
- (D) The price charged for parking spaces must be OP.

N/06/1/01

- 18 Why are there no markets for free goods?

- (A) Consumers' valuation of free goods is the same at all levels of demand.
- (B) Free goods are non-excludable.
- (C) The demand for free goods is infinite.
- (D) The supply of free goods is sufficient to satisfy all demand at zero price.

N/06/1/05

- 19 The market demand for a product is made up of the demand from three firms, X, Y and Z. The table shows the demand from each firm and the market supply.

price	demand from X	demand from Y	demand from Z	market supply
7	3 300	3 300	3 300	3 300
8	3 100	2 900	3 100	6 200
9	2 800	2 500	2 900	8 200
10	2 500	2 100	2 700	10 000

What is the equilibrium price in the market?

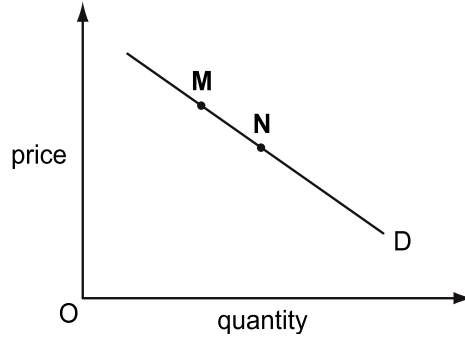
- (A) \$7
- (B) \$8
- (C) \$9
- (D) \$10

N/06/1/06

20 The diagram shows the demand curve for good X.

What could cause a movement along the curve from **M** to **N**?

- (A) a change in consumer tastes in favour of X
- (B) a decrease in labour costs of producing X
- (C) a decrease in the demand for X
- (D) an increase in the price of a substitute good

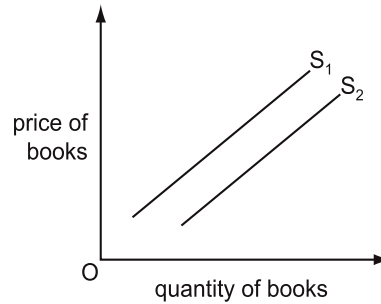


N/06/1/09

21 A firm publishes and sells books. The diagram shows a shift in the firm's supply curve from S_1 to S_2 .

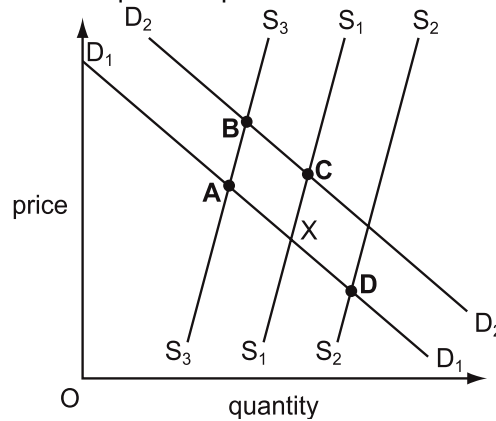
What would have caused this shift in the firm's supply curve?

- (A) a fall in the subsidies paid to book publishers
- (B) a fall in the price of paper
- (C) a rise in the real income of customers
- (D) a rise in the wages of the firm's workers



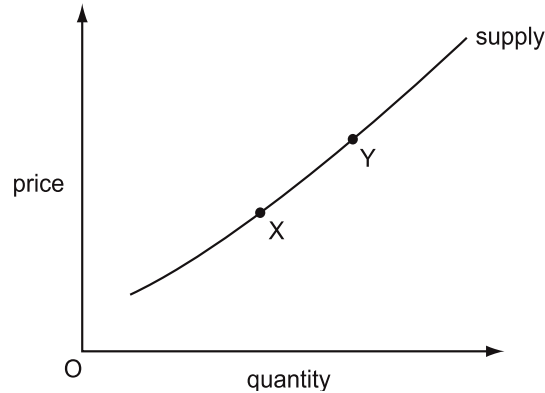
N/06/1/11

22 In the diagram, S_1 and D_1 are the initial supply and demand curves for tea and X is the original equilibrium. There is then a failure in the coffee harvest of a major coffee producer. Which point would represent the equilibrium position in the tea market as a result of this failure?



J/07/1/06

23 The diagram shows the supply curve of coffee in an economy.



The market equilibrium is initially at point X, but a change moves it to point Y. What might explain this?

- (A) an increase in wages paid by producers of coffee
- (B) a switch in consumer tastes from coffee to tea
- (C) an increase in the price of tea
- (D) a tax imposed on coffee producers

J/07/1/11

24 Goods X and Y are complements.

What will be the effect on the equilibrium price and quantity of good X of an increase in the supply of good Y?

	equilibrium price of X	equilibrium quantity of X
(A)	decreases	decreases
(B)	decreases	increases
(C)	Increases	decreases
(D)	Increases	increases

N/07/1/10

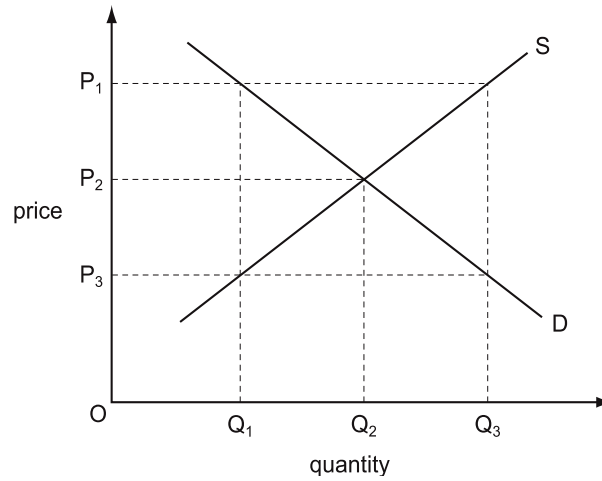
25 Jam and honey are substitutes and honey and beeswax are in joint supply.

Other things being equal, what will be the result of an increase in the price of jam?

	price of honey	price of beeswax
(A)	fall	fall
(B)	fall	rise
(C)	rise	fall
(D)	rise	rise

N/07/1/13

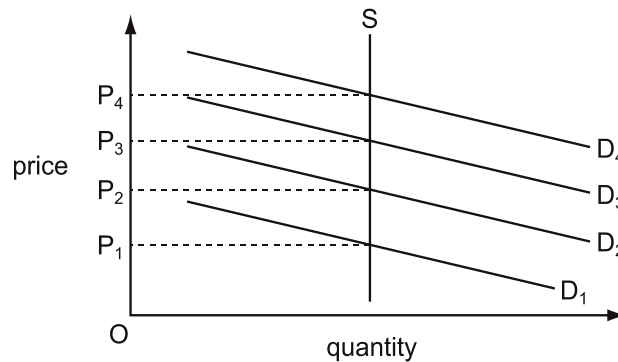
26 In a free market in disequilibrium, which combination of price and quantity will lead to a fall in price and a contraction in output to reach equilibrium?



- (A) P_1Q_1 (B) P_1Q_3 (C) P_3Q_1 (D) P_3Q_3

J/08/1/10

27 In the diagram, the supply curve shows the number of spaces in a car park and the demand curve shows the demand for spaces on four different days.



The owner wishes to charge a parking fee on each of these days to allocate the spaces according to the market mechanism.

Which pricing policy should the owner use?

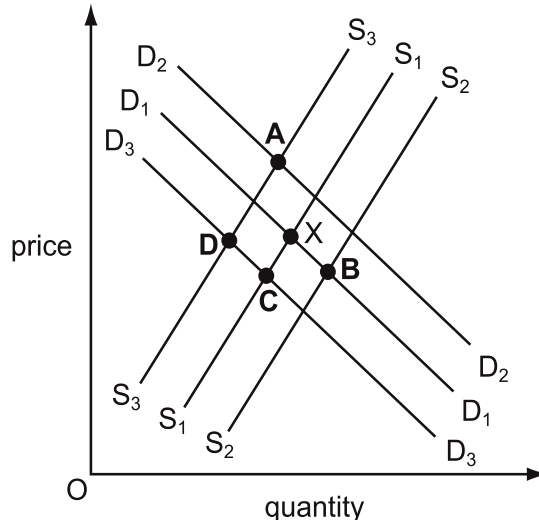
- (A) set a fixed price at P_1
 (B) set a fixed price at P_4
 (C) vary prices between P_2 and P_3
 (D) vary prices between P_1 and P_4

J/08/1/11

28 In the diagram below, D_1 and S_1 represent the demand and supply curves of a Malaysian industry in its home market. Equilibrium is at X.

The industry has to pay a large wage increase and at the same time faces increased competition from imported substitutes.

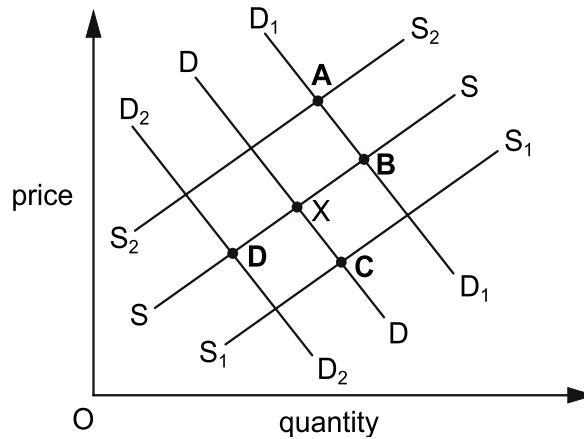
Which point on the diagram could represent the new equilibrium?



N/08/1/11

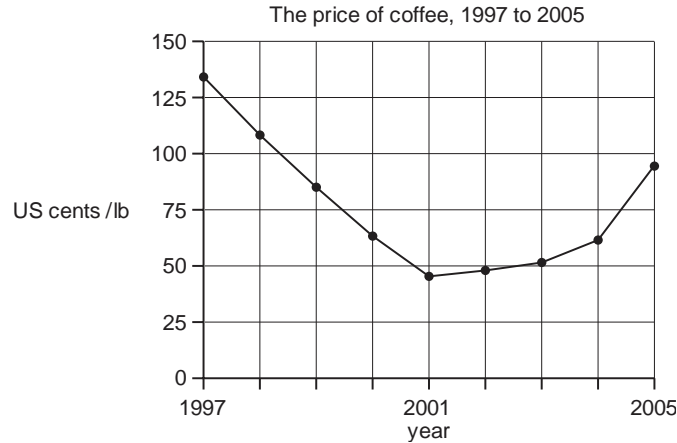
29 The diagram shows demand and supply curves for petrol. The present equilibrium is at X.

What could be the new equilibrium if there were a large fall in the price of cars?



N/08/1/13

30 The diagram shows the average world price of coffee in US cents per pound weight (lb) between 1997 and 2005.



Which event is consistent with the price behaviour shown in the specified time period?

- (A) a continuous rise in the price of tea between 1997 and 2001
- (B) the entry to the market of new producers of coffee between 1997 and 2001
- (C) a series of good coffee harvests between 2001 and 2005
- (D) increasing health worries about drinking coffee between 2001 and 2005

N/09/1/04

31 A change in market conditions causes a reduction in supply. This results in a higher price for the product, which has a downward-sloping demand curve.

What must be the outcome of this higher price?

- (A) an increase in the factors employed in the industry
- (B) an increase in producer's revenue
- (C) a reduction in the quantity demanded
- (D) a reduction in the demand for substitutes

J/10/1/04

32 The table shows the market supply for a new material and the individual demand of the three firms, X, Y and Z, which are its only buyers.

price \$ (per kilo)	market supply (000s)	demand by X (000s)	demand by Y (000s)	demand by Z (000s)
7	30	13	27	20
8	40	12	25	18
9	50	11	23	16
10	60	10	20	15

What is the equilibrium market price of the raw material?

- (A) \$7
- (B) \$8
- (C) \$9
- (D) \$10

J/10/1/06

- 33** Worldwide, the film industry has increased its expenditure to over \$1 billion each year on successful anti-piracy measures which it finances by charges on DVD products. How would this be shown in a demand and supply diagram of the market for legally produced DVDs?

	demand curve	supply curve
(A)	shifts left	shifts left
(B)	shifts left	shifts right
(C)	shifts right	shifts left
(D)	shifts right	shifts right

J/10/1/09

- 34** In 2008 a disease killed a significant number of sheep used to produce wool. How would the short-run effect be shown on a demand and supply diagram for wool?
- (A)** a movement down the existing supply curve
 - (B)** a movement up the existing supply curve
 - (C)** a shift to the left of the supply curve
 - (D)** a shift to the right of the supply curve

N/10/1/09

- 35** The table shows the market demand for a product and the individual supply of the three firms X, Y and Z in the industry

price \$	market demand (000)	supply by X (000)	supply by Y (000)	supply by Z (000)
40	60	50	10	20
30	70	41	11	18
20	80	34	10	16
10	90	30	9	11

What is the equilibrium market price?

- A** \$40 **B** \$30 **C** \$20 **D** \$10

N/10/12/10

- 36** Domino Pizza, the largest US pizza chain, said that its profits had been reduced by price inflation on ingredients and by a reduction in consumers' disposable income. How would these changes affect the demand and supply curve for its products?

	demand	supply
A	move to the left	move to the left
B	move to the left	move to the right
C	move to the right	move to the left
D	move to the right	move to the right

N/10/1/12

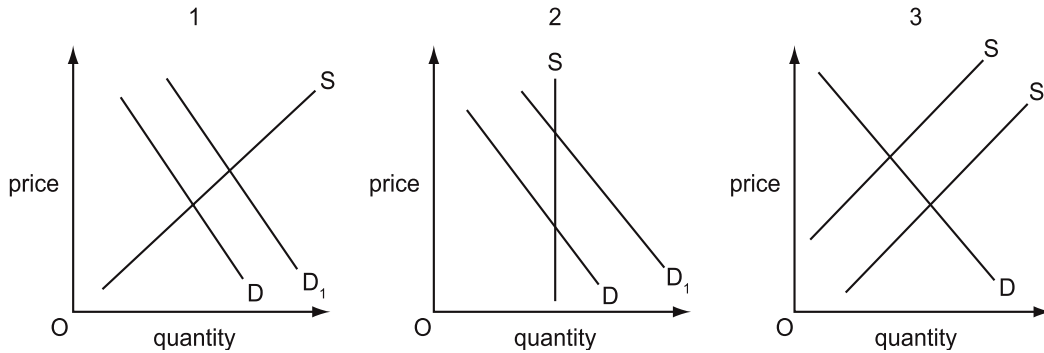
37 Rising demand for oil from China and other countries is leading to concerns that there may be a world shortage of oil.

How should a change in the price of oil prevent such a shortage developing?

- A** Price should fall to reduce demand and encourage a search for more oil.
- B** Price should fall to reduce supply and encourage a reduction in fuel use.
- C** Price should rise to reduce demand and encourage a search for alternative fuels.
- D** Price should rise to reduce supply and encourage a switch to alternative fuels.

J/11/1/06

38 The diagrams show changes in the market for a good.

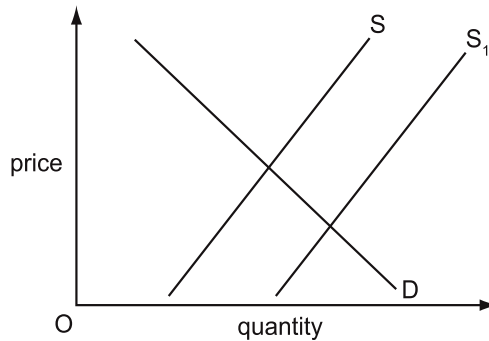


Which diagrams represent 'a change in the quantity demanded'?

- (A)** 1 and 2
- (B)** 1 and 3
- (C)** 1 only
- (D)** 3 only

J/11/1/08

39 In the diagram D and S are the demand and supply curves of a good.

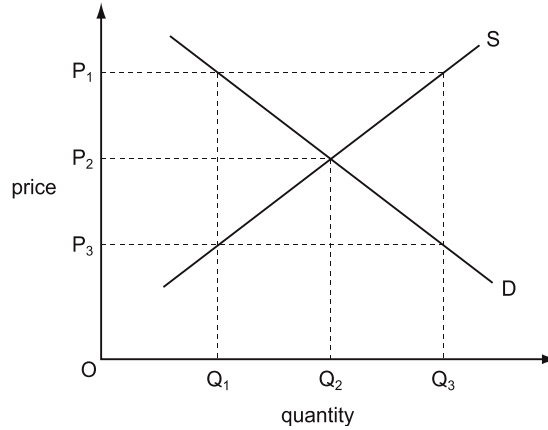


What could cause the supply curve to shift in the short run to S₁?

- (A)** a change in consumer preferences
- (B)** a decrease in the price of a complementary good
- (C)** a fall in the cost of raw materials
- (D)** a government warning that consumption of the good can damage health

N/11/1/07

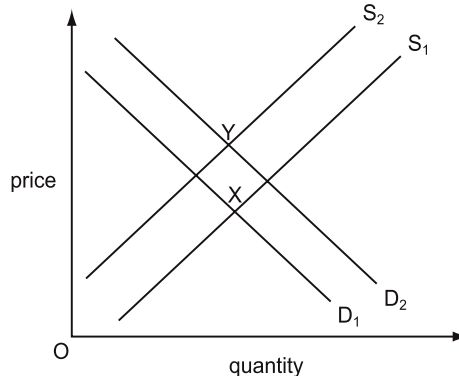
40 In a free market in disequilibrium, which combination of price and quantity will lead to a fall in price and a contraction in output to reach equilibrium?



- (A) P_1Q_1 (B) P_1Q_3 (C) P_3Q_1 (D) P_3Q_3

N/11/1/10

41 The diagram shows the market for new houses.



What would cause the change in the market equilibrium position from X to Y?

- (A) a fall in income tax and a rise in building costs
 (B) a fall in interest rates and increased efficiency in house-building
 (C) a fall in population and a rise in taxes on building materials
 (D) a rise in building subsidies and a fall in incomes

J/12/1/03

42 The growing domestic, agricultural and industrial demand for water is leading to a world shortage of water.

Which change would reduce this problem of water scarcity?

- A an increase in demand for food
 B an increase in population growth
 C climate change which leads to lower rainfall
 D more efficient water management

J/12/1/10

43 The demand for a good falls at the same time as its costs of production decrease.

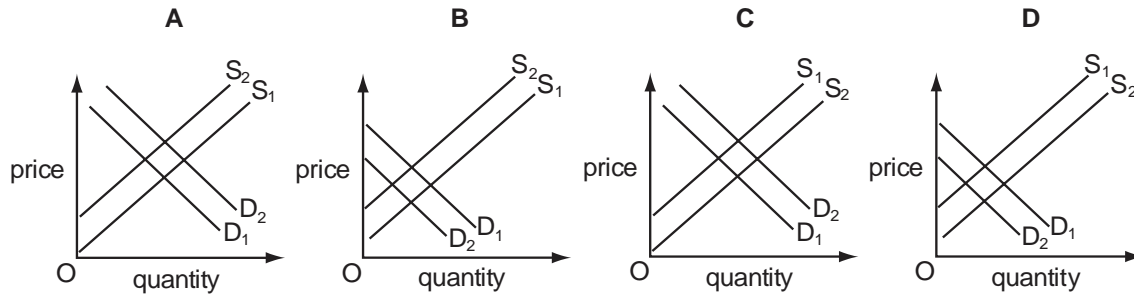
What will be the combined effect of these changes on the price and on the quantity supplied of the good?

	Price	Quantity supplied
A	decrease	decrease
B	decrease	uncertain
C	uncertain	decrease
D	uncertain	uncertain

J/12/1/11

44 The diagrams show a change in demand from D_1 to D_2 and a change in supply from S_1 to S_2 for four different goods.

Which diagram illustrates the good for which additional new uses have been found and which receives an increase in government subsidy?



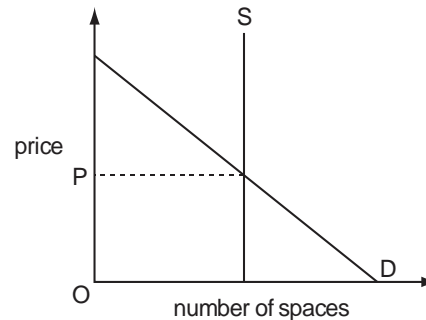
J/12/1/13

45 The diagram shows the demand and supply curves for parking spaces in a hospital car park.

The managers decide to rely on the price mechanism to allocate parking spaces at the hospital.

What is required for this to work?

- A** Alternative means of transport must be provided for those unable to afford price OP.
- B** A survey will be needed to find out the amount users are willing to pay.
- C** The capacity of the car park will need to be expanded.
- D** The price charged for parking spaces must be OP.



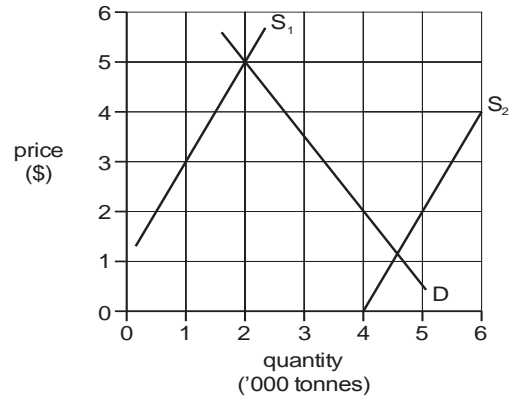
J/12/1/17

46 In the diagram, D is the demand curve for an agricultural commodity and S₁ is the initial supply curve.

A good harvest causes the supply curve to shift to S₂.

By how much will the demand curve have to shift to leave farm incomes unchanged?

- A** 500 tonnes
- B** 1000 tonnes
- C** 2000 tonnes
- D** 4000 tonnes



N/12/1/8

47 A free market is in disequilibrium with a shortage of a product. As the market moves towards equilibrium, what will happen to the price, the quantity demanded and the quantity supplied?

	price	quantity demanded	quantity supplied
A	decrease	decrease	increase
B	decrease	increase	decrease
C	increase	decrease	increase
D	increase	increase	decrease

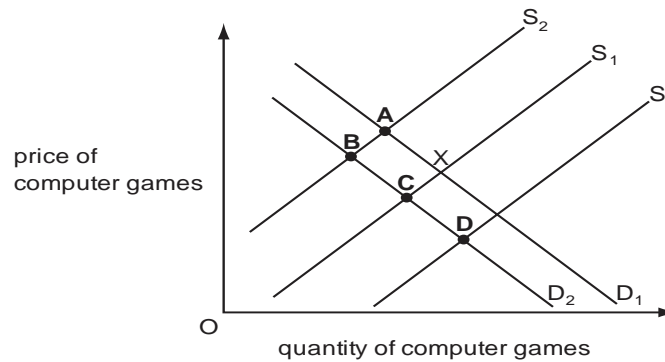
N/12/1/9

48 The market demand equation for a good is given by $Q_d = 310 - 20p$ and the supply equation by $Q_s = 10 + 10p$ where p denotes the price of the good. What is the equilibrium price?

- A** 5
- B** 10
- C** 15
- D** 20

N/12/1/10

49 The diagram shows the market for computer games. The market starts in equilibrium at X. What will be the new equilibrium if the tax on computer games is increased and incomes fall?



J/13/1/11

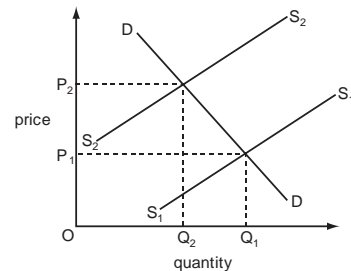
- 50** A country's government announces that the penalties imposed on those found guilty of supplying an illegal drug to others are to be increased but that possession of small quantities of the drug for an individual's own use will no longer be illegal. What effect are these changes likely to have on the illegal market price of that drug and on the quantity consumed?

	illegal market price	quantity consumed
A	increase	decrease
B	increase	uncertain
C	uncertain	decrease
D	uncertain	uncertain

N/13/1/6

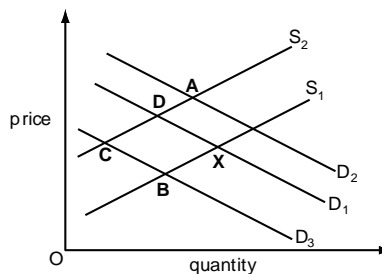
- 51** The diagram represents the market for diamonds. What could have caused price to change from P_1 to P_2 ?

- A** a fall in the price of substitute gems
- B** a fall in the tax on diamonds
- C** a rise in the productivity of diamond miners
- D** a rise in the wages of diamond miners



N/13/1/09

- 52** The diagram shows the demand and supply curves for tractors. The present equilibrium point is at X. What could be the new equilibrium if the government were to tax the country's tractor manufacturers?



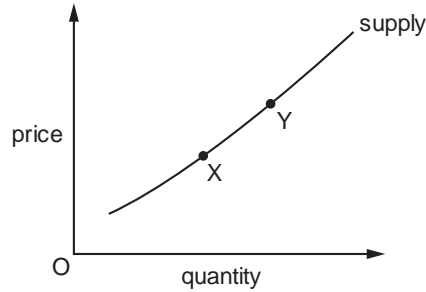
J/14/1/13

- 53** In a market for a good both demand and supply change at the same time. Which combination of changes would enable an economist to predict with confidence that more resources will be needed in its production but **not** the direction of the associated price change?

	demand	supply
A	decrease	decrease
B	decrease	increase
C	increase	decrease
D	increase	increase

N/14/1/09

54 The diagram shows the supply curve of coffee in an economy.



The market equilibrium is initially at point X, but a change moves it to point Y. What might explain this?

- A an increase in wages paid by producers of coffee
- B a switch in consumer tastes from coffee to tea
- C an increase in the price of tea
- D a tax imposed on coffee producers

J/15/1/11

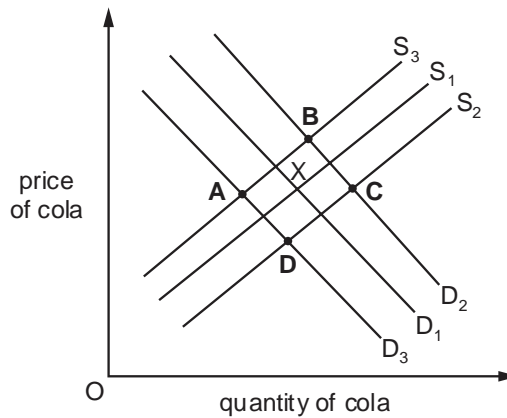
55 Many people used to smoke in restaurants. Restaurant owners have found that the decline in smoking caused by a tax on cigarettes has decreased their sales of meals. How would this be shown on demand and supply diagrams for cigarettes and for meals?

	cigarettes	meals
A	a movement along the demand curve	a shift inwards of the demand curve
B	a movement along the supply curve	a movement along the demand curve
C	a shift outwards of the demand curve	a shift outwards of the supply curve
D	a shift outwards of the supply curve	a movement along the supply curve

J/15/1/12

56 S_1 and D_1 show the original supply and demand curves for cola. Point X is the initial equilibrium.

What will be the new equilibrium position following a rise in production costs and a fall in the price of lemonade?



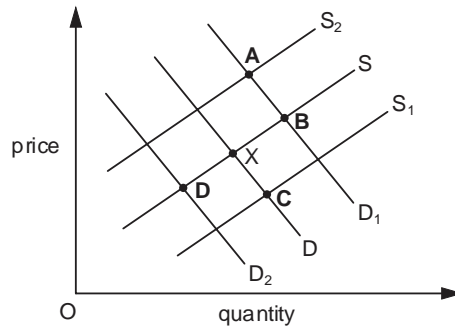
N/15/1/11

57 In a particular year, 12 000 units of a good are sold at \$1 per unit. In a later year, 14 000 units are sold at \$1.20 per unit. If consumer tastes have remained constant, what could account for the change between the two years?

- A** a decrease in the price of raw materials used by producers
- B** an increase in the price of a substitute good
- C** an increase in the rate of tax imposed on producers
- D** the formation of a monopoly in the production of the good

N/15/1/12

58 The diagram shows demand and supply curves for petrol (gas). The initial equilibrium is at X. What could be the new equilibrium if there were a large fall in the price of cars?



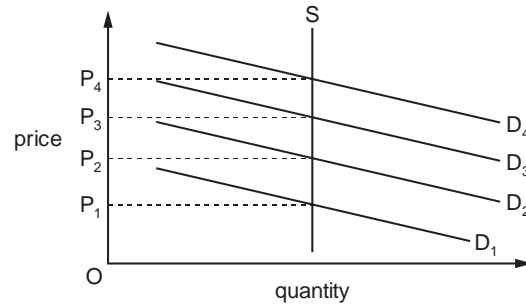
J/16/1/10

59 A US study, published in July 2014, warned teenagers to reduce the amount of fizzy drink they consume. One can of fizzy drink contains an adult's entire daily sugar allowance. If the advice were accepted, how might the effect be illustrated on demand and supply diagrams for fizzy drinks and for sugar?

	diagram for fizzy drinks	diagram for sugar
A	demand curve moves to the left	movement up the supply curve
B	demand curve moves to the left	movement down the supply curve
C	movement up the demand curve	supply curve moves to the right
D	movement up the demand curve	supply curve moves to the left

J/16/1/11

60 In the diagram, the supply curve shows the number of spaces in a car park and the demand curves show the demand for spaces on four different days (D_1 , D_2 , D_3 and D_4).



The owner wishes to charge a parking fee on each of these days to allocate the spaces according to the market mechanism.

Which pricing policy should the owner use?

- A** set a fixed price at P_1
- B** set a fixed price at P_4
- C** vary prices between P_2 and P_3
- D** vary prices between P_1 and P_4

SECTION 8

ELASTICITY OF DEMAND

We all know for a fact that increased prices for goods reduce their quantity demanded but ever wondered what determines the amount of this change? Ever wondered why demand of necessities such as essential food items doesn't change much, even when they become expensive whereas that of products with multiple substitutes decreases more than proportionately with a price rise? The answer lies in the concept of elasticity.

Elasticity of demand (Ed) measures the degree of responsiveness of quantity demanded towards a change in any of the independent variables such as own price of the product, income of the consumer and prices of other commodities.

Elasticity of demand has three types:

- Price elasticity of demand (P.E.D)
- Income elasticity of demand (M.E.D)
- Cross price elasticity of demand (C.E.D)

PRICE ELASTICITY OF DEMAND (P.E.D)

Price elasticity of demand measures the degree of responsiveness of quantity demanded towards a change in the own price of the product. P.E.D can be calculated using three different ways:

- Mathematical formula
- Total Revenue (TR) or Total Expenditures (TE) method
- Graphical Method

Mathematical Formula

Mathematically, it is the ratio of a percentage change in quantity demanded and a percentage change in the own price of the product.

$$\text{P.E.D} = \frac{\% \Delta \text{ in } X}{\% \Delta \text{ in } P_x} \text{ OR } \frac{dX}{dP_x} \times \frac{P_x}{X}$$

In the above formula:

Δ symbolizes change

X is the quantity demanded of a hypothetical product

P_x is the per unit price of X.

Price elasticity of demand is always negative, confirming the inverse relationship between price and quantity demanded. The negative sign of P.E.D is ignored.

A product has price elastic demand if a certain change in price brings a more than proportionate change in quantity demanded. P.E.D exceeds 1 for such products.

A product has price inelastic demand if a certain change in price brings a less than proportionate change in quantity demanded. P.E.D is less than 1 for such products.

A product has unitary price elastic demand if a certain change in price brings a proportionate change in quantity demanded. P.E.D equals 1 for such products.

A product has perfectly price elastic demand if a change in price brings an infinite change in quantity demanded. P.E.D is ∞ for such products.

A product has perfectly price inelastic demand if a certain change in price brings no change in quantity demanded. P.E.D is zero for such products.

The derivation of an alternative formula for P.E.D is explained below:

$$\% \text{ age } \Delta \text{ in } X = \frac{dX}{X} \times 100$$

$$\% \text{ age } \Delta \text{ in } P_x = \frac{dP_x}{P_x} \times 100$$

$$\text{P.E.D} = \frac{\% \Delta \text{ in } X}{\% \Delta \text{ in } P_x} = \frac{\frac{dX}{X} \times 100}{\frac{dP_x}{P_x} \times 100} = \frac{\frac{dX}{X}}{\frac{dP_x}{P_x}} = \frac{dX}{X} \times \frac{P_x}{dP_x} = \frac{dX}{dP_x} \times \frac{P_x}{X}$$

$$\text{P.E.D} = \frac{dX}{dP_x} \times \frac{P_x}{X}$$

where:

dX = Change in the quantity of X.

dP_x = Change in the price of X.

P_x = Price of X before change.

X = Quantity of X before change.

Since the slope of demand curve is $\frac{dP_x}{dX}$, the price elasticity of demand is the product of inverse of the slope of demand curve and the ratio of sale price and quantity sold.

$$\text{P.E.D} = \frac{1}{\text{slope of demand curve}} \times \frac{P_x}{X}$$

Example: Calculate price elasticity of demand for figures given in the following demand schedule.

Price	Quantity demanded
10	100
20	50

The above schedule can be read in two ways:

1. Price rises from 10 to 20 and quantity falls from 100 to 50, so initial price i.e. P is 10 and initial quantity i.e. Q is 100.

$$\text{P.E.D} = \frac{dX}{dP_x} \times \frac{P_x}{X} = -\frac{50}{10} \times \frac{10}{100} = -0.5$$

Price rises by 100% and quantity demanded falls by 50%, yielding P.E.D. i.e. $\frac{\% \Delta \text{in } X}{\% \Delta \text{in } P_x} = -0.5$.

Ignoring the negative sign, demand for this product is price inelastic.

2. Price falls from 20 to 10 and quantity rises from 50 to 100, so initial price i.e. P is 20 and initial quantity i.e. Q is 50.

$$\text{P.E.D} = \frac{dX}{dP_x} \times \frac{P_x}{X} = -\frac{50}{10} \times \frac{20}{50} = -2$$

Price falls by 50% and quantity demanded rises by 100% making P.E.D equal -2.

Ignoring the negative sign, demand for this product is price elastic.

The direction of change of price and quantity alters the price elasticity of demand. This is because, although $\frac{dX}{dP_x}$ is -5 irrespective of the direction of the change, the ratio $\frac{P_x}{X}$ changes with the direction of change in price.

So instead of taking P_x and X as the initial price and quantity, we take average price and average quantity to calculate P.E.D.

$$\text{P.E.D} = \frac{dX}{dP_x} \times \frac{P_x}{X} = -\frac{50}{10} \times \frac{15}{75} = -1$$

Ignoring the negative sign, demand of this product is unitary price elastic.

In reality, the product has a unitary price elastic demand as obtained by taking average price and average quantity in the formula. This is only because of the initial value problem. Otherwise, both the ways conform to proportionality- a 100% increase in price is completely offset by a 50% decrease in quantity demanded in the first case and a 50% fall in price, by a 100% increase in quantity demanded in the second.

The formula yields the same answer (unitary price elasticity) when taking P_x & X as larger of the two figures or smaller of the two figures of price and quantity.

Students should be careful while using the above formula for calculating price elasticity of demand. If direction of the change is unknown (as it was in the above mentioned demand schedule), P_x and X can either be the average figures, larger of the two or smaller of the two figures of price and quantity. However, if the direction of the change is known (as in the following example), P_x and X are the initial figures of price and quantity.

Example

The capacity of a car manufacturing plant is 10000 units a month. Currently, the firm charges a price of \$15 000 for one car but uses only 80% of its capacity. Price elasticity of demand is -2.5. What price should this firm charge to utilize full capacity?

Solution: The firm needs to increase its sales from 8 000 (80% of its capacity) units to 10 000 i.e. dX is 2000 units
 dP_x is unknown

P_x i.e. initial price is \$15 000

X i.e. initial quantity is 8 000 units

$$P.E.D = \frac{dX}{dP_x} \times \frac{P_x}{X} = - \frac{2000}{dP_x} \times \frac{15000}{8000} = - 2.5$$

Solving for dP_x , we get -1500 as the answer.

Therefore, this firm should decrease price per car from \$15000 to \$13500 to be able to increase its sales from 8000 units/month to 10000 units.

Alternatively, the answer could be calculated as follows:

$$P.E.D = \frac{\% \Delta \text{ in } X \text{ i.e. the number of cars sold}}{\% \Delta \text{ in } P_x \text{ i.e. the price of a car}} = \frac{+ 25\%}{\% \Delta \text{ in } P_x \text{ i.e. the price of a car}} = - 2.5$$

Thus, $\% \Delta \text{ in } P_x \text{ i.e. the price of a car}$ is -10%, making \$13500 the new price.

Total Revenue (TR) or Total Expenditures (TE) method

Total Revenue is the product of sales price and quantity sold/purchased.

$$TR = P \times Q$$

where:

TR= Total Revenue

P = Sale price

Q= Quantity sold

From the consumer's point of view, the product of sale price and the quantity purchased is his total expenditure on that product. So,

$$TE = P \times Q$$

where:

TE= Total Expenditures

P = Sale price

Q= Quantity purchased

Since price and quantity demanded move inversely (law of demand), the impact of a price change on TR (or on TE) is uncertain unless we know the P.E.D of the product.

Assuming price inelastic demand for a product (where a certain change in price brings a less than proportionate change in quantity demanded), an increase in price increases TR (or TE) since quantity traded doesn't reduce much. Thus, price and total revenue (or total expenditures) move directly for goods with price inelastic demand.

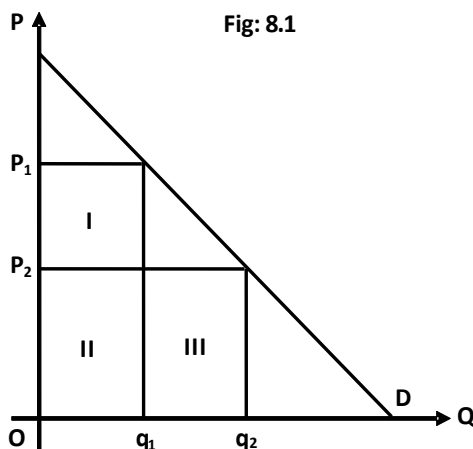
Assuming price elastic demand for a product (where a certain change in price brings a more than proportionate change in quantity demanded) a decrease in price increases TR (or TE) since quantity traded will increase significantly. Thus the price and total revenue (or total expenditures) move inversely for goods with price elastic demand.

Assuming unitary price elastic demand for a product (where a certain change in price brings a proportionate change in quantity demanded), a decrease or increase in price doesn't change TR (or TE) since quantity traded changes inversely and proportionately. Thus, changes in price have no impact on total revenue (or total expenditures) for goods with unitary price elastic demand.

Assuming perfectly price elastic demand for a product (where a change in price brings an infinite change in quantity demanded), quantity and total revenue move directly and proportionately since change in price is zero.

Assuming perfectly price inelastic demand for a product (where even a very large change in price fails to bring any change in quantity demanded), price and total revenue move directly and proportionately since change in quantity is zero.

The impacts of price changes on total revenue for goods with different price elasticities of demand are discussed with the help of (Fig.8.1).



Reducing price from P_1 to P_2 increases quantity demanded from q_1 to q_2 . At P_1 , total revenue = I + II. When price decreases to P_2 , total revenue becomes II + III. In order to judge the changes in total revenue, only I & III need to be compared since area 'II' is common to both.

Area I is the product of change in price (dP) and quantity sold i.e. q_1 . Put another way, it's the decrease in total revenue by selling all units to existing customers at a lower price.

$$\text{Area I} = dP \times q_1$$

Area III is the product of change in quantity (dq) and the new price being charged i.e. p_2 . It's the increase in total revenue resulting from new customers being attracted by a lower price.

$$\text{Area III} = dq \times P_2$$

$$\frac{\text{Area III}}{\text{Area I}} = \frac{dq}{dP} \times \frac{P}{q} = Ed$$

The ratio of area III & I is the formula of price elasticity of demand.

The reduction in price from P_1 to P_2 increases total revenue if $\text{III} > \text{I}$ i.e. when $P.E.D > 1$.

The reduction in price from P_1 to P_2 decreases total revenue if $III < I$ i.e. when $P.E.D < 1$.
The reduction in price from P_1 to P_2 leaves total revenue unchanged if $III = I$ i.e. when $P.E.D = 1$.
The impacts of changes in price on total revenue are discussed with the help of five hypothetical demand schedules with different price elasticities of demand.

Product I

Price	Quantity demanded (product I)	Total Revenue
10	100	1000
20	50	1000

This product has unitary price elastic demand since when price is doubled, quantity demanded is exactly halved. $P.E.D$ equals 1 for this product. Changes in price have no impact on total revenue (or total expenditures).

Product II

Price	Quantity demanded (product II)	Total Revenue
10	100	1000
20	60	1200

This product has price inelastic demand since as price is doubled, quantity demanded is less than halved. $P.E.D$ is less than 1 for this product. Price and total revenue (or total expenditures) move directly for such goods.

Product III

Price	Quantity demanded (product III)	Total Revenue
10	100	1000
20	40	800

This product has price elastic demand since when price is doubled, quantity demanded is more than halved. $P.E.D$ exceeds 1 for this product. Price and total revenue (or total expenditures) move inversely for goods with price elastic demand.

Product IV

Price	Quantity demanded (product IV)	Total Revenue
10	100	1000
20	100	2000

This product has perfectly price inelastic demand since when price is changed, quantity demanded does not change at all. $P.E.D$ is zero for this product. Price and total revenue move directly and proportionately for such products, as change in quantity is zero.

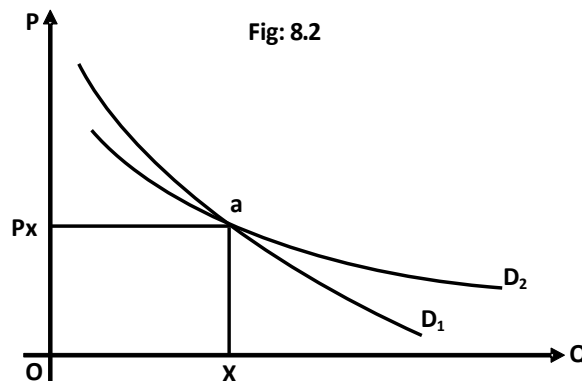
Product V		
Price	Quantity demanded (Product V)	Total Revenue
10	1	10
10	2	20

This product has perfectly price elastic demand since quantity demanded changes even when the change in price is zero. P.E.D is ∞ for this product. Quantity and total revenue move directly and proportionately for such products, as change in price is zero.

Graphical Method

Price elasticity of demand (P.E.D) can also be calculated graphically. We know that the steeper a curve, the greater its slope and vice versa. Since P.E.D is the inverse of the slope of demand curve multiplied with the ratio of price and quantity, it can be said that:

Steeper the demand schedule, smaller is the P.E.D. Flatter the demand curve, greater is the P.E.D.



In the figure above, D₁ is relatively steep. As explained earlier, D₁ shows price inelastic demand when compared with D₂. The formula of P.E.D. can be used to understand this concept.

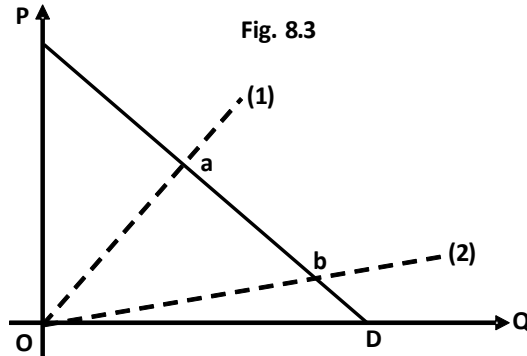
$$P.E.D = \frac{1}{\text{slope of demand curve}} \times \frac{Px}{X}$$

The slope of a straight line drawn from origin in the panel of price and quantity gives the ratio of price and quantity i.e. $\frac{Px}{X}$ at a certain point on a demand curve. At point 'a', $\frac{Px}{X}$ is same for both the demand curves. However, since slope of D₁ exceeds the slope of D₂,

$\frac{1}{\text{slope of demand curve}}$ for D₁ is less than $\frac{1}{\text{slope of demand curve}}$ of D₂. Thus, D₁ is less price elastic than D₂.

Price elasticity of demand along a linear demand curve

Along a linear demand curve, the slope and hence the inverse of slope stays the same. However, price elasticity of demand decreases as we move downwards along a demand curve. Moving down along a linear demand curve means that $\frac{Px}{X}$ falls while inverse of slope stays the same, hence making the product of the two (i.e. P.E.D) fall continuously.



The figure above shows a linear demand curve with P.E.D being compared at two points: 'a' & 'b'. The slope of demand curve and hence the inverse of the slope is the same at both 'a' & 'b' but line 2, the slope of which shows $\frac{P}{Q}$ at point 'b', is flatter than line 1, the slope of which shows $\frac{P}{Q}$ at point 'a'. Since $\frac{P}{Q}$ is higher at point 'a', P.E.D is higher too.

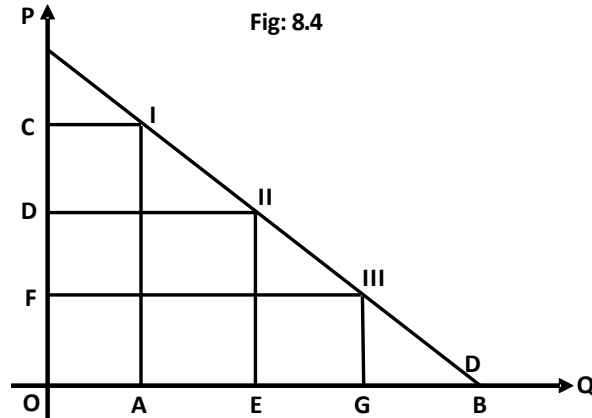
At the vertical (Y) intercept of a demand curve, P.E.D is ∞ since $\frac{P}{Q}$ is ∞ as Q is zero.

At the horizontal (X) intercept of a demand curve, P.E.D is zero since $\frac{P}{Q}$ is zero as P is zero.

Thus, along a linear demand curve, P.E.D. moves down from ∞ to zero.

Point Elasticity of demand

The following procedure can be used to calculate P.E.D for very small changes in price and quantity. Since change in Q and change in P is too small to be shown graphically or be assigned a number, P.E.D is actually calculated at a point.



In Fig. 8.4, P.E.D is calculated at three points: 'I', in the upper half of the demand curve, 'II', at its midpoint and 'III' in the lower half.

To calculate P.E.D at point 'II', it is assumed that price falls from OD to zero and quantity demanded rises from 'OE' to 'OB'.

$$\text{P.E.D} = \frac{dX}{dP_x} \times \frac{P_x}{X} = \frac{EB}{OD} \times \frac{OD}{OE} = \frac{EB}{OE}$$

Point E bisects (splits into two equal parts) OB, therefore, EB equals OE. P.E.D at point II equals unity.

To calculate P.E.D at 'I', it is assumed that price falls from OC to zero and quantity demanded rises from 'OA' to 'OB'.

$$\text{P.E.D} = \frac{dX}{dP_x} \times \frac{P_x}{X} = \frac{AB}{OC} \times \frac{OC}{OA} = \frac{AB}{OA}$$

Since AB is larger than OA, P.E.D at point 1 exceeds unity.

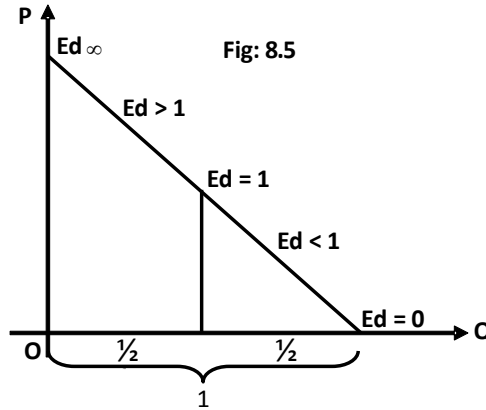
To calculate P.E.D at point 'III', it is assumed that price falls from OF to zero and quantity demanded rises from 'OG' to 'OB'.

$$\text{P.E.D} = \frac{dX}{dP_x} \times \frac{P_x}{X} = \frac{GB}{OF} \times \frac{OF}{OG} = \frac{GB}{OG}$$

Since GB is smaller than OG, P.E.D at point III is less than unity.

Conclusion

Along a linear demand curve, P.E.D moves down from ∞ to zero. P.E.D exceeds 1 in the upper half of the demand curve, equals 1 at the mid point and is less than 1 in the lower half (see Fig. 8.5).



Linear demand curve and total revenue

The concept of P.E.D. along a linear demand curve can be understood with the help of the following demand schedule. If plotted in a panel of price and quantity, it gives a linear demand curve. The following table also shows the changes in total revenue when we move along the demand curve.

Price	Quantity	Total revenue
10	1	10
9	2	18
8	3	24
7	4	28
6	5	30
5	6	30
4	7	28
3	8	24
2	9	18
1	10	10

→ Upper half of the linear demand curve

→ Mid point of the linear demand curve

→ Lower half of the linear demand curve

The percentage change in quantity increases and percentage change in price decreases if we move away from the origin. Thus P.E.D (the ratio of percentage change in quantity demanded and percentage change in price) decreases while we move downwards along a linear demand curve.

For example, a decrease in the price from \$10 to \$9 is a 10% decrease whereas the corresponding change in quantity demanded from 1 to 2 units is a 100% increase. P.E.D is almost 10. However, the decrease in price from \$2 to \$1 is a 50% decrease whereas the corresponding change in quantity demanded will be 11%. P.E.D is less than 1 at this point.

Also note that in the upper half of the linear demand curve (P.E.D>1), a decrease in price increases total revenue.

At the mid point of the linear demand curve (P.E.D=1), a decrease (or increase) in price leaves total revenue unchanged.

In the lower half of the linear demand curve (P.E.D<1), a decrease in price decreases total revenue.

Total revenue is maximized at the mid point of the linear demand curve, where P.E.D equals 1. Therefore, we conclude that along a linear demand curve, revenues rise initially and then fall (see Fig. 8.6(a) and 8.6(b))

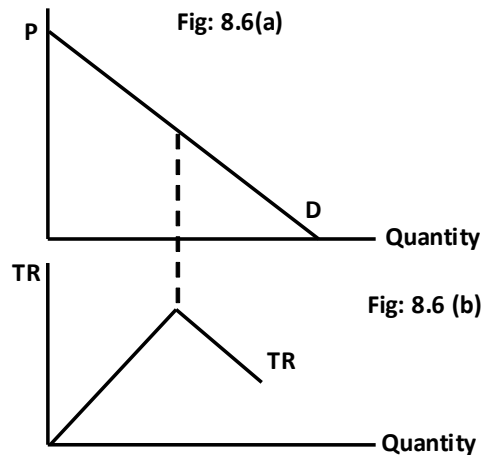
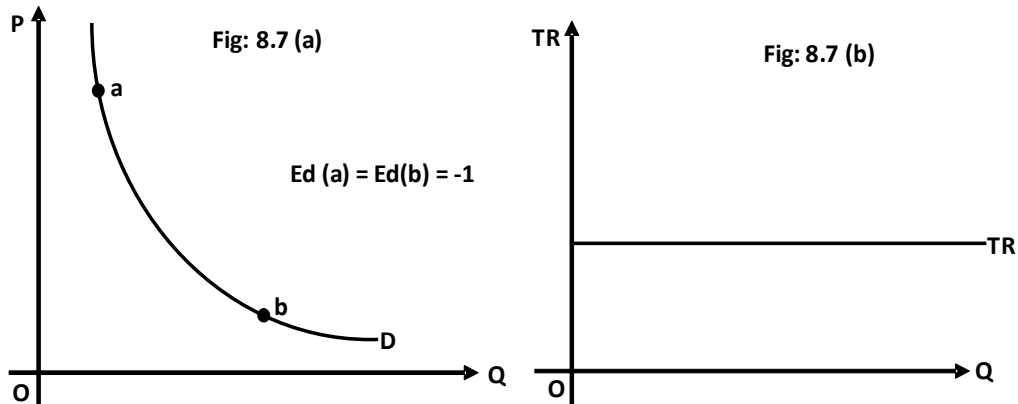


Fig. 8.6(a) shows a linear demand curve and Fig. 8.6 (b) shows the corresponding total revenue curve.

A decrease in price increases revenues in the upper half of the demand curve but decreases them in the lower half. Total revenues are maximized at the mid point of the demand curve.

Rectangular hyperbola

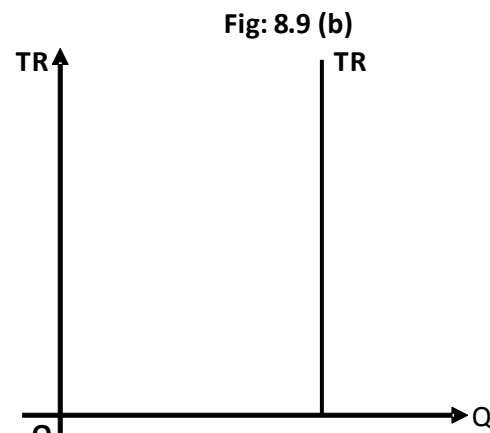
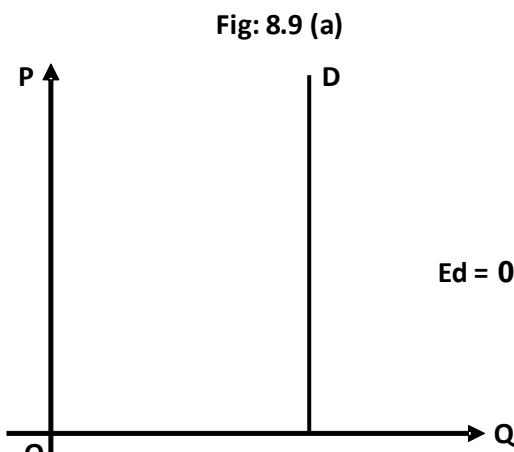
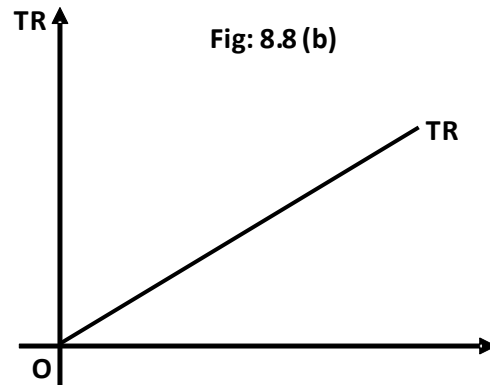
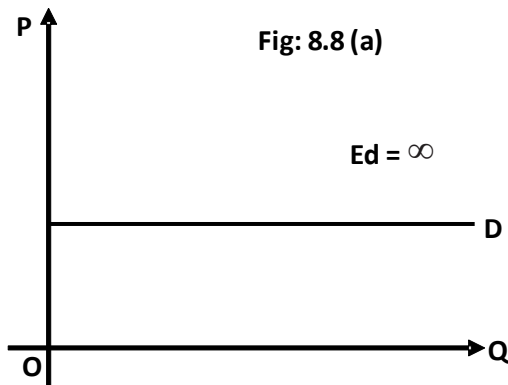
Figure 8.7 (a) shows a rectangular hyperbola, a demand curve which shows unitary price elastic demand at all points. Fig. 8.7 (b) shows its corresponding total revenue curve.



A straight horizontal demand curve shows perfectly price elastic demand at all its points. P.E.D is ∞ at all the points of the demand curve shown in Fig. 8.8 (a).

A straight vertical demand curve shows perfectly price inelastic demand at all its points. P.E.D is zero at all the points of the demand curve shown in Fig. 8.9 (a).

Figures 8.8 (b) and 8.9 (b) show the corresponding total revenue curves for a perfectly price elastic and for a perfectly price inelastic demand curves, respectively.



Impacts of price changes on profits for goods with different price elasticities of demand

Profits are the excess of Total Revenue (TR) over Total Cost (TC).

$$\text{Profit} = \text{Total Revenue} - \text{Total Cost} = \text{TR} - \text{TC}$$

Total cost increases with the number of units being produced and vice versa.

For goods with price elastic demand, a reduction in price increases total revenue. Since more units are sold at a lower price, this reduction in price increases total cost too. Thus, the impact on profits is uncertain since both total revenue and total cost have increased.

For goods with price inelastic demand, a rise in price increases total revenue. Since fewer units are sold at a higher price, this increase in price decreases total cost. We can safely conclude that increased prices raise profits for goods with price inelastic demand.

For goods with unitary price elastic demand, a rise in price leaves total revenue unchanged. Since fewer units are sold at a higher price, this increase in price decreases total cost. Profits increase with decreasing cost and constant revenue.

Price elasticity of demand (P.E.D)	Impacts on				
	Price	Quantity	Revenue	Total cost	Profit
P.E.D > 1	Decrease	Increase more than proportionately	Increase	Increase	Uncertain
P.E.D < 1	Increase	Decrease less than proportionately	Increase	Decrease	Increase
P.E.D = 1	Increase	Decrease proportionately	Unchanged	Decrease	Increase

Usefulness of the knowledge of Price elasticity of demand to the producers

The knowledge of price elasticity of demand can be useful for producers while formulating marketing strategies for the products they offer. It can help producers set the right price for their product, plan the right quantity to produce and make other marketing decisions.

A producer can add some unique features to his products to be able to reduce price elasticity of demand. A lower price elasticity of demand increases the power of the producer to charge the price of his choice. Market power is the inverse of price elasticity of demand.

$$\text{Market power} = \frac{1}{Ed}$$

A higher price can be charged for goods with price inelastic demand. A higher price not only increases sales revenues but also profits for the producers.

Producers can consider charging low prices for goods with high price elasticities of demand. Such a decision however, should be made carefully as apart from increasing sales revenue, a price cut can damage a firm’s reputation and also initiate a price war if competitors decide to match the price cut. The firm can consider reducing price only if it has excess capacity i.e. the ability to meet the increased demand from lowering prices.

The impact on profits of a price cut is uncertain. Such a decision raises sales revenue (assuming a price elastic demand) but also increases total cost as more units are produced and sold. Businesses whose total cost does not change much with changes in volume produced such as a bus or airline operator can decrease the price if there is excess capacity. Assuming price elastic demand, sales revenues increase, so do profits, since total cost does not rise when accommodating more passengers.

Price elasticity of demand is not a static concept. New products like latest cellular phones and computers are likely to experience price inelastic demand. Consumers are willing to pay a price for them as their designs and features are unique and no close substitutes are available. The exclusivity associated with new products however, may not last long as competing firms manage to flood the market with substitutes. If the degree of substitutability between a firm’s and its rivals’ products is high in the eyes of consumers, then even brand loyal customers may be forced to switch preferences to cheaper substitutes with time. The availability of cheaper substitutes allows for greater variability in demand with price changes and makes demand for such commodities

relatively price elastic. Thus, firms can initially charge high prices for their products but gradually lower them to account for increased price elasticity and make their products affordable to a large customer base.

A Summary of three methods to calculate price elasticity of demand

	Mathematical Formula	Total revenues (TR) Approach	Graphical approach	Linear demand curve
Price elastic demand	$ Ed > 1$	Price and TR move inversely	Demand curve is flatter	Upper half of a linear demand curve
Price inelastic demand	$ Ed < 1$	Price and TR move directly	Demand curve is steeper	Lower half of linear demand curve
Unitary price elastic demand	$ Ed = 1$	Changes in prices have no impact on total revenues	Demand curve is a rectangular hyperbola	Mid point of a linear demand curve
Perfectly price inelastic demand	$Ed = 0$	Price and TR move directly & proportionately	Demand curve is a straight vertical line	X – intercept of a linear demand curve
Perfectly price elastic demand	$Ed \infty$	Quantity and TR move directly & proportionately	Demand curve is a straight horizontal line	Y – intercept of a linear demand curve

Determinants of Price Elasticity of Demand

Different goods respond differently to changes in price. Demand of few goods changes more relative to others. Following are few factors which determine this price elasticity of demand:

Nature of the product

Necessities of life such as food, electricity, fuel and clothing usually have price inelastic demand, implying that a change in their prices does not change quantity demanded much. However, goods which are not essentials such as designer clothing, a sports car, a multi-featured cellular phone usually have price elastic demand.

No good can clearly be labeled as a necessity or luxury. It varies between individuals.

Availability of substitutes

Goods whose substitutes are available have price elastic demand since consumers can substitute them if their prices rise. However, products such as electricity, being supplied by a monopoly firm have no substitutes and hence, price inelastic demand.

Percentage of budget allocated to a certain product

Few goods account for a greater portion of an ordinary consumer’s income. For instance, a poor individual usually spends a greater portion of his income on necessities such as rent of his house, food and clothing. For such consumers, changes in prices of these commodities have a greater impact on their purchasing power and quantity demanded. Therefore, goods occupying a greater portion of one’s budget usually have price elastic demand. On the other hand, products occupying an insignificant portion of one’s income have price inelastic demand i.e. the importance of being unimportant. A consumer won’t change the number of match boxes he buys every week,

if their price rises from Rs.1 to Rs.1.5 each, since this price change has little impact on his budget and purchasing power.

Frequency of purchase and size of order

Frequently purchased items usually have price elastic demand whereas demand of rarely purchased goods is price inelastic. A tourist may pay a high price for a cup of milk thinking it won't be an everyday expense. However, a housewife will negotiate the price with the milkman, keeping in mind she has to buy it every day.

Similarly, buyers ordering small quantities have price inelastic demand-they may pay a high price unlike consumers ordering in bulk, for whom a little difference in price may cost a handsome amount of money. Firms usually offer bulk discounts to such consumers, given their sensitivity to price.

Habit forming goods

Habit forming goods such as cigarettes have price inelastic demand and that is why taxes aren't considered to be a very effective tool in discouraging their consumption.

Time

Price elasticity of demand increases in the long run as it allows households and suppliers to adjust their plans.

Currently, oil's demand is price inelastic but a successful attempt on part of oil importing countries to discover oil domestically or find alternative sources of energy can make oil's demand price elastic in the long run.

INCOME ELASTICITY OF DEMAND (M.E.D)

Income elasticity of demand measures the degree of responsiveness of quantity demanded towards a change in consumer's income. Mathematically, it is the ratio of a percentage change in quantity demanded and a percentage change in the income of the consumer.

$$M.E.D = \frac{\% \Delta \text{ in } X}{\% \Delta \text{ in } M} = \frac{dX}{dM} \times \frac{M}{X}$$

In the formula above:

M.E.D is income elasticity of demand.

Δ or d is a symbol of change

X is the quantity demanded of a hypothetical product

M is the consumer's income.

While estimating M.E.D, price is assumed to be constant so changes in quantity demanded equal changes in total expenditures (i.e. sale price \times quantity demanded). So, the formula for M.E.D may be written as:

$$M.E.D = \frac{\% \Delta \text{ in } X}{\% \Delta \text{ in } M} = \frac{\% \Delta \text{ in } E}{\% \Delta \text{ in } M}$$
$$M.E.D = \frac{\% \Delta \text{ in } E}{\% \Delta \text{ in } M} = \frac{dE}{dM} \times \frac{M}{E}$$

where E is total expenditures.

The sign of income elasticity of demand can either be positive or negative. A positive sign indicates that the product in consideration is a normal good. Normal goods are those, the demand (or expenditures) of which varies directly with consumer's income. A negative sign shows that the product being considered is an inferior good. Inferior goods are those, the demand (or expenditures) of which varies inversely with the income of the consumer.

Whether a product is normal or inferior depends on the perceptions of consumers. A certain product can be normal for a low income group but inferior for a higher income one.

A fundamental difference between price elasticity of demand and income elasticity of demand is that only the latter differentiates between normal and inferior goods. P.E.D is negative for both but the sign of M.E.D differs for normal and inferior goods.

The interpretation of the coefficient of M.E.D is similar to that of price elasticity of demand.

A product has income elastic demand if a certain change in income brings a more than proportionate change in quantity demanded (or expenditures). M.E.D exceeds 1 for such products.

A product has income inelastic demand if a certain change in income brings a less than proportionate change in quantity demanded (or expenditures). M.E.D is less than 1 for such products. Necessities usually have a low income elastic demand.

A product has unitary income elastic demand if a certain change in income brings a proportionate change in quantity demanded (or expenditures). M.E.D equals 1 for such products.

A product has perfectly income inelastic demand if a certain change in income brings no change in quantity demanded (or expenditures). M.E.D is zero for such products.

Consider the following table:

	Expenditures/Quantity demanded				
Income	Product I	Product II	Product III	Product IV	Product V
1000	100	100	100	100	100
2000	90	100	150	200	250

Product I is inferior as its income elasticity of demand is negative. All other products are normal goods.

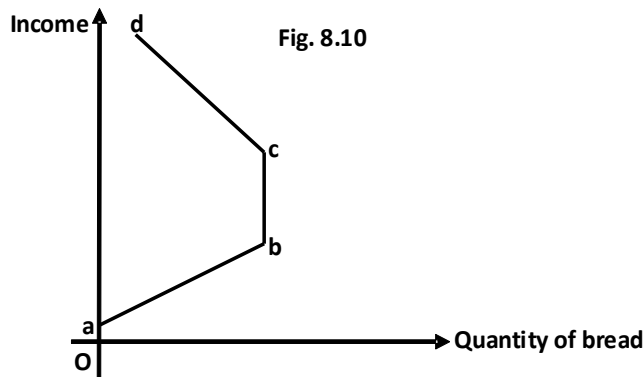
Product II has perfectly income inelastic demand since consumer demands the same quantity of this product even when income is doubled.

Product III has income inelastic demand since doubling income increases the quantity demanded of this product by 50%. Income elasticity of demand for this product is +0.5.

Product IV has unitary income elastic demand since doubling income increases its quantity demanded by 100%. Income elasticity of demand for this product is +1.

Product V has income elastic demand since doubling income increases its quantity demanded of this product by 150%. Income elasticity of demand for this product is +1.5.

The nature of a product may change with income. A consumer may start considering a normal good as inferior at higher income levels. The example of bread or a small car proves helpful in understanding this pattern. Fig. 8.10 shows the changes in demand for bread at different income levels.



At a lower level of income, bread is a normal good and its demand rises with income. This is shown by the upward rising portion of (income) demand curve (*atob*). M.E.D exceeds zero in this income range. However, the consumption of bread remains unchanged if income increases further, as shown by the straight vertical portion of (income) demand curve (*b to c*). M.E.D is zero in this range. A further increase in income renders better quality food items such as meat affordable for the consumers. Consumers with higher incomes switch to low calorie, high quality food items, decreasing the demand for bread. This is shown by the backward bending portion of (income) demand curve (*c to d*). M.E.D is negative in this range and hence, bread is considered to be an inferior good here.

Usefulness of Income Elasticity of Demand to the producers

If the economy experiences a boom, producers should increase the production of normal goods and decrease that of inferior goods. During an economic period of boom, national income increases which increases the demand for normal goods. However, in a recession, demand for low price, low quality goods increases since average income declines.

Firms can launch better quality products and add advanced features when the economy goes through a period of rising incomes. On the other hand, firms should concentrate on lowering their production cost and making more economical models and variants of their products when recession hits the economy. Developed economies, during recessionary periods, usually witness outsourcing by businesses that aim to reduce their production cost.

Cross price elasticity of demand (C.E.D)

Cross price elasticity of demand measures the degree of responsiveness of quantity demanded towards a change in the prices of other products. Mathematically, it is the ratio of a percentage change in quantity demanded of a product and a percentage change in the price of another product.

$$C.E.D_{xy} = \frac{\% \Delta \text{in } X}{\% \Delta \text{in } PY} = \frac{dX}{dPY} \times \frac{PY}{X}$$

In the above formula:

$C.E.D_{xy}$ is the cross price elasticity of demand of commodity X with respect to the price of commodity Y.

Δ or d is a symbol of change
 X is the quantity demanded of a hypothetical product
 P_y is the per unit price of another product, Y.

A positive sign of C.E.D_{xy} indicates that Y's price and X's demand move directly. In this case, X & Y are likely to be substitutes since demand of a product changes directly with the price of its substitute.

A negative sign of C.E.D_{xy} indicates that Y's price and X's demand move inversely. In this case, X & Y are likely to be complements since demand of a product changes inversely with the price of its complement.

However, there can be an exception to the rule. A rise in the price of fuel decreases the demand for cars and cross price elasticity of demand for cars with respect to fuel should hence be negative. However, demand for fuel efficient cars increases when fuel becomes expensive. In that case, C.E.D for cars with respect to the price of fuel could even be positive.

A zero cross price elasticity of demand for X with respect to the price of Y means that changes in the price of Y have no impact on the demand for product X. In this case, X & Y are unrelated commodities.

The coefficient of C.E.D (assuming sign is positive) shows the strength of the relationship between two commodities. C.E.D is expected to be higher for goods which are regarded similar by the consumers. Simply put, close substitutes have a higher cross price elasticity of demand and weaker substitutes have a lower C.E.D. Cross price elasticity of demand is undefined for goods which are perfect substitutes, real world examples of which are hard to find. However, for a color blind buyer, a red colored pack of lead pencils could be a perfect substitute for a blue colored one.

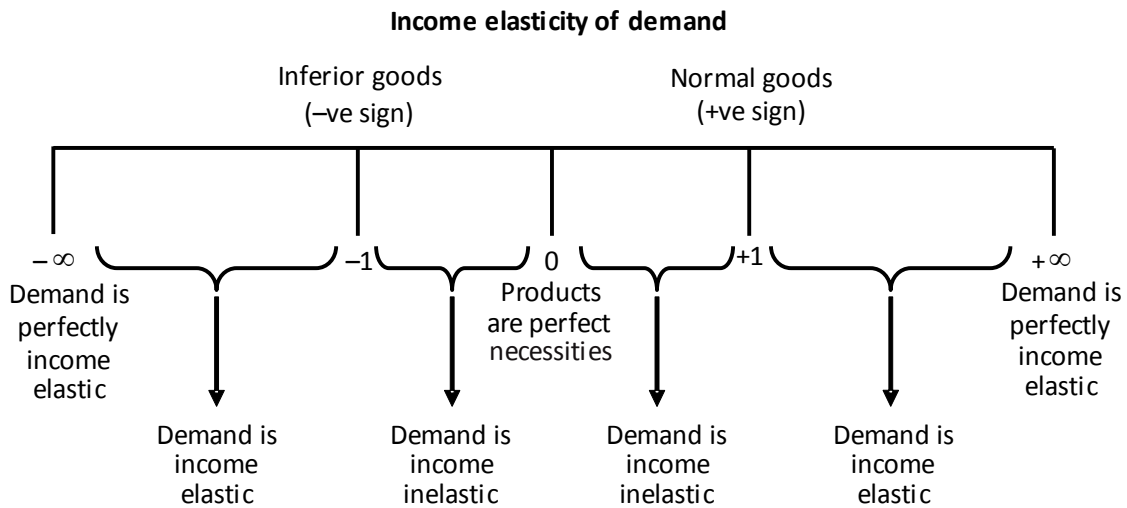
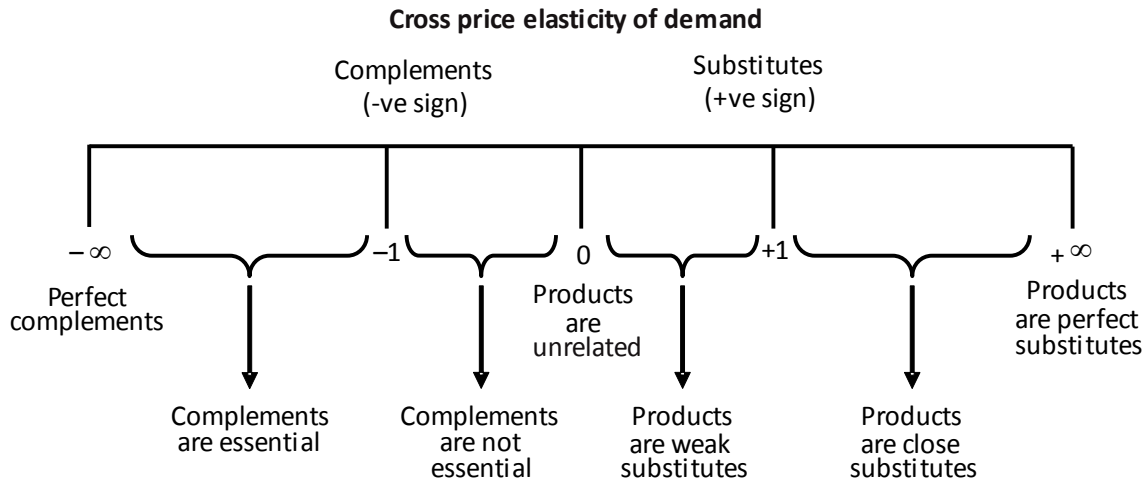
Firms adding a unique selling point (USP) to their products intend to differentiate them from their competitors'. A successful attempt at that means a reduced cross price elasticity of demand and increased control over price.

The meaning of sign in different types of demand elasticities		
	Negative sign	Positive sign
Price elasticity of demand	Product could be normal or inferior	An exceptional case such as Giffen goods
Income elasticity of demand	Product is inferior	Product is normal
Cross price elasticity of demand	Two products are likely to be complements	Two products are likely to be substitutes

Usefulness of Cross Price Elasticity of Demand to the producers

A positive sign of cross price elasticity of demand shows that the two goods are substitutes. Higher the cross price elasticity of demand, more sensitive is the demand of the product towards a change in the price of its substitutes. A firm can add some unique features or attributes to its products to reduce cross price elasticity of demand. A lower cross price elasticity of demand enables a firm to charge a higher price for its product, without losing too many customers to its competitors.

A negative sign of cross price elasticity of demand means that the two goods are complements. A firm should also look at the prices and availability of its complements before deciding the right price for its product. Easy availability of its complements increases the demand for a particular product and enables the producers to charge a high price for it.



Limitations of demand elasticities

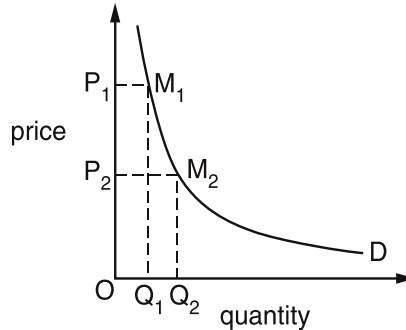
Demand elasticities are mere estimates and are based on past sales data. Changing market conditions may render these estimates irrelevant so a firm should look at other factors such as economic conditions, competitors' strategies and government policies while formulating a marketing strategy.

MULTIPLE CHOICE QUESTIONS

Price elasticity of demand

J/02/1/06

1 In the diagrams area $OP_1 M_1 Q_1$ is equal to area $OP_2 M_2 Q_2$.



What is the value of the price elasticity of demand if the price is halved from P_1 to P_2 ?

- (A) zero
- (B) 0.5
- (C) 1
- (D) infinity

N/02/1/06

2 A manufacturer progressively reduces the price of his product in an attempt to increase total revenue.

The table shows the outcome of this policy.

Price (\$)	total revenue 000's (\$)
10	750
9	750
8	750

What is the price elasticity of demand for the product?

- (A) perfectly inelastic
- (B) relatively inelastic
- (C) perfectly elastic
- (D) unitary

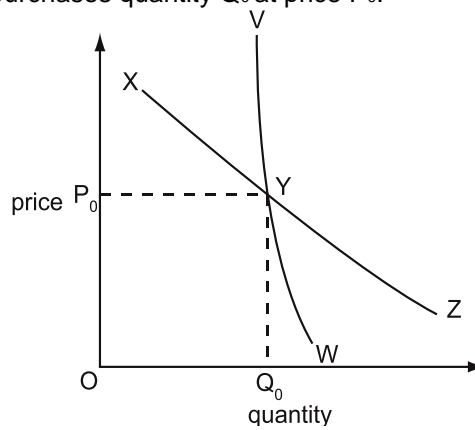
N/02/1/08

3 Which of the following combinations is most likely to result in the demand for a product being highly price elastic?

	number of close substitutes	% of income spent on product
(A)	large	large
(B)	large	small
(C)	small	large
(D)	small	small

J/03/1/05

- 4 The diagram shows a consumer's short-run and long-run demand curves for coconuts. Initially, the consumer purchases quantity Q_0 at price P_0 .



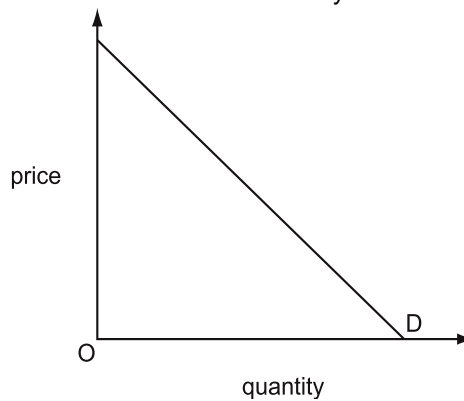
If the price of coconuts increases from P_0 , the consumer's short-run response is greater than his long-run response. If the price decreases from P_0 his short-run response is smaller than his long-run response.

What is the consumer's short-run demand curve?

- | | | | |
|-----|-----|-----|-----|
| (A) | VYW | (B) | VYZ |
| (C) | XYZ | (D) | XYW |

J/03/1/09

- 5 The diagram shows the demand curve for commodity X.

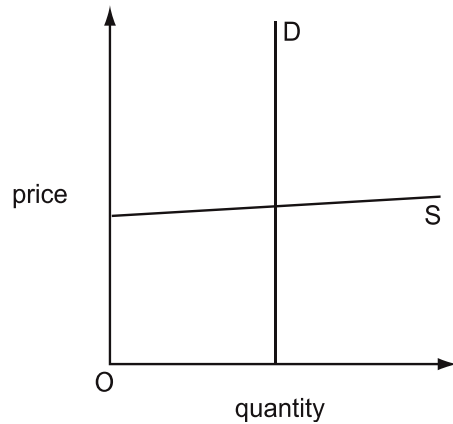


Which of the following statements is correct?

- (A) Demand is less elastic at higher prices than at lower prices.
- (B) Consumer expenditure on the commodity always rises whenever price falls.
- (C) Price elasticity of demand is different at every price.
- (D) Price elasticity of demand equals one at every price.

N/03/1/05

6 The diagram shows the demand for and supply of a product.



What can be deduced about the product?

- (A) It has infinite price elasticity of demand.
- (B) It has no substitutes.
- (C) It is an inferior good.
- (D) It takes a large proportion of consumer income.

N/03/1/06

7 The table shows the price elasticity of demand for four goods and services.

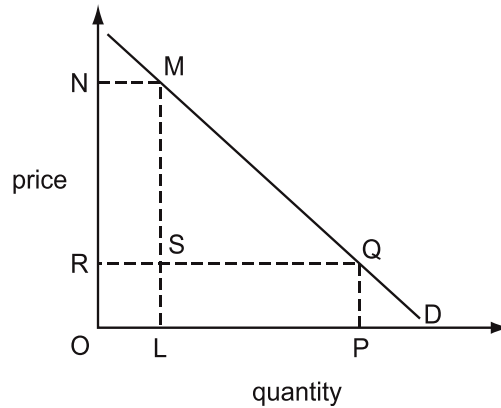
	price elasticity
motor cycles	1.6
telephone calls	1.0
football tickets	0.3
light bulbs	0.0

If the price of each item increased by 1%, for which of these items would the total expenditure increase?

- (A) football tickets only
- (B) motor cycles only
- (C) football tickets and light bulbs
- (D) motor cycles and telephone calls

J/04/1/06

8 The diagram shows the demand curve for a product.

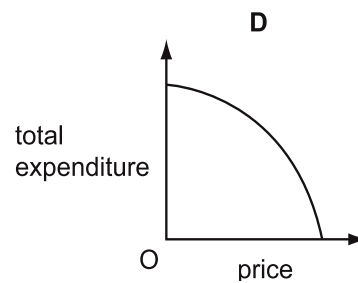
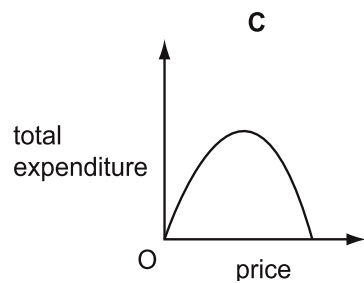
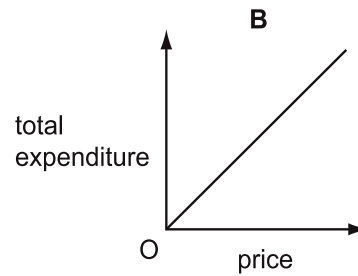
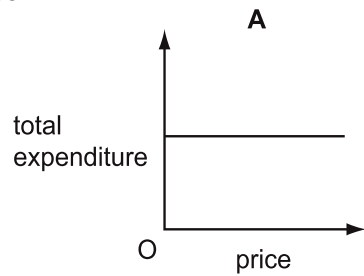


If the rectangle OLMN is equal in area to the rectangle OPQR, which statement is correct?

- (A) Total revenue falls by MSQ if the price rises from OR to ON.
- (B) Consumer surplus falls by RSMN if the price rises from OR to ON.
- (C) The price elasticity of demand is unitary for all changes in price.
- (D) A rise in price from OR to ON results in the same proportionate fall in quantity demanded.

N/04/1/07

9 The demand for a commodity has unitary price elasticity. Which diagram shows the relationship between total expenditure on the commodity and its price?



N/04/1/10

10 The table refers to exports of sugar from Jamaica in 1999 and 2000.

	exports of sugar (tonnes)	export earnings from sugar (US\$ millions)
1999	177 522	95.79
2000	180 481	83.8

What can be deduced from the data?

- (A) The demand for sugar is price-elastic.
- (B) The income elasticity of demand for sugar is negative.
- (C) The price of sugar in US\$ fell between 1999 and 2000.
- (D) The supply of sugar is price-elastic.

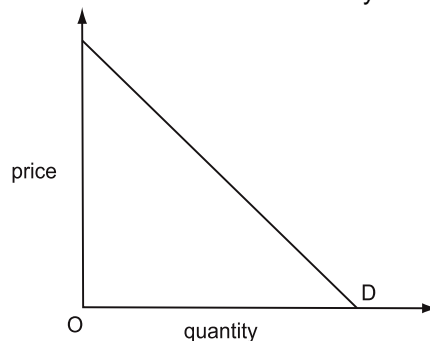
J/05/1/06

11 What is most likely to make the demand for Good X inelastic?

- (A) Good X is a luxury good.
- (B) Good X is habit-forming.
- (C) The proportion of income spent on Good X is very high.
- (D) There are a large number of substitutes for Good X.

N/05/1/06

12 The diagram shows the demand curve for commodity X.



Which of the following statements is correct?

- (A) Demand is less elastic at higher prices than at lower prices.
- (B) Consumer expenditure on the commodity always rises when price falls.
- (C) Price elasticity of demand is different at every price.
- (D) Price elasticity of demand equals one at every price.

N/05/1/07

13 Over the last ten years the price elasticity of demand for tea in many countries has risen. What is the most likely cause of this change in price elasticity?

- (A) a decrease in the incomes of consumers
- (B) a decrease in the number of complements to tea
- (C) an increase in the number of substitutes for tea
- (D) an increase in the supply of tea

J/06/1/07

14 The price elasticity of demand for good X is 1. At a price of \$12, quantity demanded is 4000 units. What will be the price when the quantity demanded is 20 000 units?

- (A) \$2.00 (B) \$2.40 (C) \$2.66 (D) \$20.00

N/06/1/07

15 From the table below, in which price range is demand for product X inelastic?

product X	
price \$	quantity demanded
12	250
11	450
10	500
9	600
8	650

- (A) \$12-11 (B) \$11-10 (C) \$10-9 (D) \$9-8

J/07/1/07

16 A businessman had intended to borrow \$5000 at 8 % per year for house purchase. When the interest rate rose to 10 % he decided to borrow only \$4000.

Within what range is his interest elasticity of demand for loans?

- (A) 0.0 to -0.3 (B) -0.4 to -0.7 (C) -0.8 to -1.2 (D) -1.3 to -1.7

J/07/1/13

17 In 2003, some tobacco companies in the US wanted to raise prices but a spokesman said the tobacco industry was no longer in a position where it could increase revenue by raising prices.

What might be concluded from this statement?

- (A) The price elasticity of demand for tobacco is lower than it used to be.
 (B) The price elasticity of demand for tobacco is likely to be greater than unity.
 (C) The price of tobacco is too low.
 (D) The profit of tobacco growers does not depend on the price system.

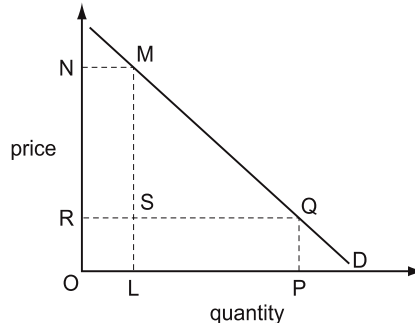
J/08/1/07

18 A good has unitary price elasticity of demand and at a price of \$25 it sells 100 000 units. Which price must the firm charge if it wants to sell 125 000 units of the good?

- (A) \$22 (B) \$20
 (C) \$18 (D) \$15

N/08/1/07

19 The diagram shows the demand curve for a product.



If the rectangle OLMN is equal in area to the rectangle OPQR, which statement is correct?

- (A) A rise in price from OR to ON results in the same proportionate fall in quantity demanded.
- (B) Consumer surplus falls by RSMN if the price rises from OR to ON.
- (C) The price elasticity of demand is unitary for all changes in price.
- (D) Total revenue falls by MSQ if the price rises from OR to ON.

J/09/1/06

20 The table shows the demand for tickets for a concert.

price of tickets \$	quantity demanded
20	6 000
30	5 000
40	4 000
50	3 000

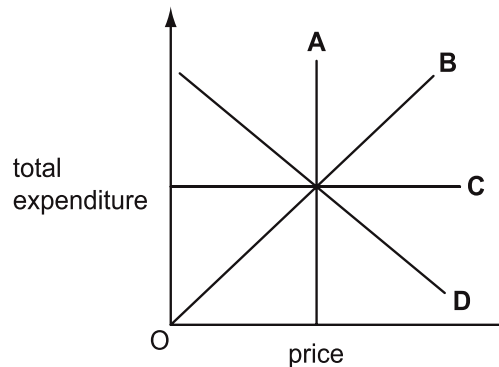
The capacity of the concert hall is 6000.

What price should be charged to maximise total revenue?

- (A) \$20
- (B) \$30
- (C) \$40
- (D) \$50

J/09/1/08

21 The price elasticity of demand for a product is constant and equal to unity. Which curve in the diagram shows the relationship between total expenditure on the product and its price?



J/09/1/09

22 In the UK, attempts to encourage people to change from road to rail travel by the introduction of a system of road pricing were forecast to fail because people like using their cars too much'.

How would this forecast be explained?

- (A) The price elasticity of demand for cars is high.
- (B) The price elasticity of demand for petrol is high.
- (C) The price elasticity of demand for rail travel is low.
- (D) The price elasticity of demand for car travel is low.

N/09/1/06

23 The table shows the price elasticity of demand for four goods and services.

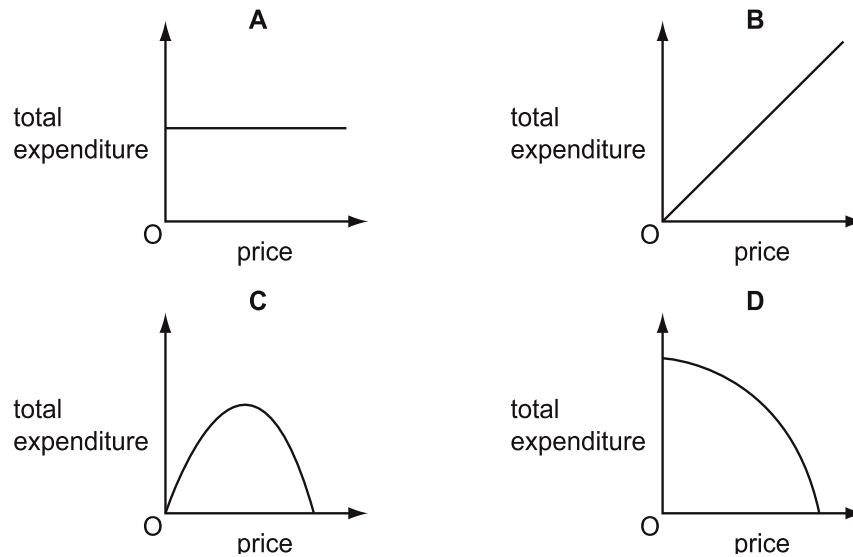
	price elasticity
motor cycles	1.6
telephone calls	1.0
football tickets	0.3
light bulbs	0.0

If the price of each item increased by 1 %, for which items would the total expenditure increase?

- (A) football tickets only
- (B) football tickets and light bulbs
- (C) motor cycles and telephone calls
- (D) motor cycles only

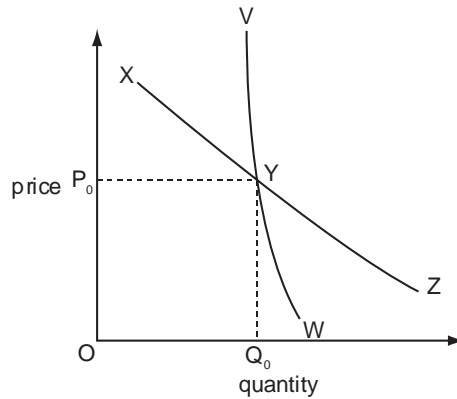
J/10/1/07

24 The demand for a company has unitary price elasticity. Which diagram shows the relationship between total expenditure on the commodity and its price?



N/10/1/06

25 The diagram shows a consumer's short-run and long-run demand curves for coconuts. Initially, the consumer purchases quantity Q_0 at price P_0 .



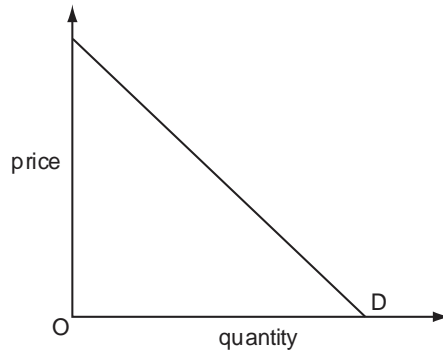
If the price of coconuts increases from P_0 , the consumer's short-run response is greater than his long-run response. If the price decreases from P_0 his short-run response is smaller than his long-run response.

What is the consumer's short-run demand curve?

- A** VYW **B** VYZ **C** XYZ **D** XYW

N/10/1/08

26 The diagram shows the demand curve for a product.

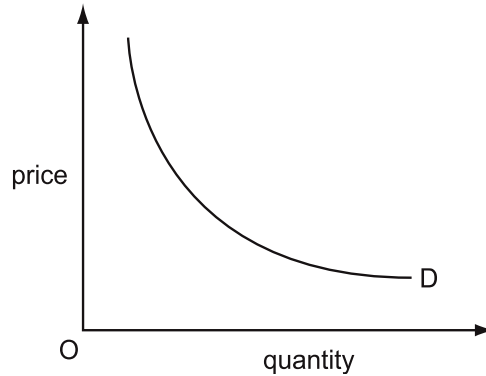


Which statement is correct?

- A** Demand is less elastic at higher prices than at lower prices.
B Consumer expenditure on the product always rises when price falls.
C Price elasticity of demand is different at every price.
D Price elasticity of demand equals one at every price.

J/11/1/07

27 The diagram shows the demand curve for a product with unitary price elasticity.

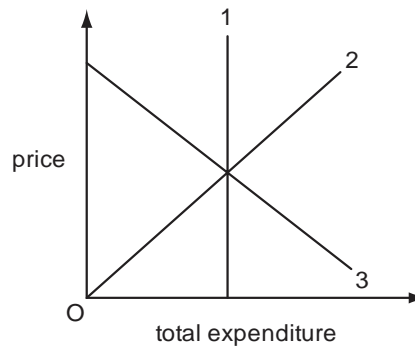


What will happen with such a curve?

- (A) A fall in price will bring about an increase in expenditure on the product.
- (B) A fall in price will bring about an increase in sales but a fall in expenditure on the product.
- (C) As the price rises, expenditure on the product stays the same.
- (D) As the price rises, expenditure on the product rises and then falls.

J/12/1/07

28 The diagram shows the relationship between total expenditure and price for three products, 1, 2 and 3.



Which curves represent the products with price elastic and unitary price elasticity of demand?

	Elastic	Unitary
A	1	2
B	2	3
C	3	1
D	3	2

J/14/1/07

32 If the elasticity of demand for a commodity is unity, an increase in its price will

- A** decrease the quantity purchased.
- B** have no effect on consumer surplus.
- C** increase total expenditure on the commodity.
- D** leave the quantity purchased unchanged.

N/14/1/05

33 The market price of a product rose from \$8 to \$10 and as a result the market demand fell from 20000 to 8000 a week.

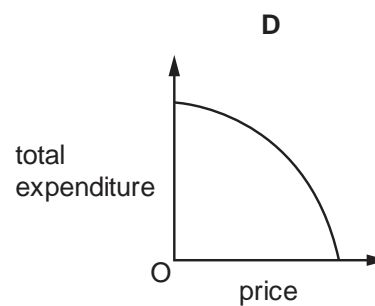
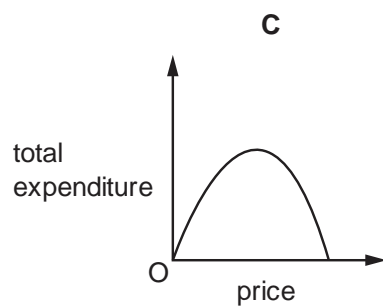
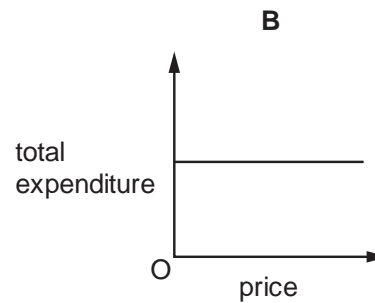
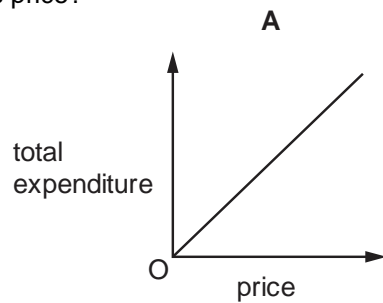
Consumer X's demand declined from 30 to 24 and consumer Y's demand fell from 100 to 60 a week.

What can be concluded from this information?

- A** Consumer X's demand for the product was more elastic than the market demand.
- B** Consumer X's percentage share of the market increased.
- C** Producer's total profit fell.
- D** Producer's total revenue rose.

N/14/1/07

34 The demand for a commodity has unitary price elasticity. Which diagram shows the relationship between total expenditure on the commodity and its price?

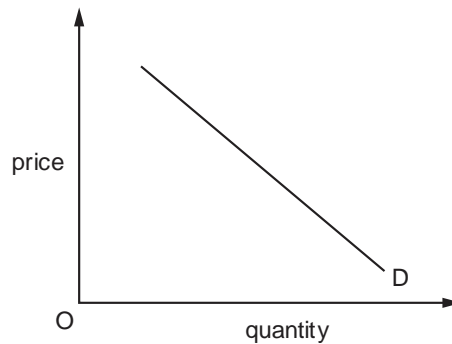


N/14/1/11

- 35** In which case will a given increase in the supply of a good cause the greatest fall in the price of the good?
- A** when the demand for the good is perfectly inelastic
 - B** when the demand for the good is infinite
 - C** when the good is an inferior good
 - D** when the good's price elasticity of demand is positive

J/15/1/05

- 36** The diagram shows a demand curve for a good.

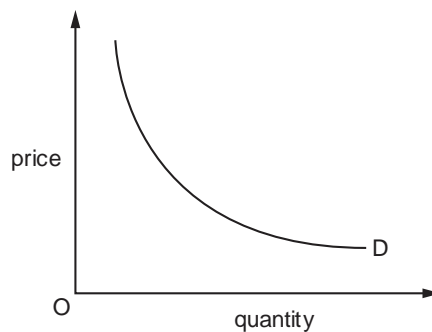


Which statement describes the nature of this demand curve?

- A** A greater or smaller quantity is demanded as price changes.
- B** A lower price is the result of a fall in demand.
- C** As demand increases so does price.
- D** Quantity changes in proportion to the change in price.

J/15/1/08

- 37** The diagram shows the demand curve for a product with unitary price elasticity.



What will happen with such a curve?

- A** A fall in price will bring about an increase in total expenditure on the product.
- B** A fall in price will bring about an increase in sales but a fall in total expenditure on the product.
- C** As the price rises, total expenditure on the product stays the same.
- D** As the price rises, total expenditure on the product rises and then falls.

Income elasticity of demand

J/02/1/07

38 It was estimated in 1998 that milk has an income elasticity of demand of -0.6 . What can be concluded about milk from this information?

- (A) It accounts for only a small proportion of household expenditure.
- (B) It has very few substitutes.
- (C) Household expenditure on milk will increase if the price of milk increases.
- (D) It is an inferior good.

J/03/1/08

39 The table gives an individual's demand for four goods at two income levels.

Over this range of income, for which good does the individual have an income elasticity of demand = 1?

Income level	units of goods demanded			
	(A)	(B)	(C)	(D)
\$1 000	50	50	50	50
\$1 100	50	55	60	100

J/04/1/11

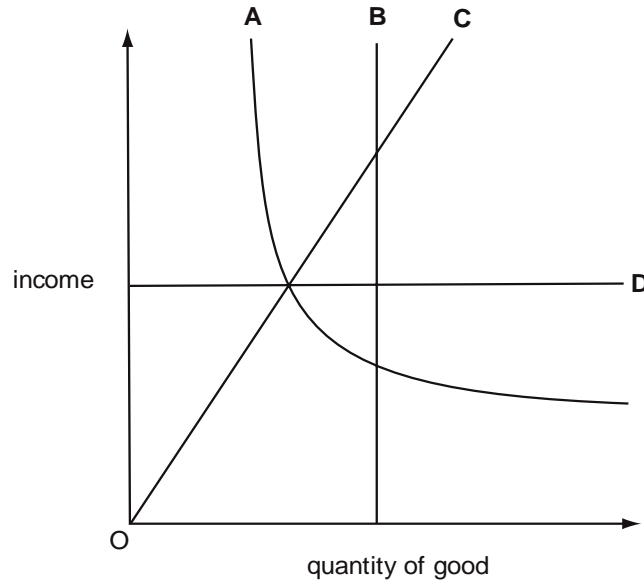
40 The table shows a consumer's expenditure on a range of goods at different levels of income.

For which good does the consumer have an income elasticity of demand greater than zero, but less than one?

good	consumer's income (\$)		
	40	50	100
	Consumer's expenditure (\$)		
(A)	10	18	40
(B)	10	11	20
(C)	10	10	10
(D)	10	8	6

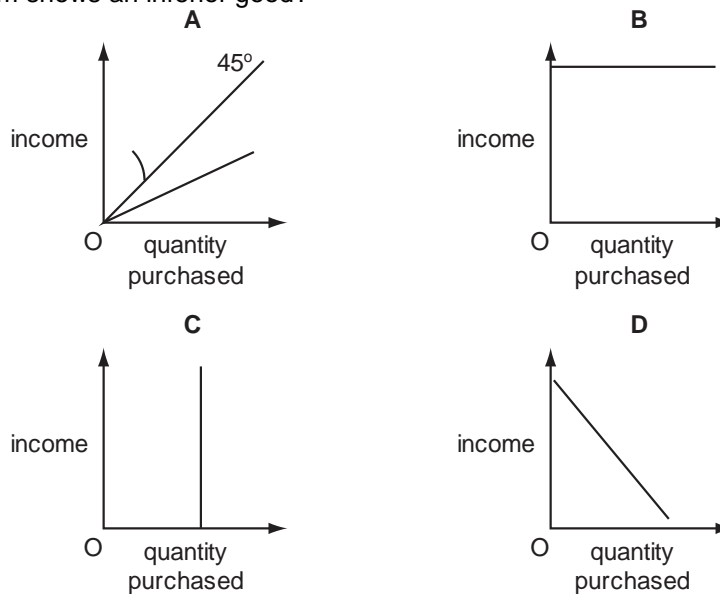
J/05/1/08

- 41 The diagram shows how the quantity demanded of four goods changes as income changes. Which good has an income elasticity of demand which is always +1?



J/06/1/08

- 42 The diagrams show possible relationships between income and the quantity of a good purchased. Which diagram shows an inferior good?



J/08/1/08

43 The table shows how an individual's consumption of cola and nuts varies with income.

Income (\$)	cola (cans)	nuts (packets)
50	2	0
100	4	1

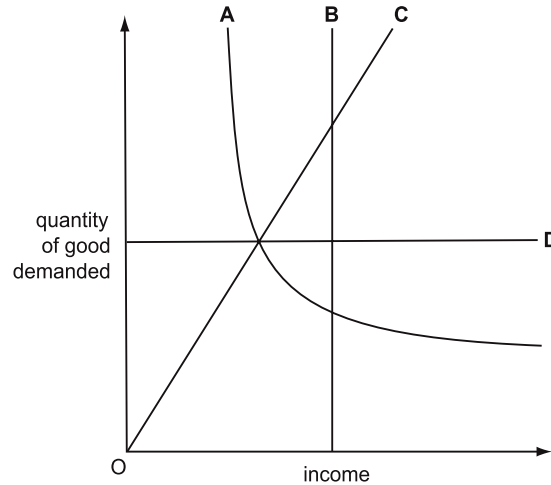
Which statement about income elasticity of demand over the range of income shown is true?

- (A)** For cola it is less than 1. **(B)** For cola it is greater than 1.
(C) For nuts it is greater than 1. **(D)** For nuts it is zero.

N/08/1/06

44 The diagram shows how the quantity demanded of four goods changes as income changes.

Which good has an income elasticity of demand which is always +1?



J/09/1/10

45 The table shows changes in a consumer's expenditure on various goods when his income increases from \$20 000 to \$24 000.

good	Income \$20 000:	Income \$24 000:
	amount spent on good (\$)	amount spent on good (\$)
W	100	96
X	100	100
Y	200	224
Z	200	248

Assuming all else remains unchanged, for which goods is the consumer's income elasticity of demand greater than 1.0?

- (A)** W only **(B)** Z only **(C)** W and Z only **(D)** W, Y and Z

N/10/1/07

- 46** The table shows a consumer's expenditure on a range of goods at different levels of income.
For which good does the consumer have an income elasticity of demand greater than zero, but less than one?

good	consumer's income (\$)		
	40	50	100
consumer's expenditure (\$)			
A	10	18	40
B	10	11	20
C	10	10	10
D	10	8	6

N/11/1/06

- 47** It was estimated in 2010 that milk had an income elasticity of demand of -0.6 .
What can be concluded about milk from this information?

- (A) It accounts for only a small proportion of household expenditure.
- (B) It has very few substitutes.
- (C) Household expenditure on milk will decrease if the price of milk increases.
- (D) It is an inferior good.

J/14/1/08

- 48** The table shows a consumer's expenditure on a range of goods at different levels of income.
For which good does the consumer have an income elasticity of demand greater than zero, but less than one?

good	consumer's income (\$)		
	40	50	100
consumer's expenditure (\$)			
A	10	18	40
B	10	11	20
C	10	10	10
D	10	8	6

N/15/1/07

- 49** An individual reacts to a 5% increase in the price of good X by increasing the proportion of his income that he spends on good X from 2% to 3%.
If there are no other changes, what can be concluded from this about the individual's demand for good X?

- A** It is income-elastic.
- B** It is income-inelastic.
- C** It is price-elastic.
- D** It is price-inelastic.

J/16/1/08

50 It has been estimated that bread has an income elasticity of -0.04 . What can be concluded about bread from this information?

- A** It is a normal good.
- B** It is an inferior good.
- C** It has many complements.
- D** It has many substitutes.

Cross elasticity of demand

J/02/1/09

51 A fall in the price of cameras causes the demand for film to rise by 20%. The cross-elasticity of demand between cameras and films is -2 . Which change in camera prices has brought this about?

	from	to
(A)	\$60	\$50
(B)	\$55	\$45
(C)	\$50	\$45
(D)	\$50	\$40

N/02/1/07

52 A product is an inferior good with no close substitutes. It is also a complement to product X. Which product matches the description of this product?

Product	price elasticity of demand	income elasticity of demand	cross elasticity of demand with respect to the price of X
(A)	-2	$+2$	$+1$
(B)	-2	$+2$	-1
(C)	-0.5	-2	$+1$
(D)	-0.5	-2	-1

J/03/1/10

53 Product R is an inferior good with no close substitutes. It is also a complement to product S. Which describes product R?

	income elasticity of demand	cross elasticity of demand with product S
(A)	negative	positive
(B)	positive	negative
(C)	negative	negative
(D)	positive	Positive

N/03/1/07

- 54 The table gives estimates of own-price and cross-price elasticities of demand for tea and instant coffee.

commodity	elasticity with respect to the price of	
	Tea	instant coffee
tea	-0.48	+0.11
instant coffee	+0.13	-0.67

Other things being equal, what will be the change in the quantity of instant coffee demanded as a result of a 1% increase in the price of tea?

- (A) +0.11% (B) +0.13% (C) 0.11% (D) -0.13%

J/04/1/09

- 55 In 2002 it was proposed that car owners should pay a charge to travel into the centre of London. Fares on public transport would also be reduced. It was hoped that more use would be made of public transport and that congestion would decrease. What price elasticities of demand would be necessary for this policy to succeed?

	price elasticity of demand for travel by car	price elasticity of demand for travel by public transport
(A)	Elastic	elastic
(B)	Elastic	inelastic
(C)	Inelastic	elastic
(D)	Inelastic	inelastic

J/04/1/10

- 56 The table gives estimates of the price elasticities and cross-elasticities of demand for bus and rail travel.

service	elasticity with respect to the price of	
	bus travel	rail travel
bus travel	-0.37	+0.13
rail travel	+0.16	-0.43

What would be the change in the volume of rail travel resulting from a 1% increase in bus fares?

- (A) an increase of 0.16% (B) an increase of 0.43%
 (C) a reduction of 0.13% (D) a reduction of 0.37%

N/04/1/08

- 57 The cross-elasticity of demand between two goods will be higher
 (A) the greater the difference in price between the two goods.
 (B) the greater the income elasticities of demand for the two goods.
 (C) the greater the price elasticities of demand for the two goods.
 (D) the more they are regarded as similar by consumers.

N/05/1/08

- 58 The price of Good X rises by 20%. As a result, the demand for a substitute Good Y rises by 10%. What is the cross-elasticity of demand for Good Y with respect to Good X?
 (A) +2 (B) +0.5 (C) -0.5 (D) -2

N/06/1/08

59 Product R is an inferior good with no close substitutes. It is also a complement to product S. Which describes product R?

	income elasticity of demand	cross elasticity of demand with respect to product S
(A)	Negative	positive
(B)	Positive	negative
(C)	Negative	negative
(D)	Positive	positive

J/07/1/09

60 The table gives information about the market for two models of car.

model	number of cars sold per week	cross elasticity of demand with respect to the price of petrol
1200 cc	10 000	-0.25
2000 cc	5 000	-0.50

If the prices of the cars remain unchanged, but the price of petrol increases by 100 %, what will be the effect on the number of cars sold per week?

- (A) increase by 5000 (B) no change
 (C) decrease by 5000 (D) decrease by 15 000

N/07/1/06

61 A fall in the price of cars causes the demand for petrol to rise by 20 %. The cross-elasticity of demand between cars and petrol is -2.

Which change in car prices has brought this about?

	from	to
(A)	\$6000	\$5000
(B)	\$5500	\$4500
(C)	\$5000	\$4500
(D)	\$5000	\$4000

N/08/1/08

62 The price of good X rises by 10 %. As a result, the demand for a substitute good Y rises by 20 %.

What is the cross-elasticity of demand for good Y with respect to good X?

- (A) +2
 (B) +0.5
 (C) -0.5
 (D) -2

N/09/1/07

63 Two goods, X and Y, are complementary goods. Column 1 of the table below shows the original market situation at time period 1 and column 2 shows the situation following an increase in the price of good Y.

	1	2
price of good X	10	10
quantity demanded	50	40
price of good Y	20	30
Quantity demanded	80	60

The value of cross elasticity of demand for good X with respect to the price of good Y lies between

- (A) -1.7 and -2.6.
- (B) -0.8 and -1.3.
- (C) -0.3 and -0.8.
- (D) +0.3 and +0.6.

J/10/1/08

64 The table gives information about the market for two models of car.

model	number of cars sold per week	cross elasticity of demand with respect to the price of petrol
1200 cc	10 000	-0.25
2000 cc	5 000	-0.50

If the price of the cars remain unchanged, but the price of petrol increases by 100%, what will be the effect on the number of cars sold per week?

- (A) increase by 5000
- (B) no change
- (C) decrease by 5000
- (D) decrease by 15 000

N/10/1/17

65 What will make it more likely that road tolls will reduce traffic congestion?

- A Cross-elasticity of demand between private and public transport is zero.
- B Demand for car use is income-elastic.
- C Demand for car use is price-elastic.
- D Supply of public transport is price-inelastic.

J/11/1/10

66 The table gives estimates of the price elasticities and cross elasticities of demand for bus and rail travel.

service	elasticity with respect to the price of:	
	bus travel	rail travel
bus travel	-0.37	+0.13
rail travel	+0.16	-0.43

What would be the change in the volume of rail travel resulting from a 1 % increase in bus fares?

- (A) an increase of 0.16 % (B) an increase of 0.43 %
 (C) a reduction of 0.13 % (D) a reduction of 0.37 %

J/12/1/08

67 The table shows the quantities demanded (Q) of goods X and Y corresponding to different prices(P) of the two goods.

P	$P_X = \$8$	$P_X = \$10$
$P_Y = \$3$	$Q_X = 16$ $Q_Y = 20$	$Q_X = 12$ $Q_Y = 30$
$P_Y = \$4$	$Q_X = 20$ $Q_Y = 16$	$Q_X = 16$ $Q_Y = 24$

Within which range is the value of the cross elasticity of demand for good Y with respect to the price of good X?

- A** 0.75 to 1.5 **B** 1.50 to 2.4
C 1.66 to 2.0 **D** 1.75 to 2.5

N/12/1/06

68 What can be concluded about a product which has an income elasticity of demand (YED) of +1.5 and a cross elasticity of demand (XED) of +1.2?

	YED figure	XED figure
A	the product is an inferior good	the product has a close complement
B	the product is an inferior good	the product has a close substitute
C	the product is a normal good	the product has a close complement
D	the product is a normal good	the product has a close substitute

J/13/1/08

- 69** A product is an inferior good with no close substitutes. It is also a complement to good X. Which product matches the above description?

product	price elasticity of demand	income elasticity of demand	cross elasticity of demand with respect to the price of x
A	-2	+2	+1
B	-2	+2	-1
C	-0.5	-2	+1
D	-0.5	-2	-1

N/14/1/08

- 70** The price of good X rises by 10%. As a result, the demand for a substitute good Y rises by 20%.

What is the cross-elasticity of demand for good Y with respect to the price of good X?

- A** +2 **B** +0.5 **C** -0.5 **D** -2

J/15/1/07

- 71** A survey into the market for good X found that it is an inferior good and a close substitute to good Y. Which values for the income elasticity of demand for good X and its cross elasticity of demand with respect to the price of good Y would support this?

	income elasticity of demand for good X	cross elasticity of demand for good X with respect to the price of good Y
A	-1.2	-0.9
B	-1.2	+0.9
C	+1.2	-0.9
D	+1.2	+0.9

N/15/1/08

- 72** The cross-elasticity of demand for good X with respect to good Y is -0.5. What can be concluded from this?

- A** Goods X and Y are complementary goods.
B Goods X and Y are substitute goods.
C Good X is an inferior good.
D Good Y is an inferior good.

J/16/1/07

73 The table gives estimates of the price elasticities and cross elasticities of demand for bus and rail travel.

service	elasticity with respect to the price of	
	bus travel	rail travel
bus travel	-0.37	+0.13
rail travel	+0.16	-0.43

What would be the change in the volume of rail travel resulting from a 1% increase in bus fares?

- A** an increase of 0.16% **B** an increase of 0.43%
C a reduction of 0.13% **D** a reduction of 0.37%

SECTION 9

PRICE ELASTICITY OF SUPPLY

Like demand, supply responds to changes in price too-but again, the big question is: by how much? Producers become eager to supply more at higher prices but their ability to increase production depends on many factors e.g. even if price of wheat rises, wheat growing farmers must wait for an entire season to increase its production. Thus, the degree of responsiveness of supply of wheat is very low to the change in its price. However, a manufacturing firm having excess capacity can easily increase supply if the price of its product rises.

Price elasticity of supply measures the degree of responsiveness of quantity supplied towards a change in the own price of the product. Mathematically, it is the ratio of a percentage change in quantity supplied and a percentage change in the own price of the product.

$$P.E.S = \frac{\% \Delta \text{in } X}{\% \Delta \text{in } P_x}$$

In the above formula:

Δ symbolizes change

X is the quantity supplied of a hypothetical product, X

P_x is the per unit price of X.

Price elasticity of supply is always positive, confirming the positive relationship between price and quantity supplied.

Supply is price elastic when a change in price brings a more than proportionate change in quantity supplied. Products made by firms with excess capacity have a price elastic supply. P.E.S exceeds 1 for such products.

Supply is price inelastic when a change in price brings a less than proportionate change in quantity supplied. Wheat and other agriculture commodities have a price inelastic supply. P.E.S is less than 1 for such products.

Supply is unitary price elastic when a change in price brings a proportionate change in quantity supplied. P.E.S equals 1 for such products.

Supply is perfectly price elastic when a change in price brings an infinite change in quantity supplied. P.E.S is ∞ for such products.

Supply is perfectly price inelastic when a change in price brings no change in quantity supplied. P.E.S equals zero for such products.

The formula for P.E.S can also be expressed as:

$$P.E.S = \frac{dX}{dP_x} \times \frac{P_x}{X}$$

where:

dx = Change in the quantity of X.

dPx = Change in the price of X.
 Px = Price of X before change.
 X = Quantity of X before change.

DETERMINANTS OF PRICE ELASTICITY OF SUPPLY

- **Time needed for production**
 As mentioned earlier, products such as agriculture goods that require a long period of time for production are more likely to have price inelastic supply.
- **Excess capacity**
 Excess capacity exists when current production of a firm is below its full capacity. Products made by such firms are likely to have price elastic supply, since they can easily increase production and hence, supply, when prices rise.
- **Current stock level**
 Stocks of unsold items allow quick responses to a price rise, by simply releasing them. It is relatively more time consuming to increase the supply when stocks are zero. Thus, low stocks of a product make its supply price inelastic.
- **Availability of inputs**
 Supply is relatively price elastic if inputs such as labour, capital and raw materials are easily available. A possibility of substituting capital for labour also increases the price elasticity of supply.
- **Nature of the product**
 Perishable products like flowers, newspapers, fresh fruits and vegetables have a price inelastic supply.

Price elasticity of supply: A graphical analysis

Graphically, price elasticity of supply is estimated using the formula:

$$\text{P.E.S} = \frac{dX}{dPx} \times \frac{Px}{X} = \frac{1}{\text{Slope of the supply curve}} \times \text{Slope of straight line drawn from origin}$$

$$= \frac{\text{Slope of straight line drawn from origin}}{\text{Slope of the supply curve}}$$

Price elasticity of supply along a linear supply curve

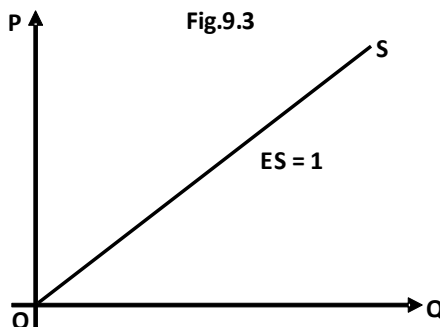
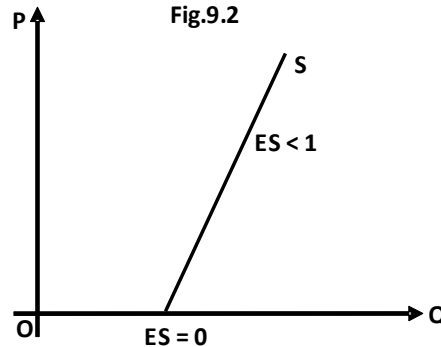
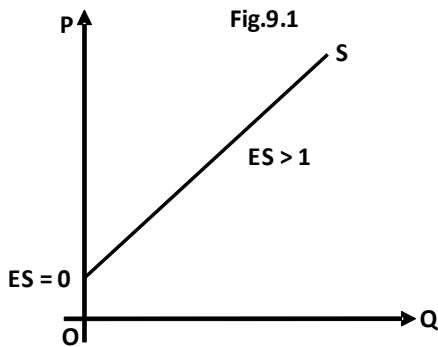
Price elasticity of supply along a linear supply curve depends upon the intercept of the supply curve.

Price elasticity of supply is greater than 1 at all the points along a linear supply curve, if it starts from the y-axis (as shown in Fig. 9.1). Price elasticity of supply exceeds unity at all points since the slope of the straight line drawn from origin is higher than the slope of this supply curve. Along this supply curve, price elasticity of supply decreases throughout but always stays higher than 1.

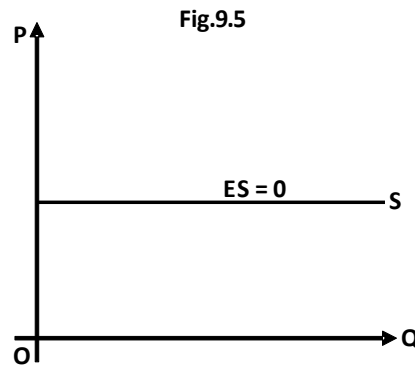
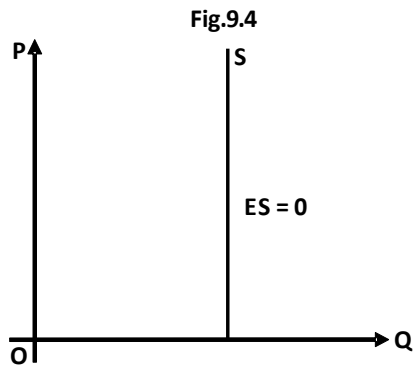
Price elasticity of supply is less than 1 at all the points along linear supply curves starting from the x-axis (as shown in Fig. 9.2). Price elasticity of supply is below unity at all points since the slope

of the straight line drawn from origin is smaller than the slope of this supply curve. Along this supply curve, price elasticity of supply increases throughout but always stays less than 1.

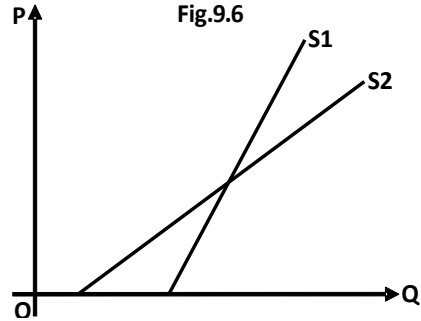
A linear supply curve starting from origin has a unitary price elastic supply at all points (as shown in Fig. 9.3). Price elasticity of supply equals unity at all points since the slope of the straight line drawn from origin is the same as the slope of this supply curve. Along this supply curve price elasticity of supply stays the same throughout.



Price elasticity of supply is zero at all points for a straight vertical supply curve (Fig. 9.4) and is infinity for a straight horizontal supply curve. (Fig. 9.5).



Assuming other factors constant, the steeper a supply curve, the lower is price elasticity of supply and the flatter a supply curve, the higher is price elasticity of supply. In Fig. 9.6, supply curve, S_1 has a lower price elasticity of supply compared to supply curve, S_2 .

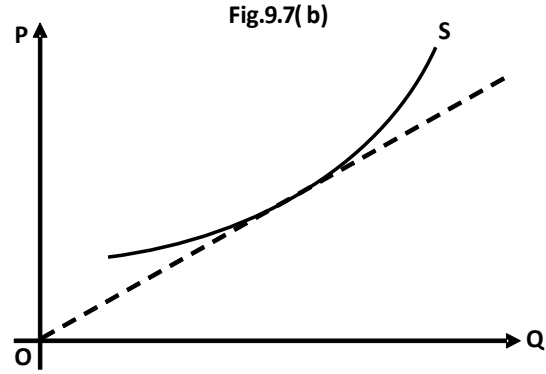
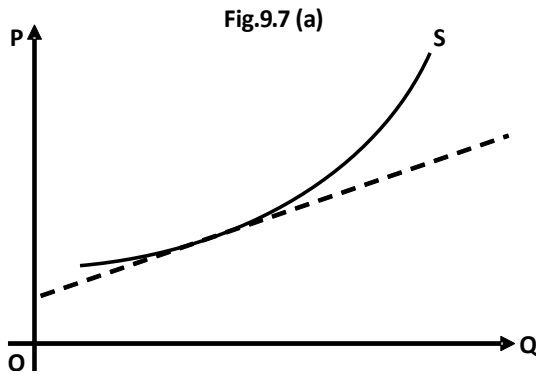


Price elasticity of supply along a non-linear supply curve

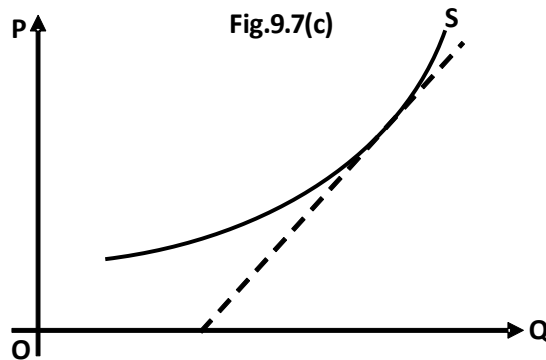
To calculate price elasticity of supply at a certain point on a non-linear supply curve, tangents can be drawn and extended to the axis.

Price elasticity of supply is more than 1 if the drawn tangent touches y-axis. (Fig. 9.7(a))

Price elasticity of supply is unity if the tangent passes through the origin. (Fig. 9.7 (b))



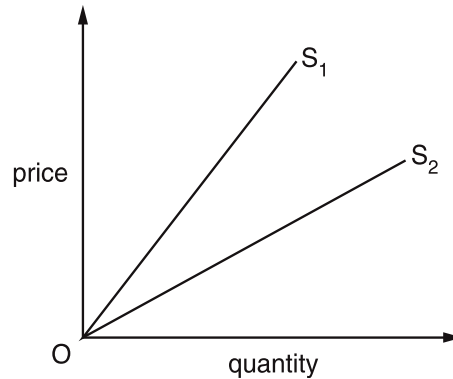
Price elasticity of supply is less than 1 if the drawn tangent touches x-axis. (Fig. 9.7 (c)).



MULTIPLE CHOICE QUESTIONS

J/02/1/12

1 In the diagram OS_1 and OS_2 are two straight-line supply curves.



As price increases, the elasticity of supply

- (A) decreases along both OS_1 and OS_2
- (B) increases less rapidly along OS_1 than along OS_2 .
- (C) increases more rapidly along OS_1 than along OS_2 .
- (D) is constant along both OS_1 and OS_2 .

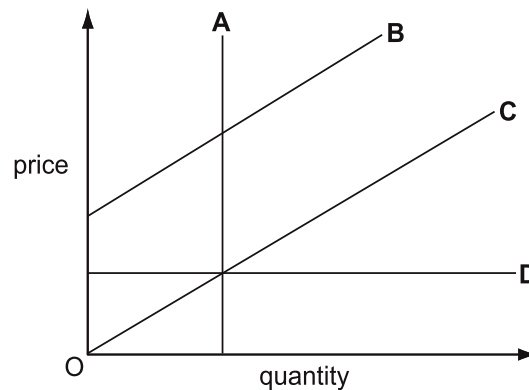
N/02/1/13

2 A manufacturer's ability to increase his output in the short run will be greater

- (A) if labour is immobile.
- (B) if the product is perishable.
- (C) if there is spare capacity.
- (D) if unemployment is low.

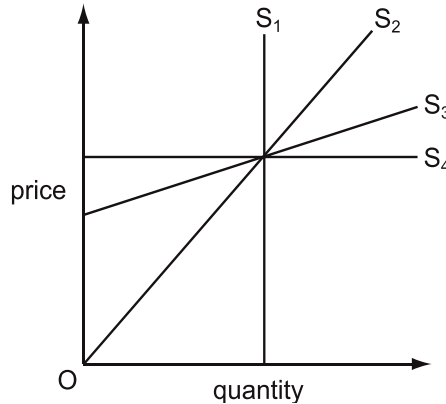
J/04/1/12

3 Which of the supply curves shown in the diagram has unitary price elasticity?



N/04/1/09

4 The diagram shows four different straight line supply curves.



What can be concluded from the diagram?

- (A) S_1 has unitary elasticity. (B) S_2 has zero elasticity.
(C) S_3 has a constant elasticity. (D) S_4 has infinite elasticity.

J/05/1/07

5 The market for tractors is supplied by two firms, X and Y, each initially having 50% of the market.

A 10 % increase in the price of tractors leads to an increase in output from firm X of 10 % and from firm Y of 20 %.

What is the price elasticity of supply of tractors in this market?

- (A) 1 (B) 1.5 (C) 2 (D) 3

J/06/1/09

6 When demand for a good increases, equilibrium price stays the same.

What is its elasticity of supply?

- (A) -1
(B) zero
(C) +1
(D) infinite

N/06/1/10

7 A product has a low price elasticity of supply.

What might explain this?

- (A) The product has a low opportunity cost.
(B) The product has a perishable nature.
(C) The product is classed as an inferior good.
(D) The product is considered to be a necessity.

J/07/1/08

- 8** A manufacturer's ability to increase supply in the short run will be greater
- (A) if labour is immobile.
 - (B) if the product is perishable.
 - (C) if there is spare capacity.
 - (D) if unemployment is low.

N/07/1/08

- 9** The price of a firm's product rises by 12%. After one week the firm is only able to produce the same quantity but after one month it can increase the quantity by 6%. How would price elasticity of supply be described after one week and after one month?

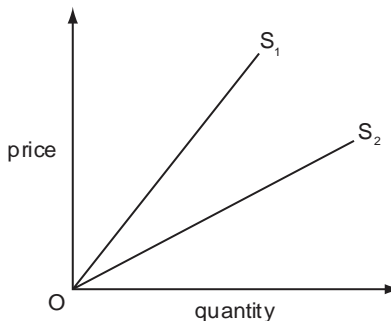
	after one week	after one month
(A)	infinite	Elastic
(B)	Infinite	Inelastic
(C)	zero	Elastic
(D)	zero	Inelastic

J/08/1/09

- 10** What would increase the price elasticity of supply of a firm's products?
- (A) a decrease in the period of time that stocks can be kept
 - (B) a decrease in the time that it takes to produce the products
 - (C) an increase in the cost of capital goods employed by the firm
 - (D) an increase in the level of employment in the area

N/10/1/13

- 11** In the diagram OS_1 and OS_2 are two straight-line supply curves.



As price increases, the elasticity of supply

- A** decreases along both OS_1 and OS_2 .
- B** increases less rapidly along OS_1 than along OS_2 .
- C** increases more rapidly along OS_1 than along OS_2 .
- D** is constant along both OS_1 and OS_2 .

J/11/1/09

12 A refinery which processes oil into petrol (gas) is faced with the following conditions.

- 1 It is working at full capacity.
- 2 Its petrol storage tanks are full.
- 3 It has received delivery of a new fleet of petrol tankers to transport its petrol.
- 4 It requires six months to train new workers to qualify in safety procedures.

Which of the conditions will tend to make the supply of petrol relatively price inelastic?

- (A) 1 and 2 (B) 1 and 4 (C) 2 and 3 (D) 3 and 4

N/11/1/08

13 A manufacturer has estimated that the price elasticity of supply of ice cream is +1.5. If the demand for ice cream rises and price increases by 10 %, how much more will the manufacturer supply to the market?

- (A) 0.15 % (B) 1.5 % (C) 15 % (D) 50 %

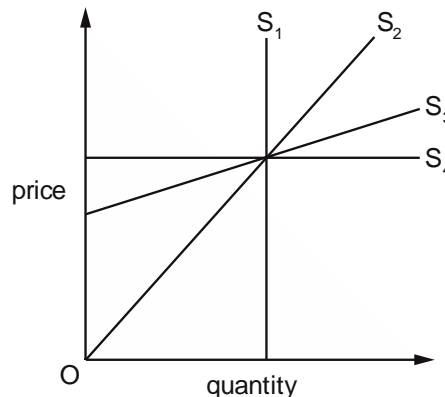
N/11/1/13

14 When is a rise in the price of a product likely to cause more resources to be allocated to its production?

- (A) if demand increases when the supply curve is perfectly inelastic
 (B) if the demand curve shifts to the right when the supply curve is inelastic
 (C) if supply increases when the demand curve is perfectly inelastic
 (D) if the supply curve shifts to the left when the demand curve is elastic

J/14/1/10

15 The diagram shows four different straight line supply curves.

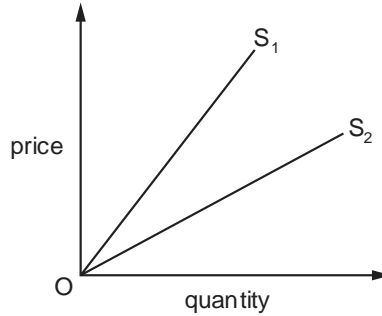


What can be concluded from the diagram?

- A S₁ has unitary elasticity.
 B S₂ has zero elasticity.
 C S₃ has a constant elasticity.
 D S₄ has infinite elasticity.

N/14/1/10

16 In the diagram OS_1 and OS_2 are two straight-line supply curves.



As price increases, the elasticity of supply

- A** decreases along both OS_1 and OS_2 .
- B** increases less rapidly along OS_1 than along OS_2 .
- C** increases more rapidly along OS_1 than along OS_2 .
- D** is constant along OS_1 and along OS_2 .

J/15/1/10

17 The price of a firm's product rises by 12%. After one week the firm is only able to produce the same quantity but after one month it can increase the quantity by 6%. How would the price elasticity of supply be described after one week and after one month?

	after one week	after one month
A	infinite	elastic
B	infinite	inelastic
C	zero	elastic
D	zero	inelastic

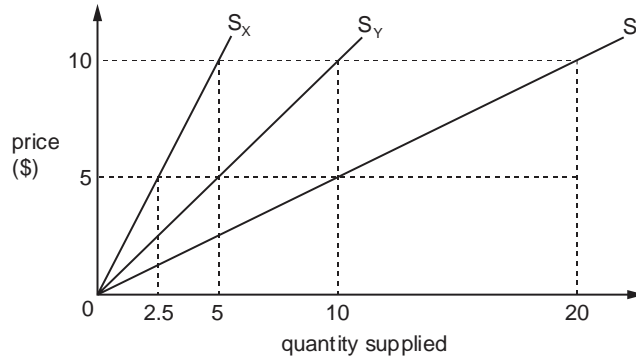
N/15/1/10

18 Which business is likely to be the slowest to alter its output in response to a sustained increase in demand for its product?

- A** a fast-food restaurant
- B** a household cleaning service
- C** a newspaper printer
- D** an oil exploration company

J/16/1/09

19 S_x , S_y and S_z are the supply curves of goods X, Y and Z.



If the price of all three goods rises from \$5 to \$10, what are their price elasticity of supply values?

	good X	good Y	good Z
A	equal to 1	equal to 1	equal to 1
B	equal to 1	greater than 1	greater than 1
C	less than 1	equal to 1	greater than 1
D	less than 1	greater than 1	greater than 1

SECTION 10

CONSUMER AND PRODUCER SURPLUS

CONSUMER SURPLUS

In general, consumers choose to incur expenditures on the purchase of only those commodities which bear some utility for them. The higher the utility or value associated with a certain product, the greater is a consumer's willingness to buy it. For example, a teenager fond of possessing the latest electronic gadgets assigns a higher value to a recently launched mobile phone and, therefore, is willing to pay a high price to be among the first few to possess it. On the other hand, there are consumers who wait for the handset's price to decrease before they purchase it as they do not associate much value with immediate possession. The difference between what consumers are willing to pay for a product and what they actually pay is called consumer surplus, and is a measure of consumers' welfare.

Consumer surplus may be explained through the related concept of marginal utility (taught in detail under the extended A Level syllabus). Marginal utility is the utility derived from consuming an additional unit of a product, and typically diminishes as consumers use more and more of it. The utility of a second car to a household, for instance, is less than that of the first. This diminishing marginal utility explains why consumers assign lower values to additional units of a product and, therefore, wish to pay less and less for them. Consider the example of a family of three: father, mother and son, who are settled in Lahore and invited to a wedding in Karachi. Assume that the wedding is an event in the mother's family, among her relatives. Since it involves her relatives, the mother is much more eager to attend the wedding than the father and son. She is, therefore, even willing to pay a higher airfare of PKR 20,000 to travel to Karachi while the other two members are not. When the fare is lowered to PKR 18,000, however, the father also chooses to attend the wedding so the family buys two tickets for a price of PKR 18,000. Finally, if the fare is further reduced to PKR 16,000, they decide to take their son as well and purchase 3 tickets for a price of PKR 16,000. Mathematically, consumer surplus is the difference between the prices consumers are willing to pay and actually pay. Therefore, the mother's consumer surplus is PKR 4,000 (20,000-16,000), the father's surplus is PKR 2,000 and the son's surplus is nil as the parents would not have paid a price higher than PKR 16,000 for his ticket any way.

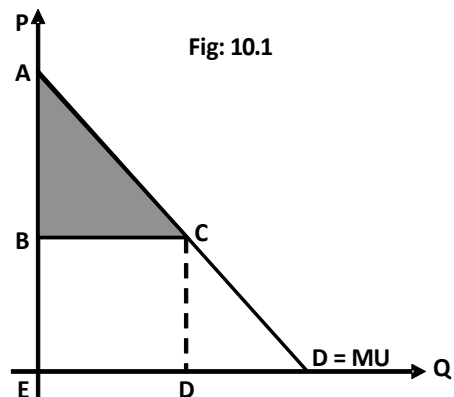
Graphically, the area below a demand curve and above price is consumer surplus. The following example may also help us understand the concept.

Price \$	Quantity demanded
10	1
8	2
6	3
4	4
2	5

The consumer purchases 4 units when the market price is \$4 per unit. Consumer surplus from the first unit is \$6 as the individual was willing to pay \$10 but actually paid only \$4. Similarly, consumer surplus for the second and third units is \$4 and \$2 respectively. Unit 4 however, does

not yield any consumer surplus. The total consumer surplus from buying 4 units is \$12 (\$6+\$4+\$2+0).

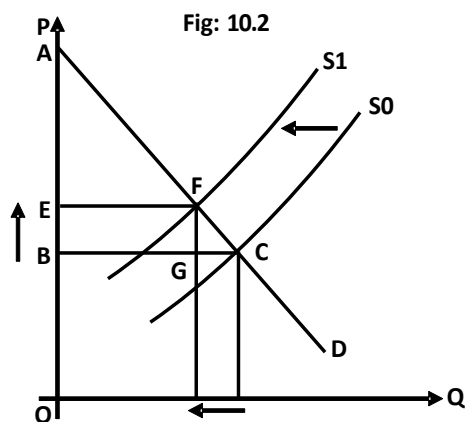
The shaded area in Fig. 10.1 shows the consumer surplus (area below a demand curve and above price)



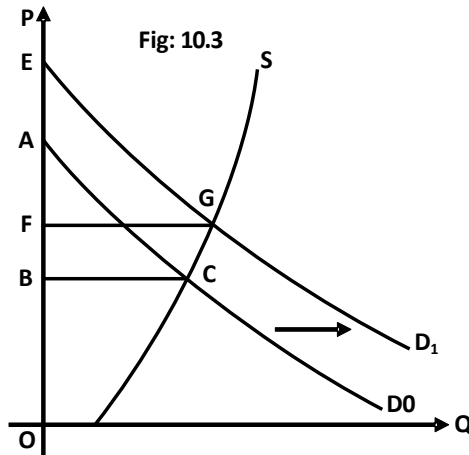
The total amount this consumer was willing to pay for 4 units is area ACDE and the amount this consumer actually pays is area BCDE. The difference between the two is consumer surplus, represented by the shaded area, ABC.

Changes in Consumer Surplus

Since consumer surplus is the difference between prices consumers are willing to pay and those they actually pay, a change in either of the two alters consumer surplus. The market price may change with shifts in either the demand curve, or the supply curve, or both. Fig. 10.2 shows the impacts on market price and consumer surplus of a shift in supply curve. The leftward shift in the supply curve from S_0 to S_1 increases market price from OB to OE and changes consumer surplus from ABC to AEF. This decrease in consumer surplus is partly attributed to the fact that existing consumers pay a higher price (EFGB) and partly to the fact that few customers leave the market altogether (FGC). Similarly, a rightward shift in supply curve decreases market price and increases consumer surplus.



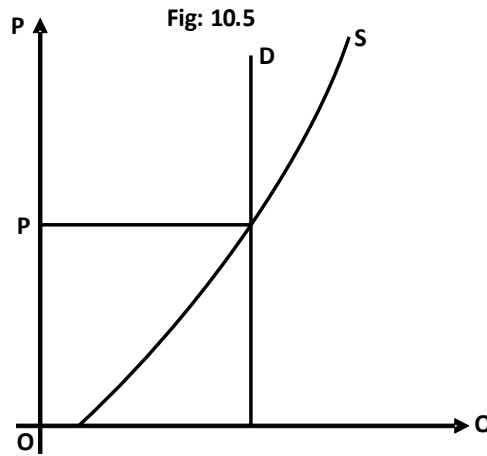
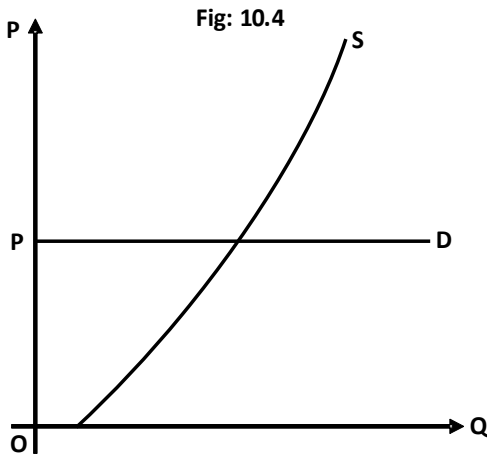
However, the impact on consumer surplus of shifts in the demand curve is uncertain. A rightward shift in the demand curve increases the price consumers are willing to pay as well as the market price. The change in the size of consumer surplus therefore becomes uncertain.



In Fig. 10.3, a rightward shift in the demand curve from D_0 to D_1 increases market price from OB to OF and consumer surplus changes from area ABC to area EFG . It remains uncertain however, if it has increased, decreased or stayed the same.

Consumer surplus and Price Elasticity of Demand

Coefficient of price elasticity of demand and the size of consumer surplus move inversely. Higher the price elasticity of demand, smaller is consumer surplus. Consumer surplus is zero when price elasticity of demand is infinity (Fig. 10.4) and is infinity when price elasticity of demand is zero (Fig: 10.5).



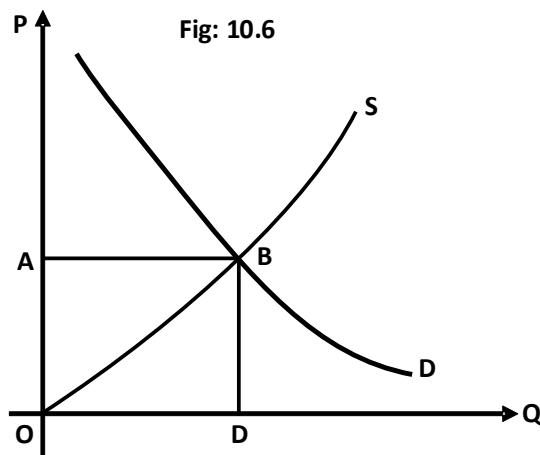
PRODUCER SURPLUS

The welfare of consumers and producers determines society's overall welfare. Producers' welfare is measured by producer surplus, which exists when the selling price exceeds the minimum price producers are willing to charge (i.e. the price where producers cover their costs).

Mathematically, producer surplus is the difference between prices producers actually charge and those they are willing to charge. The height of the supply curve shows the minimum price a producer is willing to charge. Graphically, the area above a supply curve and below price is producer surplus. The following example may help us understand the concept.

Price \$	Quantity supplied
2	1
4	2
6	3
8	4
10	5

This producer sells 4 units if the market price is \$8 per unit. The first unit yields a surplus of \$6 as the producer would've sold it at a price of \$2 but ends up charging \$8. Similarly, producer surplus for the second and third unit is \$4 and \$2 respectively. Unit 4 however, does not yield any producer surplus. The total producer surplus from selling 4 units is \$12 (\$6+\$4+\$2+0).

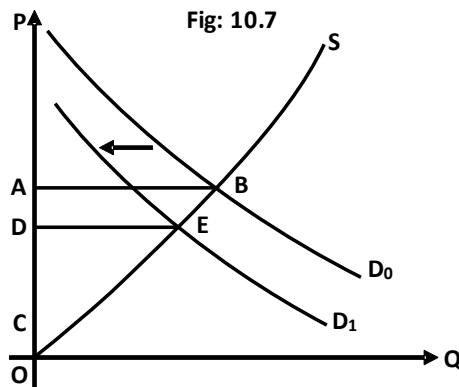


In Fig. 10.6, area ABO shows producer surplus i.e. the difference between the amount producers actually charge i.e. area ABDO and the amount producers were willing to charge i.e. area BOD.

Changes in Producer Surplus

Since producer surplus is the difference between prices producers are actually charging and those they actually charge, a change in either of the two alters producer surplus. The market price may change with shifts in either the demand curve, or the supply curve, or both. Fig. 10.7

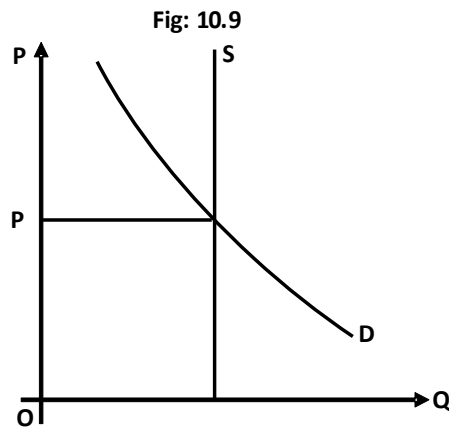
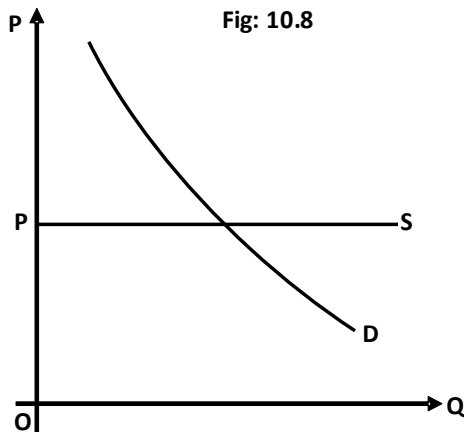
shows the impacts on market price and producer surplus of a shift in demand curve. The leftward shift in the demand curve from D_0 to D_1 lowers market price from OA to OD and producer surplus decreases from ABC to DEC . Similarly, a rightward shift in demand curve raises market price as well as producer surplus.



The impacts of shifts in supply curve on the size of producer surplus are uncertain, since both, the price producers are willing to charge and that which they actually charge, change.

Producer surplus and Price Elasticity of Supply

Coefficient of price elasticity of supply and the size of producer surplus move inversely. Higher the price elasticity of supply, smaller is the size of producer surplus. Producer surplus is zero when price elasticity of supply is infinity (Fig. 10.8) and is maximized when price elasticity of supply is zero (Fig. 10.9).



Prices as Rationing and Allocative Mechanisms

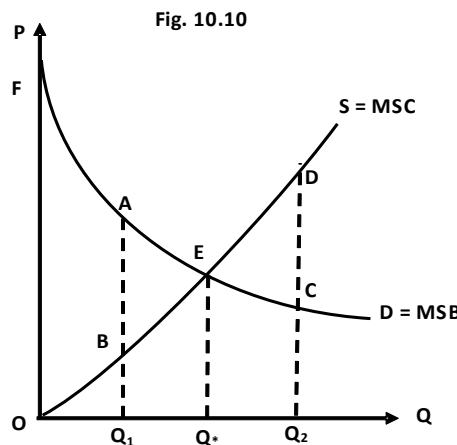
A resource allocation is efficient when it becomes impossible to make someone better off without making someone else worse off. This condition is also known as Pareto optimality. Price mechanism has the ability to determine the allocatively efficient output by the intersection of demand and supply curves, which reflect independent choices and decisions of innumerable buyers and sellers.

The height of the demand curve shows marginal utility (MU) i.e. the utility derived from consuming an extra unit. From society's point of view, marginal utility is marginal social benefit (MSB) i.e. the utility or benefit derived by society from having an extra unit. Demand curve i.e. MSB slopes downwards, given law of diminishing marginal utility (This law will be explained in extension portion of the course).

The height of the supply curve shows marginal cost (MC) i.e. the cost incurred on producing an extra unit. From society's point of view, the marginal cost is marginal social cost (MSC) i.e. the cost incurred by the society to produce an extra unit. Supply curve i.e. MSC slopes upward, given law of variable proportions. (This law will also be explained in extension portion of the course.)

Welfare is surplus i.e. the excess of social benefit over social cost. Units contributing more to benefit and less to cost ($MSB > MSC$) increase the welfare of the society and hence, should be produced whereas units contributing less to benefit and more to cost ($MSB < MSC$) decrease the welfare of the society and hence, should not be produced.

An efficient resource allocation is where the social benefit of producing the last unit exactly equals its social cost i.e. $MSB = MSC$.



In Fig. 12.7 Q^* is the efficient resource allocation. Society's welfare (i.e. area FEO) is maximized at this output level. Total benefit of consuming output Q^* is area FEQ \cdot O (the entire area below demand curve) and total social cost of producing this output is area OEQ \cdot (the entire area below supply curve). The surplus i.e. welfare is area FEO.

Society's welfare diminishes in case any quantity other than Q^* is produced. For example, quantity Q_1 which is below Q^* deprives society of a welfare gain of area ABE. All units between Q_1 and Q^* benefit more to the society and cost less ($MSB > MSC$) and hence, if made, increase the welfare of society. Thus, Q_1 shows under allocation and under production of this product. Output Q_2 on the other hand, shows over allocation and over production since all units above Q^* cost more and benefit less to the society. The society's welfare decreases by area EDC if output Q_2 is made.

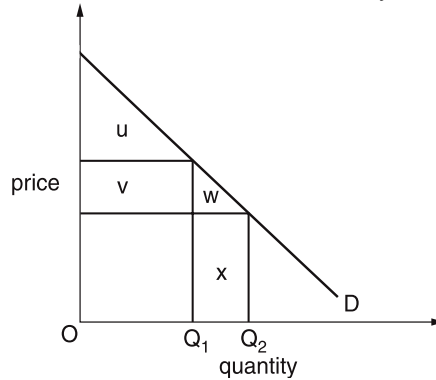
Rationing is another important role that prices play. The question of rationing arises when demand exceeds supply. Prices rise to ration limited goods among buyers by reducing quantity demanded and raising quantity supplied. Where prices fail to ration, black marketing and long queues of customers are observed.

Prices signal firms and consumers and guide them how to alter their production and consumption patterns. Firms leave markets where prices and profits fall and enter growing markets where demand and prices rise. On the other hand, consumers reduce demand for goods which become expensive and search for cheaper substitutes. Where firms and consumers understand price signals correctly, their responses bring stability and certainty to the economy. Resources are withdrawn from markets with surpluses and employed where shortages exist. Thus, shortages and surpluses are eliminated automatically.

MULTIPLE CHOICE QUESTIONS

N/02/1/11

1 In the diagram D is the demand curve for a commodity.



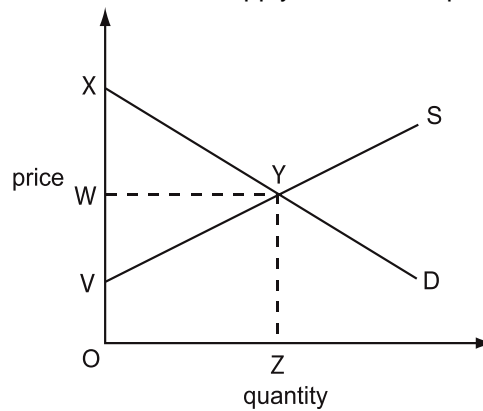
The quantity initially supplied is OQ_1 .

Which area measures the total additional amount consumers would be willing to pay for an increase equal to Q_1Q_2 in the quantity supplied?

- (A) $u + v + w$ (B) w (C) $w + x$ (D) x

J/04/1/13

2 The diagram shows the demand and supply curves for a product.



Which area measures the total amount consumers would be willing to pay for the equilibrium level of output?

- (A) $OWYZ$ (B) $OXYZ$ (C) $OVYZ$ (D) XYV

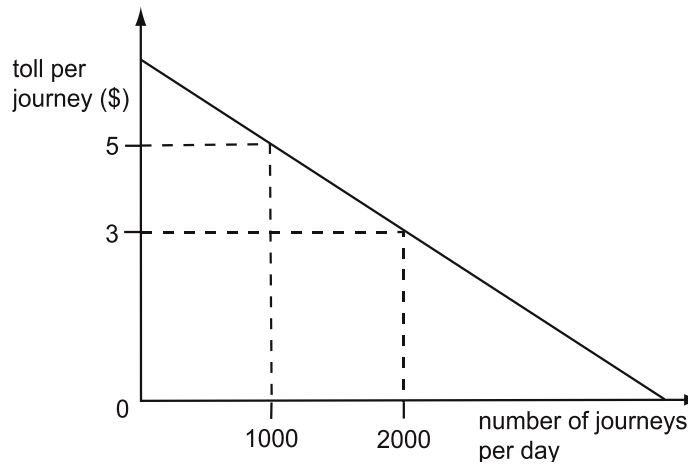
J/05/1/13

3 What is necessary for consumer surplus to be zero?

- (A) Demand is perfectly inelastic.
 (B) Demand is perfectly elastic.
 (C) Supply is perfectly inelastic.
 (D) Supply is perfectly elastic.

N/05/1/12

4 The diagram shows a demand curve for journeys on a toll road.

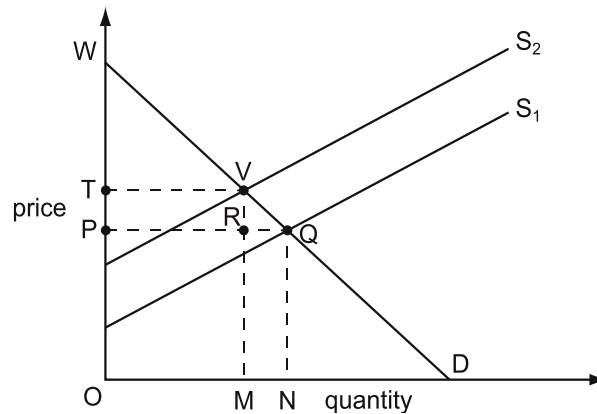


If there is a reduction in the toll from \$5 to \$3, what is the resulting increase in the daily consumer surplus?

- | | | | |
|------------|---------|------------|---------|
| (A) | \$1 000 | (B) | \$2 000 |
| (C) | \$3 000 | (D) | \$4 000 |

J/06/1/12

5 In the diagram, S_1 is the original supply curve and D is the original demand curve.

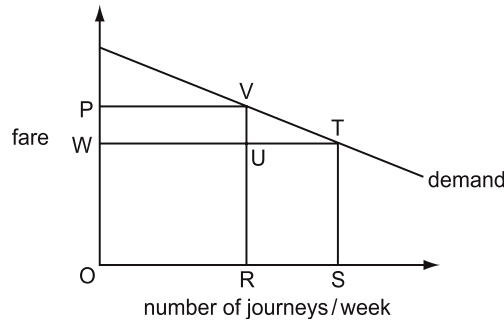


If supply shifts to S_2 , which area represents the change in consumer surplus?

- | | | | |
|------------|------|------------|-----|
| (A) | PQVT | (B) | PQW |
| (C) | PRVT | (D) | TVW |

N/07/1/11

6 The number of passenger journeys per week by train on a certain route is shown by the demand curve in the diagram.



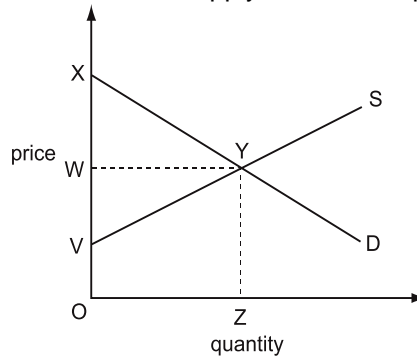
Initially the fare is OP, but it is then reduced by PW.

Which area measures the amount spent on the extra journeys resulting from the lower fare?

- (A) VUT (B) PWTU (C) VRST (D) URST

N/08/1/12

7 The diagram shows the demand and supply curves for a product.



Which area measures the total amount consumers would be willing to pay for the equilibrium level of output?

- (A) OWYZ (B) OXYZ (C) OVYZ (D) XYV

N/09/1/09

8 The table shows the maximum price a consumer would be willing to pay for successive cans of fruit juice.

Cans	first	second	third	fourth	fifth
price (\$)	14	10	6	4	3

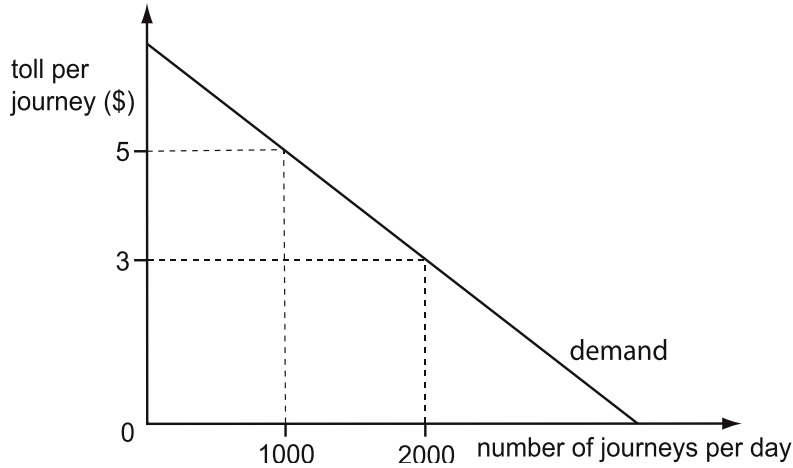
The price of a can of fruit juice is \$4 and, having bought three cans, the consumer decides to buy a fourth.

How does buying the fourth can affect his consumer surplus?

- (A) It leaves it unchanged. (B) It lowers it by \$2.
 (C) It raises it by \$4. (D) It raises it by \$34.

J/10/1/11

9 The diagram shows a demand curve for journeys on a toll road.

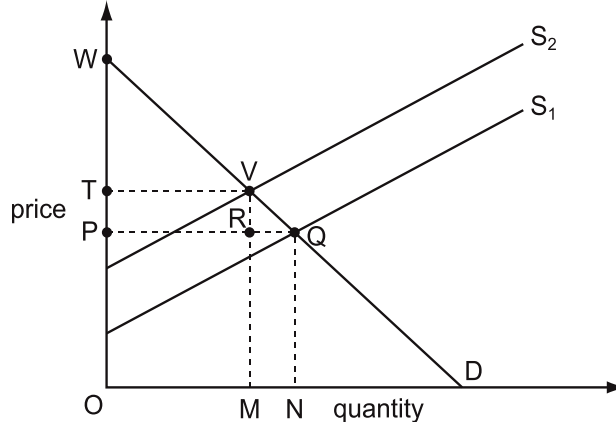


If there is a reduction in the toll from \$5 to \$3, what is the resulting increase in the daily consumer surplus?

- (A) \$1000
- (B) \$2000
- (C) \$3000
- (D) \$4000

N/11/1/11

10 In the diagram, S_1 is the original supply curve and D is the original demand curve.



If supply shifts to S_2 , which area represents the change in consumer surplus?

- (A) PQVT
- (B) PQW
- (C) PRVT
- (D) TVW

J/12/1/10

11 The table shows the maximum amount three students would each be willing to pay for a taxi to take them home from a night club.

	\$
JANE	10.00
SARA	8.00
YASMIN	6.00

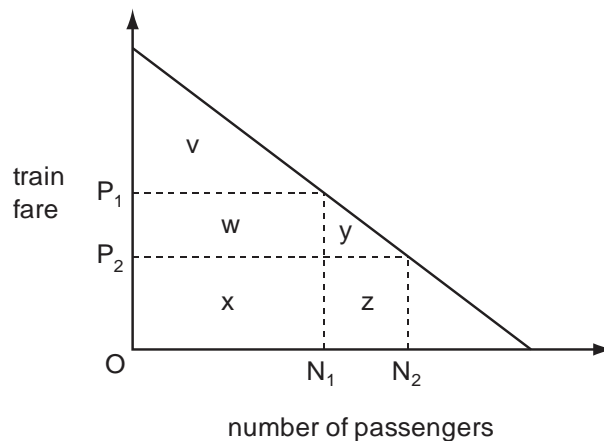
Assume they share the taxi fare as shown in the table below.

Which shows how much they each should pay so that they each obtain the same consumer surplus?

	Jane \$	Sara \$	Jasmin \$
A	2.00	4.00	6.00
B	4.00	4.00	4.00
C	5.00	4.00	3.00
D	6.00	4.00	2.00

J/13/1/13

12 The diagram shows the change in the number of passengers when a company reduces the fare for a train journey from OP_1 to OP_2 .



Which areas measure the consumer surplus at the new fare for the original passengers and for the additional passengers?

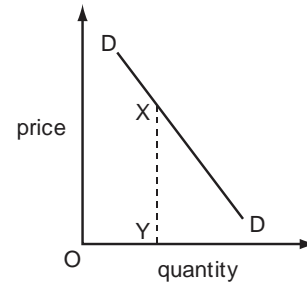
	original passengers	additional passengers
A	V	Y
B	V + W	Y
C	V + W + X	Y + Z
D	X	Z

N/13/1/05

13 The diagram shows an individual's demand curve.

What does XY measure?

- A** the consumer surplus derived by the individual from the last unit consumed
- B** the equilibrium price of the good
- C** the quantity demanded by the individual at any given price
- D** the value of the individual's marginal benefit from the last unit consumed



N/13/1/12

14 A consumer needed a new camera and a new armchair. She was prepared to spend \$500 on one item. She discovered that the camera cost \$450 and the armchair \$500. She bought the camera. What was her opportunity cost and her consumer surplus?

	opportunity cost	consumer surplus
A	the armchair	\$50
B	the armchair	\$500
C	\$50	\$450
D	\$450	\$50

J/14/1/12

15 What is consumer surplus?

- A** the difference between the cost of producing a good and what consumers would be willing to pay for it
- B** the difference between what consumers actually pay for a good and its cost of production
- C** the difference between what consumers actually pay for a good and the maximum amount they would be willing to pay for it
- D** the difference between what consumers are willing to pay for a good and the amount required by producers to supply the good

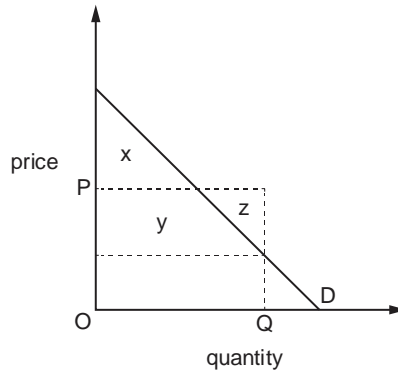
J/15/1/13

16 Producer surplus is the difference between

- A** the consumer surplus from the good and the producers' total cost in supplying the good.
- B** the highest price that the consumer would be willing to pay for the good and the price the producer actually sold it for.
- C** the lowest price that the producer would accept for the good and the price the producer actually sold it for.
- D** the quantity that the producers manufacture in a week and the amount sold to consumers that week.

N/15/1/13

17 The diagram shows an individual's demand curve for a commodity.



The supplier of the commodity charges a unit price of OP but consumers are currently required to purchase a minimum quantity, OQ.

Which area(s) in the diagram measure the net gain in consumer surplus from the removal of the minimum purchase requirement?

- A** $x + y$ **B** $x - z$ **C** y only **D** z only

J/16/1/13

18 The diagram shows a consumer's demand curve for a product.



How does consumer surplus change as the price of the product rises in \$5 steps between \$5 and \$20?

- A** It falls at a constant rate (%) with each \$5 rise.
B It falls by a constant amount with each \$5 rise.
C It falls by a decreasing amount with each \$5 rise.
D It falls by an increasing amount with each \$5 rise.

PRICES AS RATIONING AND ALLOCATIVE MECHANISMS

J/03/1/13

19 For price to act as a rationing mechanism, the effect of a rising price must be to

- (A) attract new firms into the market.
- (B) generate additional profits for producers.
- (C) reduce the quantity demanded by some individuals.
- (D) signal the need for a reallocation of resources.

J/04/1/04

20 What is an advantage of using the market mechanism to allocate resources between alternative uses?

- (A) It ensures that resources will be allocated efficiently.
- (B) It ensures that resources are allocated in accordance with need.
- (C) It minimises the time required to make decisions.
- (D) It gives all consumers an equal voice in deciding how resources should be allocated.

N/06/1/13

21 What is **not** correct when price acts as a means to allocate resources?

- (A) Price determines the supply of public goods.
- (B) Price operates in the markets for both goods and factors of production.
- (C) Price recognises consumers' ability to pay rather than consumers' needs.
- (D) Price signals to producers which goods are most profitable.

J/08/1/13

22 Which government policy might limit the rationing function of the price mechanism?

- (A) the imposition of tariffs on imported consumer goods
- (B) the levy of indirect taxes at varying rates on different goods
- (C) the payment of subsidies to food producers
- (D) the setting of maximum prices for rented housing

J/09/1/13

23 Which statement indicates that the price mechanism is allocating resources successfully?

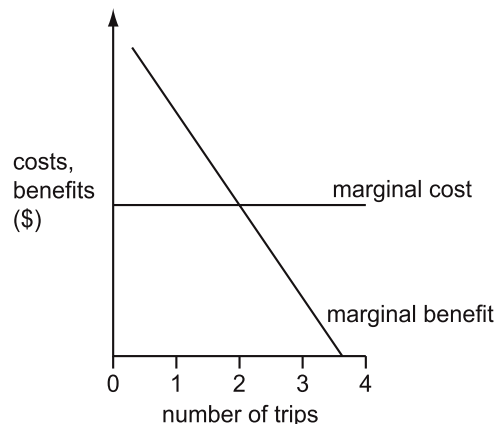
- (A) Belgian chocolate companies increase supplies to China because of higher than expected sales.
- (B) Train operators in India lower fares because of overcrowding on trains.
- (C) US supermarkets throw away large amounts of food because of misjudging demand.
- (D) World fish stocks decline because of over-fishing.

N/09/1/03

24 The diagram shows a person's marginal costs and marginal benefits of making trips to the cinema.

How many trips will the person make?

- (A) None, as each extra trip reduces marginal benefit.
- (B) One, as this maximises the excess of marginal benefit over marginal cost.
- (C) Two, as this maximises the net benefit of making trips.
- (D) Three, as all trips have a positive marginal benefit.



N/09/1/10

25 What is generally considered to be one of the advantages of using the price mechanism as a rationing device?

- (A) It ensures that goods are allocated in accordance with the needs of consumers.
- (B) It ensures that suppliers cannot make excessive profits.
- (C) No one can be prevented from consuming a good if they are willing and able to pay the market price.
- (D) The allocation of goods is determined by consumers' wealth.

N/09/1/12

26 What would cause a failure of the market mechanism's rationing function?

- (A) falling prices
- (B) price controls
- (C) rising profits
- (D) self interest

J/10/1/12

27 What does **not** happen when price acts as a means to allocate resources?

- (A) Price determines the supply of public goods.
- (B) Price operates in the markets for both goods and factors of production.
- (C) Price recognizes consumers' ability to pay rather than consumers' needs.
- (D) Price signals to producers which goods are most profitable.

J/11/1/12

28 Global stocks of cod are currently under threat due to over-fishing whilst there are plentiful supplies of the less popular Alaskan pollock.

How might the price mechanism operate to limit the depletion of fish stocks?

- (A) The price of both cod and Alaskan pollock will fall.
- (B) The price of both cod and Alaskan pollock will rise.
- (C) The price of cod will fall whilst the price of Alaskan pollock will rise.
- (D) The price of cod will rise whilst the price of Alaskan pollock will fall.

N/11/1/03

- 29** In Economics, decisions are usually taken 'at the margin'.
What does this mean?
- (A) They are concerned with actions that occur in free market not planned economies.
 - (B) They are concerned with issues on the boundary between macroeconomics and microeconomics.
 - (C) They are concerned with the choice between normative and positive actions.
 - (D) They are concerned with the effect of adding a further action to the current level of activity.

N/11/1/12

- 30** When demand for a good falls, its price falls.
What is the function of the price fall?
- (A) to eliminate shortages
 - (B) to reduce consumer surplus
 - (C) to send a signal to producers
 - (D) to stimulate a further fall in demand

N/12/1/13

- 31** In which situation will it be necessary to use an alternative to the price mechanism to allocate a good between consumers?
- A Producers of the good receive a subsidy.
 - B The government imposes a specific tax on the good.
 - C The government sets a maximum price below the equilibrium price.
 - D The quantity of the good available is fixed.

N/13/1/13

- 32** In which set of circumstances will prices play no part in determining how resources are allocated between alternative uses but may still have a role as a rationing mechanism?
- A The government sets maximum prices for all goods above their market clearing price.
 - B The government sets minimum wages for all workers below the market rates of pay.
 - C The quantities of consumer goods produced are determined by the government.
 - D The total income consumers have available to spend is fixed by the government.

N/14/1/13

- 33** Which combination of changes would enable the price mechanism to allocate resources more efficiently in a monopoly market?

	consumer sovereignty	producer sovereignty
A	decrease	decrease
B	decrease	increase
C	increase	decrease
D	increase	increase

SECTION 11

TAXES AND SUBSIDIES

TAXES

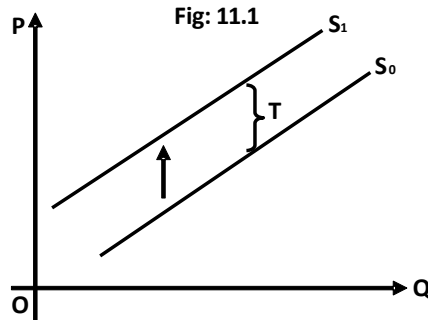
Besides being a very important source of revenue, taxes help governments achieve various economic objectives. Indirect taxes can be levied to correct market failures and discourage over consumption. For example, taxing oil is a popular government strategy as it helps generate revenues, decrease the import bill, protect the environment, reduce road congestion and save precious resources from quick exhaustion.

Indirect taxes are levied on expenditures and shift supply curve upwards by the amount of tax per unit. Talking in terms of tax rates, indirect taxes are of two types:

1) Specific tax

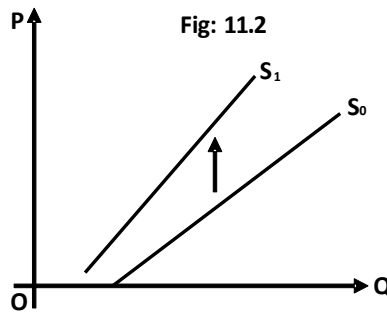
A specific tax is one, the amount of which does not change with the price/value of the product e.g. a tax of \$0.5/unit. Such a tax shifts supply curve upwards in a parallel fashion, as shown in Fig. 11.1. S_0 is the initial supply curve and S_1 , the supply curve after imposing taxes.

In case of specific tax, the vertical distance between two supply curves i.e. the tax amount per unit is constant throughout.



2) Ad valorem tax (percentage tax)

Ad valorem tax is one, the amount per unit of which varies directly with the price/value of the product e.g. a sale tax of 5% of the value of the product. Such a tax shifts supply curve upwards and as shown in Fig. 11.2, the vertical distance between two supply curves keeps on increasing with the value of the product.



Distribution of taxes between consumers and producers

Producers try to shift the burden of indirect taxes to consumers by raising prices but their ability to do so depends upon the price elasticities of demand and supply.

Example

Before taxes		
Price (\$)	Quantity demanded	Quantity Supplied
5	10	50
4	20	40
3	30	30
2	40	20
1	50	10

Price paid equals price received when there are no indirect taxes (or subsidies). Equilibrium price is \$3 and equilibrium quantity, 30 units. Now assume that a tax of \$2/unit is announced. This means that producers receive \$2 less than the market price for every unit they sell.

Price received by producers = Price paid by consumers i.e. the market price - indirect tax

The following table shows the impact of tax by separating price paid and price received.

Consumer plan quantity demanded according to the prices they pay. Producers plan quantity supplied according to the prices they receive.

Price paid	Qd	Price received = Price paid – tax	Qs
5	10	3	30
4	20	2	20
3	30	1	10
2	40	0	-
1	50	-1	-

New equilibrium price is \$4 (higher than the price before tax) and new equilibrium quantity, 20 units (smaller than the quantity before tax). Indirect taxes usually raise prices and reduce quantity traded.

Total tax burden of consumers is \$20 which is \$1 extra they pay for every unit purchased multiplied by 20 units purchased after taxes.

Total tax burden of producers is \$20 which is \$1 less they receive for every unit sold multiplied by 20 units sold after tax.

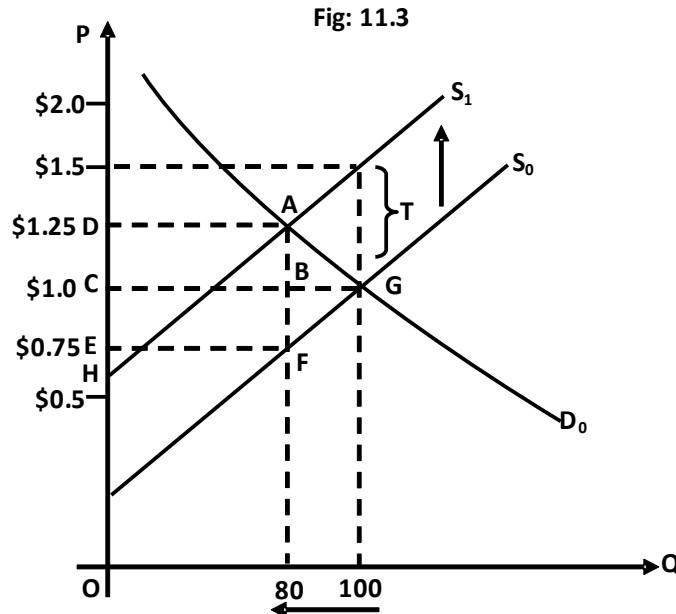
The tax of \$2/unit is distributed equally between consumers and producers.

Total revenues/receipts of the government from this tax is \$40 which is \$2 i.e. tax amount/unit multiplied by 20 units traded after the tax.

	Before tax	After tax
Market price/Price paid	\$3	\$4
Price received	\$3	\$2
Quantity traded	30 units	20 units
Consumers burden	-	\$1 × 20 units = \$20
Producer burden	-	\$1 × 20 units = \$20
Government tax receipts	-	\$2 × 20 units = \$40

Impacts of indirect taxes: A graphical analysis

The following diagram shows equilibrium price at \$1/unit and quantity sold at 100 units. The initial supply curve is S_0 and the imposition of indirect tax of \$0.5/unit shifts supply curve to S_1 . The vertical distance between S_0 and S_1 is the tax amount/unit.



The new price is \$1.25/unit and equilibrium quantity is 80 units.

To calculate the price received, the tax amount/unit i.e. \$0.5/unit should be deducted from price paid. The vertical distance between A and F (or D & E) is tax amount, thus price received is $\$1.25 - \0.5 i.e. \$0.75/unit.

Consumers pay \$0.25/unit extra for 80 units so their burden of this tax is $\$0.25 \times 80$ units i.e. \$20. Graphically, it is the area ABCD.

Producers/suppliers receive \$0.25 less for every unit they sell. Their tax burden is \$20 i.e. $\$0.25/\text{unit} \times 80$ units. Graphically, it is the area BFEC.

Government receipts from the tax are $\$0.5/\text{unit} \times 80$ units i.e. \$40. Graphically, it is the area AFED.

The burden of tax is divided equally between consumers and producers since elasticities of demand and supply are assumed to be the same.

Impacts of taxes on welfare

Taxes increase the prices consumer pay, hence decreasing the consumer surplus. In the Fig. 11.3, consumer surplus decreases by area ADCG.

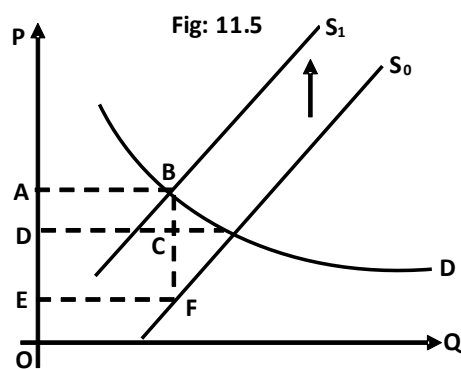
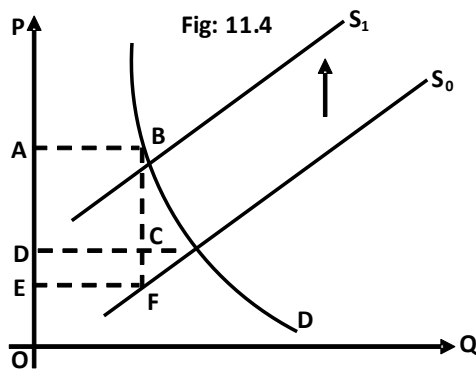
Taxes reduce the prices producers receive, hence decreasing producer surplus too, by area CGFE.

Total welfare loss (of consumers and producers) equals DAGFE. Out of this welfare loss, area DAFE becomes receipts of the government. However, AFG does not become anyone's gain. AFG is the DEAD WEIGHT LOSS or the excess burden of tax. Mathematically, $AFG = \frac{1}{2} (\text{tax amount/unit} \times \text{quantity before tax} - \text{quantity after tax})$.

Dead weight loss is the third party effect or externality of the tax. Taxes reduce the quantity traded and employment. The loss of job opportunities and the decreased demand of inputs/ raw material are examples of third party effects of a tax.

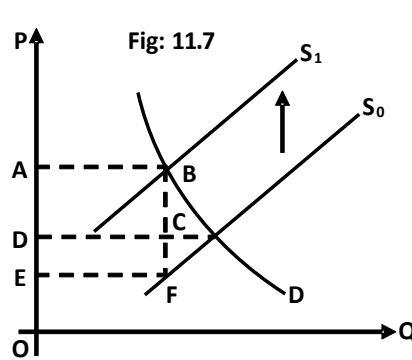
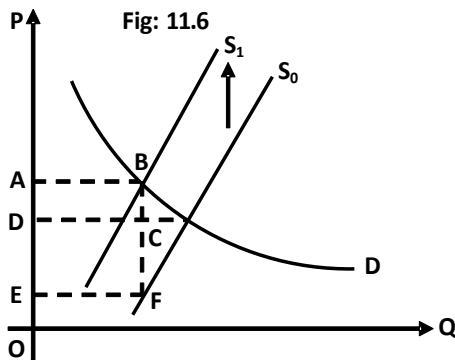
Distribution of indirect taxes and price elasticity of demand

Producers successfully transfer a higher portion of tax to consumers by raising prices, if the price elasticity of demand is low. In Fig. 11.4, a relatively steep demand curve showing price inelastic demand is drawn. In this case, consumer burden, ABCD is greater than producer burden, DCFE. Fig. 11.5 shows a relatively flat demand curve, making consumer burden, ABCD smaller than producer burden, DCFE.



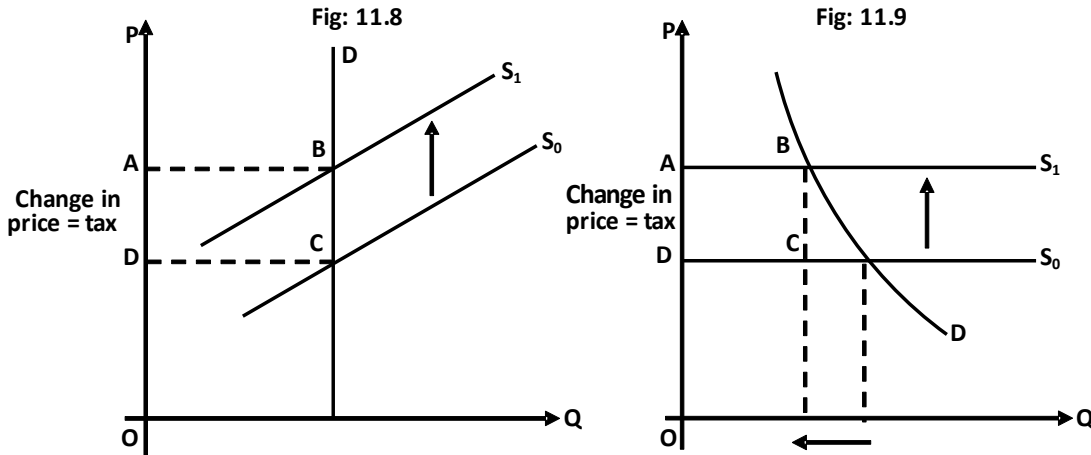
Distribution of indirect taxes and price elasticity of supply

Producers successfully transfer a higher portion of tax to consumers by raising prices, if the price elasticity of supply is high. Fig. 11.6 shows a relatively steep supply curve which causes consumer burden, ABCD to be smaller than producer burden, DCFE. In Fig. 11.7, the supply curve is relatively flat and consumer burden, ABCD is greater than producer burden, DCFE.



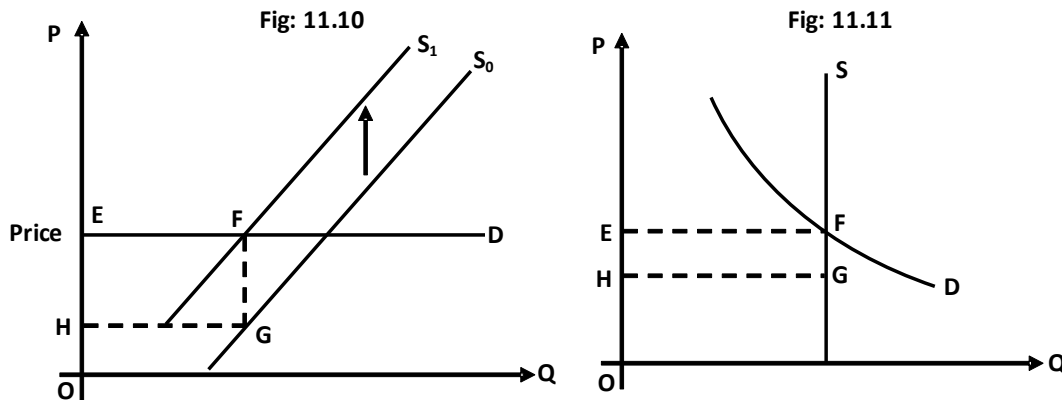
Consumers bear the entire tax burden (ABCD), if the price increases exactly by the amount of tax. This can happen when:

- (i) price elasticity of demand is zero (Fig. 11.8)
- (ii) price elasticity of supply is infinity (Fig. 11.9)



Producers bear the entire tax burden (EFGH) if the price remains unchanged even after the imposition of a tax. This can happen when:

- (i) price elasticity of demand is infinity (Fig. 11.10)
- (ii) price elasticity of supply is zero (Fig. 11.11)



It was stated earlier that taxes raise market prices and reduce quantity traded. However, this only happens when price elasticities of demand and supply lie between zero and infinity.

Taxes usually raise prices but prices remain unchanged when price elasticity of demand is infinity (Fig. 11.10) or when price elasticity of supply is zero (Fig. 11.11). Taxes usually lower quantity traded but it remains unchanged when price elasticity of demand is zero (Fig. 11.8) or when price elasticity of supply is zero (Fig. 11.11).

Note that taxes affect neither price nor quantity traded when price elasticity of supply is zero (Fig. 11.11).

Taxes have little impact on the consumption of goods with price inelastic demand such as cigarettes and fuel. Thus, taxing these products help governments generate revenues. Tools other than taxes like public campaign can be used to discourage people from smoking.

SUBSIDIES

Subsidies are negative taxes and their imposition shifts supply curve downwards by the subsidy per unit. Subsidies are of two types:

Specific subsidy

A specific subsidy is one, the amount of which does not change with the price/value of the product e.g. a subsidy of \$0.5/unit.

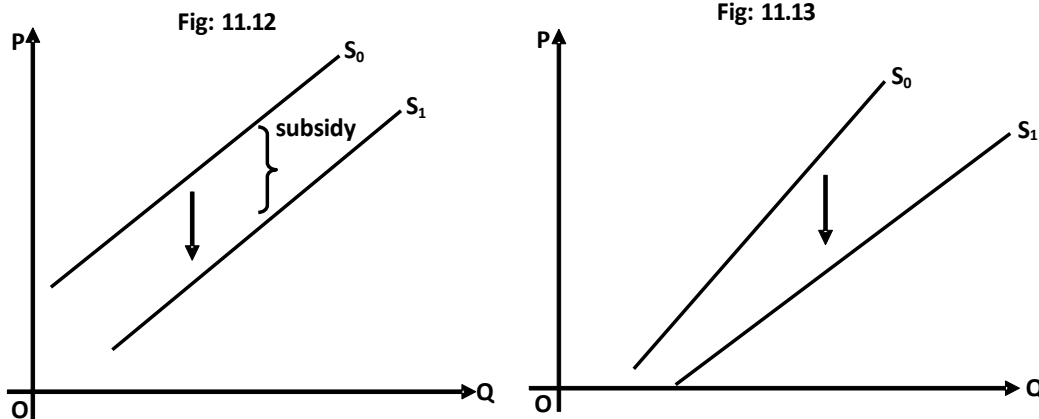
Such a subsidy causes a parallel, downward shift in the supply curve, as shown Fig. 11.12. S_0 is the original supply curve and S_1 , the supply curve after subsidy.

In case of specific subsidy, the vertical distance between two supply curves i.e. the subsidy per unit is constant throughout.

Ad valorem subsidy (percentage subsidy)

Ad valorem subsidy is one, the amount/unit of which varies directly with the price/value of the product e.g. a subsidy of 5% of the value of the product.

Ad valorem subsidy shifts the supply curve downwards too, but the vertical distance between the two supply curves rises continuously with the value of the product, as shown in Fig. 11.13.



Distribution of subsidies between consumers and producers

Producers usually try to keep the benefit of subsidy to themselves but their ability to keep prices unchanged depends upon the price elasticities of demand and supply.

Example

Before subsidy	Price (\$)	5	4	3	2	1
	Quantity demanded	10	20	30	40	50
	Quantity Supplied	50	40	30	20	10

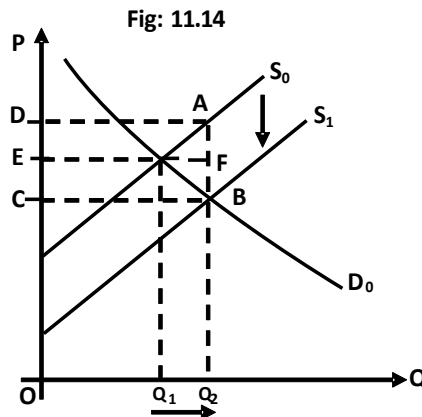
Price paid equals price received when there are no subsidies. Equilibrium price is \$3 and equilibrium quantity, 30 units. Now assume that a subsidy of \$2/unit is announced. This means that producers receive \$2 in excess of the market price for every unit they sell.

Price received by producers = Price paid by consumers i.e. the market price + subsidy

The following table shows the impact of the subsidy by separating price paid and price received.

Price paid	5	4	3	2	1
Qd	10	20	30	40	50
Price received = Price paid + subsidy	7	6	5	4	3
Qs	-	-	50	40	30

New equilibrium price is \$2 (lower than the price before subsidy) and new equilibrium quantity is 40 units (higher than the quantity before subsidy). Subsidies usually reduce prices and raise quantity traded, as illustrated in the following diagram.

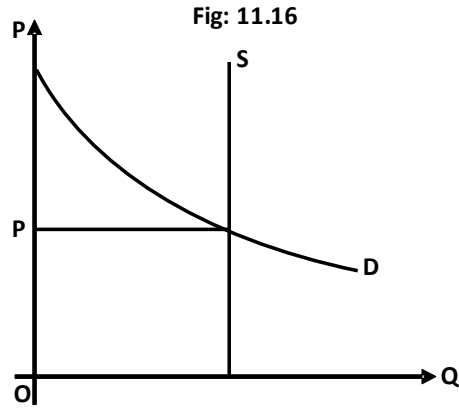
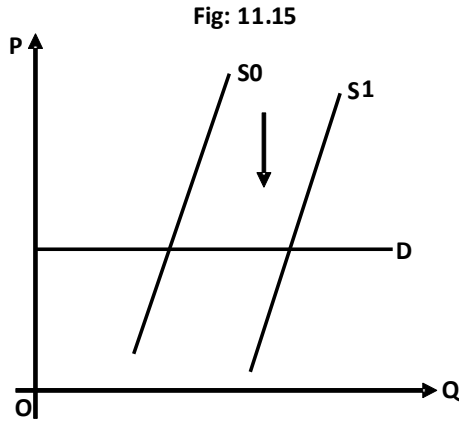


The following table summarize the effects of the subsidy, both for the given numerical example and graphical representation.

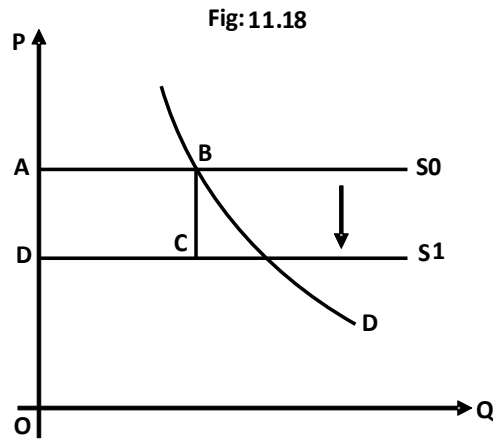
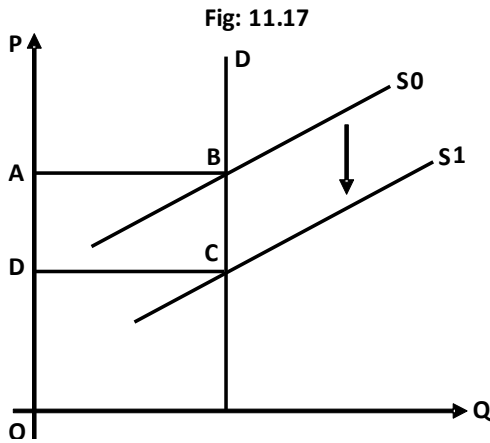
	Before subsidy		After subsidy	
	Numerical example	Graphical representation	Numerical example	Graphical representation
Market price/Price paid	\$3	E	\$2	C
Price received	\$3	E	\$4	D
Quantity traded	30 units	Q ₁	40 units	Q ₂
Consumer share	-	-	\$1 × 40 units = \$40	EFBC
Producer share	-	-	\$1 × 40 units = \$40	DEFA
Government expenditures	-	-	\$2 × 40 units = \$80	ABCD

- Attempt N/11/1/Q12 (Variant 1)

Subsidies usually reduce prices but prices remain unchanged when price elasticity of demand is infinity (Fig. 11.15) or when price elasticity of supply is zero (Fig. 11.16). In these two cases, the entire benefit of the subsidy goes to producers. Subsidies usually increase quantity traded but it doesn't change when price elasticity of demand is zero (Fig. 11.17) or when price elasticity of supply is zero (Fig. 11.16).



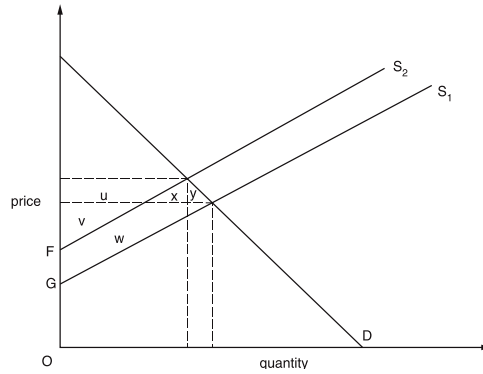
Consumers enjoy the entire subsidy benefits, if price reduces exactly by the amount of subsidy i.e. when either price elasticity of demand is zero (Fig. 11.17) or price elasticity of supply is infinity (Fig. 11.18).



MULTIPLE CHOICE QUESTIONS

J/02/1/14

1 The diagram shows the effect of the imposition of a tax equal to FG on a commodity.



Which area represents the reduction in consumer surplus?

- (A) $u + v$ (B) $u + x$ (C) $u + x + y$ (D) $x + w$

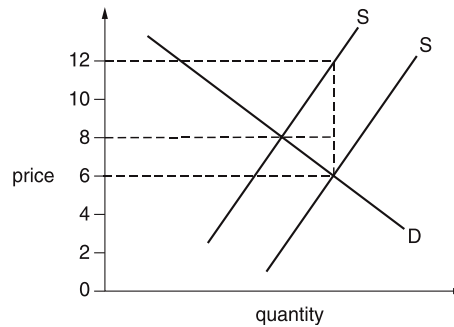
J/02/1/15

2 In which circumstance will the incidence of an indirect tax fall entirely upon the producers of a commodity?

- (A) when the demand curve is perfectly inelastic
 (B) when the elasticity of demand is unity at all points on the demand curve
 (C) when the elasticity of supply is unity at all points on the supply curve
 (D) when the supply curve is perfectly inelastic

N/02/1/12

3 The diagram shows the demand and supply curves of a commodity before and after a specific tax is removed.

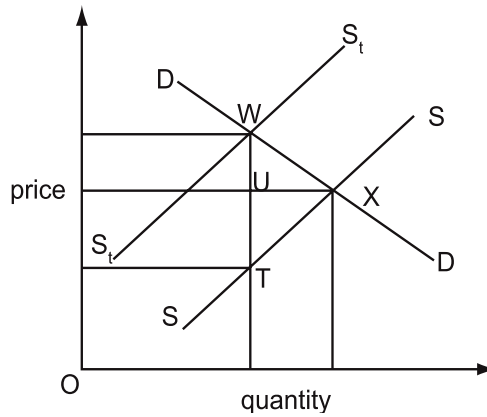


What is the tax per unit of output and what is the price after the removal of the tax?

	tax per unit	price after the removal of the tax
(A)	6	6
(B)	6	8
(C)	4	6
(D)	4	8

J/03/1/12

- 4 A specific tax is placed on the sale of bottles of lemonade. In the diagram, SS is the supply curve before imposition of the tax and S_t S_t is the supply curve after tax.



Which distance represents the specific tax on each bottle?

- (A) UT (B) WT
 (C) WU (D) WX
- N/03/1/09
- 5 The table shows the demand and supply schedules for a good before and after the imposition of a tax.

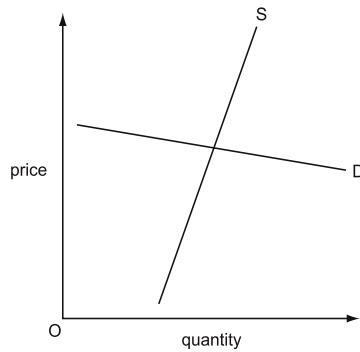
price (\$)	quantity demanded	Quantity supplied before tax	Quantity supplied after tax
20	340	440	380
19	340	430	340
18	340	410	290
17	340	380	230
16	340	340	160
15	340	290	80
14	340	230	0

What was the amount of the tax?

- (A) \$1
 (B) \$2
 (C) \$3
 (D) \$4

J/05/1/10

- 6 The diagram shows the supply and demand curves for a product. The government imposes an indirect tax on the product.

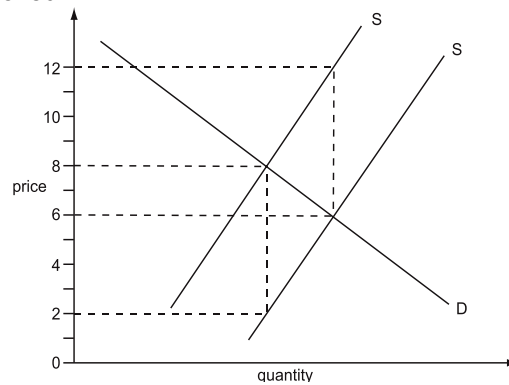


What will be the outcome of this for the producers' revenue and the incidence of the tax burden?

	effect on revenue	main incidence of the tax
(A)	Fall	Consumer
(B)	Fall	Producer
(C)	Rise	Consumer
(D)	Rise	Producer

N/05/1/13

- 7 The diagram shows the demand and supply curves of a commodity before and after a specific tax is removed.

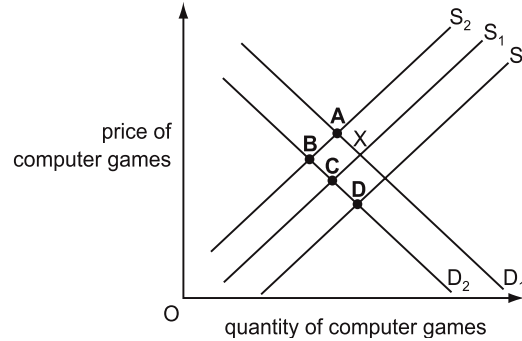


What is the tax per unit of output and what is the price after the removal of the tax?

	tax per unit	price after the removal of the tax
(A)	6	6
(B)	6	8
(C)	4	6
(D)	4	8

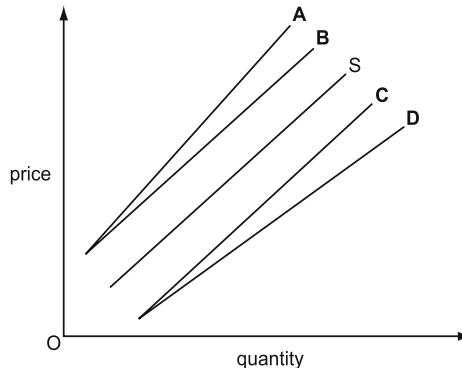
J/06/1/10

- 8 The diagram shows the market for computer games. The market starts in equilibrium at X. What will be the new equilibrium if the tax on computer games is increased and incomes fall?



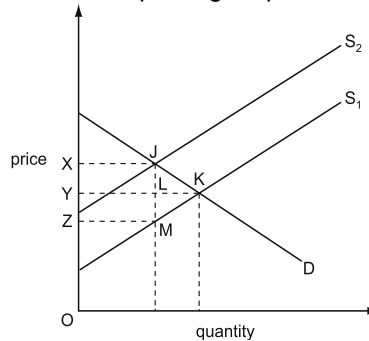
J/06/1/20

- 9 The supply of an imported good is shown by curve S. What will be the new supply curve if an ad valorem (percentage) tariff is imposed on the good?



J/07/1/10

- 10 The diagram illustrates the effects of placing a specific tax equal to JM on a good.



Which area represents total tax receipts?

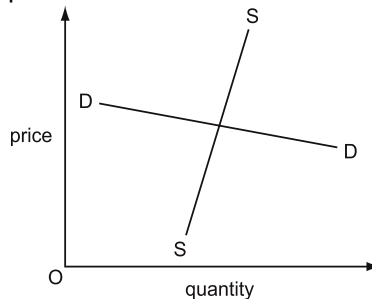
- (A) JKM (B) XJKY (C) XJLY (D) XJMZ

N/07/1/09

- 11** The government imposes a sales tax to reduce consumption of good X. With which combination of price elasticity of demand and price elasticity of supply will this have the greatest effect?
- (A) elastic demand and elastic supply (B) elastic demand and inelastic supply
 (C) inelastic demand and elastic supply (D) inelastic demand and inelastic supply

J/08/1/12

- 12** The diagram shows the demand curve and supply curve for a good on which the government imposes a specific tax.



What will be the result of this tax?

- (A) Most of the incidence of the tax will fall on the producer.
 (B) The new demand curve will be parallel to DD.
 (C) The price will rise by the full amount of the tax.
 (D) The quantity bought will fall proportionately to the tax rate.

J/09/1/07

- 13** The table shows the demand and supply schedules for a good before and after the imposition of a tax.

price (\$)	quantity demanded	quantity supplied before tax	quantity supplied after tax
20	340	440	380
19	340	430	340
18	340	410	290
17	340	380	230
16	340	340	160
15	340	290	80
14	340	230	0

What was the amount of the tax?

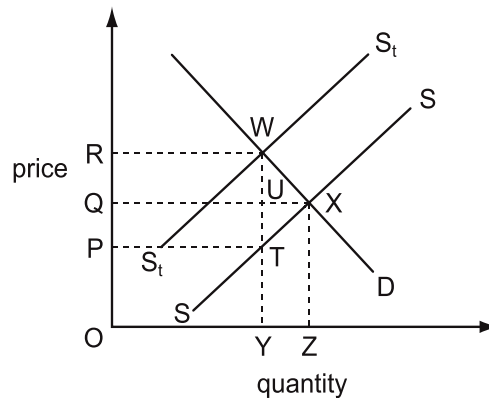
- (A) \$1 (B) \$2 (C) \$3 (D) \$4

N/09/1/05

- 14** A government wishes to impose a tax on a good so that the consumer and not the producer pays most of the tax increase. Which type of elasticity would best achieve this aim?
- (A) high price elasticity of supply (B) low price elasticity of supply
 (C) unitary price elasticity of supply (D) perfectly inelastic price elasticity of supply

N/09/1/08

- 15 A specific tax is placed upon each bottle of perfume sold. In the diagram, SS is the supply curve before tax, S_t the supply curve after tax.

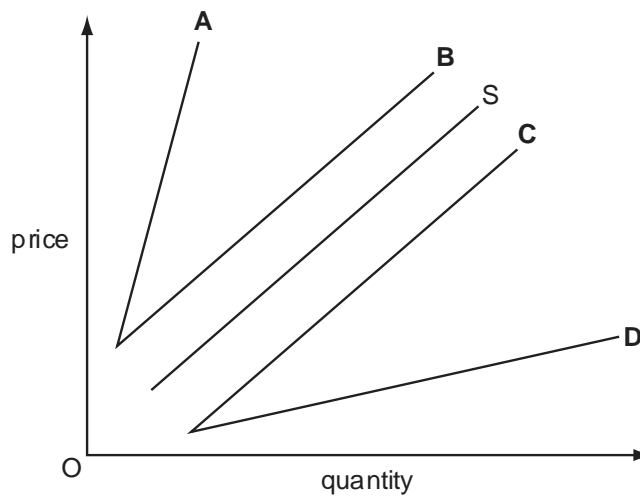


Which area represents the revenue received by the government from the tax?

- (A) ORWY
- (B) PQUT
- (C) PRWT
- (D) QRWU

N/10/1/20

- 16 The supply of an imported good is shown by curve S. What will be the new supply curve if an ad valorem (percentage) tariff is imposed on the good?



N/11/1/09

17 The table shows demand and supply schedules for red peppers. The equilibrium price is initially 15 cents per kg.

price per kg cents	amount demanded kg (thousands)	amount supplied kg (thousands)
30	11	22
25	12	19
20	13	17
15	15	15
10	17	13
5	20	11

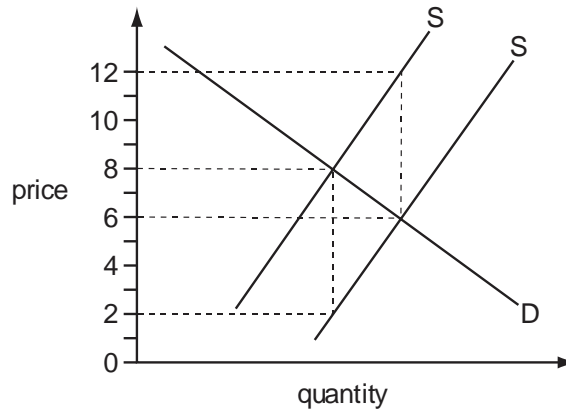
The government pays a subsidy of 10 cents per kg to producers.

What will be the new equilibrium price charged to consumers?

- (A) 5 cents
- (B) 10 cents
- (C) 15 cents
- (D) 20 cents

J/12/1/09

18 The diagram shows the demand and supply curves of a commodity before and after a specific tax is removed.

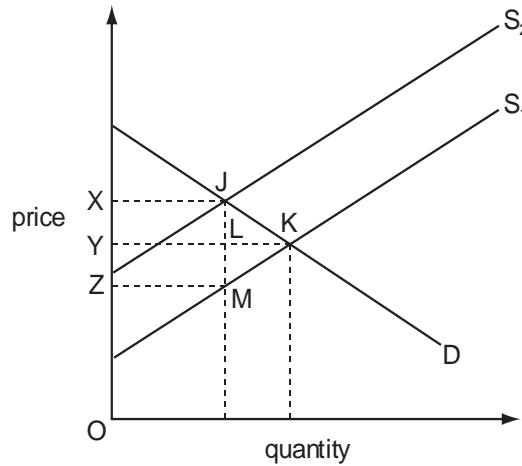


What is the tax per unit of output and what is the price after the removal of the tax?

	tax per unit	price after the removal of the tax
A	6	6
B	6	8
C	4	6
D	4	8

N/12/1/12

19 The diagram illustrates the effects of placing a specific tax equal to JM on a good.

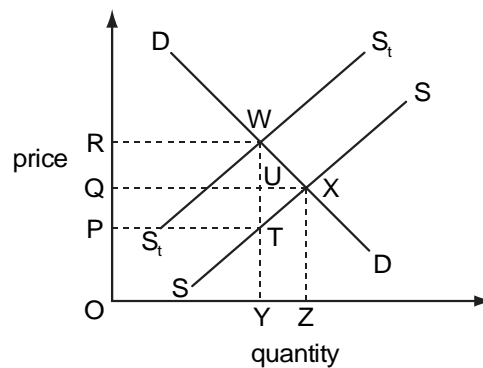


Which area represents total tax receipts?

- A JKM
- B XJKY
- C XJLY
- D XJMZ

J/13/1/12

20 A specific tax is placed upon each bottle of perfume sold. In the diagram, SS is the supply curve before tax, $S_t S_t$ is the supply curve after tax.



Which area represents that part of the tax revenue paid by consumers?

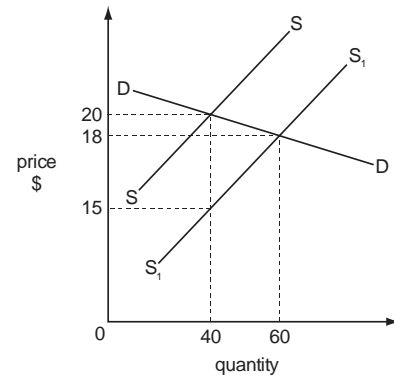
- A ORWY
- B PQUT
- C PRWT
- D QRWU

J/13/1/16

21 A tax on a product is removed causing supply to increase from SS to S₁S₁ as shown in the diagram.

What effect does the move have on government tax revenue and consumer expenditure?

	tax revenue	consumer expenditure
A	reduce by \$80	increase by \$280
B	reduce by \$80	increase by \$480
C	reduce by \$200	increase by \$280
D	reduce by \$200	increase by \$480

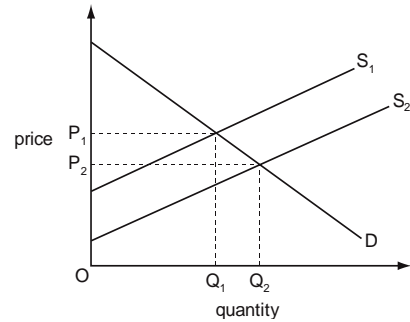


N/13/1/18

22 In the diagram, D is the demand curve for a commodity. S₁ and S₂ are the supply curves before and after an intervention by the government.

What action has the government taken?

- A It has given producers a subsidy to encourage greater output.
- B It has given a subsidy to consumers.
- C It has imposed a tax equal to $P_1 - P_2$ to discourage production.
- D It has purchased a quantity $Q_2 - Q_1$ for government use.

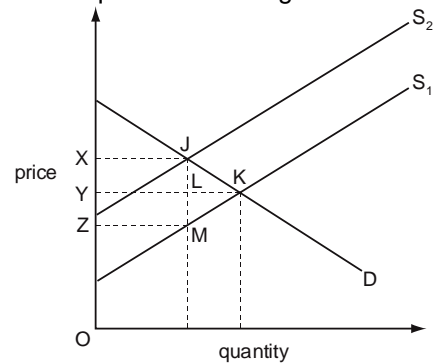


J/14/1/11

23 The diagram illustrates the effects of placing a specific tax equal to JM on a good.

Which area represents total tax receipts?

- A JKM
- B XJKY
- C XJLY
- D XJMZ

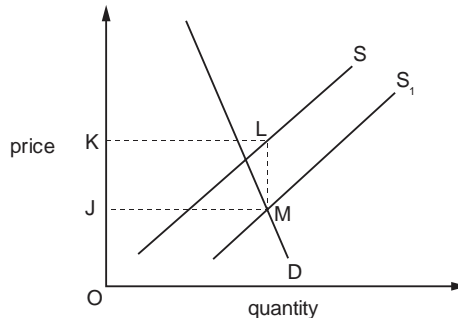


N/14/1/06

- 24** A government wishes to impose a tax on a good so that the producer and not the consumer pays most of the tax increase.
 Which level of price elasticity of demand would it be best for the good to have to achieve this aim?
- A** price elasticity of demand is elastic
 - B** price elasticity of demand is inelastic
 - C** price elasticity of demand is perfectly inelastic
 - D** price elasticity of demand is unitary

J/15/1/09

- 25** The diagram shows the effect on the market for rice of a change in government policy that causes a shift in the supply curve from S to S_1 .

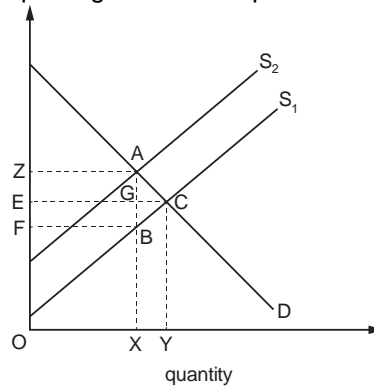


What does the area JKLM represent?

- A** the cost to the government of a subsidy to rice growers
- B** the extra saving to importers of the removal of a tariff on rice
- C** the increase in consumer surplus from the introduction of a maximum price for rice
- D** the loss in government revenue from the reduction in a lump sum tax on rice

J/15/1/18

- 26** The diagram shows the effects of placing a unit tax equal to AB on a good.

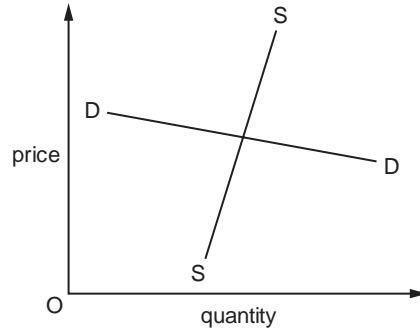


Which area represents the burden of tax paid by the producer?

- A** ECBF
- B** EGBF
- C** ZABF
- D** ZAGE

J/16/1/12

- 27** The diagram shows the demand curve and supply curve for a good on which the government imposes a specific tax.

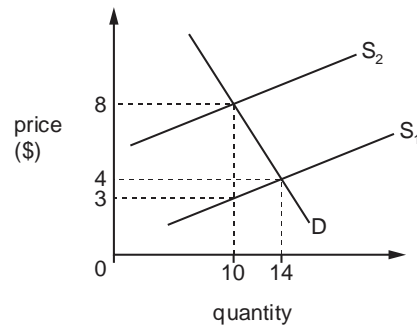


What will be the result of this tax?

- A** Most of the incidence of the tax will fall on the producer.
- B** There will be a new demand curve parallel to DD.
- C** The price will rise by the full amount of the tax.
- D** The quantity bought will fall proportionately to the tax rate.

J/16/1/15

- 28** The diagram shows demand and supply curves for a good. S_1 is the original supply curve, S_2 is supply after a tax is added.



How much tax revenue is earned by the government?

- A** \$10
- B** \$40
- C** \$50
- D** \$80

SECTION 12

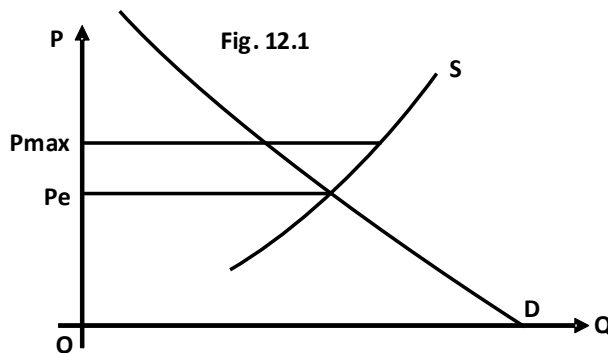
MAXIMUM AND MINIMUM PRICES

MAXIMUM PRICE

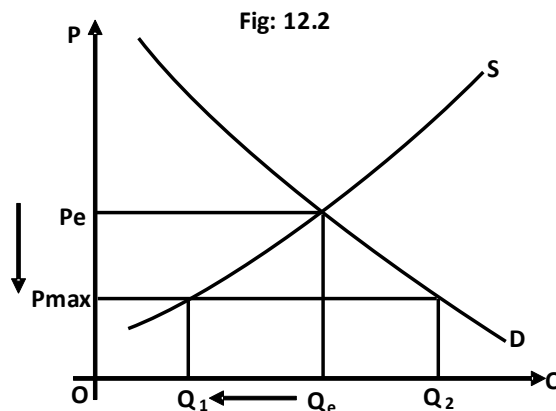
Governments may decide to intervene when they believe that producers are exploiting consumers by charging too high prices. Market forces fail to determine a fair price when producers have a better bargaining power than consumers. Producers are usually small in number and large in size so are likely to be more organized and in a better position to take collective action regarding price and output. To support consumers, government may impose a maximum price or a price ceiling to prevent possible consumer exploitation. The government declares it illegal to charge a price over and above the maximum price.

Impacts of a maximum price

Maximum price, set at or above equilibrium price, has no impact on equilibrium price and quantity since the surplus at P_{max} automatically reduces price to P_e (see Fig. 12.1).



However, the maximum price set below equilibrium reduces price as well as the quantity traded, as shown in Fig. 12.2. The imposition of maximum price, P_{max} reduces quantity traded to Q_1 . However, this price is not a market clearing price since quantity demanded i.e. Q_2 exceeds quantity supplied i.e. Q_1 .



The imposition of maximum price has mixed effects. Consumers who continue to have the product at a lower price gain at the expense of those who are deprived of it.

Other effects

Black marketing

Some suppliers may still charge higher prices by avoiding the law enforcing agencies.

Tie in sales

Suppliers may force customers to purchase other products too, if they want to buy a particular product at the price set by the government.

Grading

This talks of 'grading' the products in terms of quality. Better quality products are withdrawn from the market and consumers become forced to purchase low quality items at the price announced by the government.

Racism

In America, minorities such as blacks were forced to pay higher rents until the American government imposed a rent ceiling. Knowing that they could only earn a fixed price now, landlords began renting out houses to white Americans only, reducing the availability of houses for minorities. In case of a rent ceiling, landlords can force tenants to pay a heavy sum in terms of security and advance rent.

Rationing

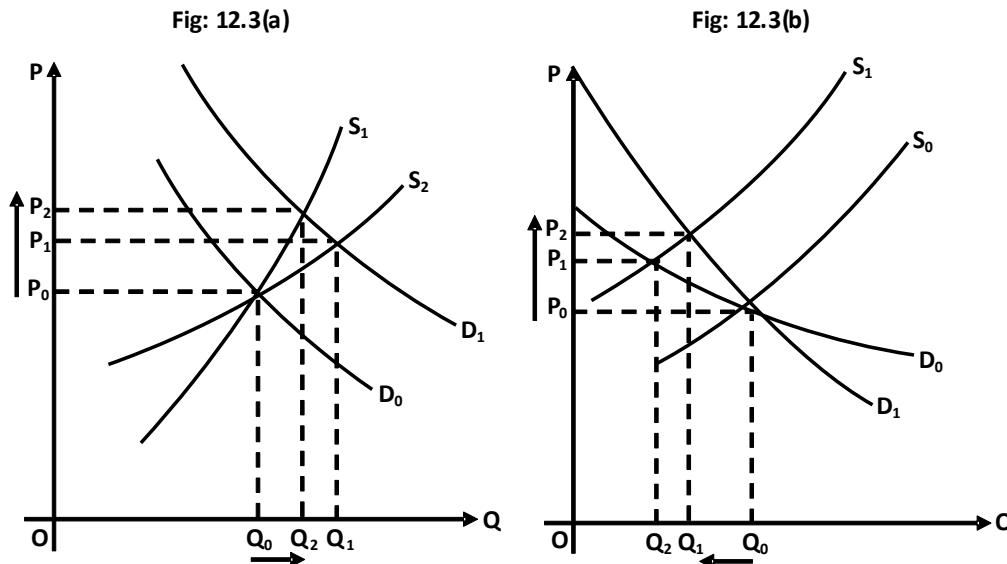
The imposition of a maximum price implies that price mechanism cannot perform one of its basic functions i.e. rationing. Quantity demanded exceeds quantity supplied and this shortage cannot be overcome by an automatic increase in the price. The government must therefore, introduce an alternative system of rationing.

MINIMUM PRICE

Governments may intervene in markets by imposing a minimum price or a price floor/support to prevent possible exploitation of suppliers. The imposition of a minimum price discourages smuggling, tax evasion, production of counterfeit products and monopolistic behavior. Minimum price discourages smuggling as importers paying due import duties are protected whilst no one is allowed to sell products at a lower price. The incentive to produce counterfeit products or evade taxes also disappears when governments declare it illegal to sell products at a lower price. Larger firms and industry giants are unable to sell products at exceptionally low prices and drive small firms out of the market. Minimum price, therefore, also helps protect small producers.

It is a common price support in the agricultural sector and labor market. Low price elasticity of demand and supply in the agricultural sector causes greater fluctuations in output prices and farmers' incomes. Price floors help reduce these fluctuations and ensure a more stable flow of income for farmers.

Fig. 12.3 (a) and Fig. 12.3 (b) illustrate why prices of primary goods fluctuate more whereas those of manufactured goods are relatively stable.



In Fig. 12.3 (a), S_1 is a relatively steep supply curve showing price inelastic supply for agricultural goods and the flatter supply curve, S_2 shows relatively price elastic supply for manufactured goods. A shift in the demand curve from D_0 to D_1 raises price of manufactured goods from P_0 to P_1 and price of farm products from P_0 to P_2 . Quantity increases from Q_0 to Q_1 for manufactured goods and from Q_0 to Q_2 for primary goods. It is clear that increase in demand has caused a greater fluctuation in price of primary goods.

Goods with price inelastic supply respond to a market change more through price and less through output.

In Fig. 12.3 (b), D_1 is a relatively steep demand curve showing price inelastic demand for agricultural goods and the flatter demand curve, D_0 shows relatively price elastic demand for manufactured goods. A shift in the supply curve from S_0 to S_1 raises price of manufactured goods from P_0 to P_1 and price of farm products from P_0 to P_2 . Quantity decreases from Q_0 to Q_1 for primary goods and from Q_0 to Q_2 for manufactured goods. It is clear that decrease in supply has caused a greater fluctuation in price of primary goods.

Goods with price inelastic demand respond to a market change more through price and less through output.

Impacts of fluctuating price and income on farmers

Income is the excess of revenue over cost. Whereas costs of growing a crop are fixed and independent of the actual amount farmers end up with, revenues depend on both the quantity and price of goods. However, as primary goods have price inelastic demand, revenues and hence profits/ income of farmers vary directly with price. With the latter barely being stable, farmers'

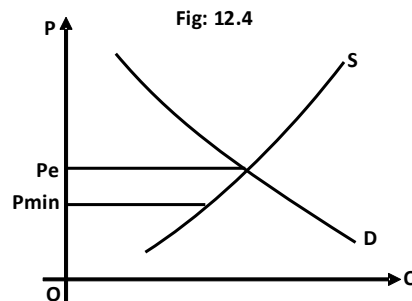
income is subject to wide fluctuations and the uncertainty associated with it forces them to search for alternative jobs providing more secure, stable streams of income. In addition to reduced farm production, such actions increase pressure on the population of cities and strain job opportunities in manufacturing and tertiary sectors.

Impacts of government intervention

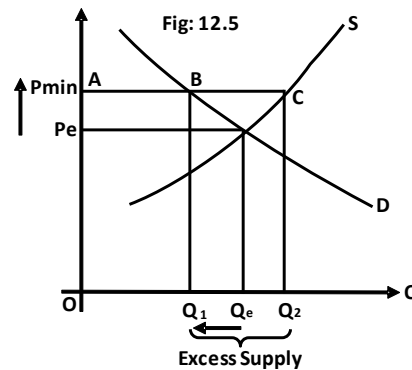
In order to reduce price fluctuations and ensure more stable incomes for farmers, governments can impose minimum prices above the equilibrium price and purchase the surplus or alternatively, the government sets a minimum guaranteed price for the farmers, allows market forces to determine the market clearing price and decides to pay the difference between them to the farmers.

Impact of a minimum price

A minimum price, when set at or below equilibrium price, has no impact on equilibrium price and quantity since the excess demand at P_{min} automatically raises price to P_e (see Fig. 12.4).



However, the minimum price set above equilibrium (Fig. 12.5) raises price and decrease the quantity traded. Such a price is not a market clearing price since a surplus (excess supply) of $Q_2 - Q_1$ still exists.

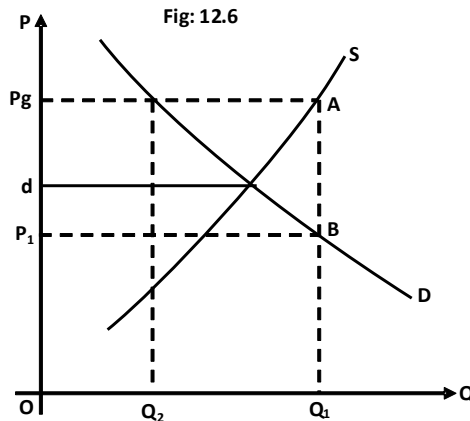


Supporting farmers by employing such a strategy can be meaningful if the surplus is purchased by either the government or the farmer association. If bought by the government, its expenditure equals BCQ_2Q_1 . The expenditures of the buyers in the market are ABQ_1O and the total receipts of the farmers are ACQ_2O .

As stated earlier, government intervention in this way ensures stable prices and stable incomes for farmers but buyers still pay higher prices. This policy can be self financing if the government buys the surplus of one year and sells it in subsequent years.

Impact of a minimum guaranteed price

Figure below explains the effects of a government decision to guarantee a price to the farmers that is above equilibrium.



In Fig. 12.6, the government has guaranteed a price of P_g to the farmers. At this price, suppliers/farmers are willing to sell quantity Q_1 but the maximum price at which quantity Q_1 can be sold is P_1 . The difference between the guaranteed price, P_g and the market clearing price, P_1 is paid by the government. The total expenditures of the government on this scheme would be $(P_g - P_1) \times Q_1$ i.e. area P_gABP_1 . The total expenditures of the buyers are P_1BQ_1O and the total receipts of the farmers are OP_gAQ_1 .

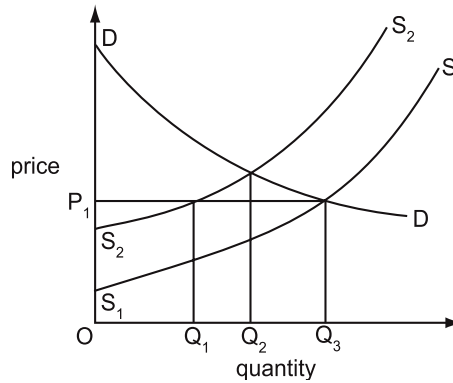
The government does not need to maintain stocks of unsold goods and consumers also benefit by getting products at lower prices. However, tax payers can criticize this policy as they have to pay taxes to finance government expenditures on this scheme.

J/03/1/14

- 3 Which of the following might explain a simultaneous increase in both price and quantity traded in the market for a normal good?
- (A) the removal of an effective maximum price on the good
 - (B) technological progress in the production of the good
 - (C) the imposition of a tax on the good
 - (D) the granting of a subsidy to producers of the good

J/03/1/18

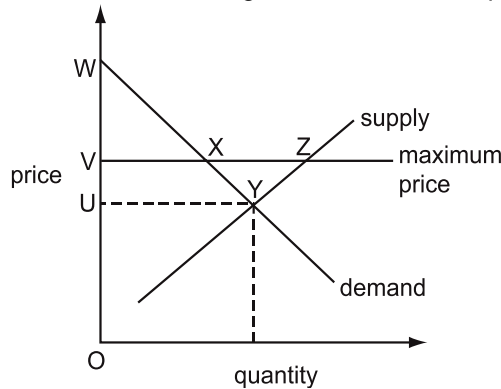
- 4 In the diagram, S_1 and S_2 represent the original supply and demand curves for an agricultural product.



- Bad weather then reduces supply to S_2 . The government does not allow the price to rise above OP_1 . How much of the product will the government have to supply from a buffer stock if demand is to be met?
- (A) OQ_1
 - (B) Q_1Q_3
 - (C) Q_1Q_2
 - (D) Q_2Q_3

N/03/1/13

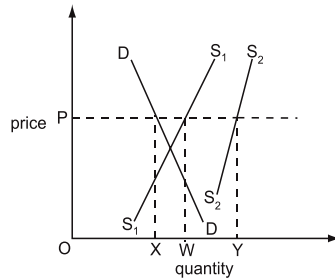
- 5 The diagram represents a market for a good, in which the equilibrium price is OU .



- A maximum price of OV is imposed by law. What effect does this have on consumer surplus?
- (A) It decreases by area $VXYU$.
 - (B) It increases by area WXV .
 - (C) It increases by area XYZ .
 - (D) It is not affected.

N/03/1/17

- 6** In the diagram S_1 S_1 and S_2 S_2 are the supply curves for an agricultural product in years 1 and 2 respectively. D D is the demand curve in years 1 and 2. In year 1 the government purchases an amount necessary to ensure that the price is at the level OP .



If the price is to be held at OP in year 2, how much must the government buy?

- (A) OY (B) XW (C) WY (D) XY

J/04/1/17

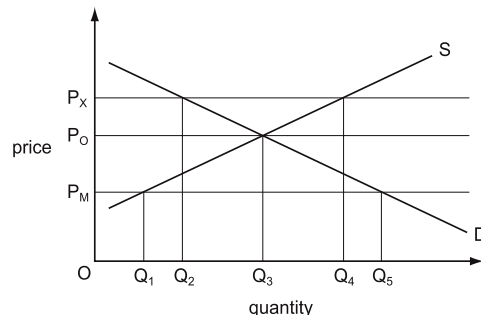
- 7** Brazil and Colombia attempt to control the supply of coffee in the world market to help stabilise their incomes.

What condition is essential for this to stabilise their incomes effectively?

- (A) There must be large firms in the industry.
 (B) It must be possible to store the coffee and release stocks when necessary.
 (C) Other countries must supply a significant percentage of the total market.
 (D) The demand for the product must be elastic.

N/04/1/17

- 8** The diagram shows the market for spectacles. Initially the market equilibrium price is P_0 and quantity Q_3 is bought and sold.



The government then sets both a maximum spectacle price of P_x and a minimum price of P_m .

What effect will these measures have on the market for spectacles?

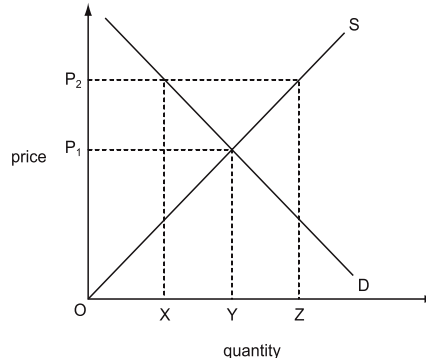
- (A) create a shortage of spectacles equal to Q_1Q_5
 (B) create a surplus of spectacles equal to Q_2Q_4
 (C) create a surplus of spectacles equal to Q_3Q_4
 (D) leave the quantity bought and sold unchanged

N/04/1/18

- 9 In which situation will it be necessary to use an alternative to the price mechanism to allocate a good between consumers?
- (A) The quantity of the good available is fixed.
 - (B) Producers of the good receive a subsidy.
 - (C) The government imposes a specific tax on the good.
 - (D) The government sets a maximum price below the equilibrium price.

J/05/1/17

- 10 The diagram shows the market for wheat.

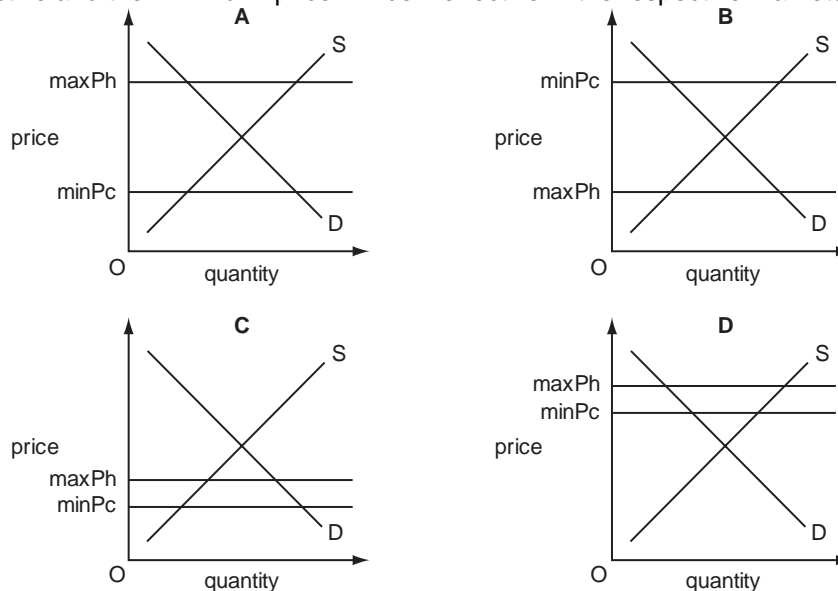


What quantity of wheat must the government buy if it wishes to raise the market price from P_1 to P_2 ?

- (A) OZ (B) XY (C) XZ (D) YZ

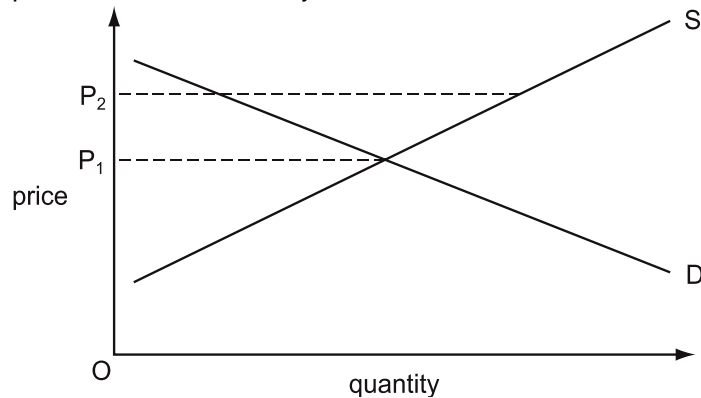
J/05/1/18

- 11 A government introduces a maximum price for house rentals (maxPh) and a minimum price for cleaning services (minPc). Which diagram shows that the maximum price will be effective and the minimum price will be ineffective in the respective markets?



N/05/1/17

12 The diagram shows the original market clearing price is P_1 . The government then imposes a maximum price of P_2 on the industry.

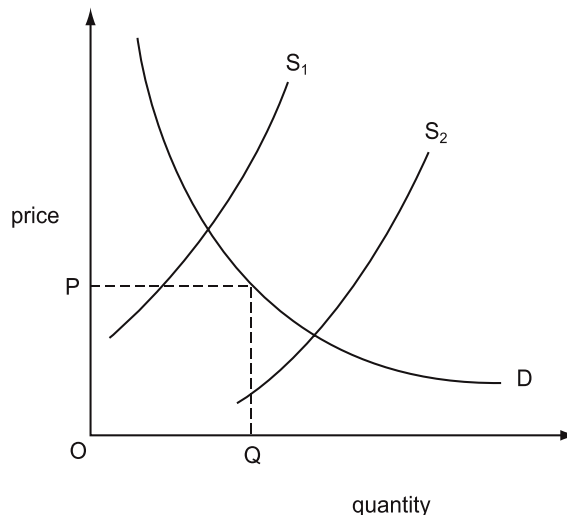


What will result from this?

- (A) a higher price and output
- (B) a shortage
- (C) a surplus
- (D) an unchanged price and output

N/05/1/18

13 The diagram shows the demand curve for an agricultural commodity that has unitary elasticity. S_1 is the supply curve if there is a bad harvest and S_2 is the supply curve if there is a good harvest.

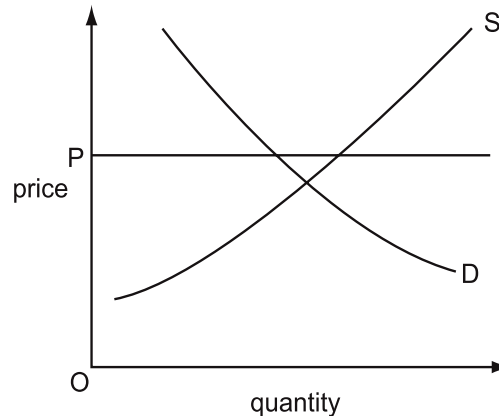


What should the government do in order to stabilise the incomes of farmers?

- (A) allow the price of the commodity to be determined by the market
- (B) fix the price paid to farmers at price OP
- (C) introduce a quota on production equal to OQ
- (D) subsidise farmers in bad years and impose a tax on farmers in good years

J/06/1/17

14 The diagram illustrates a market for wheat. The government sets a maximum price of OP.

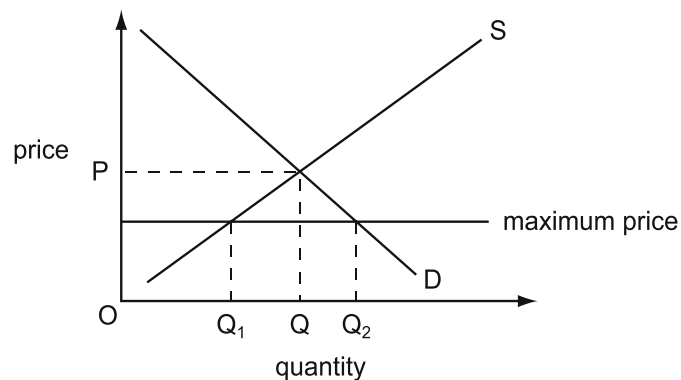


What could cause the maximum price to have an impact on the market?

- (A) an increased wheat harvest
- (B) a fall in the price of rice
- (C) an advertising campaign for bread
- (D) an increase in subsidies to wheat farmers

N/06/1/12

15 The diagram shows a market subject to a maximum price.

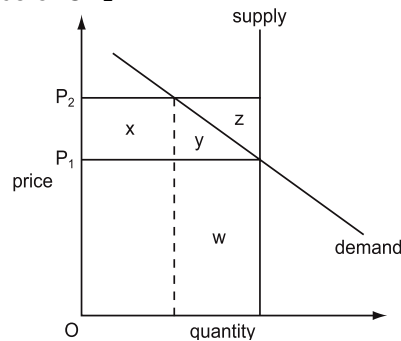


What will happen if the maximum price is removed?

- (A) There will be allocation by a queuing system.
- (B) There will be allocation by government rationing.
- (C) There will be allocation by seller's preference.
- (D) There will be allocation by the price system.

N/06/1/17

- 16** The diagram shows the market demand and supply curves for an agricultural product. The government allows the price paid by consumers to be determined by the market, but guarantees producers a price of OP_2 .



Which area in the diagram represents the total subsidy payments made by the government to producers?

- (A) $w + y + z$ (B) $y + z$ (C) x (D) $x + y + z$

N/06/1/18

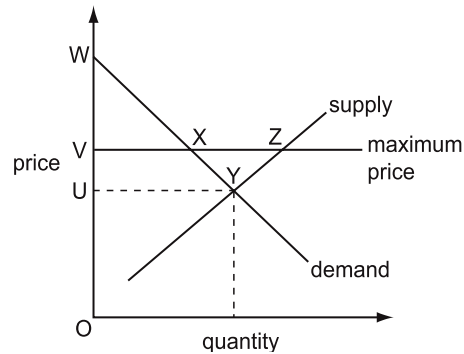
- 17** A government intends to introduce a minimum price for rice, a maximum price for heating oil and a tax on chewing gum.

Who, in each market, is meant to benefit from these policies?

	market for rice	market for heating oil	market for chewing gum
(A)	consumers	Government	producer
(B)	government	Producer	government
(C)	producer	Producer	consumers
(D)	producer	Consumers	government

J/07/1/12

- 18** The diagram represents a market for a good, in which the equilibrium price is OU .



A maximum price of OV is imposed by law.

What effect does this have on consumer surplus?

- (A) It decreases by area $VXYU$. (B) It increases by area WXV .
 (C) It increases by area XYZ . (D) It is not affected.

N/07/1/18

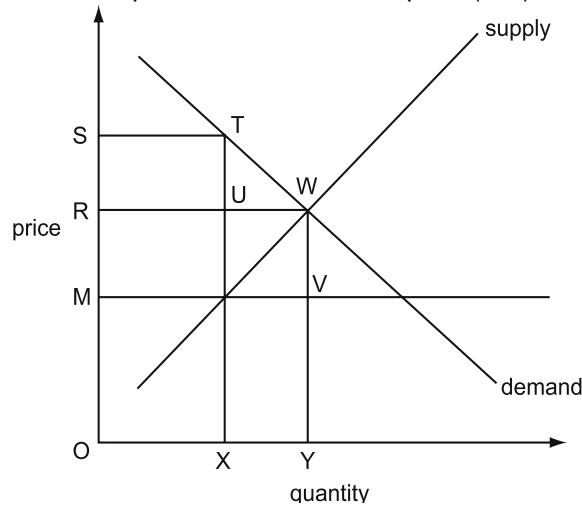
19 Brazil and Colombia attempt to control the supply of coffee in the world market to help 187 rganiz at their incomes.

What condition is essential for this to 187 rganiz at their incomes effectively?

- (A) There must be large firms in the industry.
- (B) It must be possible to store the coffee and release stocks when necessary.
- (C) Other countries must supply a significant percentage of the total market.
- (D) The demand for the product must be elastic.

J/08/1/18

20 The diagram shows the imposition of a maximum price (OM) on a product.



An 187 rganization buys up the total supply at the maximum price and then resells it illegally to gain maximum revenue.

What is the 187 rganization's revenue?

- (A) OMVY
- (B) ORUX
- (C) ORWY
- (D) OSTX

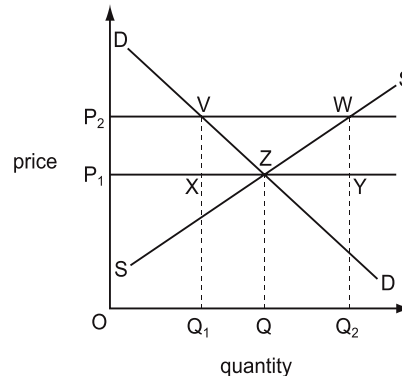
N/08/1/10

21 What might explain a simultaneous increase in both price and quantity traded in the market for a normal good?

- (A) the removal of an effective maximum price on the good
- (B) technological progress in the production of the good
- (C) the imposition of a tax on the good
- (D) the granting of a subsidy to producers of the good

N/08/1/17

22 The diagram shows the market for apples. A government maintains a minimum price P_2 by buying apples.



Which area shows the amount of money the government has to spend to maintain the price P_2 ?

- (A) P_2WYP_1 (B) P_2VQO (C) P_2WQ_2O (D) VWQ_2Q_1

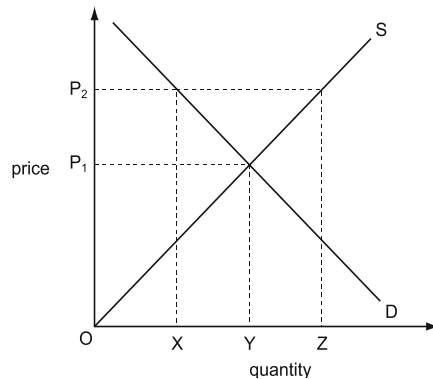
J/09/1/18

23 The market price of an agricultural commodity was so low that the government fixed a minimum price for it above the market equilibrium price. However, the government did not buy any of the commodity itself. What would happen as a result?

- (A) There would be an equilibrium in the market but the change in farmers' incomes would be uncertain.
 (B) There would be a shortage on the market and farmers' incomes would rise.
 (C) There would be a surplus on the market and farmers' incomes would fall.
 (D) There would be a surplus on the market but the change in farmers' incomes would be uncertain.

N/09/1/16

24 The diagram shows the market for wheat.

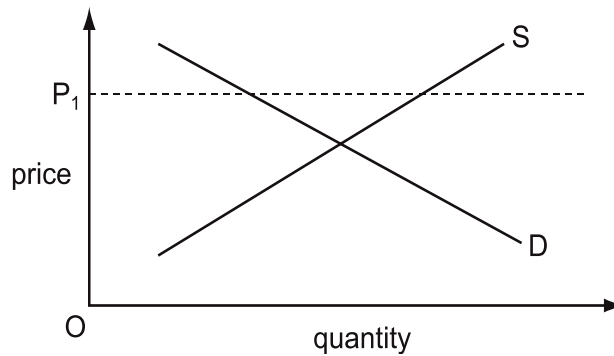


What quantity of wheat must the government buy if it wishes to raise the market price from P_1 to P_2 ?

- (A) OZ (B) XY (C) XZ (D) YZ

N/09/1/17

25 The government places a maximum price P_1 on an agricultural product. The supply and demand conditions for this product are shown.

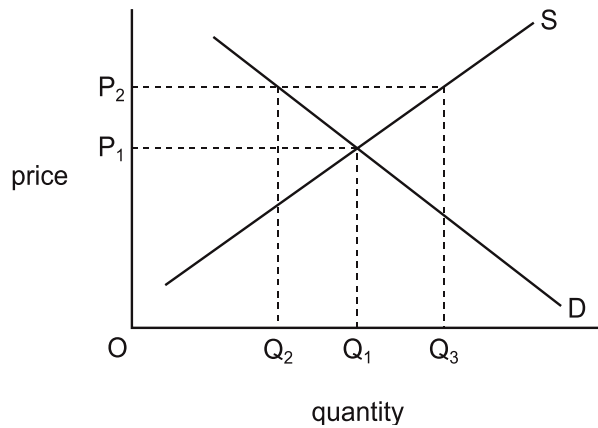


What will be the outcome in the market for this product?

- (A) There will be an equilibrium price and output.
- (B) There will be a surplus of the product.
- (C) There will be higher than expected profits.
- (D) There will be shortages of this product.

J/10/1/10

26 The government imposes a maximum price of P_2 on a product.

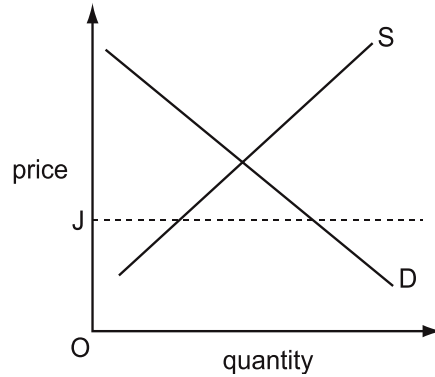


What will be the position after this action?

- (A) an equilibrium with price P_1 and quantity Q_1
- (B) an equilibrium with price P_2 and a quantity between Q_2 and Q_3
- (C) an oversupply in the market by $Q_2 Q_3$
- (D) a shortage in the market of $Q_2 Q_3$

J/10/1/17

27 The diagram shows the demand and supply curve of a good.

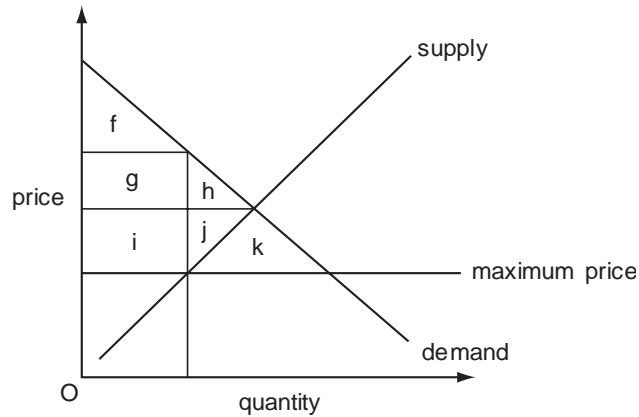


The government sets a maximum price of OJ for the good.
 How will this affect the consumers and producers of the good?

	effect on consumers	effect on producers
(A)	All consumers will gain.	Producers will lose.
(B)	All consumers will gain.	Producers will gain.
(C)	Some consumers will gain and some will lose.	Producers will gain.
(D)	Some consumers will gain and some will lose.	Producers will lose.

N/10/1/11

28 Which area in the diagram represents the amount of consumer surplus that would occur in a market if a government enforced an effective maximum price?

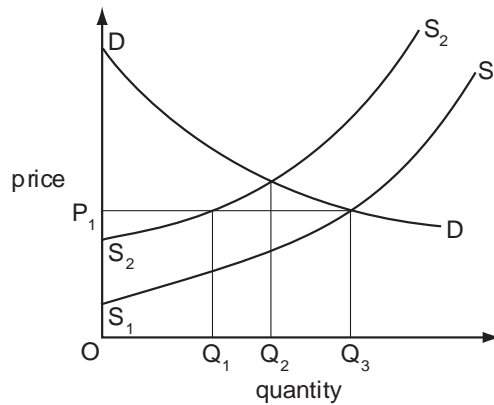


A f only
 C f + g + i only

B f + g + h only
 D f + g + h + i + j + k

N/10/1/18

29 In the diagram, S_1S_1 and DD represent the original supply and demand curves for an agricultural product.



Bad weather then reduces supply to S_2S_2 .

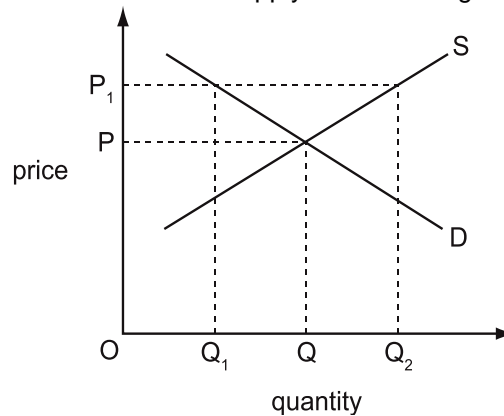
The government does not allow the price to rise above OP_1 .

How much of the product will the government have to supply from stocks if the price is to be maintained at OP_1 ?

- A** OQ_3 **B** Q_1Q_3 **C** Q_1Q_2 **D** Q_2Q_3

J/11/1/11

30 The diagram shows the demand and supply curves for a good.



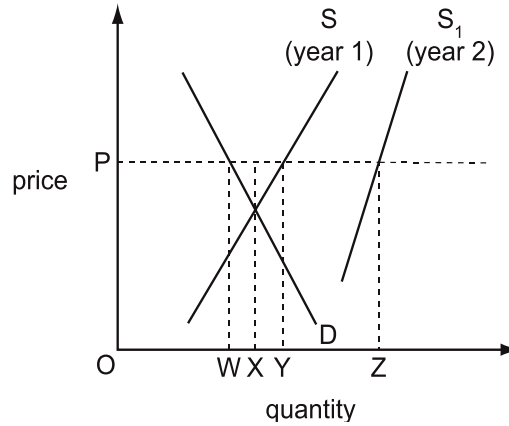
The government fixed a maximum price of OP_1 .

What would this have achieved?

- (A)** the guarantee of supplies of OQ_2
(B) the market equilibrium of quantity OQ
(C) the need for a government subsidy of PP_1
(D) the rationing of the product for consumers to OQ_1

J/11/1/17

- 31** In the diagram S and S₁ are the supply curves for an agricultural product in years 1 and 2 respectively. D is the demand curve in years 1 and 2. In year 1 the government purchased an amount necessary to ensure that the price was OP.



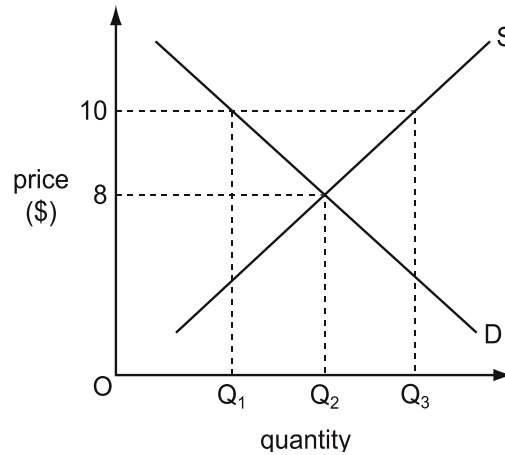
The price is held at OP in year 2.

How much more must the government buy in year 2 than it bought in year 1?

- (A) WX (B) XY (C) XZ (D) YZ

N/11/1/18

- 32** The diagram shows the market demand and supply curves for rice.



What would happen if a government imposed a maximum price of \$10?

- (A) The government would need to supply Q₁ to Q₃.
 (B) The quantity sold would be Q₁.
 (C) The quantity sold would be Q₂.
 (D) The quantity sold would increase from Q₂ to Q₃.

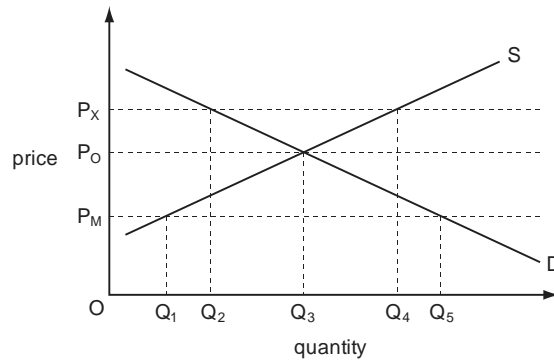
J/12/1/18

33 The diagram shows the market for spectacles. Initially the market equilibrium price is P_0 and quantity Q_3 is bought and sold.

The government then sets both a maximum price of P_X and a minimum price of P_M .

What effect will these measures have on the market for spectacles?

- A** create a shortage of spectacles equal to Q_1Q_5
- B** create a surplus of spectacles equal to Q_2Q_4
- C** create a surplus of spectacles equal to Q_3Q_4
- D** leave the quantity bought and sold unchanged



N/12/1/17

34 A government wishes to raise the incomes of farmers without raising the price of food to consumers.

Which policy should it use?

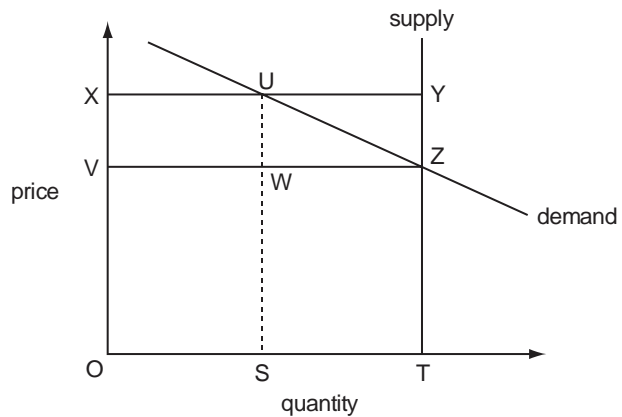
- A** a maximum price below the market price for food
- B** a minimum price below the market price for food
- C** a payment of a subsidy to farmers to produce food
- D** a release of government food stocks onto the market

N/12/1/18

35 The diagram shows the market supply and demand curves for an agricultural product. The government guarantees producers a minimum price of OX for their output, but allows the market price to be freely determined by demand and supply.

Which area in the diagram represents the total subsidy payments made by the government to producers?

- A** UYTS
- B** UYZW
- C** XUWV
- D** XYZV



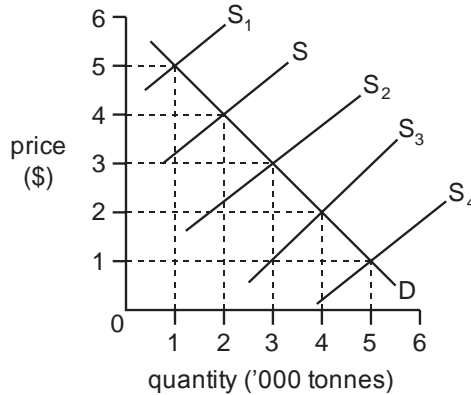
J/13/1/17

36 Which type of government intervention runs the risk of causing shortages?

- A** maximum price controls **B** specific indirect taxes
C subsidies paid to some producers **D** taxes on company profits

J/13/1/18

37 In the diagram, D is the demand curve of an agricultural commodity and S is the initial supply curve. The government promises to maintain farmers' incomes at least at this initial level. The harvests in four subsequent years are shown by supply curves $S_1 - S_4$.



In which years will the government need to provide extra income to farmers?

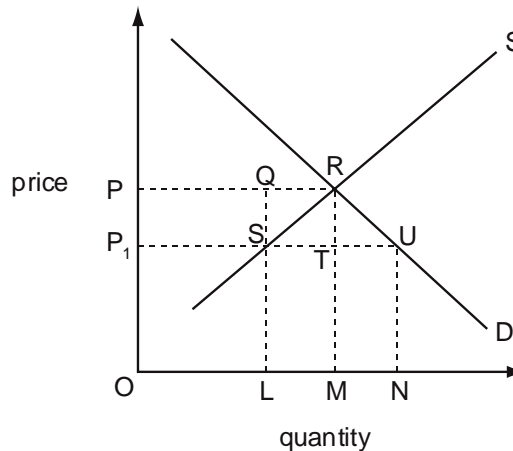
- A** 1 and 2 **B** 1 and 4 **C** 2 and 3 **D** 3 and 4

N/13/1/11

38 The diagram shows the market for sugar which is in equilibrium at a price of OP.

A government then fixes a maximum price of OP_1 . What will happen as a result?

- A** an increase in consumer surplus equal to $PRUP_1$
B a reduction in expenditure by people who still buy sugar equal to $PQSP_1$
C a reduction in farmers' receipts equal to $QRML$
D farmers' receipts would be $PQLO$



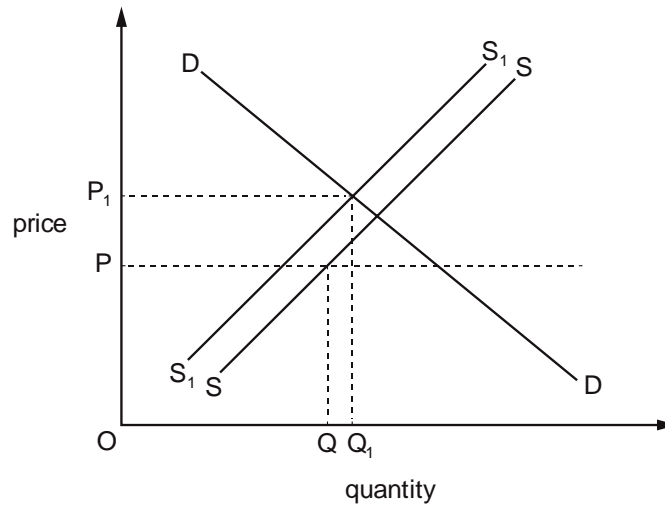
N/13/1/17

39 A government introduces a subsidy to reduce the price of heating oil, maximum rents for apartments and a national minimum wage rate. Who is meant to benefit from each of these?

	heating oil market	apartment market	labour market
A	consumers	landlords	employers
B	consumers	tenants	workers
C	producers	landlords	workers
D	producers	tenants	employers

J/14/1/18

40 In the diagram, the initial quantity traded was Q and the price was P .



The price then rose to P_1 and the quantity traded rose to Q_1 . Which combination of government policy measures could explain this change?

- A** the removal of a maximum price and the imposition of an income tax on consumers
- B** the removal of a maximum price and the removal of a subsidy to producers
- C** the removal of a minimum price and the granting of a subsidy to producers
- D** the removal of a minimum price and the imposition of an indirect tax on the product

N/14/1/12

41 The table shows the maximum price a consumer would be willing to pay for successive cans of fruit juice.

cans	first	second	third	fourth	fifth
price (\$)	14	10	6	4	3

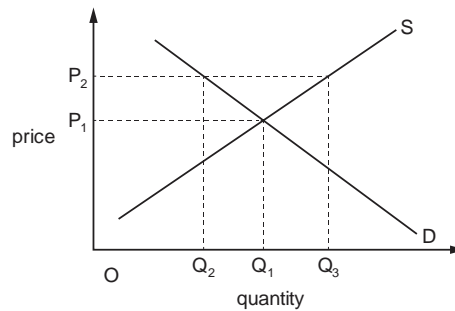
The price of a can of fruit juice is \$4 and, having bought three cans, the consumer decides to buy a fourth.

How does buying the fourth can affect his consumer surplus?

- A It leaves it unchanged.
- B It lowers it by \$2.
- C It raises it by \$4.
- D It raises it by \$34.

N/14/1/18

42 The government imposes a maximum price of P_2 on a product.



What will be the position after this action?

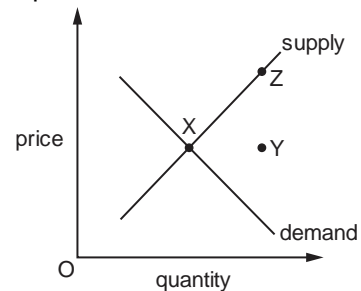
- A an equilibrium with price P_1 and quantity Q_1
- B an equilibrium with price P_2 and a quantity between Q_2 and Q_3
- C an oversupply in the market by Q_2Q_3
- D a shortage in the market of Q_2Q_3

N/15/1/18

43 The diagram shows the market for onions in equilibrium at point X. The government has a stock of onions and wants to establish a new equilibrium at point Y.

Which actions should the government take?

- A It should buy an amount equal to XY and subsidise producers by a sum equal to YZ.
- B It should buy an amount equal to XY and tax producers by a sum equal to YZ.
- C It should sell an amount equal to XY and subsidise producers by a sum equal to YZ.
- D It should sell an amount equal to XY and tax producers by a sum equal to YZ.



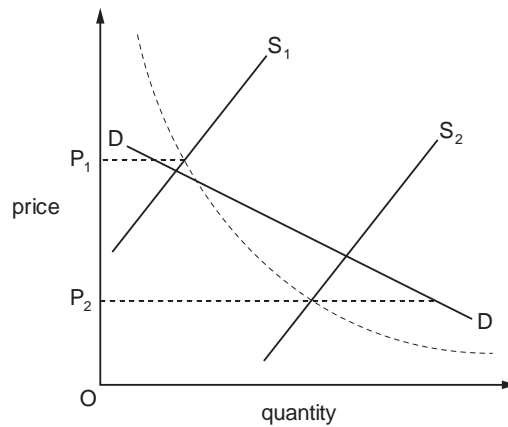
J/16/1/14

44 A government imposes a maximum rent in order to make rented housing more affordable.
What is likely to be a long-run consequence if the maximum is set below the current free market level?

- A** a shortage of applicants for rented housing
- B** a shortage of rented housing
- C** an increase in supply to satisfy the increased demand for rented housing
- D** an increase in the number of occupants of rented housing

J/16/1/17

45 In the diagram, DD is the demand curve for an agricultural commodity, S_1 is the supply curve in period 1 and S_2 is the supply curve in period 2. The broken curve is a rectangular hyperbola.



	output	farm revenue
A	higher	same
B	higher	higher
C	lower	higher
D	lower	same

SECTION 13

PUBLIC AND PRIVATE GOODS

Any thing possessing the ability to satisfy a human need or a want is a good. Goods are desirables and one wants to have them. They can be categorized into:

- (i) Free goods
- (ii) Economic goods

Free goods are a gift of nature and available in unlimited supplies. One pays no price to have them. Examples are air, rain and sunshine.

Economic goods are scarce and one ought to pay a price for them. Most of the products coming into use in our daily lives constitute examples of economic goods. Economic goods can further be classified into public and private goods.

PUBLIC GOODS

There is a category of goods that the free market, whether perfect or imperfect, under-produces or does not produce at all. They are called public goods. Public good is a good or service that is non-rival and non-excludable in nature, hence leading to the 'free rider' problem.

Examples include light houses, pavements, flood control dams, public drainage, public services such as the police, law enforcing agencies and the army.

The two important features of public goods are explained below:

Non-rivalry

Non-rivalry exists when the consumption of a product by one does not diminish the quantity available for others.

Non-excludability

Non excludability means that no one has a legal right to exclude others from a product's use. Thus once offered, the product is available to everyone.

As stated earlier, non rivalry and non excludability together lead to the free rider problem. It arises when people are tempted to have a 'free ride' on a product, knowing they cannot be excluded from its use. For example, if people living in a community decide to pool money for streetlights, every individual may avoid paying his share, knowing he won't be excluded from the streetlights' use once the rest have them. He gets the benefits free, and hence has no incentive to pay.

Price mechanism fails to provide public goods because of the free rider problem.

Quasi public goods

There are few goods which are non-rival but use of technology can make them excludable. Such goods are described as quasi or near public goods. Television broadcast is non-rival because an individual's decision to switch on a sports channel on his TV does not prevent others from watching the same channel. However, the management of that TV channel can encrypt its broadcast, enabling itself to exclude those who do not pay the subscription charges. Thus, technology advances make TV broadcast excludable- hence, charging a price for it becomes possible.

Public parks and libraries have limited space and the use by one may diminish the amount available to others. Likewise, the availability of police service to an average citizen diminishes in areas with high crime rates prevalent. Thus, public parks, libraries and police service are rival goods.

The following table gives examples of various types of goods in terms of non-excludability and non rivalry.

Examples	Non-excludable	Non-rival	Type
Defence, Lighthouse, Streetlights	Yes	Yes	Public good
Police, public parks and libraries	Yes	No	Quasi public goods
Radio and TV Broadcast	No	Yes	
Most of the consumer goods such as furniture, electronics, cosmetics and auto mobiles	No	No	Private goods

Market demand curve of a public good

The market demand curve of a public good is the vertical summation of individual demand curves, as opposed to horizontal summation in the case of private goods (explained in section 5).

Example

A software manufacturer has three customers A, B & C who are willing to pay a price of \$10000, \$8 000 and \$6 000 respectively for a customized software design. The height of the demand curve shows the maximum price customers are willing to pay. The market demand curve can be obtained by adding up the vertical distances showing the total of maximum price all consumers are willing to pay for the design. This amount is \$24000. Thus the market demand curve of a public good is the vertical summation of individual demand curves.

Who provides public goods?

The failure of price mechanism forces governments to collect taxes from its citizens for financing the provision of public goods. However, cost benefit analysis should be conducted before providing public goods to ensure that the amount of tax is used in the most sensible manner.

PRIVATE GOODS

Private goods are provided by free market and have the features of rivalry and excludability. The owner of a private good has a legal right to exclude others from using that product.

MERIT GOODS

Merit goods are 'social desirables' and societies encourage their production and consumption. These are goods, the government believes consumers buy too little, if provided by private enterprise at market prices. Government intervenes and subsidizes the use of merit goods to bring their consumption close to the optimal level. Examples include education, public libraries, hospitals, museums, art galleries, research centers, parks, play grounds and places for entertainment.

DEMERIT GOODS

Demerit goods are 'social undesirables' and societies discourage their production and consumption. These are goods, the government believes are over consumed if provided by private enterprise at market prices. Government intervenes and either completely bans or taxes the use of demerit goods to bring their consumption close to the optimal level. Examples include smoking, child labor, prostitution and alcohol consumption.

MULTIPLE CHOICE QUESTIONS

J/02/1/17

- 1 Which of the following goods is excludable but non-rival?
- | | | | |
|-----|-----------------|-----|-----------------------|
| (A) | airdefence | (B) | public libraries |
| (C) | street lighting | (D) | television broadcasts |

J/02/1/18

- 2 What is a merit good?
- | | |
|-----|---|
| (A) | a good where any benefit obtained by one consumer is extended to all consumers |
| (B) | a good that is made available to consumers according to merit |
| (C) | a good that the government believes consumers will buy too little of if it is provided by private enterprise at market prices |
| (D) | a good where the private benefits of consuming the good exceed its social benefits |

N/02/1/17

- 3 Non-rivalry is a characteristic of which type of good?
- | | | | |
|-----|------------------|-----|---------------|
| (A) | an inferior good | (B) | a merit good |
| (C) | a private good | (D) | a public good |

J/03/1/16

- 4 Which of the following statements is correct?
- | | |
|-----|--|
| (A) | Education is a public good because the government subsidises schools. |
| (B) | Healthcare is a public good when provided free of charge. |
| (C) | Law and order is a public good because it is provided by the government. |
| (D) | Street lighting is a public good because no one can be prevented from enjoying the benefits. |

J/03/1/17

- 5 A government believes that consumers derive greater benefit from a good than consumers themselves realise.
Which type of good does this define?
- | | | | |
|-----|----------------|-----|----------------|
| (A) | inferior goods | (B) | merit goods |
| (C) | private goods | (D) | superior goods |

N/03/1/16

- 6 Which of the following is the best example of a public good?
- | | | | |
|-----|-----------------|-----|-----------------|
| (A) | education | (B) | medical care |
| (C) | postal services | (D) | radiobroadcasts |

J/04/1/16

- 7 What is always a characteristic of a public good?
- | | |
|-----|---|
| (A) | Consumption of the good by one individual prevents consumption by any other individual. |
| (B) | It confers benefits on consumers that are greater than they themselves realise. |
| (C) | It is supplied by a voluntary organisation. |
| (D) | The benefits it confers on consumers can be extended to others at zero cost. |

N/04/1/16

- 8** Why do governments often subsidise the cost of entrance to museums?
- (A) Museums are a pure public good.
 - (B) Social benefits are less than social costs.
 - (C) Social benefits exceed private benefits.
 - (D) Social costs exceed private costs.

J/05/1/16

- 9** What are the characteristics of a private good?
- (A) non-rivalness and excludability
 - (B) non-rivalness and non-excludability
 - (C) rivalness and excludability
 - (D) rivalness and non-excludability

N/05/1/16

- 10** Which of the following is a public good?
- (A) defence
 - (B) education
 - (C) electricity supply
 - (D) health services

J/06/1/16

- 11** A lighthouse is considered to be a public good. Which characteristic contributes to this?
- (A) It gives external benefit.
 - (B) It causes external cost.
 - (C) It is non-excludable.
 - (D) There is rivalry in its use.

J/06/1/18

- 12** A government wishes to encourage the consumption of a merit good and reduce the consumption of a demerit good. Which policy should it adopt towards each good?

	merit good	demerit good
(A)	impose a minimum price	produce only in the public sector
(B)	increase advertising on the benefits of the good	put legal controls on output
(C)	confine access to certain age groups	tax output
(D)	subsidies the good	set a minimum level of output

N/06/1/16

- 13** What is an essential characteristic of a private good?
- (A) Consumption of the good by one user diminishes the quantity available to others.
 - (B) Consumption of the good by the user has no external effects on the consumption of others.
 - (C) It is produced by the private sector.
 - (D) The user has to pay for it.

J/07/1/18

- 14** For which one of the following reasons might education be considered a merit good?
- (A) It benefits both the recipient and society as a whole.
 - (B) Left to market forces, it would be over-provided.
 - (C) It does not have a social cost.
 - (D) Its consumption by one person does not reduce the amount available to others.

N/07/1/16

- 15** Advances in technology are turning a number of goods which are usually thought of as public goods (for example, television broadcasting and road use) into private goods. Why might this be so?
- (A) Consumer surplus is being increased.
 - (B) The costs of production are being reduced.
 - (C) It is becoming easier to exclude non-payers.
 - (D) The technology is increasing the number of people consuming the goods.

N/07/1/17

- 16** What is true of merit goods?
- (A) Consumers underestimate the benefit they provide.
 - (B) The free rider problem restricts their supply.
 - (C) Their social cost is greater than their private cost.
 - (D) The market system over-provides them.

J/08/1/15

- 17** An increase in tuition fees paid by students has no effect on the number of students entering higher education. What will be the effect on the private rate of return obtained by students from higher education and on the social rate of return to society as a whole?

	private rate of return	social rate of return
(A)	decrease	increase
(B)	decrease	uncertain
(C)	increase	increase
(D)	increase	uncertain

J/08/1/17

- 18** A good is most suitable to be provided by the market if it is
- (A) excludable and non-rival.
 - (B) excludable and rival.
 - (C) non-excludable and non-rival.
 - (D) non-excludable and rival.

N/08/1/14

- 19** A firm owns a bridge and charges all vehicle users who cross it. How might the charge be classified?
- (A) an external benefit and an external cost
 - (B) an external benefit and a private cost
 - (C) a private benefit and an external cost
 - (D) a private benefit and a private cost

N/08/1/18

20 What is a defining characteristic of a private good?

- (A) It is purchased by individual customers.
- (B) It is supplied exclusively through the market.
- (C) It is produced only by private sector firms.
- (D) When consumed by one individual, it is not available to others.

J/09/1/17

21 Why does the production of public goods have to be financed by the government?

- (A) One person's consumption of a public good means it is not available for anyone else.
- (B) People are able to consume public goods without paying for them.
- (C) Private sector firms will charge a price significantly above cost for public goods.
- (D) The cost of producing public goods is higher in the private sector.

N/09/1/14

22 Despite much opposition, the local government in a popular tourist resort built a leisure centre and swimming pool which is open to everyone. Many tourists visit the centre. Local residents are charged a reduced entry fee. How would economists classify this service?

- (A) It is a demerit good because some people objected to the development.
- (B) It is a merit good because the entry fee is reduced for local residents.
- (C) It is a private good because there is an entry fee for all users.
- (D) It is a public good because it is open to everyone and provided by the local government.

N/09/1/15

23 What can be provided only as a public good?

- | | |
|---------------------|-----------------------|
| (A) road use | (B) security services |
| (C) street lighting | (D) TV broadcasting |

J/10/1/16

24 Which good is excludable but non-rival?

- | | |
|---------------------|---------------------------|
| (A) airdefence | (B) public libraries |
| (C) street lighting | (D) television broadcasts |

N/10/1/14

25 What is the most likely reason economists will give to explain why large hospital projects are often funded by governments?

- A Governments usually control the construction industry.
- B Hospitals benefit many people who do not use them.
- C Hospitals are non-excludable.
- D Hospitals are an essential service.

J/11/1/16

26 What is a distinguishing feature of a public good that is not found with private goods?

- (A) Consumption depends on the ability to pay.
- (B) It creates negative externalities.
- (C) Its consumption by one consumer can have an effect on other consumers.
- (D) Its consumption by one consumer does not restrict consumption by other consumers.

N/11/1/16

27 A government admits that building a new bridge would produce a positive net benefit to society.

Owing to a lack of public funds, the bridge would have to be built and operated by a private company that would charge the public to use the bridge.

Private companies insist that building the bridge would not be profitable.

What could explain the companies' unwillingness to build the bridge?

- (A) A private company will be unable to obtain the consumer surplus of the users.
- (B) Building the bridge will give rise to negative externalities.
- (C) The demand for bridge crossings is price-inelastic.
- (D) The potential benefits are non-excludable.

N/11/1/17

28 What is a merit good?

- (A) a good or service which has higher social costs than private costs
- (B) a good or service which has no opportunity cost
- (C) a good or service which is both non-excludable and non-rival
- (D) a good or service which has a greater value than individuals recognize

J/12/1/16

29 Why does the production of public goods have to be financed by the government?

- A One person's consumption of a public good means it is not available for anyone else.
- B People are able to consume public goods without paying for them.
- C Private sector firms will charge a price significantly above cost for public goods.
- D The cost of producing public goods is higher in the private sector.

N/13/1/16

30 A good is produced which consumers are unable to avoid consuming. What type of good is this?

- A demerit good
- B inferior good
- C private good
- D public good

N/14/1/16

31 What can be provided only as a public good?

- A** road use
- B** security services
- C** street lighting
- D** TV broadcasting

J/15/1/17

32 A national museum charges an entry fee for admission. Which combination of rival and excludable qualities would apply to visits to the national museum on a day when there are very few visitors?

	rival	excludable
A	no	no
B	no	yes
C	yes	no
D	yes	yes

N/15/1/14

33 In 2011, the Health Ministry in a country encouraged parents to have their children vaccinated against measles. The parents did not have to use the vaccine and did not have to pay for it.

The government cancelled other projects to fund the programme from taxation because research concluded that the vaccine benefited the community by preventing the spread of a serious illness.

Which concepts are implied in the above statement?

- A** external benefit, public sector, opportunity cost
- B** market mechanism, fiscal policy, public good
- C** merit good, normative statement, regulatory control
- D** private cost, social benefit, monetary policy

N/15/1/15

34 A gardener plants bamboo to create an attractive environment along the roadside. The bamboo grows into the garden of his neighbour, who removes the bamboo with a chemical spray.

What cannot be concluded about the outcome of the planting?

- A** It increases external cost and external benefit.
- B** It increases private cost and private benefit.
- C** It increases social cost and social benefit.
- D** It increases social cost more than social benefit.

N/15/1/16

35 A cost-benefit analysis of a proposed underground railway produced the following statistics.

annual costs and benefits	\$ million
annual capital cost	10
operating and maintenance costs	3
fare revenue	6
savings to private travellers	5
savings to business	10
other economic benefits	7

What can be concluded from the statistics?

- A** If undertaken by the private sector there would be a loss of \$13 million.
- B** If undertaken by the private sector there would be a profit of \$3 million.
- C** If undertaken by the public sector there would be a net social benefit of \$15 million.
- D** If undertaken by the public sector there would be a net social cost of \$1 million.

N/15/1/17

36 What is the best example of what was once a public good becoming a private good?

- A** education
- B** medical care
- C** postal services
- D** television broadcasts

SECTION 14

FACTORS OF PRODUCTION

No production activity can take place without the help of four factors of production, namely land, labour, capital and entrepreneurship.

(1) LAND

This includes all productive resources supplied by nature - in other words, not only land itself, but also all natural resources. Land is not just the solid portion of earth but it also includes mines, forests, deserts, seas, rivers, mountains, rains, climate, fertile soil etc.

Land has three qualities which distinguish it from other factors of production:

- (i) It is a gift of nature
- (ii) It is limited in supply
- (iii) Law of diminishing returns applies to land

The owners of land are paid rent for the role it plays in the production activity.

(2) CAPITAL

This includes all manufactured products that are used to produce more goods and services in future. Thus, capital includes diverse items such as a computer, a screw driver, a cement mixer used in construction, a factory building, raw materials of various kinds etc. The owners of capital are paid interest payments for the role capital plays in the production activity. Capital has various forms, some of which are discussed below:

Material capital v/s intangible capital

Material capital has a physical shape such as plant and machinery whereas intangible capital can not be seen physically but has an important impact on the ability to produce goods and services. Examples of intangible capital are the skills, abilities and motivation level of workers collectively known as human capital. Other examples of intangible capital are goodwill, copyrights and patents.

Physical capital v/s financial capital

The examples of physical capital are plant and machinery whereas financial capital comprises paper assets such as money, bank deposits, bonds and shares.

Fixed capital v/s circulating capital

Fixed capital is expected to stay in a business for a longer period of time and used again and again e.g. plant and machinery, furniture and fixtures and various tools used in production. Circulating capital, on the other hand, are consumable items which are used only once e.g. raw materials, lubricants and all those items which become the part of the finished product.

Sometimes, it becomes difficult to distinguish between land and capital, as in the case of raw materials. However, the distinction that land includes all productive resources which are a gift of nature whereas capital includes all man made productive resources is significant. The common thing between land and capital is that they both are non-human factors of production.

(3) LABOUR

Labour includes all physical and mental activities involved in making a product for a monetary purpose. A bricklayer, a carpenter, an electrician, an engineer, an accountant, a teacher and a doctor are all examples of labour. Labour is paid wages for the role it plays in producing goods and services. Wages include salaries, fees, commissions, bonus payments, overtime payments.

(4) ENTREPRENEURSHIP

Entrepreneur is a production factor who identifies a business opportunity and hires, organizes and trains other factors of production assuming a risk of losses. Entrepreneur is a residual earner, meaning that he earns a reward only after all other factors of production have been paid for. The reward for entrepreneurs is profit.

DIVISION OF LABOUR

Division of labour is a technique of specialization. Specialization means an individual firm or country concentrates its productive efforts on a single or limited number of activities. By specializing in a single work, task, job or product, an individual is usually more productive since familiarity and repetition improves work skills and time is not lost in moving from one job to another. However, the repetitive nature of specialized jobs makes them less exciting for workers, particularly those who prefer multi dimensional tasks. Jobs become less challenging as they don't require a variety of skills- this demotivates workers and lowers their productivity.

Consumers benefit from specialization as large scale production gives way to lower per unit costs and hence, lower prices for products with standardized quality. However, the size of the market limits the benefits of specialization. Large scale production is only useful for producing goods that have a sizeable and stable demand. Specialization limits the number of items produced and hence, the variety of goods enjoyed by consumers. Individuals, firms and countries should specialize in those products which they can make at a comparatively lower cost. The theories of absolute and comparative advantage provide basis for specialization. These theories are explained later, in section 21.

MULTIPLE CHOICE QUESTIONS

N/05/1/03

- 1 What is an example of the factor of production capital?
- (A) a bank account held by a small firm to be used for future purchases
 - (B) a forest of hardwood trees ideal for furniture making
 - (C) the market value of a company's shares
 - (D) word processing software used by a writer to complete her new book

J/07/1/03

- 2 What is necessarily a function of enterprise rather than management?
- (A) accepting the risks involved in production
 - (B) deciding how much labour should be employed
 - (C) organising the other factors of production
 - (D) promoting the sale of the product

J/07/1/14

- 3 A given production process uses both labour and capital. What will be the effect on the quantities of labour and capital employed if the government introduces a subsidy on capital investment?

	quantity of labour	quantity of capital
(A)	decreases	Uncertain
(B)	uncertain	Uncertain
(C)	decreases	Increases
(D)	uncertain	Increases

N/07/1/04

- 4 In the 20th century the nature of a typical car assembly plant changed. Company merges meant there were fewer firms, they operated on larger sites and they had more automated machinery and robots. How is this change most likely to have affected the relative employment of factors of production in the industry?

	increased relative use	decreased relative use
(A)	capital and enterprise	labour and land
(B)	enterprise and labour	land and capital
(C)	land and capital	Enterprise and labour
(D)	labour and land	capital and enterprise

N/08/1/04

- 5 Which action by an individual would not be considered an action of the factor of production labour?
- (A) leaving college to work on the land
 - (B) moving from a labour-intensive industry to work in a capital-intensive industry
 - (C) setting up a new business in information technology
 - (D) undertaking a training course in computer skills

N/09/1/30

- 6** Tom has set up his own business, which is based in premises owned by Fanda. All machinery is hired from an equipment company. Both Tom and Fanda are employed in the business.

What describes the earnings of Tom and Fanda?

	Tom	Fanda
(A)	rent and profit	interest and profit
(B)	wages and profit	wages and rent
(C)	interest and rent	rent and profit
(D)	wages and interest	wages and interest

J/11/1/01

- 7** What distinguishes capital from other factors of production?

- (A)** Capital exists only in capitalist market economies.
- (B)** Capital results from the operation of the other factors.
- (C)** The rewards earned by the owners of capital are uncertain.
- (D)** Unlike labour or land, capital must be owned rather than hired or rented.

N/11/1/04

- 8** Which factor of production and example are correctly linked?

	factor of production	example
(A)	capital	\$10 000 in a savings account
(B)	enterprise	a company accountant
(C)	labour	a robot
(D)	land	the flow of a river

N/13/1/01

- 9** 'From the age of twelve I made a living by buying towels, needles, shampoo and soap and re-selling them as a street vendor. Now, I run three hotels in Hanoi' - Duong Than Binh.

Which factors of production are likely to be involved in the above events?

- A** land only
- B** land and labour only
- C** land, labour and capital only
- D** land, labour, capital, enterprise

J/14/1/04

- 10** Meera has just finished a course at art college and has decided to set up a business on her own producing clay figures of famous people.

Which factors of production is she likely to have to purchase from other businesses?

	land	labour	capital	enterprise
A	✓	✓	✓	x
B	✓	x	✓	✓
C	✓	x	✓	x
D	x	✓	x	✓

key
 ✓ = purchased
 x = not purchased

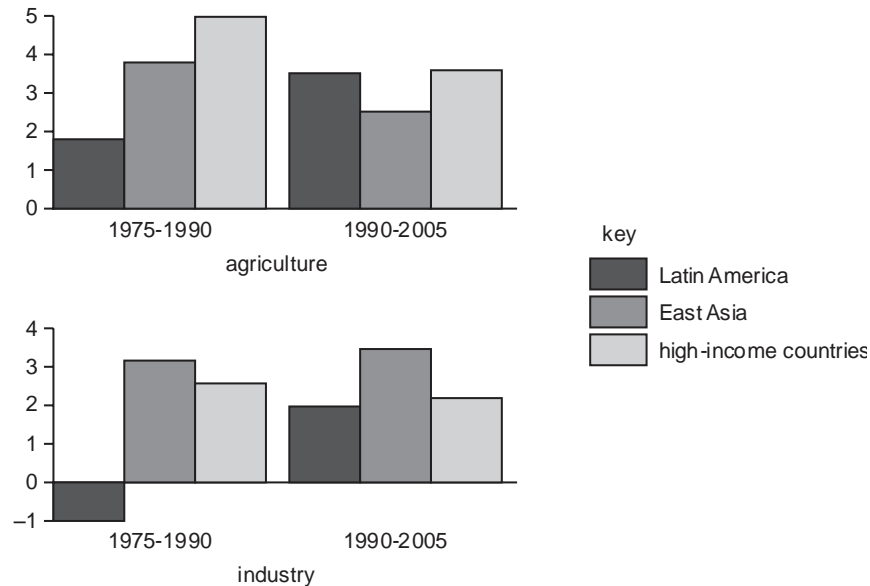
N/14/1/04

- 11** Arfan and his brother Ben own and run a fishing business together. They have one boat and on the days when they fish they employ Cephas and Dipak. They sell the fish to the owner of a local shop.
Which row correctly identifies the factors of production involved?

	land	labour	capital	enterprise
A	shop	Arfan and Ben	money paid for the fish	shop owner
B	shop	Cephas and Dipak	Boat	Arfan
C	the fish	Ben	money paid for the fish	shop owner
D	the fish	Cephas and Dipak	boat	Arfan and Ben

N/14/1/23

- 12** The diagram shows annual average labour productivity growth for three groups of countries during two time periods.



Which activity in which country group achieved the greatest improvement in its labour productivity growth rate between 1975-1990 and 1990-2005?

- A** agriculture in high-income countries
- B** agriculture in Latin America
- C** industry in East Asia
- D** industry in Latin America

J/15/1/23

- 13** Company X reduces its workers from 250 to 200 and as a result its output decreases from 5000 to 4800 units per day.
Company Y increases its workers from 800 to 1000 and as a result its output increases from 2000 to 2200 units per day.
What happens to labour productivity of the workers in the two companies?

	company X	company Y
A	falls	rises
B	rises	falls
C	rises	rises
D	falls	Falls

Division of labour

J/03/1/03

- 14** What would prevent a firm gaining the maximum benefit from the division of labour?
- (A) a high interest rate (B) a small market
(C) high production costs (D) low productivity

N/03/1/04

- 15** What is the outcome for consumers and workers as a result of increased division of labour?

	consumers	Workers
(A)	less choice of goods	wider range of skills
(B)	fewer mass-produced goods	wider variety of tasks
(C)	lower prices of goods	increased productivity
(D)	lower quality of goods	increased independence

J/04/1/03

- 16** Which group may be disadvantaged by the introduction of division of labour?
- (A) consumers who prefer standardised goods
(B) companies where the production process has many sub-divisions
(C) the government, if the product is taxed
(D) workers who prefer a variety of tasks

J/13/1/04

- 17** A kitchen manufacturer wanted to become more efficient. It decided to move to an industrial estate and to increase the division of labour in the manufacture of its products. Which statement about the division of labour is correct?
- A** It occurs only in manufacturing industry.
B It occurs only in market economies.
C It occurs only when similar firms are located in the same area.
D It occurs only when workers become more specialised.

J/15/1/04

- 18** Three women work in a pottery workshop, each dividing their time equally between three products. The table shows how many units of each product are made.

	plates	bowls	Mugs
Jane	100	50	50
Sarah	50	100	50
Seema	50	50	100
total	200	200	200

Later, division of labour is introduced and each woman makes only the product in which she has absolute advantage.

What is the rise in total output?

- A** 150 units **B** 300 units **C** 600 units **D** 900 units

N/15/1/04

- 19** What term is used by economists for the income received by the factor of production enterprise?

- A** capital **B** interest
C profit **D** revenue

SECTION 15

UNEMPLOYMENT

Unemployment results when people are out of jobs and is often associated with the level of business activity in an economy. We usually hear people complain about not being able to find jobs in times of recession or an economic downturn. This is because when an economy is growing well, jobs are created to satisfy demand but firms wish to lay off workers as soon as growth falters. Thus, the cyclical changes in business activity are mirrored by the trends in unemployment.

Unemployment is a stock in constant flow: this means that there are always people entering the unemployment register as they lose jobs and leaving the unemployment register as they get jobs. Overall unemployment increases when inflows rise faster than outflows. An important measure is the length of time for which an individual remains unemployed. If the period of unemployment is short, it is easier for an individual to gain a new job as his skills are not lost or degraded. Therefore, average length of time spent unemployed could be a better indicator of the overall health of the economy. However, official statistics often use the number of unemployed people in the economy as an indicator of economic conditions.

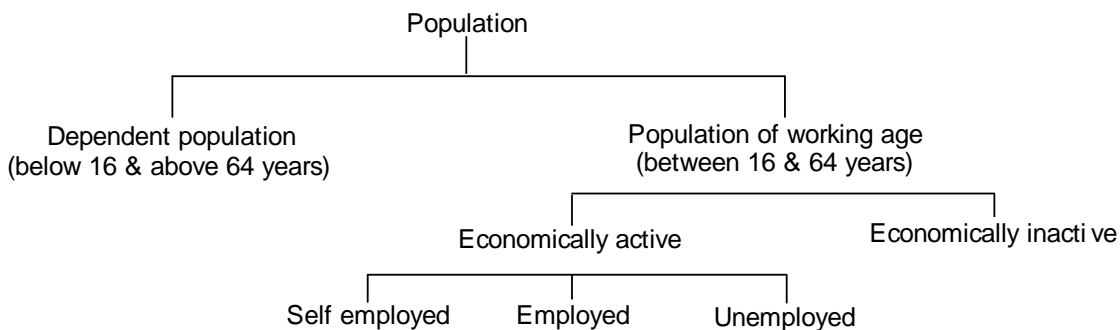
The rate of unemployment is expressed as a percentage of working population i.e. the number of individuals available for work in an economy. The working population (economically active) includes the self-employed (who work for themselves in their main job, whether or not they have employees), the employed and those unemployed who are actively seeking employment.

$$\text{Unemployment} = \frac{\text{number of unemployed people}}{\text{working population}} \times 100$$

Population of Working Age (adult population)

Population of working age in the U.K includes all males 16-64 years of age and all females 16-59 years of age. All the remaining people in the economy are economically dependent on these individuals and hence comprise the dependent population.

Within those of working age, are both economically active and inactive individuals. The economically active, simply put, are all those who form the working population i.e. who are in employment and those who are unemployed. The economically inactive include people who are in full time education or unavailable for work, who are not in search of work, who do not want paid jobs and who are long-term sick. The following flowchart helps provide a better understanding of all these categories:



The ratio of the economically active or working population and the population of working age gives the participation rate:

$$\text{Participation rat} = \frac{\text{working population}}{\text{the population of working age}} \times 100$$

The participation rate is lower when:

- There is lower female participation
- There are high unemployment benefits dampening the incentive to seek work
- High taxes discouraging earning a living for oneself
- Higher redundancy payments offered on early retirement

COSTS OF UNEMPLOYMENT

Unemployment brings both economic and social costs to economies.

The economic costs include:

- Lost output – this is the opportunity cost of unemployment or the output an unemployed person otherwise contributes to society. Assume that a person contributes £15,000 on average. Thus, an unemployment level of two million translates into a loss of goods and services worth £30 billion to society!
- Increased Benefit Payments – each unemployed person is an additional economic burden as he is entitled to receive unemployment benefits from the state.
- Lost Tax Revenue – growing unemployment means less direct and indirect tax revenue. People stop paying income tax as they go out of work and their spending falls considerably, lowering government receipts from VAT and other tax sources.

The social costs of unemployment include:

- Social Exclusion – people who are unemployed for a long time feel increasingly removed or alienated from society. Money matters may even result in some families breaking up.
- Decreased Physical and Mental Wellbeing – unemployed individuals, the youth in particular, may take being out of work to heart and experience psychological discomfort. Reduced motivation, depression and related disorders etc may impact their health and make them even more unfit for work
- Increased Crime – some unemployed individuals choose to adopt illegal means of supporting their families like bribery, theft and other vices. Such social costs are also likely to strain staffing and other resources in departments like police, law and order and the National Health Service.

REDUCING UNEMPLOYMENT

Cyclical or demand deficient unemployment is one of the most common types of unemployment. Governments can reduce it by injecting aggregate demand in the economy through expansionary (reflationary) demand management policies like increased public spending, lowered taxes and/or lowered interest rates. However, these policies can trigger inflationary pressures in fully employed economies. These policies and their impacts will be discussed in detail in the extension portion of the course.

MULTIPLE CHOICE QUESTIONS

J/02/1/23

- 1 A country experiences an increase in productivity as measured by output per labour hour. At the same time, output per worker decreases. What could explain this?
- (A) an increase in unemployment (B) an increase in part-time employment
(C) an increase in hourly wage rates (D) an increase in capital investment

N/02/1/23

- 2 In an economy real national output increases more rapidly than the increase in employment. What could account for this?
- (A) a decrease in the general price level
(B) an improvement in the country's terms of trade
(C) an increase in the size of the labour force
(D) an increase in labour productivity

J/03/1/23

- 3 Which of the following is a measure of labour productivity?
- (A) $\frac{\text{total output}}{\text{quantity of labour employed}}$ (B) $\frac{\text{total cost}}{\text{quantity of labour employed}}$
(C) $\frac{\text{total wage cost}}{\text{quantity of labour employed}}$ (D) $\frac{\text{total profit}}{\text{quantity of labour employed}}$

N/03/1/23

- 4 What will cause an immediate rise in the size of a country's labour force?
- (A) an increase in the birth rate
(B) an increase in the age of retirement
(C) an increase in the school leaving age
(D) an increase in the number of redundancies

N/03/1/24

- 5 The table shows the average annual percentage change in labour productivity.

	whole economy	manufacturing
1960s	2.4	3.0
1970s	1.8	2.2
1980s	2.3	4.9
1990s	1.9	2.2

What can be deduced from the data?

- (A) Manufacturing output increased faster than that in the rest of the economy over the entire period.
(B) Productivity growth was at its highest in the 1980s.
(C) Output per worker increased faster in manufacturing than in the rest of the economy.
(D) Economic growth was at its lowest in the 1970s.

J/04/1/23

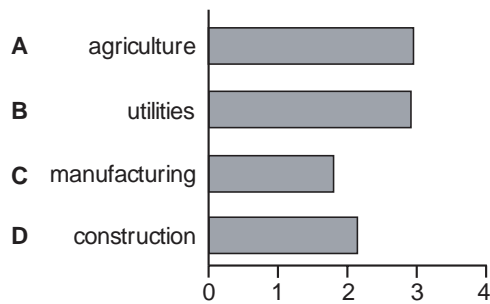
6 In an economy, both employment and unemployment rose over a ten year period. What must have risen?

- (A) birth rate
- (B) life expectancy
- (C) unemployment benefits
- (D) working population

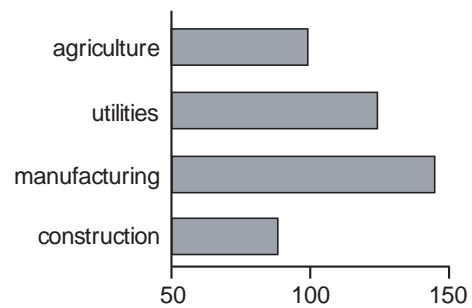
J/04/1/24

7 The diagram gives details of different aspects of productivity in the US and UK. Which sector in the UK best fits the description 'a sector with a relatively fast growth rate in productivity but which is less productive than its US equivalent'?

productivity growth in the UK by sector, 1973-95
(% per annum)

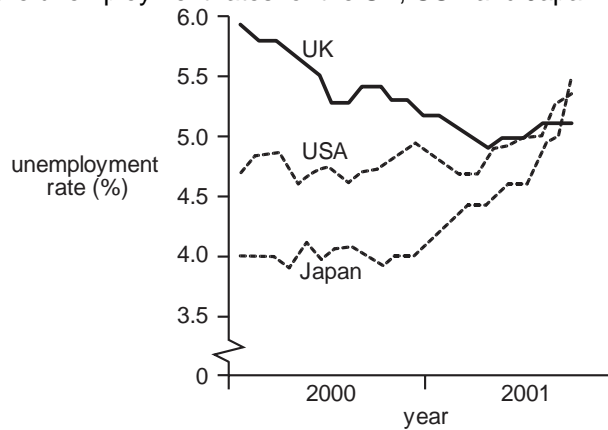


productivity by sector in US relative to UK, 1995
(US = UK at 100)



N/04/1/23

8 The graph shows the unemployment rates for the UK, USA and Japan for 2000 and 2001.

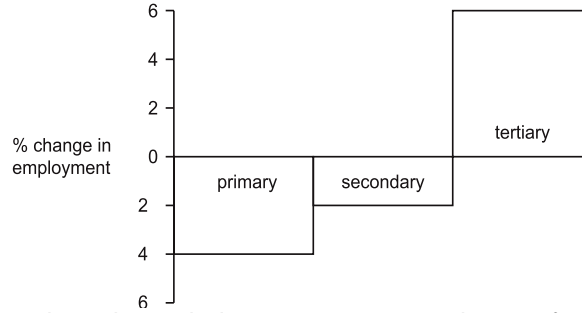


What can be concluded from the graph?

- (A) Each economy experienced a rising trend of unemployment.
- (B) Japan went from the lowest to the highest number of unemployed.
- (C) There was a trend towards more similar unemployment rates.
- (D) The UK had a higher number of unemployed than the USA.

J/05/1/23

9 The chart shows changes in employment by sector for a country between 1998 and 2003.



Which statement about the period 1998 to 2003 must be true for this country?

- (A) The primary sector lost more workers than the secondary sector.
- (B) Unemployment stayed constant.
- (C) Employment in service industries increased.
- (D) There was no change in the total working population.

N/05/1/23

10 The table shows the number of workers and the annual output of an industry.

	Year 1	Year 2	Year 3
Workers in 000s	120	130	100
Output in \$m	12.00	14.30	13.00

Which statement is correct?

- (A) Labour productivity increases in year 2 and in year 3.
- (B) Labour productivity increases in year 2 and then declines in year 3.
- (C) Labour productivity is at its highest in year 1.
- (D) Labour productivity is at its lowest in year 3.

J/06/1/23

11 What will cause an immediate rise in the size of a country's labour force?

- (A) an increase in the birth rate
- (B) an increase in the age of retirement
- (C) an increase in the school leaving age
- (D) an increase in the number of redundancies

N/06/1/23

12 The data in the table are taken from a country's labour market statistics.

	Millions
adult population	100
Number of persons in employment	45
Number of persons unemployed	5

What is the unemployment rate and the participation rate?

	unemployment rate %	participation rate %
(A)	5	45
(B)	10	50
(C)	10	45
(D)	5	50

J/07/1/23

13 Company X reduces its workers from 250 to 200 and as a result its output decreases from 5000 to 4800 units per day.

Company Y increases its workers from 800 to 1000 and as a result its output increases from 2000 to 2200 units per day.

What happens to labour productivity of the workers in the two companies?

	company X	company Y
(A)	falls	rises
(B)	rises	falls
(C)	rises	rises
(D)	falls	falls

N/07/1/23

14 The table gives the % rates of youth unemployment and total unemployment in France and the UK in 2001 and 2005.

	France		UK	
	youth unemployment (%)	total unemployment (%)	youth unemployment (%)	total unemployment (%)
2001	19.2	8.7	12	5.2
2005	22.1	10.1	12.5	4.8

What can be concluded from the table?

- (A)** France and the UK experienced the same trends in unemployment.
- (B)** France had a higher number of unemployed people than the UK.
- (C)** The UK used a different definition of unemployment from France.
- (D)** The UK was more successful than France in controlling unemployment.

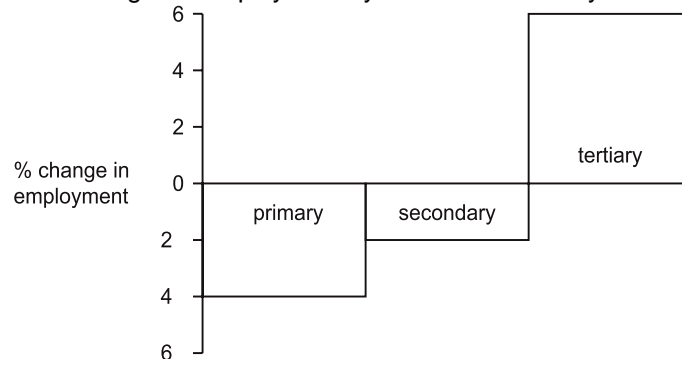
N/07/1/24

15 When is labour productivity in a firm most likely to increase?

- (A)** when a firm employs more people
- (B)** when a firm employs more capital
- (C)** when a firm doubles all factors of production
- (D)** when a firm replaces payment by results with hourly wage rates

J/08/1/23

16 The chart shows changes in employment by sector for a country between 2000 and 2006.



Which statement about the period 2000 to 2006 must be true for this country?

- (A) The primary sector lost more workers than the secondary sector.
- (B) Unemployment stayed constant.
- (C) Employment in service industries increased.
- (D) There was no change in the total working population.

N/08/1/23

17 The table shows a country's employment statistics.

	million
population of working age	100
number in employment	60
number unemployed	4

What are the participation rate and the unemployment rate?

	participation rate (%)	unemployment rate (%)
(A)	60	4.0
(B)	64	6.25
(C)	60	6.25
(D)	64	4.0

J/09/1/23

18 What will cause an immediate rise in the size of a country's labour force?

- (A) an increase in the birth rate
- (B) an increase in the age of retirement
- (C) an increase in the school-leaving age
- (D) an increase in the number of redundancies

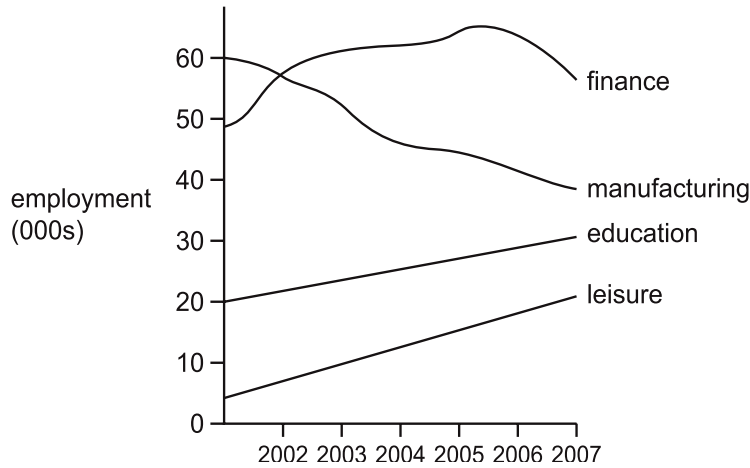
N/09/1/22

19 What could lead to an increase in the size of a country's labour force?

- (A) a decrease in unemployment
- (B) a decrease in the retirement age
- (C) an increase in the participation rate
- (D) an increase in the school-leaving age

J/10/1/22

20 The diagram shows changes in the numbers employed in four different industries in a city between 2002 and 2007.



What can be concluded from the diagram?

- (A) Finance was always the largest employer.
- (B) Leisure had the fastest growth rate in employment.
- (C) Manufacturing was the only industry to show signs of decline.
- (D) Total employment in the four industries decreased over the period.

N/10/1/23

21 What must fall when the rate of unemployment rises?

- A the effectiveness of the use of resources
- B the level of labour productivity
- C the number of workers in employment
- D the size of the labour force

J/11/1/22

22 The table shows inflation rates, unemployment rates and changes in money wage rates between 2008 and 2009 for a number of countries.

country	inflation %	unemployment %	money wages %
France	+0.2	9.4	+3.0
Germany	+0.2	8.3	+2.7
UK	+1.8	7.8	+2.5
US	-0.3	9.4	+2.5

What can be concluded from the table?

- (A) On average, those in employment in the UK had an increase in real incomes.
- (B) The same number of people were unemployed in the US and France.
- (C) The same product would have the same price in France and Germany.
- (D) Unemployment was highest where inflation was highest.

N/11/1/23

23 The table shows the rate of unemployment and population for selected countries in 2009.

country	unemployment rate (%)	population (millions)
Brazil	8.1	196
India	6.8	1 120
Indonesia	8.1	237
Malaysia	4.0	26
Thailand	2.4	65

What can be concluded from this information?

- (A) A higher proportion of those willing and able to work are in employment in Malaysia than in India.
- (B) The labour force of Thailand is smaller than that of Malaysia.
- (C) The same number of workers were unemployed in Brazil and Indonesia.
- (D) There are more people employed in Thailand than in India.

J/12/1/23

24 Which change would directly reduce the size of a country's labour force?

- A Some employees are made redundant.
- B Some employees change to self-employment.
- C Some employees retire early.
- D Some employees switch from full-time to part-time employment.

N/12/1/24

25 What is not one of the criteria used by the International Labour Office to determine whether a person should be classified as being unemployed when a labour force survey is carried out?

- A She is actively seeking employment.
- B She is available to take up employment.
- C She is eligible to claim unemployment benefits.
- D She is currently not in paid employment.

J/13/1/01

26 A government minister states that the main economic benefit of locating a new factory in a coastal region is the 500 jobs it will create.
What does this statement imply about the coastal region?

- A Alternative employment opportunities are scarce.
- B Job seekers have a wide range of choices open to them.
- C Labour is a scarce resource.
- D Unemployment is at a low level.

J/13/1/23

27 The table gives details of the unemployment rates and expenditure on unemployment benefits for the United Kingdom in 2007 and 2009.

	unemployment rate (%)	expenditure on unemployment benefits as % of GDP
2007	2.7	1.6
2009	4.7	3.4

What can definitely be concluded from the table?

- A** More of the workforce was unemployed in 2009 than in 2007.
- B** The number of workers in employment was higher in 2007 than in 2009.
- C** Unemployment benefits were more generous in 2009 than in 2007.
- D** Unemployment increased faster than expenditure on unemployment benefits.

N/13/1/23

28 A country has a population of 500 million. 15 million people are unemployed and the country has an unemployment rate of 6%. What is the size of the labour force?

- A** 90 million
- B** 250 million
- C** 470 million
- D** 485 million

J/14/1/23

29 The table shows the unemployment rate and the size of the labour force in four countries in 2012.

Which country had the highest number of people in employment in 2012?

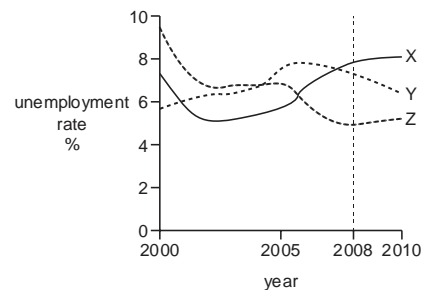
	country	unemployment rate (%)	size of the labour force (millions)
A	Egypt	12.6	27.7
B	Iran	15.3	26.4
C	Italy	9.3	25.1
D	Turkey	8.0	27.4

N/15/1/23

30 The graph shows changes in the unemployment rates in countries X, Y and Z over the period 2000 to 2010. All three countries faced recession between 2008 and 2010.

Which conclusion can be drawn from the graph about the period 2000 to 2010?

- A** All three countries experienced an upward trend in unemployment over the period.
- B** Country X had the highest number out of work in 2010.
- C** In terms of unemployment, the country least harmed by the recession was country Y.
- D** The total number out of work in the three countries was higher in 2010 than in 2000.



SECTION 16

MONEY

The use of money for economic transactions has not only enhanced pace of trade but has also facilitated consumers and producers by making exchange of goods and services convenient and less costly, both in terms of time and other resources. The increased pace of trade expands markets, thus helping producers specialize and achieve economies of scale.

However, money being used for transactions today is not what it used to be centuries ago. It has evolved over a period of time.

EVOLUTION OF MONEY

Barter

Barter is the direct exchange of goods and services, without involving money. For example, a fisherman can exchange his catch for the wheat a farmer grows. Exchanging goods and services through a barter system is very complicated and time consuming. For transactions to take place, finding another person with an opposite but equal demand i.e. double co-incidence of wants is an essential requirement. It means that the fisherman can succeed in exchanging fish for wheat only if he finds a farmer of wheat who desires to exchange wheat for fish and associates the same value to wheat and fish which the fisherman assigns.

Such a complicated and time consuming process forced a need to search for a common medium of exchange.

Commodity money

The increased specialization and production necessitated the requirement of a common medium of exchange and people started using different commodities such as crops, metals like gold and silver, livestock and precious stones as money.

Representative money

Gold was a popular medium of exchange but its excessive wear and tear forced people to find an alternative medium of exchange. People started keeping their gold with goldsmiths, who in return issued receipts to the owners of gold. The owners then used receipts for exchange of goods and services. These receipts were an example of representative money.

Fiat money

Fiat money is legal tender. Today's coins and currency notes are examples of fiat money. The central bank, on behalf of the government, issues coins and paper notes to be used as a medium of exchange.

Bank money

Bank deposits are the most important medium of exchange in developed countries. People may still use coins and currency notes for transactions of smaller denominations but larger payments are mostly made through cheques.

Money, Near money, Money substitutes

Anything, whether a commodity or a paper note, that can be used as a MEDIUM OF EXCHANGE and as a STORE OF VALUE can be labeled money. Coins, currency notes and demand or sight

bank deposits are examples of money. Demand deposits can easily be used as medium of exchange since there are no restrictions on withdrawing these deposits.

Time deposits are deposits for a particular time period (penalties are imposed if they are withdrawn before the expiry of the period). They are a store of value but cannot be used as a medium of exchange. However, increased competition in the banking sector has forced banks to introduce deposits which not only offer liquidity but also interest payments whenever amount held in deposits exceeds a certain requirement. The excess amount is automatically transferred to interest bearing accounts. Thus, time deposits may also be included in money estimates; however, they are an example of near money.

Credit cards, though very popular, cannot be regarded as money either. They do not represent a value but are only used to postpone payments. Credit cards are a medium of exchange but not a store of value. Credit cards are an example of money substitute.

The following table helps us understand the difference between money, near money and money substitutes.

	Medium of exchange	Store of value	Examples
Money	Yes	Yes	Coins, cash, demand deposits, debit cards
Near money	No	Yes	Time deposits
Money Substitute	Yes	No	Credit cards

FUNCTIONS OF MONEY

The two major functions of money are:

- (i) Medium of exchange
- (ii) Store of value

The other two functions of money are:

- (iii) Unit of value
In the absence of money, the value of every item would have to be expressed in terms of all other products. Number of values is calculated with the help of the following formula:

$$\text{Number of values (when there is no common medium of exchange)} = \frac{n(n-1)}{2}$$

For example, there would be 45 values for 10 commodities. Money however, makes the process of valuing different products easy and uncomplicated by having only 10 values for 10 commodities.

- (iv) Standard of deferred payments
It is difficult to use say, cattle and crops to postpone payments, given their perish ability and unpredictability. However, money has the ability to postpone payments.

Money can perform the functions mentioned above, only when it has the following qualities:

- (i) General acceptability**
Everyone must accept money against his goods and services believing that others will do the same. Pakistani rupee may not be a generally acceptable medium of exchange in Cyprus so buying goods and services in a Cyprian market with Pakistani rupees won't be a great idea!
- (ii) Divisibility**
Money should be divisible into smaller denominations in order to act as a medium of exchange. Cattle for example, are not a good example of money since they are not divisible to purchase say one kg of wheat.
- (iii) Portability**
Money should be easy to carry and not bulky. Currency notes are better money than coins.
- (iv) Homogeneity/standardization**
Different people must assign the same value to a certain quantity of money. The problem in barter was that different values were assigned by different people to the same set of commodities. A farmer might assign greater value to his crop than the value assigned to the crop of a neighboring farmer. A uniform value for the medium of exchange increases the pace of economic transactions.
- (v) Stability**
In order to be used as a store of value, money must have a stable and predictable value. When money sharply loses value in hyperinflation, people are discouraged to use money as a store of value.
- (vi) Durability/storability**
Money must be durable enough to be used as a store of value and as a standard for deferred payments. Wheat and other crops for example, cannot be good money because they are perishable.
- (vii) Limited supply i.e. scarcity**
Scarcity is a fundamental quality of money. A product has to be scarce to command a value and money is no exception. Even in older days, only those stones and metals were used for economic transactions which were limited in supply.

MULTIPLE CHOICE QUESTIONS

J/02/1/05

- 1 Which characteristic of money is essential, if it is to be used as a medium of exchange?
- | | |
|---|--|
| <p>(A) It must be durable.</p> <p>(C) It must be limited in supply.</p> | <p>(B) It must be legal tender.</p> <p>(D) It must have intrinsic value.</p> |
|---|--|

J/03/1/04

- 2 What is the most abundant form of money (measured by value) in a developed economy?
- | | |
|---|---|
| <p>(A) bank deposits</p> <p>(C) cheques</p> | <p>(B) cash</p> <p>(D) credit cards</p> |
|---|---|

N/06/1/04

- 3 Which characteristic of money is essential, if it is to be used as a medium of exchange?
- | | |
|---|--|
| <p>(A) It must be durable.</p> <p>(C) It must be limited in supply.</p> | <p>(B) It must be legal tender.</p> <p>(D) It must have intrinsic value.</p> |
|---|--|

J/08/1/04

- 4 What is not an essential characteristic of money?
- | | |
|---|---|
| <p>(A) It must have intrinsic value.</p> <p>(C) It must serve as a unit of account.</p> | <p>(B) It must be generally acceptable as a means of settling debts.</p> <p>(D) It must be limited in supply.</p> |
|---|---|

J/09/1/04

- 5 In 2001, the Argentinian economy was in serious economic difficulties. At this time, Argentinians made everyday purchases using the country's currency, the peso, but saved money in US dollars. Which functions were the two currencies carrying out in Argentina in this case?

	peso	US dollar
(A)	medium of exchange	standard for deferred payments
(B)	medium of exchange	store of value
(C)	unit of account	standard for deferred payments
(D)	unit of account	store of value

N/10/1/04

- 6 What is a correct statement about money?
- | | |
|---|--|
| <p>A Its functions mean the characteristics that it possesses.</p> <p>C Its supply means the total value of banknotes in circulation.</p> | <p>B Its liquidity means its use as legal tender.</p> <p>D Its value means its purchasing power.</p> |
|---|--|

J/12/1/04

7 What is considered as money if money is defined as anything which is always acceptable when paying for goods and services?

	credit cards	cheques	cash
A	yes	yes	no
B	yes	no	yes
C	no	no	no
D	no	yes	yes

N/12/1/04

8 What might cause a country's currency notes to cease to act as money?

- A the notes are issued in smaller denominations
- B the notes become harder to counterfeit
- C the notes become more long lasting
- D the notes become unlimited in supply

N/13/1/04

9 What advantage do banknotes (paper money) have over coins (metallic money)?

- A They are cheaper to produce.
- B They are more useful for low value transactions.
- C They are the only form of legal tender.
- D They have greater intrinsic value.

J/16/1/02

10 What is necessary for effective specialisation?

- A a barter system
- B a medium of exchange
- C a production possibility curve
- D a system of trade protection

J/16/1/04

11 Recently, thousands of ancient Roman coins were discovered buried in a field in the UK. Funds were raised by a museum to buy them. What function of money did the coins retain?

- A a medium of exchange
- B a standard for deferred payments
- C a store of value
- D a unit of account

SECTION 17 AGGREGATE DEMAND & AGGREGATE SUPPLY

AGGREGATE DEMAND (AD)

Aggregate Demand (AD) or Aggregate Monetary Demand (AMD) or Aggregate Expenditures represents the total demand for all goods and services during a certain period of time. In a complete economic model, Aggregate Demand equals consumer expenditures (C), Investment expenditures (I), government expenditures (G) and net export revenues (X_n).

Consumer expenditures may take up any of the following forms:

- (i) Non durables such as food and fuel
- (ii) Durables such as furniture, cars, electronics
- (iii) Services such as education, medical care, insurance etc.

Investment expenditures are of three types:

- (i) Fixed capital formation i.e. the purchase of fixed assets such as plant and machinery, equipment and fixtures.
- (ii) Changes in inventories: Firms maintain inventories (stocks), which are further categorized into:
 - (a) Raw materials prior to use
 - (b) Finished goods prior to sale
 - (c) Work in progress (WIP)

Inventory investment is positive when stocks pile up and negative when stocks deplete.

- (iii) New construction

It must be noted that only those activities are classified as investment expenditures that increase demand for currently made goods and services. None of the following activities shows investment as none increases the demand for currently made goods and services.

- Depositing money in a bank.
- Buying bonds
- Buying shares
- Buying second hand machinery or an old factory
- Buying property. However, renovating old property could be regarded as investment
- Importing machinery

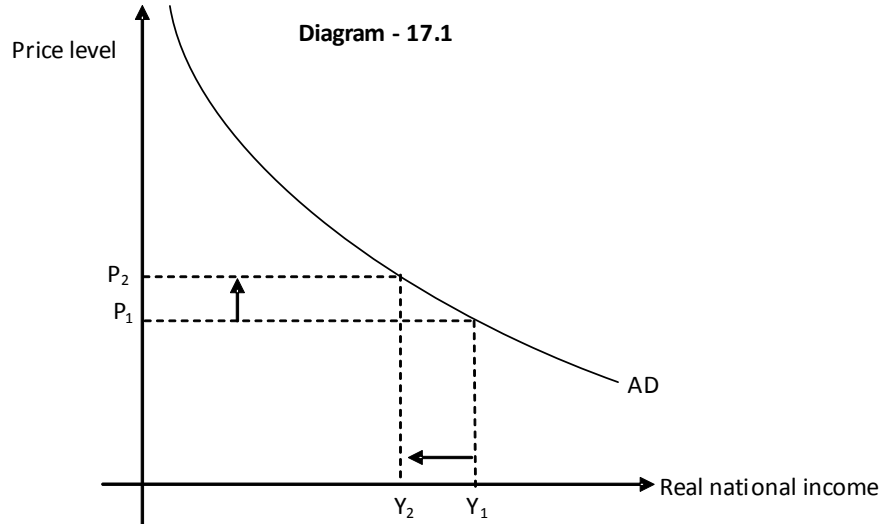
At higher interest rates, people prefer to save more and spend less- thus, consumer expenditures move inversely with interest rate. Interest rate is the opportunity cost of investment, therefore, any increase in interest rates decreases investments.

Government expenditures (G) inject demand and taxes (T) withdraw or reduce demand. A budget deficit ($G > T$) is a demand injection and a budget surplus ($G < T$) is a demand withdrawal.

Exports (X) are a demand injection and imports (M) are a demand withdrawal. A trade surplus ($X > M$) is a demand injection and a trade deficit ($X < M$) is a demand withdrawal.

The AD curve slopes downwards in the panel of average price level (x-axis) and real national income/output (y-axis), as shown in diagram 17.1.

Diagram 17.1



Why does the AD curve slope downwards?

The negative slope of the AD curve indicates that increased price level decreases Aggregate Demand. The following reasons help us understand the negative slope of the Aggregate Demand curve:

Real wealth/money balances effect: Income is a flow concept and measured for a period of time, a month or a year for instance, whereas wealth is a stock concept and measured at a certain point in time e.g. bank balance, market values of real estate, bonds, jewellery etc.

Increased price level reduces the purchasing power (real value) of wealth/money balances. Money balances are an important determinant of Aggregate Demand (Aggregate Expenditures) - decreased real balances lower expenditures (try N/05/3/20).

Interest rate effect: Households are forced to demand more money for their day to day and emergency requirements at higher price levels. Increased demand for money raises interest rates and, therefore, decreases interest sensitive expenditures such as consumption and investments.

International trade effect: Increased price level in a country makes its products less price competitive both at home and abroad. Demand for exports falls and imports rises, resulting in decreased Aggregate Demand (try N/02/3/18).

Shifts in Aggregate Demand

Factors like increased wealth and booms in real estate or stock markets encourage households to spend more, shifting Aggregate Demand towards right. The recent slump of real estate market worldwide shifted the Aggregate Demand towards left.

Decreased interest rates, lower (direct) taxes, increased budget deficit, improved consumer and business confidence, availability of loans, increased popularity and use of credit cards, depreciation of currency, improved export quality or better export marketing all increase Aggregate Demand and hence shift AD towards right.

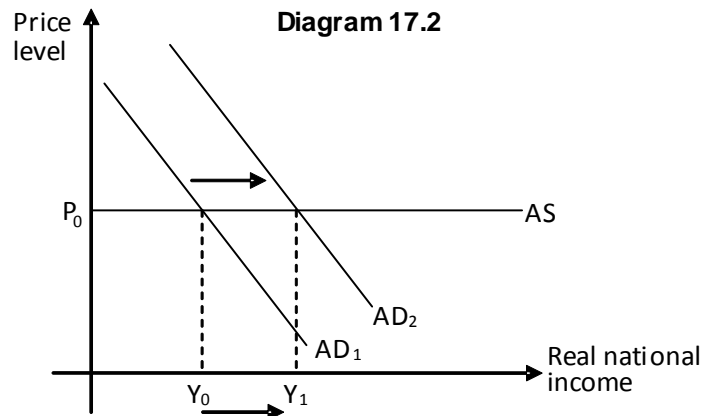
It must be noted that any change in interest rate, price competitiveness of locally made goods or wealth attributed to changes in price level brings a movement along the AD curve whereas the AD curve shifts whenever interest rates or wealth change due to other factors.

AGGREGATE SUPPLY (AS)

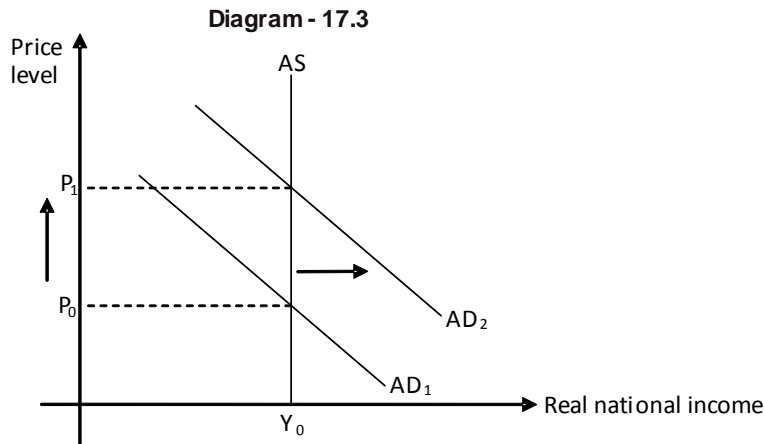
Whereas economists generally agree on the shape of the Aggregate Demand curve, dispute arises over what the Aggregate Supply curve looks like.

Keynesian Aggregate Supply (AS) curve

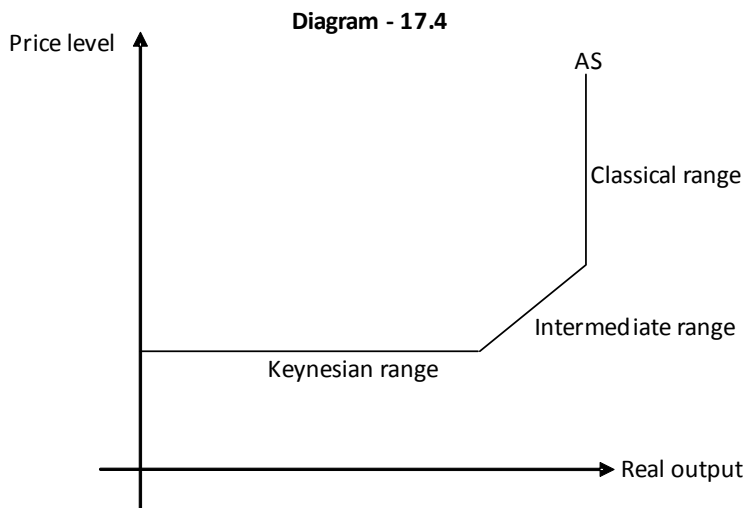
Keynesians argue that excess capacity and unemployed resources always exist, as full employment is nothing but a special case. Aggregate Supply is a straight horizontal line showing that increased Aggregate Demand helps utilize unemployed resources and leads to increased real output whereas price level remains unaffected (see diagram 17.2).



In contrast, the classical school of thought advocates that there is always full employment of resources and excess capacity hardly exists. Therefore, increased Aggregate Demand raises the price level but not real output- Classical's Aggregate Supply curve is a straight vertical line, as shown in diagram 17.3.



Diagrams 17.2 & 17.3 may be used to develop the Aggregate Supply curve as drawn in diagram 19.4 where in the Keynesian range, changes in Aggregate Demand only influence real output and not the price level. In the classical range, changes in Aggregate Demand only influence price level whereas real output remains unchanged. However, there exists an intermediate range of the AS curve too, where changes in Aggregate Demand partially influence real output and partially influence the price level.



Wage rates are assumed to be constant along an Aggregate Supply curve so any change in them may shift the AS curve.

Unit labour cost (ULC) is the ratio of the cost of hiring a labour hour and the output produced by hiring it.

$$ULC = \frac{\text{wage rate/hour}}{\text{output/hour}}$$

Increased wages may motivate workers and encourage them to work harder, making them more productive. Unit labour cost remains unchanged and causes no shift in the AS curve if a wage increase is fully offset by an equivalent improvement in productivity. Any wage increase in excess of productivity improvements increases unit labour cost and shifts the Aggregate Supply upwards (leftwards). Productivity improvements (assuming wage rate stays the same or rises slowly), shift the AS curve downwards (rightwards). Training, better work practice and a motivated workforce all result in improved productivity and lower unit labour cost.

Aggregate supply (AS) may also shift towards right because of increased female participation, increased net immigration and increased birth rate since all these changes make labour cheaper by increasing its supply. Likewise, increased participation in the workforce resulting from governments' decisions to reduce unemployment benefits and pensions and spend more money on education, training and infrastructure all shift Aggregate Supply downwards. Improved technology and increased resources also shift the Aggregate Supply curve towards right.

Strong and militant trade unions win a wage increase for their members in excess of productivity improvements, hence shifting Aggregate Supply towards left.

MULTIPLE CHOICE QUESTIONS

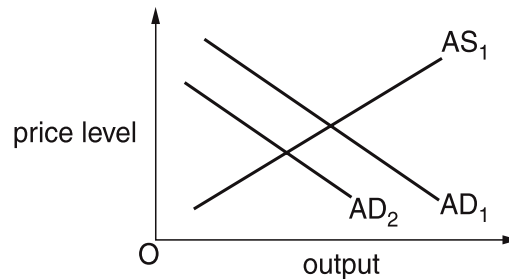
Aggregate Demand (AD)

J/02/3/22

- 1 An aggregate demand curve slopes downwards from left to right. One reason for this is that a reduction in the average price level will lead to
- (A) a reduction in the real value of money balances.
 - (B) a reduction in interest rates.
 - (C) a decline in the country's international competitiveness.
 - (D) the expectation of further price falls.

N/02/3/17

- 2 In the diagram AD_1 and AS_1 are an economy's initial aggregate demand and aggregate supply curves.

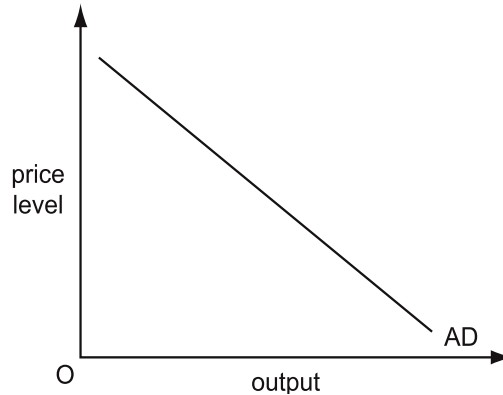


What will cause the aggregate demand curve to shift to AD_2 ?

- (A) a depreciation of the currency
 - (B) an increase in the price level
 - (C) an increase in the real wage
 - (D) a reduction in the money supply
- N/02/3/18
- 3 One of the reasons why a country's aggregate demand curve slopes downwards is that a fall in the average price level
- (A) leads to an increase in interest rates.
 - (B) reduces the real value of money balances.
 - (C) makes the country's goods cheaper relative to foreign goods.
 - (D) leads to the expectation of further price falls.

N/04/3/23

4 The diagram shows an economy's aggregate demand curve.

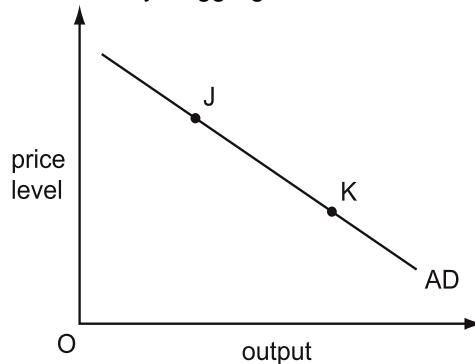


What is held constant when drawing an AD curve?

- (A) the exchange rate
- (B) the money supply
- (C) the rate of interest
- (D) the price level

J/05/3/20

5 The diagram shows an economy's aggregate demand curve.



Which change will occur as the economy moves from point J to point K?

- (A) an increase in the money supply
- (B) a decrease in the money supply
- (C) an increase in interest rates
- (D) a decrease in interest rates

N/05/3/20

6 An aggregate demand curve slopes downwards from left to right. One reason for this is that a reduction in the average price level will lead to

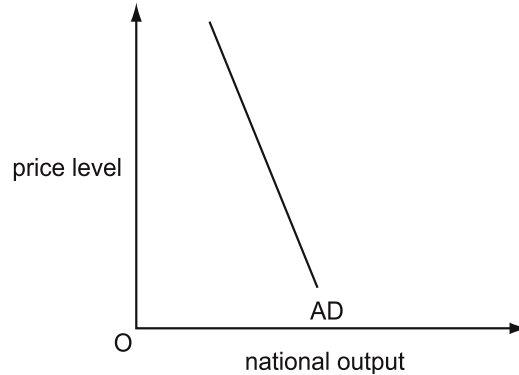
- (A) an increase in the real value of money balances.
- (B) an increase in interest rates.
- (C) a decline in the country's international competitiveness.
- (D) the expectation of further price falls.

N/05/3/30

- 7 Which government policy will increase aggregate demand?
(A) raising indirect taxation (B) reducing the budget surplus
(C) removing import quotas (D) removing subsidies

J/06/3/19

- 8 The diagram shows an aggregate demand curve.

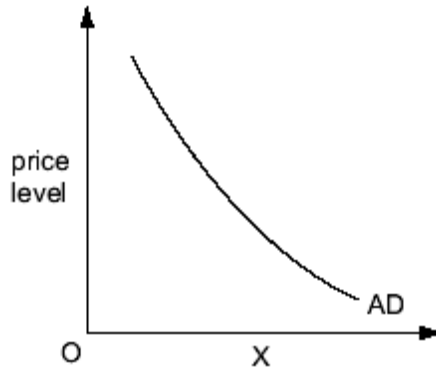


What helps to explain why the curve is downward sloping?

- (A) When exports increase there will be an increase in national income.
(B) When investment increases there will be an increase in consumption.
(C) When the price level increases there will be an increase in interest rates.
(D) When government expenditure increases there will be an increase in national output.

J/08/3/22

- 9 The diagram shows an aggregate demand curve (AD).

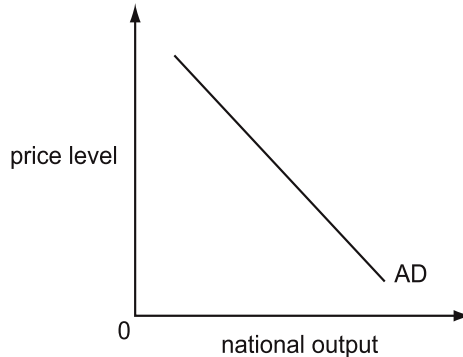


What is measured on the horizontal (X) axis?

- (A) money national output
(B) nominal national income
(C) real disposable income
(D) real GDP

J/09/3/21

10 The diagram shows a country's aggregate demand curve.



What could explain why the curve slopes downwards?

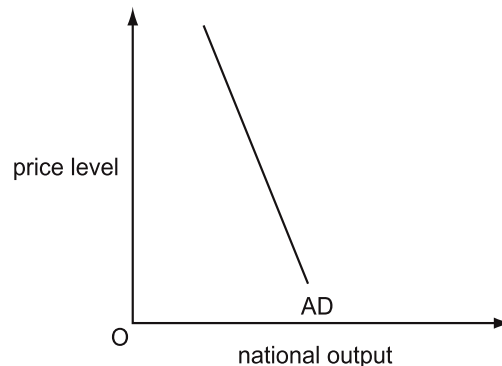
- (A) A fall in the price level increases the real value of money balances.
- (B) A fall in the price level leads to an increase in interest rates.
- (C) A fall in the price level leads to a rise in the real exchange rate.
- (D) A fall in the price level leads to the expectation of a further decrease in the price level.

N/10/3/21

11 The diagram shows an aggregate demand curve.

What helps to explain why the curve is downward sloping?

- (A) When exports increase there will be an increase in national income.
- (B) When government expenditure increases there will be an increase in national output.
- (C) When investment increases there will be an increase in consumption.
- (D) When the price level increases there will be an increase in interest rates.



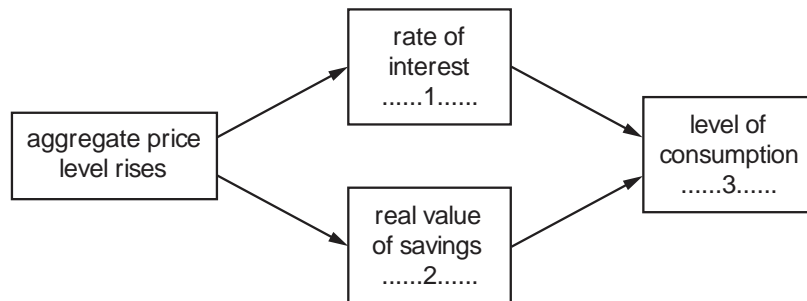
J/11/32/17

12 Other things being equal, what will result in a decrease in aggregate demand?

- (A) a decrease in interest rates
- (B) a decrease in the balance of trade deficit
- (C) a decrease in the government's budget deficit
- (D) a decrease in the household saving ratio

N/14/1/24

- 13 The diagram, which shows part of the process that causes the aggregate demand curve to slope downwards to the right, is incomplete.



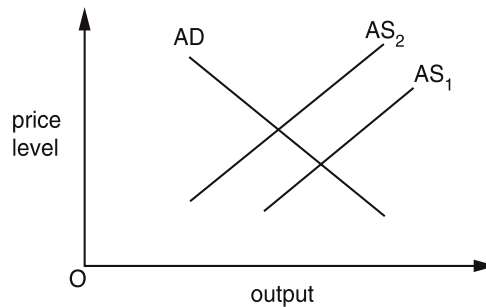
Which words correctly complete gaps 1, 2 and 3?

	1	2	3
A	falls	falls	falls
B	falls	rises	rises
C	rises	falls	falls
D	rises	rises	falls

Aggregate Supply (AS)

J/02/3/23

- 14 The diagram shows the aggregate demand and aggregate supply curves for an economy.

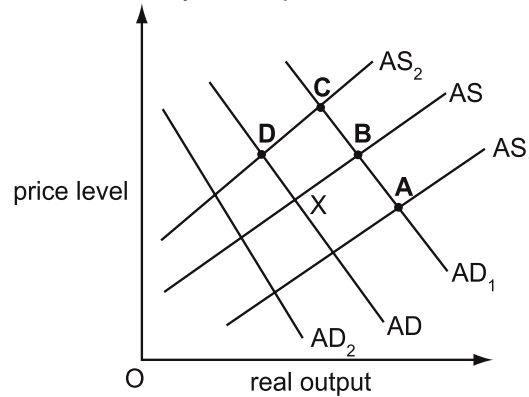


What could cause the aggregate supply to shift from AS₁ to AS₂?

- (A) an increase in the balance of payments deficit
- (B) an increase in the price level
- (C) an increase in raw material costs
- (D) an increase in labour market flexibility

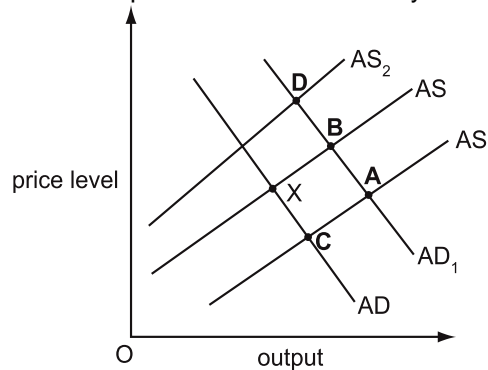
J/03/3/23

- 15** In the diagram an economy is initially in equilibrium at point X. The government increases spending on education. This coincides with an increase in wage rate inflation. Which point shows the most likely new equilibrium of the economy?



N/03/3/23

- 16** An economy is currently in equilibrium at point X. Government expenditure is increased on retraining programmes for those out of work. This raises the productivity of the trainees. Which point shows the new equilibrium in the economy?



J/04/3/23

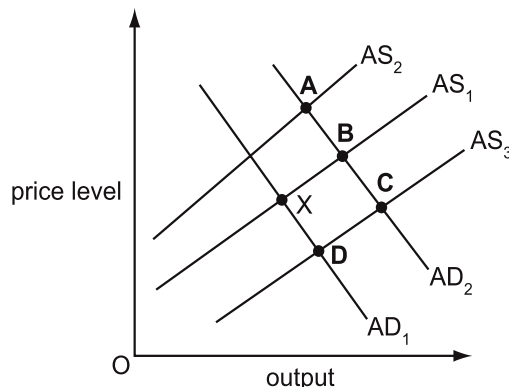
- 17** What is likely to cause a decrease in aggregate supply?
- (A) a decrease in consumption expenditure
 - (B) an increase in labour productivity
 - (C) a decrease in rates of unemployment benefit
 - (D) an increase in wage costs per unit of output

N/06/3/19

- 18** What would explain why an economy's short-run aggregate supply curve is upward sloping?
- (A) a constant price level
 - (B) constant money wages
 - (C) diseconomies of scale
 - (D) economies of scale

J/07/3/23

- 19** An economy is currently in equilibrium at point X.
 Government expenditure is increased on retraining programmes for those out of work.
 This raises the productivity of the trainees.
 Which point shows the new equilibrium in the economy?



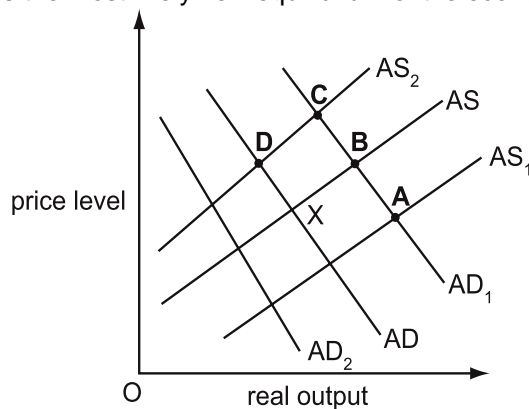
N/07/3/22

- 20** What is likely to cause a decrease in aggregate supply?

- (A) a decrease in consumption expenditure
- (B) an increase in labour productivity
- (C) a decrease in rates of unemployment benefit
- (D) an increase in wage costs per unit of output

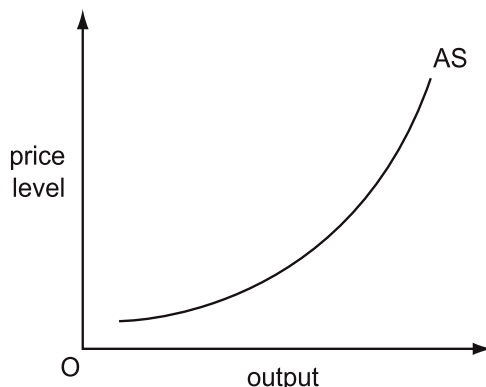
N/08/3/17

- 21** In the diagram an economy is initially in equilibrium at point X.
 The government increases spending on education. At the same time there is a decrease in money wage rates.
 Which point shows the most likely new equilibrium of the economy?



N/09/3/21

22 The diagram shows an economy's aggregate supply curve.

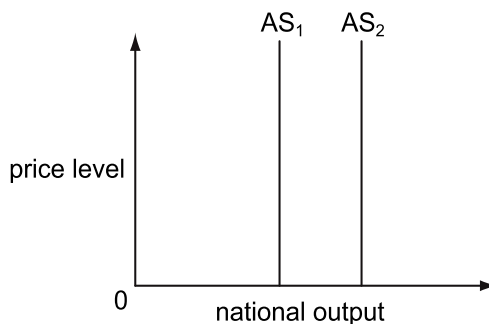


What is likely to cause the curve to shift to the left?

- (A) improvements in technology
- (B) schemes to increase the geographical mobility of labour
- (C) an increase in investment due to a reduction in interest rates
- (D) an increase in the marginal rate of income tax

J/10/3/20

23 In the diagram AS_1 is an economy's long-run aggregate supply curve.

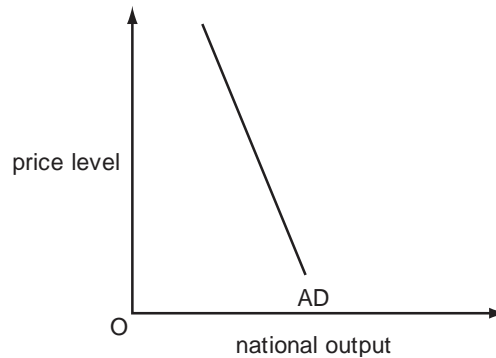


What will cause the aggregate supply curve to shift from AS_1 to AS_2 ?

- (A) an increase in consumer spending
- (B) an increase in inflation
- (C) an increase in productivity
- (D) an increase in net exports

N/10/32/21

24 The diagram shows an aggregate demand curve.



What helps to explain why the curve is downward sloping?

- A** When exports increase there will be an increase in national income.
- B** When government expenditure increases there will be an increase in national output.
- C** When investment increases there will be an increase in consumption.
- D** When the price level increases there will be an increase in interest rates.

J/11/32/17

25 Other things being equal, what will result in a decrease in aggregate demand?

- A** a decrease in interest rates
- B** a decrease in the balance of trade deficit
- C** a decrease in the government's budget deficit
- D** a decrease in the household saving ratio

N/11/32/20

26 What will be the effect, in the short run, on the price level and on national output of an increase in aggregate demand if firms are working at full capacity?

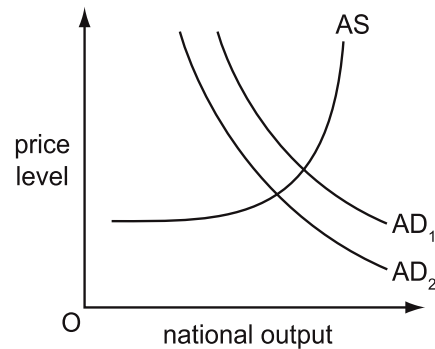
	price level	national output
A	Rise	rise
B	rise	unchanged
C	unchanged	rise
D	unchanged	unchanged

N/11/32/21

27 The diagram shows an economy's aggregate demand and aggregate supply curves.

What could cause the aggregate demand curve to shift from AD_1 to AD_2 ?

- A** an appreciation in the exchange rate
- B** an increase in the money supply
- C** a decrease in the interest rate
- D** a fall in the unemployment level

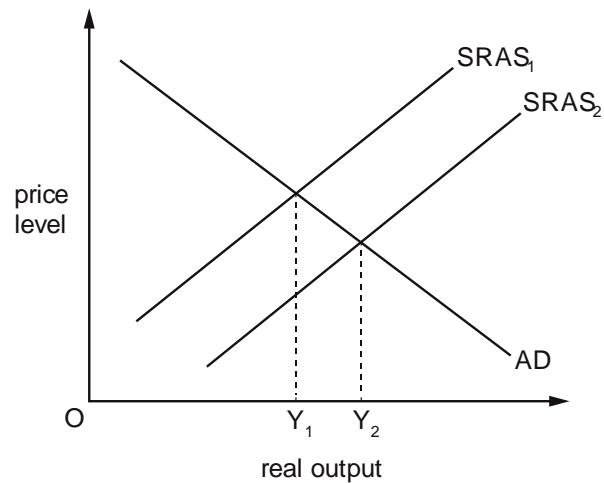


J/14/1/24

28 The diagram shows an economy's aggregate demand curve and two short-run aggregate supply curves.

What could cause the change in real output from Y_1 to Y_2 ?

- A** a decrease in bank lending
- B** a decrease in world oil prices
- C** an increase in indirect taxation
- D** an increase in wage rates



SECTION 18 GENERAL PRICE LEVEL: PRICE INDICES

Inflation is a sustained increase in the general price level. Inflation rates are a guiding tool for many government economic policies. Since prices keep changing in different directions and at different rates, the general price level is calculated to estimate the average rate of change in prices. Different products can form a basket, the price of which can be compared over time to calculate the average change in price.

Prices are compared for two years- the base year and the current year. The procedure below explains the calculation of changes in general price level i.e. the inflation rate

A, B and C are three commodities. Base year is 1990 and the current year, 1991. In 1990, prices of A, B and C were \$10, \$12 and \$8 respectively. Prices of A, B and C changed to \$12, \$15 and \$6 in year 1991. To calculate the average change in prices, price index of 100 is assigned to all prices in the base year and price index of current year shows the percentage change in the price of the product over that period. The price index of current year is calculated by deducting/adding the percentage change in prices from/to 100. For example a 20% increase in price of commodity A increases its price index from 100 to 120.

Commodity	Base year 1990		Current year 1991	
	Price \$	Price index	Price \$	Price index
A	10	100	12	120
B	12	100	15	125
C	8	100	6	75
Total		300		320

The formula for calculating simple price index is:

$$\text{Price index} = \frac{\text{Total indices}}{\text{No. of commodities}}$$

$$\text{Price index of base year} = \frac{300}{3} = 100$$

Price index of base year is always 100.

$$\text{Price index of current year} = \frac{320}{3} = 106.67$$

The difference between the price index of current year and the price index of base year is inflation rate for year 1990-91 i.e. 6.67%

This is a simple indexing method in which all commodities are given an equal weight but few commodities occupy a greater portion of consumer's income and are more important for a consumer. A price change in these products has a greater impact on consumers' budgets. Such commodities should be assigned a higher weight in order to calculate a more realistic average change in prices.

Following is an explanation of a weighted price index where different commodities are assigned weights according to the portion of income spent on these commodities. We assume that a

consumer spends 50%, 30% and 20% of his income on three commodities, A, B and C respectively. The following table shows a comparison of the prices of these three commodities along with the assigned weights.

Commodity	Base year 1990				Current year 1991			
	Price \$	Price index	Weights	Total indices	Price \$	Price index	Weights	Total indices
A	10	100	5	500	12	120	5	600
B	12	100	3	300	15	125	3	375
C	8	100	2	200	6	75	2	150
Total		300	10	1000		320	10	1125

Weights of 5, 3 and 2 are assigned to commodities A, B and C according to the proportion of consumer's budget to these commodities. The column of total indices is calculated by multiplying price index of a commodity with the weight assigned to that commodity.

In the case of weighted price index, the formula is as follows:

$$\text{Price index} = \frac{\text{Total indices}}{\text{Total weights}}$$

$$\text{Price index of base year} = \frac{1000}{10} = 100$$

$$\text{Price index of current year} = \frac{1125}{10} = 112.5$$

$$\begin{aligned} \text{Inflation rate} &= \text{Price Index of current year} - \text{price index of base year} \\ &= 112.5 - 100 \\ &= 12.5\% \end{aligned}$$

Inflation rate calculated through weighted price index is higher than the inflation rate calculated through simple price index. The reason is that a lower weight is assigned to commodity C, the price of which has fallen.

Inflation rate is price index of current year minus price index of base year. However, the following formula should be used to calculate inflation rate if price index of previous year is not 100.

$$\text{Inflation rate} = \frac{\text{Price Index of current year} - \text{Price index of previous year}}{\text{Price Index of Previous Year}} \times 100$$

Example: Which country experienced the highest inflation rate between 2006 and 2007.

country	2006	2007
X	100	120
Y	140	150
Z	90	99

$$\begin{aligned} \text{Answer: Inflation rate (Country X)} &= \text{Price Index of current year} - \text{price index of base year} \\ &= 120 - 100 = 20\% \end{aligned}$$

$$\text{Inflation rate (Country Y)} = \frac{\text{Price Index of current year} - \text{Price index of previous year}}{\text{Price Index of Previous Year}} \times 100$$

$$= \frac{150 - 140}{140} \times 100 = \frac{10}{140} \times 100 = 7.14\%$$

$$\text{Inflation rate (Country Z)} = \frac{\text{Price Index of current year} - \text{Price index of previous year}}{\text{Price Index of Previous Year}} \times 100$$

$$= \frac{99 - 90}{90} \times 100 = \frac{9}{90} \times 100 = 10\%$$

Country X experienced the highest inflation rate during 2006 – 2007.

Students should now attempt question N/08/1/24.

LIMITATIONS OF PRICE INDEX

- The weights assigned can involve controversies. Governments can assign higher weights to commodities whose prices have either gone down or have not risen sharply, simply to understate the rate of inflation.
- Weights may also change with time, making comparisons over time difficult.
- The calculated rate of inflation may not be a true reflection of increase in cost of living in all areas of the country. Prices of few products may have risen more sharply in some parts of the country, than in others.
- The competency of authorities responsible for collecting data limits the reliability of such figures.
- Selecting the right base year carries much importance. Base year should be free of extreme fluctuations.
- Lack of proper documentation in developing countries makes estimating inflation even more difficult.
- Firms may also understate prices to evade taxes, reducing the reliability of the calculated rate of inflation.

NOMINAL AND REAL CHANGES

To analyze changes in different variables such as income, expenditures and sales, one must differentiate between nominal and real changes. A nominal change is calculated in terms of money value and does not take into account changes in the price level e.g. increase in income from \$1 000 to \$1 100 is a 10% increase in nominal income. However, the real change in income depends upon the change in the price level. Real income i.e. the purchasing power of the given money income stays unchanged, in case the price level also increases by 10%.

The calculation of income at current prices gives the figures for nominal income. In order to calculate real changes, income and other variables should be calculated at constant prices of the base year. This method neutralizes the effect of changes in price level and expects an analysis of factors other than price that brought a change in the variable. The following exercise explains this point.

Example

	2004	2005
Consumer expenditure	\$150 m	\$165 m
Price index	100	105

Consumer expenditures increase from \$150 m to \$165 m. If calculated at current prices, this is a 10% increase in expenditures. Real change in expenditures can be calculated using the following formula, taking year 2004 as the base year:

$$\begin{aligned} \text{Real expenditure} &= \text{Nominal expenditures} \times \frac{\text{Price index of base year}}{\text{Price index of current year}} \\ &= 165 \times \frac{100}{105} = 157.14 \end{aligned}$$

The calculation of consumer expenditures at constant prices of the base year shows an increase of 4.76% in real terms.

Question

What could be the possible reasons for a decrease in expenditures on beef consumption from \$60 m to \$58 m, calculated at constant prices?

Answer (Decrease in price of beef cannot be the reason as calculation of expenditures at constant prices neutralizes the effect of possible change in price.)

Reasons of decreased expenditures on beef could include households becoming more health conscious and deciding to lower beef consumption, better quality food items catching consumers' attraction and mad cow disease!

The following example explains the calculation of consumer expenditures at constant prices.

Question Suppose the average consumer's expenditure is divided between bread, meat, milk and vegetables in the ratio 4:3:2:1.

During the course of a year, the prices of both bread and vegetables increase by 10%, the price of meat increases by 20% and the price of milk decreases by 10%. What is the increase in the average price level during the year?

Answer

- Price index of base year and initial prices for all commodities are assumed to be 100.
- After the changes, prices of both bread and vegetables increase to 110, price of meat increases to 120 and price of milk decreases to 90.
- Multiply new prices with their respective weights:
Bread $110 \times 4 = 440$
Meat $120 \times 3 = 360$
Milk $90 \times 2 = 180$
Vegetable $110 \times 1 = 110$
- Get the total of all indices i.e. $440 + 360 + 180 + 110 = 1090$
- Divide this total with total weights i.e. $\frac{1090}{10} = 109$
- Inflation rate = Price Index of current year - Price index of previous year
 $= 109 - 100 = 9$
Average increase in the price level or inflation rate is 9%.

Students should now attempt question J/04/1/24.

MULTIPLE CHOICE QUESTIONS

J/02/1/24

- 1** Suppose the average consumer's expenditure is divided between bread, meat, milk and vegetables in the ratio 4:3:2:1.
During the course of a year, the price of bread falls by 10%, the price of meat increases by 20% and the prices of both milk and vegetables increase by 10%. What is the increase in the average price level during the year?

- (A) 5% (B) 7.3% (C) 10% (D) 12.5%

J/02/1/25

- 2** The table shows a country's consumer price index for March and April 2000.

March 2000	148.6
April 2000	151.3

Which statement correctly describes what happened between these two months?

- (A) There was an increase in the annual rate of inflation.
 (B) There was an increase in the standard of living.
 (C) There was a decrease in real interest rates.
 (D) There was a decrease in the purchasing power of money.

N/02/1/24

- 3** The table shows information about a country whose consumers spend their income on three commodities, P, Q and R.

Commodity	index of prices in year 1	index of prices in year 2	consumers' expenditure in year 1
P	100	160	\$ 100 million
Q	100	80	\$ 300 million
R	100	100	\$ 100 million

Between year 1 and year 2 how has the general level of prices changed?

- (A) It has risen by 40%. (B) It has risen by 10%.
 (C) It has remained the same. (D) It has fallen by 5%.

J/03/1/24

- 4** The average consumer divides his expenditure between food, accommodation and clothing in the ratio 5:3:2.
During the course of a year, the price of food rises by 10%, the price of accommodation remains constant and the price of clothing falls by 5%.
As summing that the weights of a price index reflect the expenditure of the average consumer, what is the increase in the index over the year?

- (A) 2.5% (B) 4% (C) 5% (D) 6%

N/03/1/14

5 What explains why the social cost of developing tourism on a remote island is greater than the private cost?

- A the costs of building extra hotels on the island
- B the extra costs of providing the tourists with food
- C the travel costs paid by tourists who visit the island
- D the harm to the environment caused by the tourists

N/03/1/25

6 The table shows the price indices and weights for three commodity groups that are included in the calculation of a country's cost of living index.

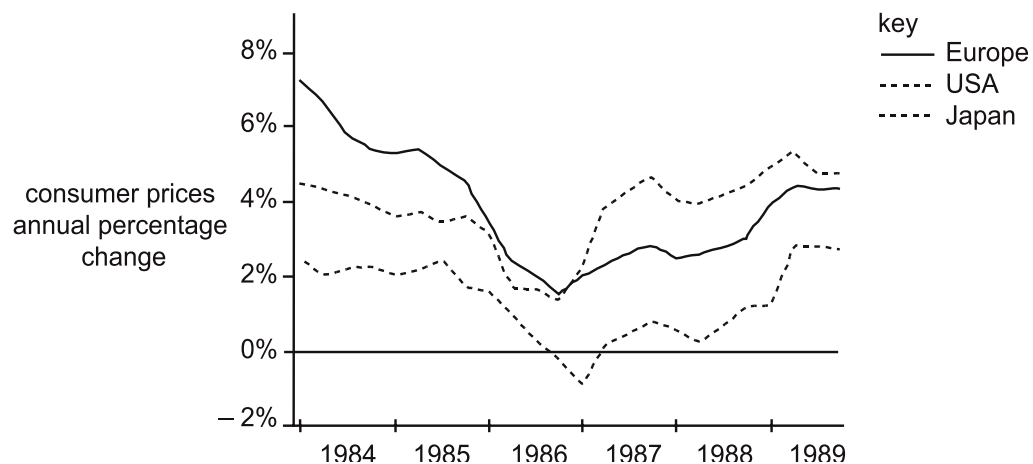
commodity group	index	weight
X	300	4
Y	140	3
Z	80	3

By how much has the cost of living increased since the base year?

- (A) 52% (B) 86% (C) 186% (D) 198%

N/03/1/26

7 The diagram shows the annual percentage changes in consumer prices for Europe, Japan and the USA between 1984 and 1989.



Which of the following statements is correct?

- (A) In 1986 consumer prices were falling in Japan, the USA and Europe.
- (B) In the period 1984-1987 consumer prices fell more quickly in Europe than in the USA.
- (C) In the period 1987-1989 the USA had the highest consumer prices.
- (D) In the period 1984-1989 Japan had the lowest consumer price in inflation.

N/04/1/24

- 8 The table shows the price in dices and weights for three commodity groups that are included in the calculation of a country's consumer price index.

commodity group	index	weight
X	400	5
Y	120	3
Z	80	2

By how much has the cost of living increased since the base year?

- (A) 52% (B) 60% (C) 152% (D) 520%

N/04/1/25

- 9 The figures show the consumer price index (CPI) of a country. (1971 = 100)

	CPI
1998	200
1999	204
2000	206
2001	209

What can be deduced from the data?

- (A) There was hyperinflation between 1971 and 1998.
 (B) The rate of inflation rose in 2000.
 (C) The rate of inflation in 1999 was 4%.
 (D) The country experienced inflation in the three years down to the end of 2001.

J/05/1/24

- 10 The table shows the share of a worker's income spent on three classes of good and the percentage change in the prices of the goods over a year.

	share of income spent on goods	change in price of good
clothing	$\frac{1}{4}$	+25%
food	$\frac{1}{2}$	+50%
fuel	$\frac{1}{4}$	-25%

Over the same period the worker's money income rises by 25%.
 What happens to the worker's real income?

- (A) It falls by 25%. (B) It falls by 50%.
 (C) It rises by 25%. (D) It is unchanged.

N/05/1/24

11 The table shows the weights used over three years in the UK consumer price index.

	2001	2002	2003
food	116	114	109
motoring expenditure	140	141	146
housing	205	199	203
leisure goods	49	48	48

What can be deduced from the table?

- (A) Housing was a bigger proportion of the average UK household's spending in 2003 than in 2002.
- (B) The average UK household ate less in 2003 than in 2001.
- (C) The average UK household spent more on motoring in 2003 than in 2001.
- (D) The price of leisure goods remained unchanged between 2002 and 2003.

N/05/1/25

12 The data given below refers to money supply and prices in the years 2001 and 2004 in four countries **A**, **B**, **C** and **D**.

Between 2001 and 2004, in which country was the rate of inflation the highest?

	2001		2004	
	money supply (\$ million)	price index (200 = 100)	money supply (\$ million)	price index (200 = 100)
(A)	69	104	78	153
(B)	65	112	120	247
(C)	70	101	213	157
(D)	172	105	360	210

J/06/1/24

13 The table shows the year-on-year percentage changes for a country's consumer price index from 1999 to 2005.

year	% change
1999	18.0
2000	11.7
2001	8.6
2002	4.6
2003	4.9
2004	6.1
2005	4.5

Which statement about the price level is correct?

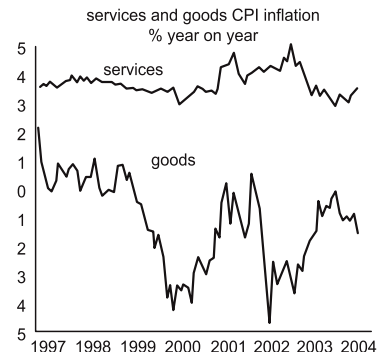
- (A) It fell over the first half of the period.
- (B) It was at its highest at the start of the period.
- (C) It was at its lowest at the end of the period.
- (D) It was at its lowest at the start of the period.

N/06/1/24

14 The diagram shows rates of inflation as measured by the Consumer Price Index (CPI) between 1997 and 2004.

Which conclusion can be drawn from this data?

- (A) The prices of goods fell in 1999.
- (B) The prices of goods rose between 2000 and 2001.
- (C) The prices of services fell between 2002 and 2004.
- (D) Between 1997 and 2004, services cost more than goods.



N/06/1/25

15 The table shows a country's rate of inflation for four years.

year	rate of inflation %
2000	4.0
2001	3.0
2002	2.5
2003	2.0

What fell between 2000 and 2003?

- (A) average prices
- (B) the cost of living
- (C) the exchange rate
- (D) the value of money

J/07/1/24

16 The table shows the retail prices index for four countries for years 2 and 3. (Year 1 index = 100 for all countries.)

Which country had a higher rate of inflation in year 2 than year 3?

Country	year 2 index	year 3 index
(A)	100	115
(B)	110	132
(C)	120	144
(D)	130	150

N/07/1/25

17 A country experienced an annual inflation rate of 4% for three successive years. Which statement is correct for the three-year period?

- (A) The price level rose by 12%.
- (B) The price level rose by more than 12%.
- (C) The real value of money rose by 12%.
- (D) The real value of money rose by more than 12%.

N/08/1/24

18 The figures were taken from the consumer price indices of retail prices for three countries.

Between 2006 and 2007, what is correct?

- (A) Country X has the highest growth in the purchasing power of money.
- (B) Country Y has the highest growth in the purchasing power of money.
- (C) Country Z has the lowest rate of inflation.
- (D) Country Y has the lowest rate of inflation.

Country	2006	2007
X	100	120
Y	140	150
Z	90	99

J/09/1/24

19 What is the average weighted price change illustrated by the table below?

Product	Percentage of income spent on product	price change %
P	10	+8
Q	15	+6
R	25	+4
S	50	-9

- (A) 9.0 %
- (B) 7.2 %
- (C) 4.5 %
- (D) -1.8 %

J/10/1/23

20 The average consumer divides his expenditure between food, accommodation and clothing in the ratio 5:3:2.

During the course of a year, the price of food rises by 10%, the price of accommodation remains constant and the price of clothing falls by 5%.

What is the increase in the Consumer Price Index over the year?

- (A) 2.5%
- (B) 4%
- (C) 5%
- (D) 6%

N/11/1/24

21 The average consumer divides his expenditure between food, clothing, accommodation and transport in the ratio 2 : 1 : 4 : 3.

During the course of a year, the price of food falls by 2 %, the price of clothing increases by 4 %, the price of accommodation increases by 10 % and the price of transport remains constant.

Assuming that the weights of a price index reflect the expenditure of the average consumer, what is the increase in the index over the year?

- (A) 2.5 %
- (B) 4 %
- (C) 10 %
- (D) 12 %

J/14/1/25

22 The table shows a country's rate of inflation for four years.

What fell between 2009 and 2012?

- A average prices
- B the cost of living
- C the exchange rate
- D the value of money

year	rate of inflation %
2009	4.0
2010	3.0
2011	2.5
2012	2.0

J/15/1/24

- 23** In 2012, a survey of household expenditure identified X and Y as the contents of a basket of goods for a price index. The value of the index in 2012 was 100. In 2013, the index was valued at 116. During 2013, the prices of X and Y increased by 10% and 20%, respectively.
In percentage terms, which weights were attached to X and Y in calculating the index?

	good X (%)	good Y (%)
A	25	75
B	40	60
C	50	50
D	70	30

N/15/1/26

- 24** The table shows the Consumer Price Index (CPI) for a country.

year	CPI
2008	100
2009	104
2010	102
2011	105
2012	108
2013	111

Which statement about the period 2008 to 2013 is correct?

- A** Prices increased each year.
- B** Prices increased fastest in 2011.
- C** The rate of inflation was 2% in 2010.
- D** The smallest rise in prices was in 2013.

SECTION 19

INFLATION

Inflation is a sustained rise in the general price level in an economy. A positive inflation rate is an indication of increasing price level and cost of living. When inflation is negative, price level falls and purchasing power of money increases.

TYPES OF INFLATION

Creeping Inflation

Inflation rate is creeping when price level increases at a slow and steady rate. Inflation rate is roughly around 1% per annum. This type of inflation can usually be anticipated and the costs of creeping inflation are fewer compared to high and fluctuating inflation rates. In fact, benefits of creeping inflation might even exceed its costs. Creeping inflation signals growth and prosperity and encourages investments and entrepreneurship.

Strato Inflation

In this type of inflation, price level rises at a faster rate. The rate of inflation could be 5% to several hundred percent. If left unchecked, it is feared that strato inflation may turn into hyper inflation.

Hyper Inflation

This is the most dangerous type of inflation. Price level rises at a very high rate and varies anywhere between 10% and several hundred percent. The difference between strato inflation and hyper inflation is that price level rises suddenly in the latter. This erratic increase in price level causes uncertainty and may even completely destroy the confidence of people in the national currency. Money loses its ability to act as a medium of exchange and a store of value. People prefer exchanging goods and services through a barter system i.e. that goods and services are exchanged with other goods and services without involving cash/money.



Shown above is a 50 million Zimbabwean dollar note (equal to 3.5 US dollars) indicating hyperinflation in Zimbabwe and extremely low value of its currency. Zimbabwe's inflation rate in December 2008 was 231000 000%- the government of Mr. Robert Mugabe is in serious danger!

Suppressed Inflation

Sometimes, the government artificially keeps prices at a lower level even when price level actually faces an upward pressure. The outcome of price controls is shortages (excess demand) of products and long queues of customers. The economy may face hyper inflation once artificial measures taken by government to check prices are removed.

Stagflation

Stagflation occurs where a country simultaneously experiences a high inflation rate and a high level of unemployment. This type of inflation is usually witnessed in developing countries.

Rectifying stagflation is a bigger challenge as the tools used to reduce unemployment inflate the price level and the converse is true as well.

CAUSES OF INFLATION

Causes of inflation can generally be categorized as:

- Demand Pull Inflation
- Cost Push Inflation

Demand Pull Inflation

Demand Pull Inflation occurs where aggregate demand persistently exceeds aggregate supply at current prices so that general price level is risen up.

Economists agree that once the country's resources are fully employed, a further increase in Aggregate Demand (AD) leads to an increased price level.

Excess demand may be caused when a country achieves a trade account surplus i.e. export revenue (X) exceeds import expenditure (M). A trade surplus injects demand into the economy and could be reflationary (increase in real output) if unemployed resources and excess capacity is available but a trade surplus is inflationary when economy is already operating at full employment. A weaker currency is thus inflationary, as it makes exports cheaper and imports expensive, increasing the aggregate demand.

A budget deficit i.e. government spending (G) exceeds tax revenue (T) injects demand and is inflationary in a situation of full employment.

Increased consumers' and investors' optimism also increase AD and raises prices if excess capacity is unavailable to meet extra demand.

Easy and cheap availability of consumer loans, credit cards and automatic teller machines (ATMs) may also contribute to a rising price level.

Lower interest rates and increased money supply also raise price level.

Cost Push Inflation

Cost Push Inflation occurs where the process of rising prices is initiated and sustained by higher input costs. The famous types of cost push inflation are wage cost push inflation, import price cost push inflation and profit cost push inflation.

Wage cost push inflation arises when workers win a wage increase in excess of productivity improvements, raising the unit labor cost and hence, the price level. Unit labor cost (ULC) is the ratio of total cost of labor and the total number of units made.

$$ULC = \frac{\text{Total cost of labour i.e. the wage}}{\text{number of units made}}$$

A wage increase that equals increase in productivity keeps unit labor cost unchanged. Unit labor cost increases when wages rise is in excess of productivity improvements.

Strong trade unions and governments introducing a minimum wage over and above the equilibrium wage contribute to wage cost push inflation.

An increase in wages also has demand pull effects on inflation. Increased wages raise purchasing power and hence, demand for available goods and services.

Import cost push inflation takes place when imported raw materials and other imported inputs become expensive. Rising oil prices in the world market are a reason of inflation in many oil importing countries. A weaker currency makes imports expensive and is reason for both demand pull and cost push inflation.

Temptation of firms to make more profits can induce them to charge high prices and contribute to higher inflation. The presence of a vigilant regulatory authority keeps this temptation in check and prices under control.

Crop failures result in shortages of essential food items, thus raising the general price level. Government price support schemes that help and encourage farmers also contribute to higher production cost and thus, higher inflation.

Demand pull inflation may increase profits and thus firms' optimism but cost push inflation usually lowers them. Increased optimism may reduce the pressure on firms to be financially disciplined. The rising demand shifts emphasis from controlling production cost to increasing production speed. Thus, demand pull inflation is more likely to accelerate inflationary pressures through cost push effects. However, cost push inflation pressurizes firms into controlling their cost, hence helping control inflationary trends.

CONSEQUENCES OF INFLATION

The effects of inflation depend on its rate, how old it is, whether it is anticipated or unanticipated and the inflation rates of other countries.

The consequences of creeping inflation are few and may even be outweighed by its benefits. A low and stable inflation rate can be anticipated and allows different stakeholders to adjust their plans, reducing the consequences of inflation. A high inflation rate may still not be dangerous for export competitiveness of locally made goods if inflation rates in other countries are comparatively higher.

Some of the consequences of inflation are discussed below:

Effect on distribution of income

Fixed income earners (for example wage earners), people living on pensions and those who derive their incomes from fixed interest securities, lose when price level rises. Unlike businessmen, they cannot shift the burden of higher cost of living to others. However workers can attempt to transfer higher cost of living by negotiating through trade unions for a wage increase.

Governments can decide to link wages and pensions with the price index. Indexing wages and pensions means that wages/pensions automatically rise when general price level rises. However this leads to the problem of fiscal drag. Fiscal drag is a situation where low income earners are dragged into the list of tax payers because of high inflation rate.

The concept of fiscal drag is explained in the following example:

An individual's annual income is Rs.100 000. The tax threshold i.e. the portion of income exempted from tax is also Rs.100 000. This individual does not pay any income tax and his disposable income (income – taxes) is Rs.100 000.

Assuming that his wage is index linked, a 10% increase in price level automatically raises his annual wage to Rs.110 000. He will have to pay a tax on income in excess of the tax threshold. Assuming tax rate is 10%, his disposable income will be Rs.109 000.

The real income i.e. the purchasing power is a ratio of money income and price level. A lower increase in money income and a comparatively higher increase in price level means the real income of this individual has decreased even when his wage was index linked. Higher inflation has dragged this individual into the list of tax payers. Fiscal drag arises as a result of government's inability to increase tax threshold in line with the inflation rate.

Effects on lending, borrowing and savings

Real interest rates are nominal interest rates adjusted with inflation.

Real interest rate = Nominal interest rate – Inflation rate.

Real interest rates decrease when price level rises and may even be negative if inflation rate exceeds nominal interest rates. Lending and savings are discouraged when inflation rate increases since real interest rate falls. Borrowers gain at the expense of lenders as they pay back less in real terms during periods of inflation.

In case of anticipated inflation, borrowers and lenders can adjust nominal interest rate to minimize the consequences of a higher inflation rate.

Central bank can decide to increase nominal interest rates to control inflation, making investments more costly.

Effects on international trade

A comparatively higher inflation rate in a country reduces the price competitiveness of its goods and services both at home and abroad. Assuming price elastic demand for exports and imports, the increased imports and decreased exports lead to a rising trade deficit, putting pressure on the economy.

Lost consumers' and investors' confidence

Higher inflation creates uncertainty and distortion which saps the underlying strength of the economy and causes steeper, more volatile business cycles. Costing and pricing decisions become even more difficult, forcing investors to either avoid or delay their investment and expansion plans. Long term contracts are discouraged and frequent changes in prices damage relationships between buyers and suppliers. Some investors prefer non-productive business activities such as keeping finished goods in stocks (hoarding), anticipating higher prices.

Money ceases to be a medium of exchange and a store of value when inflation rate accelerates and turns into hyper inflation. People lose confidence in money and replace it with barter i.e. a direct exchange of goods and services without involving money. Such an extreme situation may lead to a political turmoil and economic unrest.

Menu and shoe leather costs

These are the minor costs associated with inflation. Higher price level forces firms to spend huge sums of money on printing new menus and informing distributors and customers about these price changes.

Consumers spend more time in searching for a better deal and negotiating prices when high inflation rate reduces their purchasing power. This increased 'search time' reduces the pace of economic activity and results in wastage of time and energy. This cost can be described as shoe leather cost.

Is inflation necessarily harmful?

The harmful consequences of inflation are explained above. However, inflation is less harmful when:

- Rate of inflation is low, steady and can be anticipated
- Rate of inflation is decreasing over years
- Rate of inflation is relatively low, compared to other countries
- Balance of trade will not be adversely affected if the sum of import and export elasticities is less than 1 and/or exchange rate is flexible.

The ideal inflation rate, surprisingly, is NOT zero. It's rather like a pinch of salt- neither too much nor too little works. A low inflation rate signals growth, prosperity and encourages entrepreneurship. However, if inflation turns into hyper, the economy can collapse just as too much salt makes the food bitter. Therefore, zero inflation i.e. completely stable prices, is never the objective of any government.

Is controlling inflation the most important government objective?

Controlling inflation could be the most important objective of a government since it helps achieve several other economic objectives.

- Unchecked inflation can turn into hyper inflation, completely destroying the economic system and causing massive unemployment. So, controlling inflation helps prevent economic collapse and unemployment.
- A persistent trade deficit puts pressure on national official reserves and can increase unemployment, necessitating governments to reduce trade deficit. Controlling inflation makes locally made goods and services more price competitive, both at home and abroad- hence, helping governments reduce trade deficit.
- Low inflation rate reduces uncertainties and makes investments less risky. Thus, controlling inflation ensures a sustainable growth of the economy.
- Inflation mainly affects low income earners and widens income inequalities. Controlling inflation helps reduce these inequalities, which is yet another important economic objective.

However, governments experiencing recession and massive unemployment can sacrifice the objective of reducing inflation and pay more attention to fostering economic growth.

How to reduce inflation

Government can use contractionary (deflationary) demand management policies like decreased public spending, higher taxes or/and higher interest rates to withdraw aggregate demand. However, these policies can increase unemployment. These policies and their impacts will be discussed in detail in the extension portion of the course.

MULTIPLE CHOICE QUESTIONS

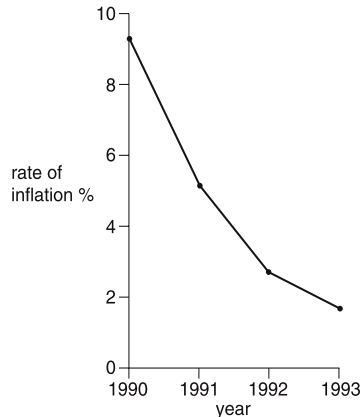
J/02/1/29

- 1** Assuming the demand for oil is price-inelastic, what will be the effect on demand-pull inflation and on cost-push inflation in an oil importing country of an increase in the world price of oil?

	effect on demand-pull inflation	effect on cost-push inflation
(A)	increase	increase
(B)	increase	reduce
(C)	reduce	increase
(D)	reduce	reduce

N/02/1/30

- 2** The diagram shows the annual rate of inflation in the UK between 1990 and 1993.



Which statement is true of the period 1990 to 1993?

- (A)** The cost of living fell. **(B)** The price level rose.
(C) The retail price index fell. **(D)** The value of money rose.

J/03/1/25

- 3** Which factor will cause cost-push inflation?

- (A)** a higher level of consumption
(B) an increase in trade union power
(C) an increase in labour productivity
(D) an appreciation of the exchange rate

J/03/1/26

- 4** In what circumstances will money lose its value?

- (A)** The economy experiences a period of deflation.
(B) The general level of prices is falling.
(C) The rate of inflation is positive.
(D) The growth of money supply falls below the growth of output.

J/04/1/25

- 5** A non-interest bearing asset is index-linked.
 During a period of inflation, how will its money value and its real value change?

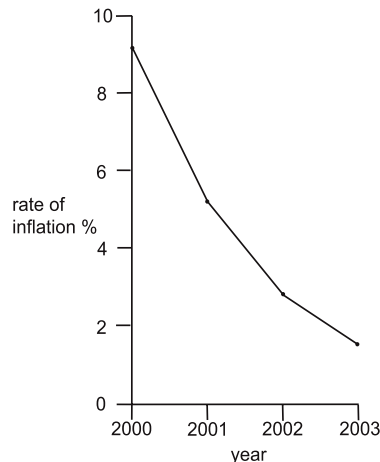
	Money value	real value
(A)	rises	rises
(B)	rises	stays constant
(C)	stays constant	falls
(D)	stays constant	stays constant

J/04/1/26

- 6** When will a reduction in unemployment result in an increase in inflation?
(A) when a high percentage of the increase in income is saved
(B) when the economy reaches its production possibility curve
(C) when the jobs created are unskilled
(D) when the newly employed buy mainly imported goods

J/05/1/25

- 7** The diagram shows the annual rate of inflation in a country between 2000 and 2003.



Which statement is true of the period 2000 to 2003?

- (A)** The cost of living fell. **(B)** The price level rose.
(C) The retail price index fell. **(D)** The value of money rose.

J/05/1/26

- 8** Which combination of events is most likely to cause inflation?

	exchange rate	direct taxes	money supply
(A)	falling	falling	falling
(B)	falling	falling	rising
(C)	rising	rising	rising
(D)	rising	rising	falling

N/05/1/26

9 A government announces that it has achieved its target of 2.5% inflation per annum and that it expects to maintain it.

How might such an announcement reduce inflationary pressure?

- (A) by encouraging the government to reduce its spending
- (B) by putting downward pressure on the country's exchange rate
- (C) by putting pressure on the central bank to reduce interest rates
- (D) by reducing workers' expectations of future inflation

J/06/1/25

10 What is most likely to cause demand-pull inflation?

- (A) an increase in indirect taxes
- (B) an increase in interest rates
- (C) a reduction in direct taxes
- (D) a reduction in the money supply

N/06/1/26

11 What is **not** a possible cause of cost-push inflation?

- (A) an increase in firms' profit margins
- (B) an increase in the supply of money
- (C) an increase in trade union power
- (D) an increase in world oil prices

J/07/1/25

12 Which combination is likely to result from demand-pull inflation?

	balance of trade	Profits
(A)	worsening	Rising
(B)	improving	Rising
(C)	worsening	Falling
(D)	improving	Falling

J/07/1/26

13 What would be likely to increase inflation in an economy?

- (A) an increase in consumer saving
- (B) an increase in interest rates
- (C) an increase in labour productivity
- (D) an increase in taxes on imports

N/07/1/26

14 What would be likely to decrease inflation in an economy?

- (A) an increase in consumer spending
- (B) an increase in employment
- (C) an increase in labour productivity
- (D) an increase in taxes on imports

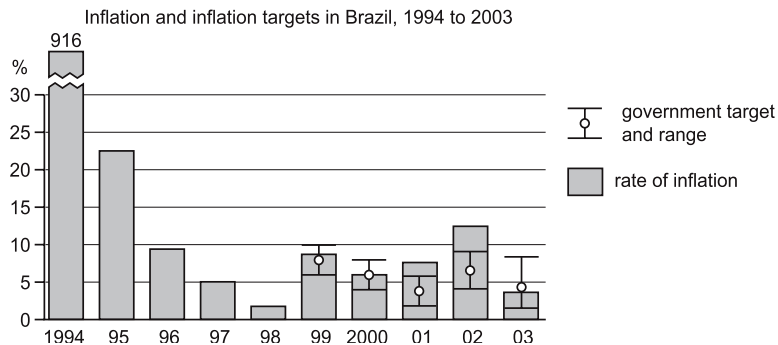
J/08/1/24

15 A country's Consumer Price Index increased from 100 to 200 over a five-year period. What can be deduced from this?

- (A) The economy experienced creeping inflation.
- (B) The standard of living halved.
- (C) The cost of living fell by 50 %.
- (D) The purchasing power of money halved.

J/08/1/25

- 16** Before 1999 the Brazilian government did not have a desired target rate of inflation. From 1999 it set target rates within an upper and lower boundary. The diagram shows the rate of inflation between 1994 and 2003 and the target rate between 1999 and 2003.

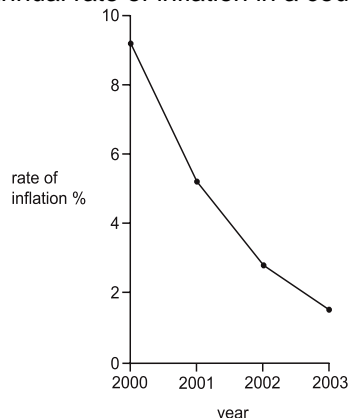


What can be concluded from the diagram?

- (A) The Brazilian government achieved its target in each year from 1999 to 2003.
 (B) The inflation target was continuously reduced.
 (C) The lowest level of inflation was achieved when an inflation target was used.
 (D) The inflation rate was more stable after inflation targets were introduced.
- N/08/1/25
- 17** What is correct about the causes of inflation?
 (A) Cost-push inflation can be caused by a rising exchange rate.
 (B) Cost-push inflation can be caused by lower indirect taxes.
 (C) Demand-pull inflation can be caused by a rising exchange rate.
 (D) Demand-pull inflation can be caused by lower direct taxes.

J/09/1/25

- 18** The diagram shows the annual rate of inflation in a country between 2000 and 2003.



Which statement is true of the period 2000 to 2003?

- (A) The cost of living fell. (B) The price level rose.
 (C) The Retail Prices Index fell. (D) The value of money rose.

N/09/1/23

- 19 What may cause cost-push inflation?
- (A) an appreciation of the exchange rate (B) a higher level of consumption
(C) an increase in labour productivity (D) an increase in trade union power

N/09/1/24

- 20 The graphs show consumer prices and employment for Ireland.



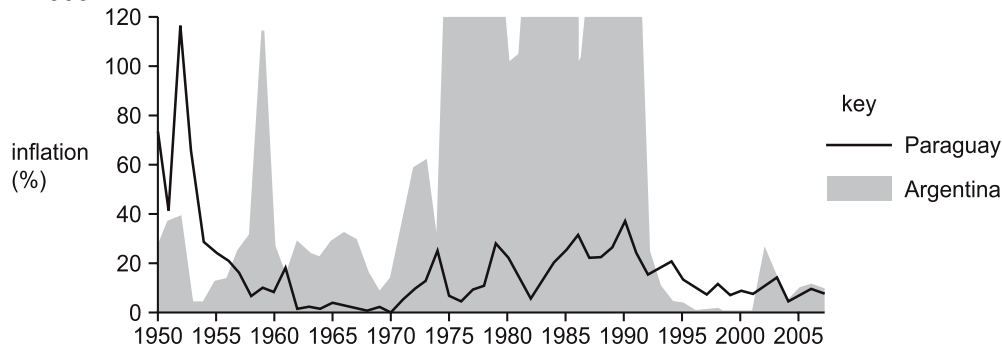
- What can be concluded from the graphs?
- (A) Between 2003 and 2004, unemployment and prices moved in the same direction.
(B) Prices were at their lowest in 2004.
(C) Prices rose continuously over the period.
(D) The number of unemployed workers fell over the period.

J/10/1/24

- 21 Which statement about inflation is correct?
- (A) Cost-push inflation is likely to occur when the government increases its expenditure.
(B) Demand-pull inflation is likely to occur when the country's exchange rate appreciates.
(C) The quantity Theory of Money predicts that changes in money supply can cause inflation.
(D) When inflation is unanticipated real values remain unchanged.

J/11/1/23

25 The diagram compares the inflation rates of Paraguay and Argentina between 1950 and 2005.



What can be concluded about inflation rates in the two countries in the period 1950 to 2005?

- (A) Argentina's prices fell rapidly between 1992 and 1995.
- (B) Argentina stabilised its price level between 1973 and 1992.
- (C) Paraguay was always more successful than Argentina at controlling its inflation rate.
- (D) Paraguay was most successful at controlling its inflation rate between 1962 and 1970.

J/11/1/24

26 Over a period of a year, the annual rate of inflation falls from 10 % to 6 %. Which statement is correct?

- (A) The cost of living has increased.
- (B) The purchasing power of money has increased.
- (C) There has been a reduction in the Retail Price Index.
- (D) The standard of living has increased.

N/11/1/25

27 At the start of 2009, a worker earned \$100 a week. In 2009, the Retail Price Index (RPI) rose 4 % and his average wage rose 7 %. In 2010, the RPI fell 3 % and his wage fell 2 %. What happened to his real wage between the start of 2009 and the end of 2010?

- (A) It fell by less than 5 %.
- (B) It fell by more than 5 %.
- (C) It rose by less than 5 %.
- (D) It rose by more than 5 %.

J/12/1/24

28 The figures show the Consumer Price Index (CPI) of a country. (1990 = 100)

	CPI
2007	200
2008	204
2009	206
2010	209

What can be deduced from the data?

- A There was hyperinflation between 1990 and 2007.
- B The rate of inflation rose in 2009.
- C The rate of inflation in 2008 was 4 %.
- D The country experienced inflation in each year from 2008 to 2010.

J/12/1/25

29 A country experienced a significant fall in unemployment but its inflation rate remained low.

What could explain this?

- A** Global competition prevented firms passing on higher costs.
- B** Increased spending on imports had lowered the exchange rate.
- C** There was a low level of spare capacity in the economy.
- D** Wage rates had increased by more than labour productivity.

N/12/1/23

30 The table gives some information on inflation rates, unemployment rates, and changes in wages for a number of countries in 2006.

country	inflation rate %	unemployment rate %	annual change in wages %
Britain	+1.9	+5.0	+3.5
Germany	+2.1	+11.3	+0.8
Italy	+2.1	+7.5	+2.3
Japan	+0.5	+4.5	-0.6
Spain	+4.0	+8.4	+2.5

What can be concluded from the table about 2006?

- A** Britain had an increase in real incomes.
- B** High wage rises caused high rates of inflation.
- C** The price of an identical product was the same in Germany and Italy.
- D** There were more people unemployed in Spain than in Japan.

N/12/1/25

31 The data given below refers to money supply and prices in the years 2006 and 2010 in four countries.

Between 2006 and 2010, in which country was the rate of inflation the highest?

Country	2006		2010	
	money supply (\$ million)	price index (2005 = 100)	money supply (\$ million)	price index (2005 = 100)
A	69	104	78	153
B	65	112	120	247
C	70	101	213	157
D	172	105	360	210

N/12/1/26

32 A sudden rise in the price of imported oil caused the annual rate of inflation in a given period to be higher than expected.

What might be a likely result of this?

- A** Borrowers would gain.
- B** Real wages would rise.
- C** The balance of trade would improve.
- D** Unemployment would fall.

J/13/1/25

- 33** The table shows an index number of prices between 2009 and 2012. In the base year of 2008, inflation was 2% per annum. What was the first year in which the rate of inflation fell?

	year	price index
A	2009	103
B	2010	104
C	2011	104
D	2012	101

J/13/1/26

- 34** What will be the probable effect of an increase in indirect taxes on demand-pull inflation and on cost-push inflation?

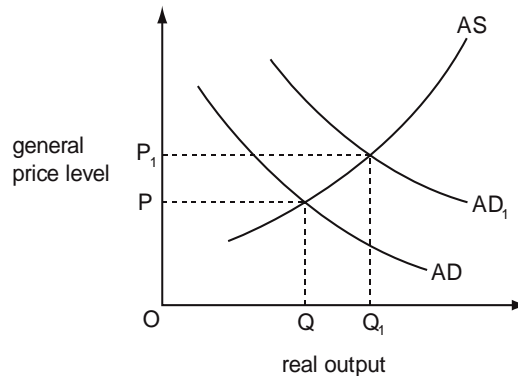
	demand-pull inflation	cost-push inflation
A	increase	increase
B	increase	decrease
C	decrease	decrease
D	decrease	increase

N/13/1/24

- 35** The diagram illustrates what happens to aggregate demand (AD) and aggregate supply (AS) in an economy during a year.

What explains the rise in the general price level?

- A** boom in consumer spending
- B** higher taxes on company profits
- C** reduction in government-financed projects
- D** rising costs of raw materials



N/13/1/25

- 36** What would increase both demand-pull and cost-push inflation?

- A** an appreciation of a country's currency
- B** an increase in the cost of borrowing
- C** an increase in the level of its import tariffs
- D** an increase in the price of oil

J/14/1/26

37 What is **not** a possible cause of cost-push inflation?

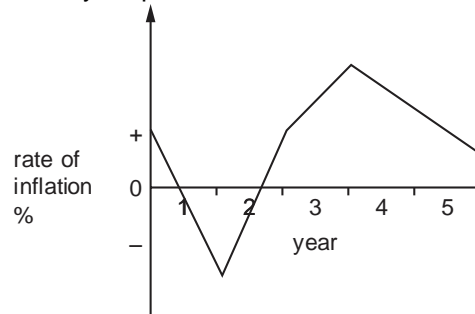
- A an increase in firms' profit margins
- B an increase in raw material prices
- C an increase in the supply of money
- D an increase in trade union power

N/14/1/25

38 The graph shows the rate of inflation in a country in a 5 year period.

What can be concluded from the graph?

- A The price level fell during two years.
- B The price level was highest during year 4.
- C The value of money fell for 5 years.
- D The value of money rose in 1 year.



J/15/1/25

39 In an economy with an interest rate of 4% per annum, the rate of inflation falls from 5% to 3% per annum.

What will be a benefit of this fall?

- A Menu costs will fall to zero.
- B People on fixed incomes will be better off in real terms.
- C Savers will gain in real terms.
- D The purchasing power of the currency will rise.

N/15/1/25

40 An economy is experiencing accelerating cost-push inflation. Which group is likely to be least concerned by this?

- A borrowers
- B consumers
- C creditors
- D exporters

J/16/1/21

41 A country experienced an annual deflation rate of 2% for four successive years. Which statement is correct for the four-year period?

- A The price level fell by 8%.
- B The price level fell by less than 8%.
- C The real value of money fell by 8%.
- D The real value of money fell by less than 8%.

SECTION 20 PRINCIPLES OF ABSOLUTE & COMPARATIVE ADVANTAGE

Imagine a world where everyone has to produce whatever he needs for living. For example, a fisherman will have to take his time off and grow wheat, sew clothes, construct his house and teach his child. However, in doing so, there is an obvious wastage of resources as he is not equally efficient in all these activities. Specialization and trade whereby each individual, firm or nation concentrates its productive efforts on a single or limited number of activities, allow this fisherman to concentrate on catching fish and exchange the surplus for cloth, shoes, a place to live and his child's education. The world becomes a better place to live in as people concentrate only on those activities which they can perform better and purchase rest of the goods and services from those who can make them cheaper. Principles of absolute and comparative advantage provide basis for specialization and trade i.e. exchange of goods and services among individuals, firms or nations.

The following assumptions are made to discuss the theories of absolute and comparative advantage:

- The world comprises only two countries, X and Y
- Watches and calculators are the only commodities being produced
- Transportation costs are zero
- There are constant costs i.e. cost of making one extra unit of watches or calculators remains unchanged.

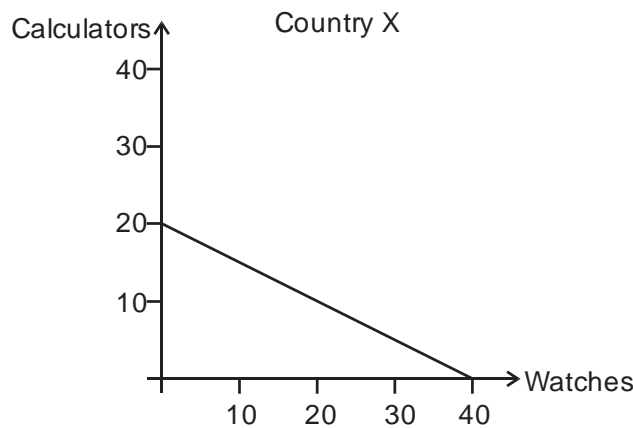
THEORY OF ABSOLUTE ADVANTAGE

The following table shows production possibilities of watches and calculators for both X and Y.

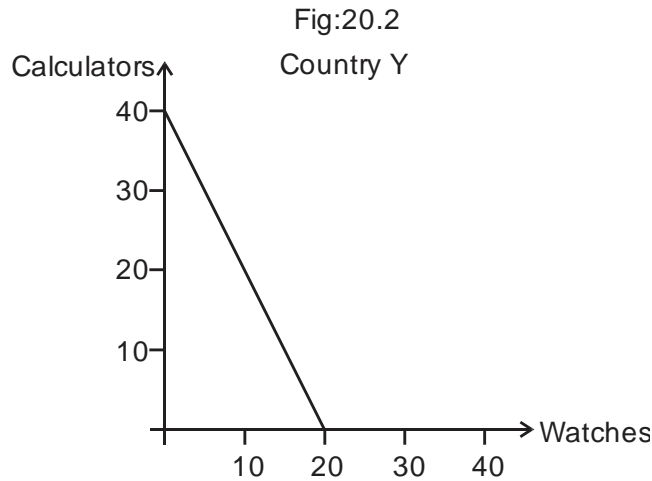
	Watches	Calculators
X	40	20
Y	20	40

X, if using all its resources, can either produce 40 watches or 20 calculators, as shown by the production possibility curve in Fig. 20.1.

Fig:20.1



Y, on the other hand, can either make 40 calculators or 20 watches. Fig.20.2 shows the production possibility curve faced by country Y.



X has an absolute advantage in the production of watches since it can make more watches than country Y. Likewise, country Y has an absolute advantage in the production of calculators. The world will be better off if X specializes in watches and Y, in calculators. Specialization ensures greater world output as both countries produce goods which they are capable of producing more efficiently. However, specialization will only be beneficial if both countries exchange the surplus of their products with goods they don't produce.

THEORY OF COMPARATIVE ADVANTAGE

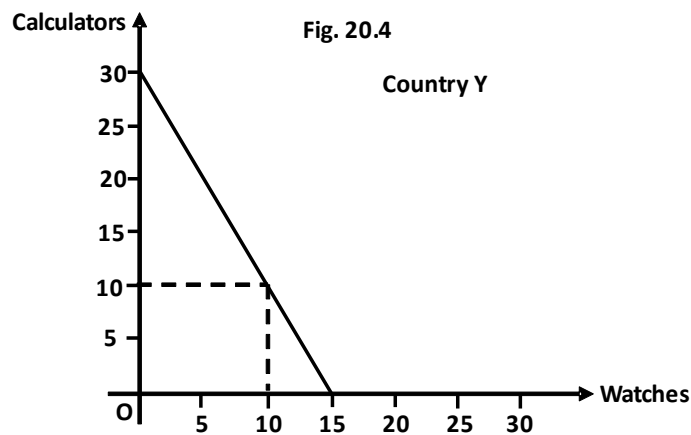
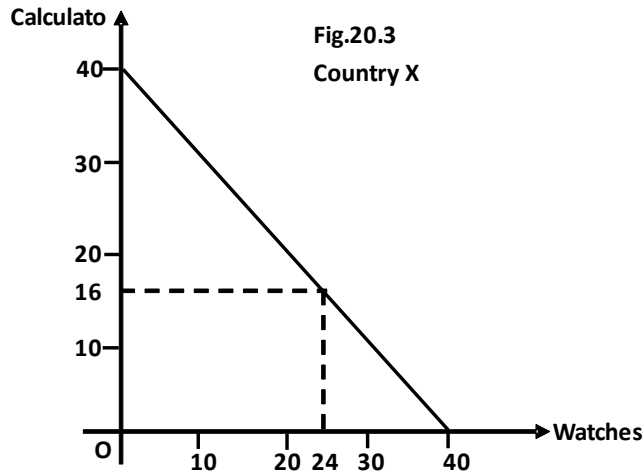
Theory of absolute advantage may sometimes fail to provide basis for specialization. This is explained using the following example, which assumes different production possibilities for X and Y.

	Watches (W)	Calculators (C)
X	40	40
Y	15	30

Question: Assuming the production constraints mentioned in the schedule above, calculate number of calculators country X produces if it chooses to make 24 watches. Also calculate number of watches Y makes if it makes 10 calculators.

Answer: For country X, opportunity cost of 1 watch is 1 calculator so a decision to make 24 watches means giving up 24 calculators out of the maximum 40. Thus, country X can make 16 calculators when it chooses to make 24 watches. (See Fig. 20.3)

For country Y, opportunity cost of 1 calculator is $\frac{1}{2}$ a watch so a decision to make 10 calculators means 5 watches out of the maximum 15 watches have to be given up. Thus, country Y can make 10 watches when it chooses to make 10 calculators. (See Fig. 20.4)



X has an absolute advantage in both watches and calculators whereas Y has an absolute disadvantage in both. World sacrifices 15 watches if X specializes in watches and 30 calculators, if it specializes in calculators. Thus, X is comparatively better in the production of watches, as they have a greater absolute advantage and lower opportunity cost. Similarly, Y has a comparative advantage in calculators since their absolute disadvantage is smaller.

Comparative advantage lies where opportunity cost is the lowest - thus, X should specialize in watches and Y, in calculators.

Gains from specialization

Prior to specialization, X produced 24 watches and 16 calculators and Y, 10 watches and 10 calculators (Fig. 20.3 & 20.4). Total production of watches equaled 34 and that of calculators, 26. After specialization, total world output of watches increases to 40 and of calculators, to 30. The increased world output is attributed to the fact that both countries concentrate on producing commodities in which they have a comparative advantage. It is interesting to know that world

output has increased even without an increase in world resources or an improvement in technology.

Gains from trade

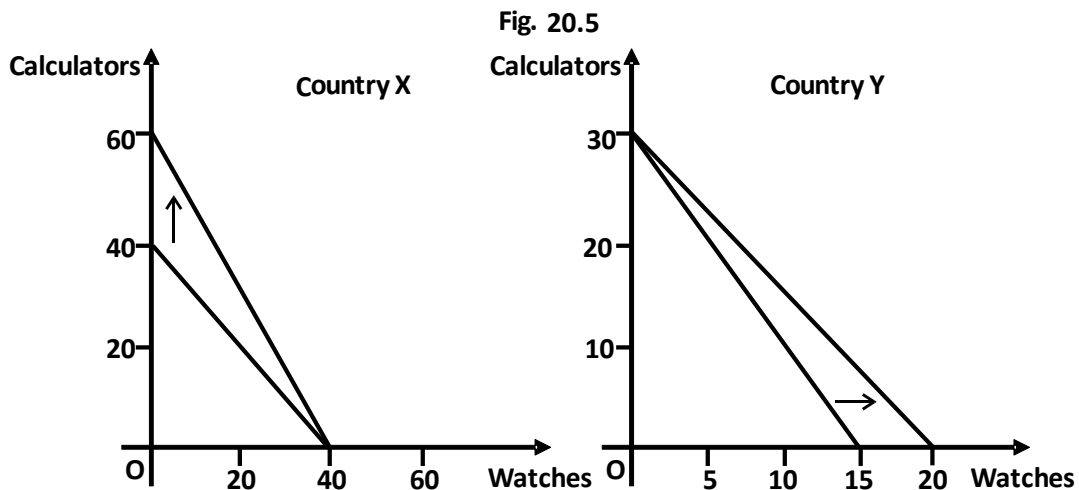
Countries X and Y should trade watches and calculators to benefit from specialization but what prices should the trade take place at? One thing is clear though, that both countries will try to get the maximum possible price for their products. The following discussion examines how countries settle for a mutually beneficial terms of trade i.e. prices at which their commodities are traded.

Prior to specialization and trade, X would have increased the production of calculators by one unit by giving away one watch. After specialization and trade X, is justified in asking for more than one calculator on selling one watch in the international market.

The slope of the production possibility curve of Y shows that Y would have 'purchased' one watch by giving away two calculators. After specialization, it would agree to trade only if it gets one watch by giving away less than two calculators.

X won't trade if term of trade is 1W:1C, whereas Y is likely to accept it. X won't mind terms of trade of 1W:2C, but then, Y won't find any incentive to trade. Thus, the mutually beneficial terms of trade lies somewhere between 1W:1C and 1W:2C. Where the actual terms of trade lies depends upon the price elasticities of demand and supply. Terms of trade will be near 1W:1C if price elasticity of demand for calculators is low but will be near 1W:2C if price elasticity of demand for watches is low. Assuming similar price elasticities of demand for watches and calculators, the terms of trade would be 1W:1.5C or 1C:0.67W.

X can now exchange 40 watches for 60 calculators and Y can exchange 30 calculators for 20 watches. This increase in consumption possibilities for X and Y is shown in Fig.20.5.



The following table explains gains from specialization and trade. Negative sign implies exports or goods going out of the country and a positive sign indicates imports. Assuming X decides to export 12 watches and keep the rest, it has 4 more watches and 2 more calculators compared to the situation before specialization and trade. Exporting 12 watches enables X to get 18 calculators since terms of trade is 1W:1.5C.

Similarly, country Y gains by having 2 more watches and 2 more calculators.

Country	Output before specialization	Output after specialization	Amounts exported (-) and imported (+)	Outputs available after trade	Gains from specialization and trade
X	24 watches	40 watches	-12 watches	28 watches	4 watches
	16 calculators	0 calculators	+18 calculators	18 calculators	2 calculators
Y	10 watches	0 watches	+12 watches	12 watches	2 watches
	10 calculators	30 calculators	-18 calculators	12 calculators	2 calculators

Question: The production possibilities of countries M and N are shown below. In which product should country M specialize.

	Product X	Product Y
Country M	100	100
Country N	50	75

Answer: Country M has an absolute advantage in both products. However, it is greater for product X so M specializes in product X and exports it to N, which specializes in product Y (N has an absolute disadvantage in both commodities, which is smaller for product Y)

Students should now attempt question N/06/1/19.

Question: Which of the following exchange ratios is mutually beneficial for countries M and N, given in the question above?

- (A) 1X : 0.5Y (B) 1X : 1Y (C) 1X : 1.25Y (D) 1X : 2Y

Answer: Domestic exchange ratio for country M is 1X : 1Y, i.e. it gets 1Y by giving away 1X. Domestic exchange ratio for country N is 1X : 1.5Y, i.e. it gets 0.67X by giving away 1Y.

Mutually beneficial exchange ratio lies between the domestic exchange ratios so option C is the correct answer.

Option A suits country M as it gets 2 units of X (instead of just 0.67 units of X which they could have obtained domestically) at the cost of 1 unit of Y. However, country N gets only half a Y in

exchange of 1 X, which is less than 1 Y that it could have obtained domestically. Thus, N has no incentive to trade.

Option B also suits country M, as it gets 1 X (instead of just 0.67 units of X which they could have obtained domestically) by giving away 1 unit of Y. However, this option does not suit country N as it gets 1Y in exchange of 1 X, which it could also have obtained domestically.

Option D suits country N because it gets 2 units of Y (instead of 1X which they could have obtained domestically) by giving away 1 unit of X. However, country M gets only half an X in exchange of 1 Y that is less than 0.67 X it obtains domestically.

Students should now attempt question J/02/1/21.

Example: Determine the mutually beneficial exchange ratio for countries with the following production possibilities:

	Product X	Product Y
Country I	2000	1000
Country II	1000	500

Answer: Domestic exchange ratio for country I is 1X : 0.5Y.

Domestic exchange ratio for country II is 1X : 0.5Y.

Trade does not take place since domestic exchange ratios of the two countries are the same. Thus, it is impossible to determine a mutually beneficial exchange ratio lying between the domestic exchange ratios.

Students should now attempt question N/02/1/21.

EXCEPTIONS TO THE THEORIES OF ABSOLUTE & COMPARATIVE ADVANTAGE

The theories of absolute and comparative advantage may fail to explain the flow of goods in few situations. Some of them are explained below:

- Comparative advantage is a dynamic concept and not a static one. With the passage of time, countries can acquire comparative advantage in few commodities and can lose advantage in others. They keep on investing in their infant industries with the hope of turning them into giants. Once established, these industries help replace the declining industries. Thus, the increased diversification ensures balanced and sustained growth.
- The international product life cycle explains that a country could go through the following stages while producing a product.

1st stage:

A technologically advanced country develops a new product.

2nd stage:

Only a limited quantity is produced to fulfill domestic requirements.

3rd stage:

The country gains experience and manages to produce the product in larger quantities, hence beginning to export.

4th stage:

The importing countries succeed in producing import substitutes by acquiring technology, hence reducing their imports.

5th stage:

Eventually, cheaper labour and land enable importing countries to produce this product at a comparatively lower cost. The technologically advanced country shifts its emphasis to more technologically advanced products and starts importing this product from rest of the world.

The process clearly shows that countries may very well invest resources in businesses they don't have a comparative advantage in.

- Some products and industries are strategically important and a country must make them itself, regardless of its comparative advantage. Pakistan has developed nuclear technology even without a comparative advantage.
- Countries can forgo the theories of specialization if they desire to remain sovereign and avoid trading with countries, they have troubled relations with.

LIMITATIONS TO THE THEORIES

- Gains from trade are modified by existence of transport costs and tariffs and may evaporate completely if transportation costs outweigh the differentials in opportunity cost.
- The assumption of constant cost is unrealistic. Increased production enables the country to gain economies of scale and lower per unit costs, meaning that the production possibility curve is not a straight line and determining a mutually beneficial terms of trade may become even more difficult.
- Increased specialization increases the inter dependence of countries. In the volatile political world of today, such inter dependence may not suit few countries.
- Excessive specialization means putting all eggs in one basket and makes countries more vulnerable to changes in demand and supply. For example, falling price of oil is more damaging for those oil producing economies which do not have a diversified production base. Diversification on the other hand, spreads risks over a greater volume and variety of goods and services.
- The threat to employment opportunities and fear of political unrest may restrict governments from closing down industries that don't enjoy a comparative advantage.
- Fruits of specialization may not always be enjoyed since some resources are better suited to the production of few goods and shifting them to another industry won't yield the required results.
- The gains from specialization are unequally divided among developed and developing countries. Developed countries specialize in value added items because of their comparative advantage in technology whereas developing countries are more efficient in the production of land and labour intensive primary goods which are usually low priced. Thus, developing economies have to export huge quantities of primary products to import a handful of value added items.

CHALLENGES OF INTERNATIONAL TRADE

Economies have always found trading in goods and services a challenging and risk-bearing task. This is primarily because the only constant factor in today's fast changing world is diversity itself. Swings in rivals' strategies, arrival of ever new competitors, changes in consumers' tastes and preferences, legal and economic policies etc may all render existing estimates, predictions and plans irrelevant. Such complexities cause manifold increases in the risks associated with business activity and trading across international borders.

One hindrance faced by international businesses is the use of more than one currency for trade. Fluctuating exchange rates further add risks to business activity, making costing and pricing decisions and forecasting cash flows much difficult and tedious. An ordinary businessman may not be an expert at currency markets and may lose a fortune because of an unexpected change in exchange rates. Economic unions however, like the European Union, have successfully introduced a single currency to reduce the risks associated with international businesses but such an option is available to only a handful of businesses in a limited number of countries.

Geographical constraints involved in international business raise transactional costs like those of transportation and coordination between the firm and its buyers. Safe and timely transportation of goods to another country adds to the firm's costs through packaging, insurance and freight charges. The geographical distance also makes it difficult for businessmen to visit other countries frequently, leading to poor communication and coordination.

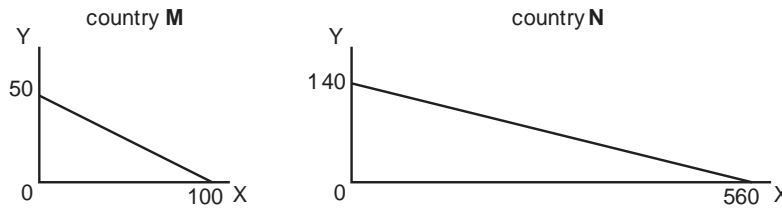
The dynamics of foreign markets may be entirely different from local ones. Whereas firms need to incur substantial costs in discovering the unique traits of foreign markets, knowledge about local markets in terms of the target group, consumers' preferences, potential competition etc is much more readily and cheaply available. Foreign markets have the added disadvantage of tailoring production, packaging and advertisement to a foreign market segment. The increased chances of misunderstanding foreign cultures raise the probability of business failure.

The imposition of trade barriers like tariffs, quotas and non-tariff restrictions also raises the costs of trading internationally while attracting consumers to domestic markets at the same time. Non-tariff barriers are more problematic as they are less transparent and visible and firms often ignore them while formulating business plans. The different laws of all the governments involved in international trade also add complexity to doing business internationally.

MULTIPLE CHOICE QUESTIONS

J/02/1/21

- 1 The graphs show the production possibilities for commodities X and Y in two countries **M** and **N**.

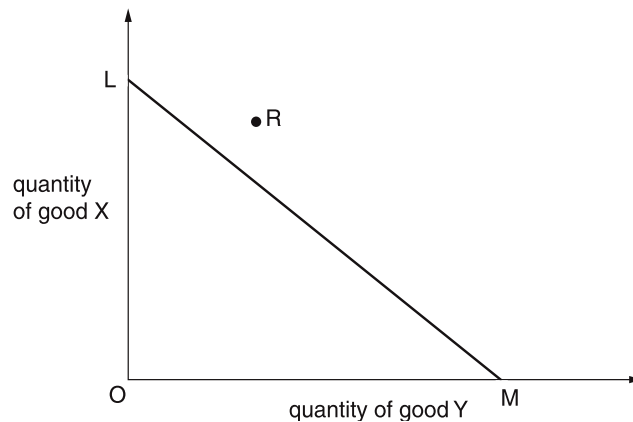


Who will gain or lose from an agreement between **M** and **N** to exchange the commodities at a rate of 1Y for 3X?

- (A) Both countries will gain because their consumption possibilities will increase.
- (B) Consumers in country **M** will lose, because a unit of Y will now cost 3X instead of 2X.
- (C) Only country **N** will gain, because **N** can produce more of both commodities than **M**.
- (D) Neither country will gain because they both have a comparative advantage in the production of the same commodity X.

N/02/1/04

- 2 In the diagram LM is the production possibility curve of a country that has a comparative advantage in the production of good Y.

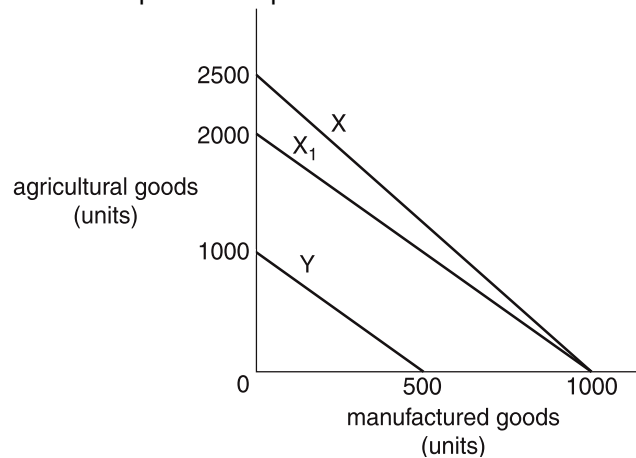


What might enable the country to consume the quantities of X and Y indicated by point R?

- (A) increased specialisation in the production of good X
- (B) international trade
- (C) a reduction in unemployment
- (D) increased specialisation in the production of good Y

N/02/1/21

3 The diagram represents the production possibilities of two economies X and Y.



As a result of soil erosion in economy X, the production possibility curve shifts from X to X₁.

According to the law of comparative advantage, what should country Y do following this change?

- (A) cease to trade with country X
- (B) export agricultural goods to country X
- (C) export manufactured goods to country X
- (D) import both agricultural and manufactured goods from country X

J/03/1/20

4 The table shows the levels of output which three countries can produce.

Country X	25 tonnes of maize or 5 tractors
Country Y	75 tonnes of maize or 5 tractors
Country Z	225 tonnes of maize or 5 tractors

Which of the following would be the most likely outcome?

- (A) Country X will specialise in maize and country Y in tractors.
- (B) Country Y will specialise in maize and country Z in tractors.
- (C) Country Z will specialise in both maize and tractors.
- (D) There will be no gains from trade between the countries.

N/03/1/18

5 In a world economy there are two goods, guns and butter, and two countries, X and Y. Country X can produce both guns and butter with fewer resources per unit than country Y, but country X has a higher opportunity cost in the production of guns than country Y. Which statement is correct?

- A X has an absolute advantage in butter but not in guns.
- B X has an absolute advantage in guns but not in butter.
- C X has a comparative advantage in butter.
- D X has a comparative advantage in guns..

N/03/1/22

- 6** Country X has a comparative advantage in producing wheat and country Y in producing cars.
 However, the countries choose not to specialise and trade.
 What is a valid reason for this behaviour?
- A** The exchange rate lies within the countries' opportunity cost ratios.
 - B** There is immobility of factors of production between the countries.
 - C** Trade is based on absolute rather than comparative advantage.
 - D** Transport costs are high relative to the opportunity cost differences between the countries.

J/04/1/22

- 7** The table shows the numbers of goods X and Y which two countries produce. Each country uses half of its resources to make each good.

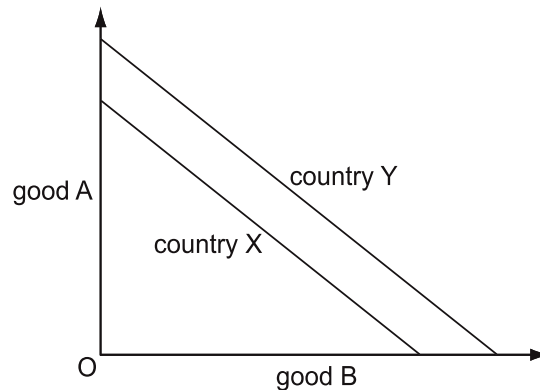
	country 1	country 2
good X	100	300
good Y	200	400

Later, each country specialises in the product in which it has a comparative advantage. Which rate of exchange would be suitable so each country gains from trade?

- (A)** $1X = 1Y$ **(B)** $1X = 1.5Y$ **(C)** $1X = 2Y$ **(D)** $1X = 3Y$

N/04/1/19

- 8** The diagram shows production possibility curves for two countries, X and Y.



What can be deduced from the diagram?

- (A)** Both countries can benefit by specialisation.
- (B)** Country X has a higher opportunity cost than Y in producing good B.
- (C)** Country Y has a comparative advantage in both goods.
- (D)** Trade between X and Y will not take place.

J/05/1/19

9 The world consists of two countries Sealand and Fantasia, both of which produce just two goods, X and Y.

The production of X is land-intensive and the production of Y is labour-intensive.

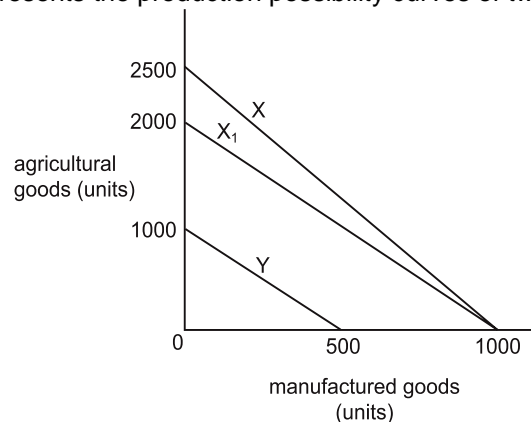
Sealand has plentiful supplies of both land and labour. Fantasia has a relative scarcity of labour.

What can be deduced from this?

- (A) Fantasia is likely to have a comparative advantage in X.
- (B) It is unlikely that Fantasia can compete with Sealand in the production of either X or Y.
- (C) It is unlikely there would be any benefit to Sealand from trading with Fantasia.
- (D) Sealand is likely to have an absolute advantage in both X and Y.

N/05/1/19

10 The diagram represents the production possibility curves of two economies X and Y.



As a result of soil erosion in economy X, the production possibility curve shifts from X to X₁.

According to the law of comparative advantage, what should country Y do following this change?

- (A) cease to trade with country X
- (B) export agricultural goods to country X
- (C) export manufactured goods to country X
- (D) import both agricultural and manufactured goods from country X

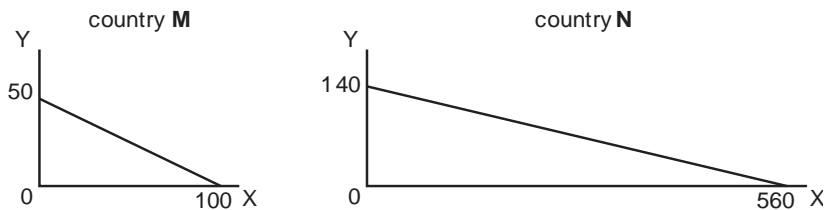
J/06/1/04

11 What would encourage the growth of the international division of labour?

- (A) an improvement in transport systems
- (B) instability in international exchange rates
- (C) restrictions on the movement of resources
- (D) the widespread introduction of tariffs

J/06/1/19

12 The graphs show the production possibilities for commodities X and Y in two countries **M** and **N**.



What will be the effect of an agreement between **M** and **N** to exchange the commodities at a rate of 1Y for 3X?

- (A) Both countries will gain, because their consumption possibilities will increase.
- (B) Consumers in country **M** will lose, because a unit of Y will now cost 3X instead of 2X.
- (C) Only country **N** will gain, because **N** can produce more of both commodities than **M**.
- (D) Neither country will gain, because they both have a comparative advantage in the production of the same commodity, X.

N/06/1/19

13 The table shows the output per unit of input of two goods, X and Y, in two countries, 1 and 2.

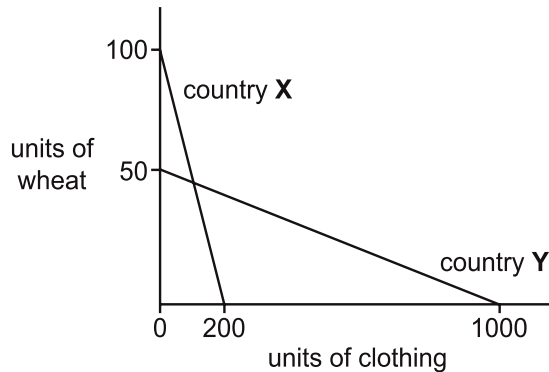
	output of X per unit of input	output of Y per unit of input
Country 1	70	30
Country 2	50	25

Which statement about the data in the table is correct?

- (A) Country 1 has absolute advantage in the production of X and comparative advantage in the production of Y.
- (B) Country 1 has absolute advantage in the production of Y and comparative advantage in the production of X.
- (C) Country 2 has no absolute or comparative advantage.
- (D) Country 2 has comparative advantage in the production of X and no absolute advantage.

J/07/1/19

- 14 The diagram shows the amounts of wheat and clothing that can be produced in countries X and Y with a given quantity of resources.



What does the diagram indicate about the production of these two commodities?

- (A) Both countries have an absolute advantage in the production of clothing.
- (B) Both countries have a comparative advantage in the production of clothing.
- (C) Country X has a comparative advantage in wheat and an absolute advantage in clothing.
- (D) Country Y has both an absolute and a comparative advantage in clothing.

N/07/1/19

- 15 Country X has a comparative advantage in producing wheat and country Y in producing cars. However, the countries choose not to specialise and trade.

What is a valid reason for this behaviour?

- (A) The exchange rate lies within the countries' opportunity cost ratios.
- (B) There is immobility of factors of production between the countries.
- (C) Trade is based on absolute rather than comparative advantage.
- (D) Transport costs are high relative to the opportunity cost differences between the countries.

J/08/1/19

- 16 The table shows the ability of two countries, P and Q, to produce two goods, Y and Z.

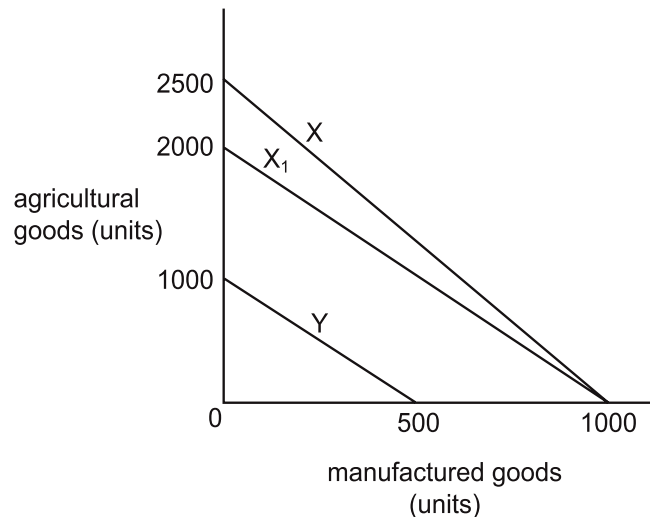
	Production of good Y per person	Production of good Z per person
country P	1000	1600
country Q	1500	2000

Which statement is correct?

- (A) P has an absolute advantage in Z and Q has a comparative advantage in Y.
- (B) P has an absolute advantage in Z and Q has an absolute advantage in Y.
- (C) P has a comparative advantage in Z and Q has an absolute advantage in Y.
- (D) P has a comparative advantage in Y and Q has an absolute advantage in Z.

N/08/1/19

17 The diagram represents the production possibility curves of two economies X and Y.



As a result of soil erosion in economy X, the production possibility curve shifts from X to X₁. According to the law of comparative advantage, what should country Y do following this change?

- (A) cease to trade with country X
- (B) export agricultural goods to country X
- (C) export manufactured goods to country X
- (D) import both agricultural and manufactured goods from country X

J/09/1/01

18 Three women work in a pottery workshop, each dividing their time equally between three products. The table shows how many units of each product are made.

	plates	bowls	mugs
Jane	100	50	50
Sarah	50	100	50
Seema	<u>50</u>	<u>50</u>	<u>100</u>
total	<u>200</u>	<u>200</u>	<u>200</u>

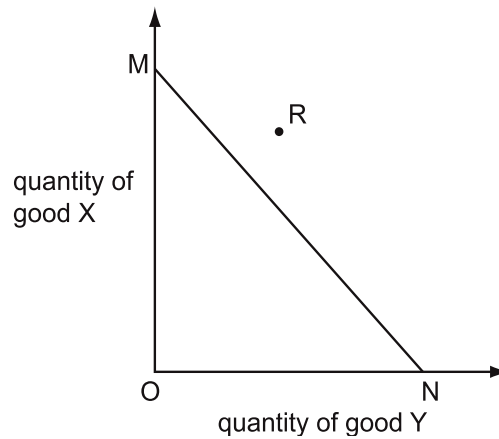
Later, division of labour is introduced and each woman makes only the product in which she has absolute advantage.

What is the rise in total output?

- (A) 150 units
- (B) 300 units
- (C) 600 units
- (D) 900 units

J/09/1/19

- 19 In the diagram, MN is the production possibility curve of a country that has a comparative advantage in the production of good Y.



What might enable the country to consume the quantities of X and Y indicated by point R?

- (A) increased specialisation in the production of good X
- (B) international trade
- (C) a reduction in unemployment
- (D) increased specialisation in the production of good Y

N/09/1/18

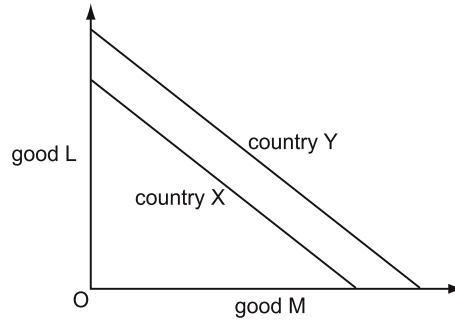
- 20 A country has the correct climate for growing tea, which is produced very cheaply and exported. Fruit is also grown, but this costs more as the climate is not as suitable. Fruit can be sold at a higher price than tea so some of the land used for tea is switched to fruit.

What will definitely happen as a result?

- (A) There will be an increase in specialisation by the country.
- (B) There will be an increase in the imports of tea.
- (C) There will be an opportunity cost of the loss of the tea production.
- (D) There will be production in line with absolute advantage.

J/10/1/18

21 The diagram shows production possibility curves for two countries, X and Y.



What can be deduced from the diagram?

- (A) Both countries can benefit from specialization.
- (B) Country X has a higher opportunity cost than Y in producing good M.
- (C) Country Y has a comparative advantage in both goods.
- (D) Trade between X and Y will not take place.

N/10/1/22

22 The table shows how much rice and wheat two countries, X and Y, can grow when each country divides its resources equally between growing rice and wheat.

	country X	country Y
rice (units)	900 m	100 m
wheat (units)	300 m	50 m

Assume that each country now specialises according to comparative advantage and trades with the other country.

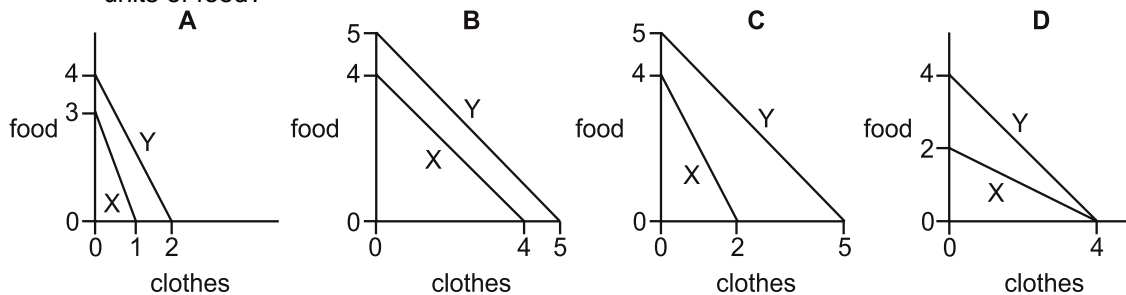
Which terms of trade would benefit both countries?

- A 1 wheat = 5 rice
- B 1 wheat = 3 rice
- C 1 wheat = 2.5 rice
- D 1 wheat = 2 rice

J/11/1/18

23 Each diagram shows the production possibility curves of two economies, X and Y, which produce food and clothes.

In which diagram would both economies benefit by specialising in the good in which they have comparative advantage and trading at an exchange rate of 1 unit of clothes to 1.5 units of food?

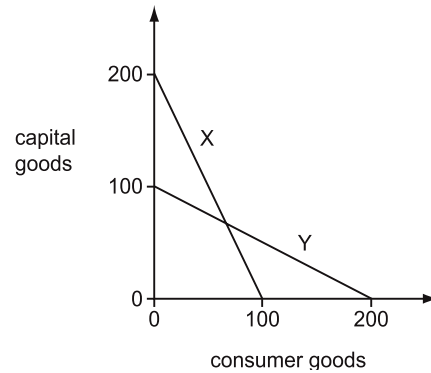


J/11/1/30

24 The diagram shows the production possibility curves of two economies, X and Y.

Which statement about the two economies is correct?

- (A) Both economies always have the identical opportunity costs.
- (B) Both economies have the same future growth prospects.
- (C) The opportunity costs are constant in both economies.
- (D) The two economies can never produce the same combination of products.



J/12/1/19

25 A country has a comparative advantage in producing spices. Why may it choose not to specialise in spices?

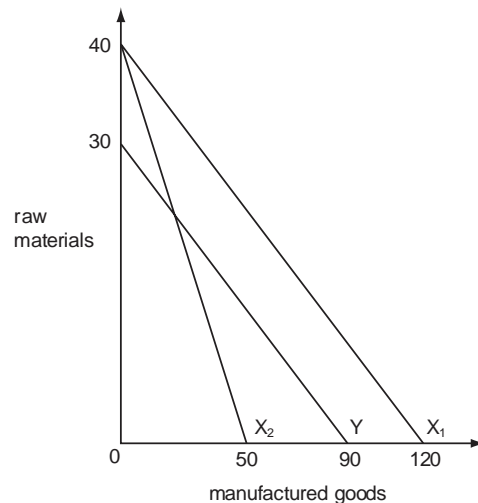
- A The country experiences a lower opportunity cost in producing spices than other countries.
- B There are high tariffs imposed by other countries on the import of spices.
- C There is a low cost of transporting spices to other countries.
- D There is high world income elasticity of demand for spices.

J/12/1/20

26 The diagram shows the production possibility curves for two countries, X and Y. A decrease in productivity moves country X's production possibility curve from X_1 to X_2 .

Which statement is correct?

- A After the change X would export raw materials and import manufactured goods.
- B After the change there is no economic basis for trade.
- C Before the change Y had an absolute advantage in the production of raw materials.
- D Before the change X had a comparative advantage in both products.



J/13/1/19

27 The table shows the costs of producing a unit of food and a unit of clothing in countries X and Y, expressed in the currency of each country.

COUNTRY	FOOD	CLOTHING
X	\$2	\$4
Y	£1	£1

The exchange rate is fixed at £1 = \$3.

What level of transport cost per unit of each commodity would exactly eliminate the benefits of trade?

- A** £0.33 **B** £0.50 **C** £1.00 **D** £1.50

N/13/1/19

28 The table shows the ability of two countries, P and Q, to produce two goods, Y and Z.

	production of good Y per person	production of good Z per person
country P	1000	1600
country Q	1500	2000

Which statement is correct?

- A** P has an absolute advantage in Z and Q has a comparative advantage in Y.
B P has an absolute advantage in Z and Q has an absolute advantage in Y.
C P has a comparative advantage in Z and Q has an absolute advantage in Y.
D P has a comparative advantage in Y and Q has an absolute advantage in Z.

J/14/1/19

29 The table shows the output of cars and televisions per worker per week before trade and specialisation.

	country X	country Y
cars	2	8
televisions	6	48

Each country specialises in the product where it has a comparative advantage and trades on the basis of an exchange rate which lies between their opportunity cost ratios.

Which change would stop the countries specialising and trading?

- A** The exchange rate moves to one car for five televisions.
B The exchange rate moves to one car for eight televisions.
C The productivity of workers in country X rises to three cars per week.
D The productivity of workers in country Y rises to fifty six televisions per week.

J/15/1/19

30 Below are production possibilities for two countries showing their daily production of food and drink, each using the same quantity of resources.

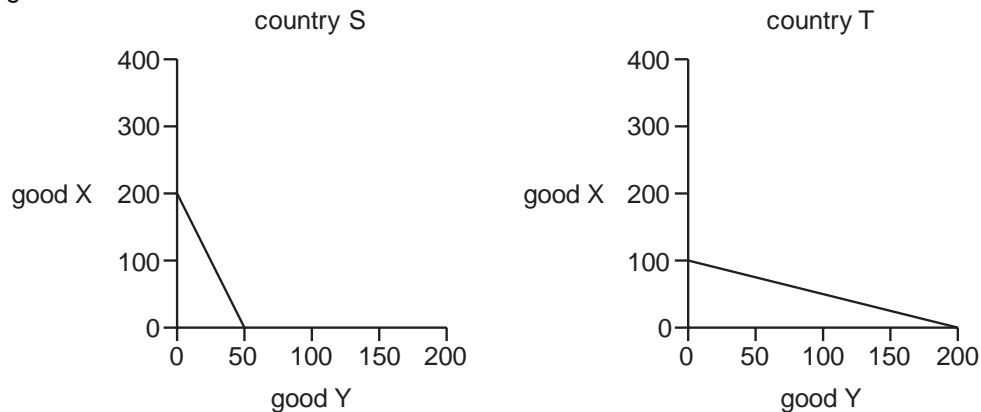
	food (units)	drink (units)
country X	50	100
country Y	40	60

What can be concluded from the figures?

- A** Country X has absolute advantage in food and comparative advantage in drink.
- B** Country X has comparative advantage in both goods.
- C** Country Y has absolute advantage in drink and comparative advantage in food.
- D** Country Y has neither absolute nor comparative advantage.

N/15/1/19

31 The diagram illustrates the production possibility curves for countries S and T producing goods X and Y.

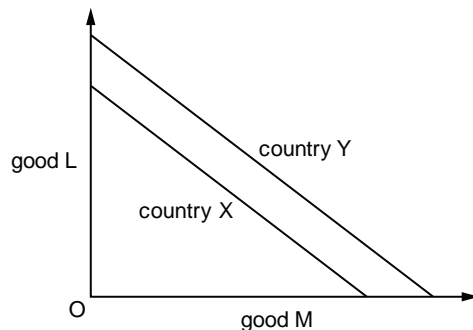


Countries S and T specialise in the product for which they have the lower opportunity cost. They trade with each other at the rate of two good X for one good Y. What is a possible combination of goods for country S to consume after specialisation and trade have taken place?

	good X	good Y
A	100	50
B	150	75
C	200	100
D	300	150

J/16/1/25

32 The diagram shows production possibility curves for two countries, X and Y.



What can be deduced from the diagram?

- A Both countries can benefit from specialisation.
- B Country X has a higher opportunity cost than Y in producing good M.
- C Country Y has a comparative advantage in both goods.
- D Trade between X and Y will not take place.

J/16/1/27

33 Which statement is not a valid justification for an import tariff?

- A A tariff will prevent imported inflation.
- B A tariff will prevent unfair foreign competition.
- C A tariff will protect a developing industry.
- D A tariff will protect an industry in decline.

SECTION 21

TERMS OF TRADE

Terms of trade (TOT) reflects the ability of a country's products to be exchanged for products made by other countries.

$$\text{Terms of trade} = \frac{\text{export price index}}{\text{import price index}} \times 100$$

An increase in terms of trade (a favourable move) means the country can fetch a greater quantity of imports with a given quantity of exports or can import the same quantity by giving away fewer units of locally made goods and services. TOT improves when export prices rise faster than import prices or when import prices rise slower than export prices.

Terms of trade move favorably for countries with comparatively higher inflation rates. Terms of trade can also move favourably if the domestic currency's value increases in terms of foreign currencies. A stronger national currency makes exports expensive in the international market and imports, relatively cheaper. However, the favorable move in terms of trade might not always bring favourable outcomes for the balance of trade. The impact on trade balance of a favorable move in terms of trade depends upon the price elasticities of demand for exports and imports. This aspect will be explored in detail in section 26.

Developing countries usually have low and fluctuating terms of trade. Their exports mainly comprise primary goods which have low and fluctuating prices whereas their imports mainly consist of value added items such as machinery and technologically advanced goods. However they can win an improvement in terms of trade by shifting emphasis from production of primary goods to value added manufactured goods. Members of OPEC (Oil and Petroleum Exporting Countries), through cartels and higher prices, have succeed in improving their terms of trade.

Countries investing in resources used to produce value added items are likely to experience improving terms of trade and hence, improved standard of living. Producers should thus be encouraged to produce and export finished goods rather than raw materials or semi finished goods.

MULTIPLE CHOICE QUESTIONS

J/02/1/22

- 1 The 'terms of trade' of a country refers to
- (A) the system of tariff rates levied by the government of the country.
 - (B) the relationship between average import prices and average export prices.
 - (C) the rate at which domestic currency can be sold in foreign exchange markets.
 - (D) the difference between the value of exports and the value of imports.

N/02/1/18

- 2 The table refers to a particular country.

year	index of import prices (1995 = 100)	index of export prices (1995 = 100)
1992	48.1	57.0
1996	122.4	120.8

Which of the following statements about the period 1992 to 1996 is correct?

- (A) The balance of trade improved.
- (B) The balance of payments worsened.
- (C) The terms of trade worsened.
- (D) The exchange rate appreciated.

J/03/1/22

- 3 The index for a country's terms of trade changed from 100 in year 2001, to 104 in year 2002.

What could have caused this change?

- (A) a fall in export prices with import prices unchanged
- (B) a fall in invisible earnings
- (C) an appreciation of the country's currency
- (D) a rise in the value of imports

N/03/1/21

- 4 When is an economy likely to experience a deterioration in its terms of trade?

- (A) when demand for its exports increases
- (B) when the trade weighted value of its currency depreciates
- (C) when the interest rate is increased
- (D) when there is a fall in the average price of its imports

J/04/1/20

- 5 In which of the following situations will a country's terms of trade worsen?

- (A) The prices of its imports rise by more than the prices of its exports.
- (B) The total value of external payments rises by more than the total value of external receipts.
- (C) The value of its imports rises by more than the value of its exports.
- (D) The volume of its imports rises by more than the volume of its exports.

N/04/1/22

- 6 In which situation must the terms of trade be moving in a country's favour?
- (A) Its import prices are rising at a slower rate than its export prices.
 - (B) There is a fall in both its import and its export prices.
 - (C) There is an increase in its official reserves.
 - (D) The volume of its exports is increasing more than the volume of its imports.

J/05/1/22

- 7 The 'terms of trade' of a country refers to
- (A) the system of tariff rates levied by the government of the country.
 - (B) the relationship between average import prices and average export prices.
 - (C) the rate at which domestic currency can be sold in foreign exchange markets.
 - (D) the difference between the value of exports and the value of imports.

N/05/1/21

- 8 When will there be a favourable movement in a country's terms of trade?
- (A) when the prices of its exports fall by more than the prices of its imports
 - (B) when the prices of its imports rise by less than the prices of its exports
 - (C) when the volume of its exports increases by more than the volume of its imports
 - (D) when the volume of its imports increases by more than the volume of its exports

J/06/1/21

- 9 The table refers to a particular country.

year	index of import prices (2000 = 100)	index of export prices (2000 = 100)
1995	48.1	57.0
2005	122.4	120.8

Which statement about the period 1995 to 2005 is correct?

- (A) The balance of trade improved.
- (B) The balance of payments worsened.
- (C) The terms of trade worsened.
- (D) The exchange

N/06/1/21

- 10 A country's terms of trade index currently stands at 120 (base year 2000). Since 2000, the average price of its imports has increased by 25%. What has been the change in the average price the country has received for its exports over this period?
- (A) -10%
 - (B) +5%
 - (C) +45%
 - (D) +50%

J/07/1/21

- 11 A country's terms of trade increased from the base year value of 100 to 120 in the following year.

Which behaviour of export prices and import prices would have caused this?

	export prices	import prices
(A)	decreased 10%	increased 10%
(B)	increased 10%	decreased 10%
(C)	increased 20%	unchanged
(D)	unchanged	decreased 20%

N/07/1/21

- 12 When must the terms of trade of a country change?
- (A) when the volume of exports falls and the volume of imports rises
 - (B) when the total value of exports falls and the total value of imports rises
 - (C) when the balance of trade moves from deficit to surplus
 - (D) when the average price of exports rises and the average price of imports falls

N/08/1/22

- 13 In which situation must the terms of trade be moving in a country's favour?
- (A) Its import prices are rising at a slower rate than its export prices.
 - (B) There is a fall in both its import and its export prices.
 - (C) There is an increase in its official reserves.
 - (D) The volume of its exports is increasing more than the volume of its imports.

J/09/1/22

- 14 Since 2000 a country's export prices have increased on average by 50 % and its import prices by 25 %.
What is the current figure for the country's terms of trade (2000 = 100)?
- (A) 75 (B) 83 (C) 120 (D) 125

N/09/1/20

- 15 What will cause an improvement in a country's terms of trade?
- (A) a fall in incomes abroad
 - (B) a fall in its exchange rate
 - (C) a rise in its inflation rate
 - (D) a rise in the price of its imports

J/11/1/20

- 16 A country's terms of trade currently stands at 150 (base year 2000 = 100).
Since 2000 the average price the country has received for its exports has increased by 20 %.
What has been the change in the average price it has paid for its imports?
- (A) -25 % (B) -20 % (C) +20 % (D) +25 %

N/11/1/21

- 17 The table shows four combinations of price changes which may affect a country's terms of trade.

Which combination of price changes must cause an improvement in the country's terms of trade?

	average price of exports	average price of imports
(A)	falls	falls
(B)	falls	rises
(C)	rises	falls
(D)	rises	rises

N/12/1/21

18 A country's terms of trade increased from a base year value of 100 to 120 in the following year.
If export prices had increased by 50 %, what was the change in the price of the country's imports?

- A** -30 % **B** -25 % **C** +25 % **D** +30 %

J/13/1/22

19 Since 2000 a country's export prices have increased on average by 50% and its import prices by 25%.
What is the current figure for the country's terms of trade (2000 = 100)?

- A** 75 **B** 83 **C** 120 **D** 125

N/13/1/22

20 In Australia in 2005 a shipload of exported iron ore paid for 2200 imported flat screen TVs. In 2010 the same size shipload paid for 22 000 imported flat screen TVs.
Which combination of price changes is certain to cause this change in the terms of trade of Australia?

	average export price	average import price
A	decrease	decrease
B	decrease	increase
C	increase	decrease
D	increase	increase

J/16/1/24

21 Between 2005 and 2010, a country's import prices rose by 25% and its terms of trade rose to 120 (2005 = 100).
Which change has there been in the country's export prices?

- A** -5% **B** 12.5% **C** 45% **D** 50%

SECTION 22 ARGUMENTS FOR FREE TRADE & MOTIVES FOR PROTECTION

Free trade refers to the unrestricted movement of goods and services across borders i.e. trade without the imposition of any barriers like trade tariffs, quotas and other controls. Economies promoting such free trade are called open economies. The presumption in favour of free trade is primarily based on an economic analysis demonstrating frequent net gains from free trade, both for nations and for the world.

However, economists quote few exceptional cases where trade barriers may be justified. These are discussed below:

Infant industry argument

Countries impose trade barriers to protect newly built industries, till they're able to compete with international giants in the open and free market. This argument for protecting a local industry is justified to an extent and even validated by the World Trade Organization. However, such protections should be temporary and removed gradually so as to keep local firms under pressure to gain efficiency as soon as possible.

To protect employment

Another argument given to justify the imposition of trade barriers is the willingness of governments to protect jobs in the local businesses. However, this argument is questioned on the grounds that free trade can enable local businesses to increase their exports. Increased demand for locally manufactured goods in other countries creates job opportunities. Thus, the number of job opportunities can be higher in case of free trade.

To restrict wealth within the country

Some economists argue that imports call for expending national wealth outside the country. This argument however, can be refuted on the grounds that wealth is not simply money but also the goods and services available for consumption. Free trade increases economic welfare by allowing exports to countries where higher prices can be charged and by making better quality, cheaper imports possible. Thus, free trade could increase national wealth as well as economic welfare.

To prevent dumping

Dumping is a firm's attempt to penetrate a market by selling products at prices below their cost. This aggressive pricing policy threatens the survival of small local firms so governments can impose anti-dumping duties on imports of firms that seem to be dumping their products.

To correct the problems of balance of payment

A persistent trade deficit (export revenues falling short of import expenditures) can force governments to impose trade barriers and reduce import expenditures. However, such a method may trigger retaliation from other countries and exports may also decrease.

ARGUMENTS FOR FREE TRADE

Gains from specialization and trade

As explained earlier, specialization and trade makes the world a better place to live in. Enhanced global productivity resulting from countries specializing in goods with a comparative advantage (and importing the rest) allows people all across the globe to enjoy access to a greater amount of goods and services.

Efficiency

Free trade promotes competition and efficiency as consumers choose between buying imported and locally made goods. Consumers' sovereignty and freedom to choose puts extra pressure on firms to be innovative as well as cost efficient.

Improvement in standard of living

Access to better quality, cheaper imports increases the variety of goods available for consumption and improves standard of living.

Increased opportunities for exports

Free trade opens the gates of the international market, providing opportunities to local firms to increase their sales and profits. However, the survival of weaker and lesser efficient firms becomes difficult in the face of rising competition from imports.

TYPES (METHODS) OF PROTECTION AND THEIR EFFECTS

Governments can protect local industries by imposing the following trade barriers:

1. Trade tariffs

Trade tariffs are taxes or duties imposed on goods traded across international borders.

On the basis of direction, tariffs are of two types:

(i) Export tariffs

Governments can impose tariffs on locally made items to discourage their exports. Such tariffs are usually imposed to combat inflationary pressures and to ensure an easy, sustained supply of necessities within the country. The Pakistani government has recently imposed export tariffs on meat and cement to discourage their exports and keep their prices low. Export tariffs can also be levied on raw materials in order to encourage firms to produce and export value added items.

(ii) Import tariff

This is a more common form of tariffs. Import tariffs aim at generating revenues and/or protecting the local industry by making imported goods expensive. Contrary to export tariffs, import tariffs trigger inflationary pressures.

On the basis of rates, tariffs are of two types:

(i) Specific tariffs

The amount of specific tariff per unit stays the same, irrespective of the value of the imported item. Such tariffs are levied on quantity e.g. \$10/unit. Such a tariff has a regressive effect since the impact of tariff reduces with an increase in the value/price of the product.

Such tariffs are imposed to discourage under invoicing i.e. importers under quoting the prices of imported items to evade paying import duties.

(ii) Ad valorem tariffs

The tariff amount increases with the value of the imported item e.g. a 50% import duty on an imported car.

On the basis of purpose, tariffs are of two types:

(i) Revenue tariffs

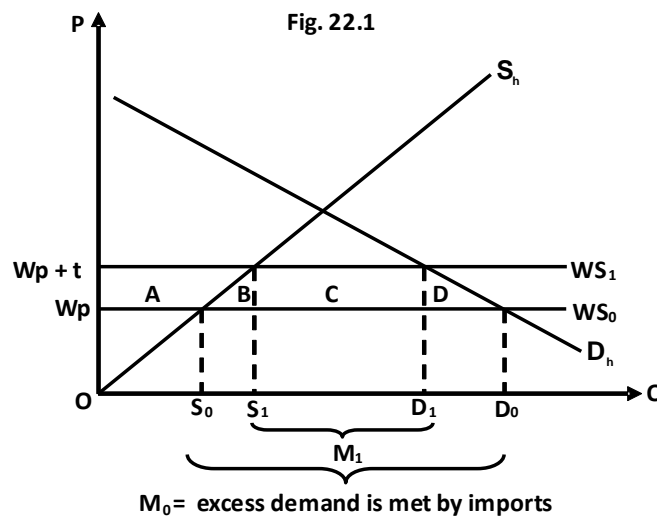
Import tariffs, like other taxes, help governments generate revenue. Revenue tariffs are those, the major aim of which is to generate revenues for the government. Usually, such tariffs have lower rates.

(ii) Protective tariffs

Import tariffs protect local industries by making imported items less price competitive in the local market. Protective tariffs are usually higher than revenue tariffs. The Pakistani government has imposed very high tariffs on the import of automobiles, discouraging their imports. The local automobile industry stands protected but the government doesn't generate revenues.

For protective tariffs to be effective in reducing import volume, demand for imported goods should be price elastic.

Impacts of import tariffs



In Fig. 22.1, D_h shows the domestic (home) demand and S_h , domestic supply. The world supply curve, WS_0 is a straight horizontal line at world price, W_p . The world supply is perfectly price elastic since countries usually import relatively small quantities and their decisions to import more (or less) have no impact on world supply and world price. However, world supply curve could slope upwards for countries importing huge quantities. For example, the increased demand of oil by the economic giant, America (which roughly uses up 25% of world's total oil production) or of

steel by fastest growing economies like China or India, raises the world demand and price. World supply curve of imports faced by these economies is thus, upward rising.

Assuming free trade, the equilibrium price is determined at W_p . At this price, the domestic demand, D_0 exceeds domestic supply, S_0 and the shortage is met by imports, M_0 . The imposition of import tariff, t shifts world supply curve to WS_1 . Since world supply is perfectly price elastic, the equilibrium price increases exactly by the amount of tariff and the entire burden is passed on to the consumers.

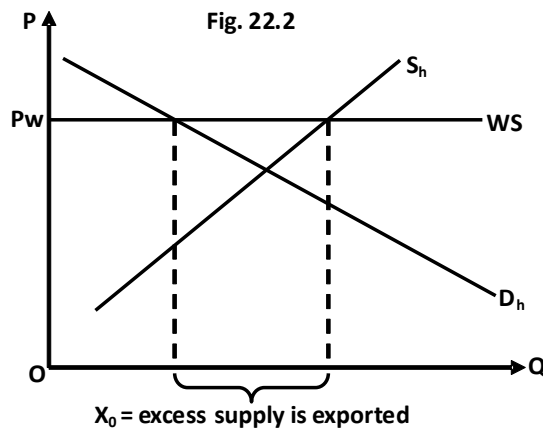
Higher price decreases domestic demand from D_0 to D_1 and raises domestic supply from S_0 to S_1 . Imports also decrease from M_0 to M_1 . Government revenue from this tariff equals area C.

Increase in price reduces consumer surplus by area $A+B+C+D$ whereas producer surplus increases by area A only. The loss in consumer surplus is higher than the gain in producer surplus since consumers pay high prices on both domestically made and imported goods while producers benefit from higher prices only on domestically made goods. Area $B+D$, that does not become either government revenue or the gain of the producers is the dead weight loss of the import tariff.

Tariffs are effective in reducing trade deficit when:

- Demand for imports is price elastic and higher import prices compel consumers to switch to local commodities
- Excess capacity exists in the local market to replace unfulfilled domestic demand that was previously met by imports. In such a case, tariffs create employment opportunities and raise national income. In the absence of excess capacity, their impact is likely to be inflationary.
- Smuggling can be controlled as high tariffs and taxes encourage tax evasion and illegal trade.

Note that tariffs are desirable only when imposed for a limited period of time and removed gradually. Tariffs reduce the pressure on local firms to remain cost efficient in production and are likely to make local firms complacent and inefficient if imposed indefinitely.



In Fig. 22.2, D_h shows the domestic demand and S_h , domestic supply. The world supply curve, WS_0 is a straight horizontal line at world price, W_p . Assuming free trade, the equilibrium price is determined at P_w . At this price, the domestic supply exceeds domestic demand and this excess supply is exported (X_0).

2. Quotas

Import quota is an import ceiling, specifying the maximum quantity that can be imported. Lower import quotas decrease imports.

Tariff quota specifies the maximum quantity that can be imported without tariffs. Quantities in excess of the quota can be imported on the payment of a tariff.

The effects of quotas are similar to that of import tariffs, since both reduce imports by making them expensive.

Import quotas are more effective in discouraging imports than tariffs when the demand for imports is price inelastic.

3. Exchange controls

The national government can tightly control all transactions between a nation's residents and the rest of the world. Specifically, it can ration the ability of residents to acquire foreign exchange for spending abroad, keeping the volume of imports under check.

4. Export subsidies

Governments can grant subsidies to producers, enabling them to produce cheaper goods and decrease dependence on imports.

5. Voluntary export restriction

This is a relatively new concept. Japan voluntarily restricted automobile exports to America in order to avoid a possible retaliatory action by the American government.

6. Non-tariff barriers

Non-tariff barriers are becoming more and more popular as a means of restricting free trade. Non-tariff barriers are less visible and subject to lesser retaliation. They can take up many types, for example, product standard regulation, packaging and distribution restrictions, complex custom procedures, government contract and licensing policy etc.

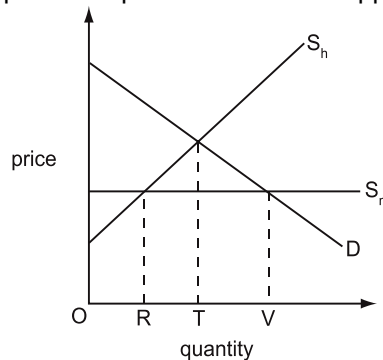
MULTIPLE CHOICE QUESTIONS

N/02/1/20

- 1 A developing country imposes a tariff to protect a new domestic industry. Which argument would provide an acceptable economic case for this?
- (A) It is believed that the industry will always need government assistance to compete internationally.
 - (B) It is believed that the industry will compete effectively when it achieves economies of scale.
 - (C) The country wishes to reduce the rate of inflation.
 - (D) The country wishes to lower its terms of trade.

N/03/1/12

- 2 The diagram shows a market for a good which is supplied partly from domestic production and partly from imports. S_h represents domestic supply and S_m represents imports.



What will be the level of consumption and the associated volume of imports?

	consumption	volume of imports
(A)	OT	RT
(B)	OT	OT
(C)	OV	RT
(D)	OV	RV

N/03/1/19

- 3 What will be the immediate effect of the removal of tariffs on imported consumer goods?
- (A) a decrease in the cost of living
 - (B) a decrease in free trade
 - (C) an increase in customs revenues received by the government
 - (D) an increase in the level of domestic employment

J/04/1/19

- 4 Which method of protection raises revenue for the government?
- (A) domestic subsidies
 - (B) embargo
 - (C) quota
 - (D) tariff

N/04/1/20

- 5** An argument against trade protection is that it will increase
- (A) competition for domestic industries.
 - (B) domestic price levels.
 - (C) the current account deficit.
 - (D) opportunities for domestic infant industries.

J/05/1/20

- 6** Why would a government introduce tariffs and quotas?
- (A) to increase the level of international competition
 - (B) to increase the demand for home-produced goods
 - (C) to reduce the price of home-produced goods
 - (D) to reduce the price of imports

N/05/1/20

- 7** Which of the following will increase a country's protection against imports?
- (A) an appreciation of its exchange rate
 - (B) an increase in its inflation rate
 - (C) a reduction in the size of existing import quotas
 - (D) a reduction in subsidies to domestic producers

J/06/1/11

- 8** Assume the price elasticity of demand for best-quality French wine is zero. What would be the effect in New Zealand if the New Zealand government imposed a tariff on such wine?
- (A) The price of the wine would rise by an amount less than the tariff.
 - (B) Demand for the wine would fall.
 - (C) Expenditure on the wine would rise.
 - (D) Sales of the wine would cease.

N/06/1/20

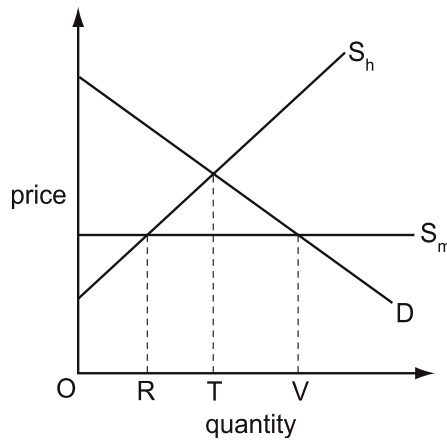
- 9** What would reduce an economy's protection against the import of cars?
- (A) a lower exchange rate
 - (B) a higher quota of imported cars
 - (C) a higher tariff on imported cars
 - (D) a higher subsidy for domestic car producers

J/07/1/20

- 10** Which method of protection would a government be most likely to use to increase the country's exports?
- (A) exchange control
 - (B) quotas
 - (C) subsidies
 - (D) tariffs

N/07/1/12

11 The diagram shows a market for a good which is supplied partly from domestic production and partly from imports. S_h represents domestic supply and S_m represents imports.



What will be the level of consumption and the associated volume of imports?

	computation	volume of imports
(A)	OT	RT
(B)	OT	OT
(C)	OV	RT
(D)	OV	RV

N/07/1/20

12 What would be an economic benefit to a country of imposing a tariff on imported goods?

- (A) It would increase global productivity.
- (B) It would make the country's exports more competitive.
- (C) It would put pressure on foreign suppliers to reduce their prices.
- (D) It would reduce the prices paid by consumers for imported goods.

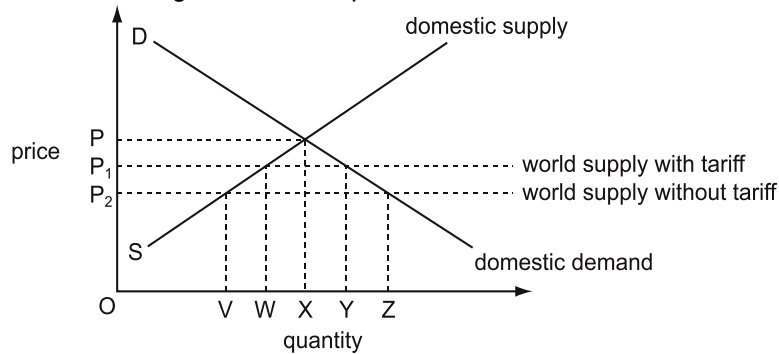
J/08/1/20

13 When would the sale of cheap exports definitely be classed as dumping?

- (A) if the exports were produced profitably at a low price in the exporting country
- (B) if the exports were the result of a surplus caused by favourable weather conditions
- (C) if the exports were the result of improved technology that led to capital-intensive production
- (D) if the exports were the result of government subsidies to producers that made loss-making sales profitable

J/08/1/21

- 14 A government removes the tariff on a product.
What will be the change in domestic production?



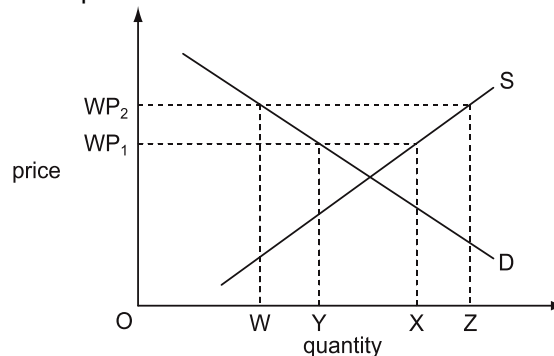
- (A) a reduction of WV (B) a reduction of XV
(C) a reduction of XW (D) a reduction of ZY

N/08/1/20

- 15 What will be the immediate effect of the removal of tariffs on imported consumer goods?
(A) a decrease in the cost of living
(B) a decrease in free trade
(C) an increase in customs revenues received by the government
(D) an increase in the level of domestic employment

J/09/1/11

- 16 The diagram shows a country's domestic supply of, and demand for, a commodity that it both consumes and exports.



- The world price changes from WP_1 to WP_2 .
What are the resulting changes in domestic consumption and exports?

	domestic consumption	quantity of exports
(A)	OX to OZ	OY to OX
(B)	OX to OZ	OY to OZ
(C)	OY to OW	YX to WZ
(D)	OY to OW	YX to OZ

J/09/1/20

- 17** Japan introduces import quotas on consumer durables imported from Malaysia. These goods have a high price elasticity of demand. What effect is this likely to have on the prices paid for these goods by Japanese consumers and on the revenues received by Malaysian producers?

	change in prices paid by Japanese consumers	change in revenues received by Malaysian producers
(A)	decrease	uncertain
(B)	decrease	increase
(C)	increase	decrease
(D)	increase	uncertain

N/09/1/19

- 18** A government has been protecting its domestic car industry with a quota on imported cars. It then removes the quota and replaces it with a subsidy to domestic car producers. How will this change affect the price of cars and the level of consumer choice?

	price of cars	level of choice
(A)	decrease	decrease
(B)	decrease	increase
(C)	increase	decrease
(D)	increase	increase

J/10/1/19

- 19** The statements that follow relate to possible gains from an increase in free trade. Which gain is least certain to result?
- (A)** Increased specialization leads to improvements in productivity.
 - (B)** Trade extends the choice of goods available to consumers.
 - (C)** Trade leads to an increase in the number of jobs.
 - (D)** Trade leads to a reduction in costs of production.

N/10/1/19

- 20** Steel is produced in a number of countries, including China, Japan and the US. It is used in the manufacture of cars. The US protects its domestic steel industry by imposing high tariffs on foreign steel imports. Which two groups would benefit from the removal of the US tariffs?

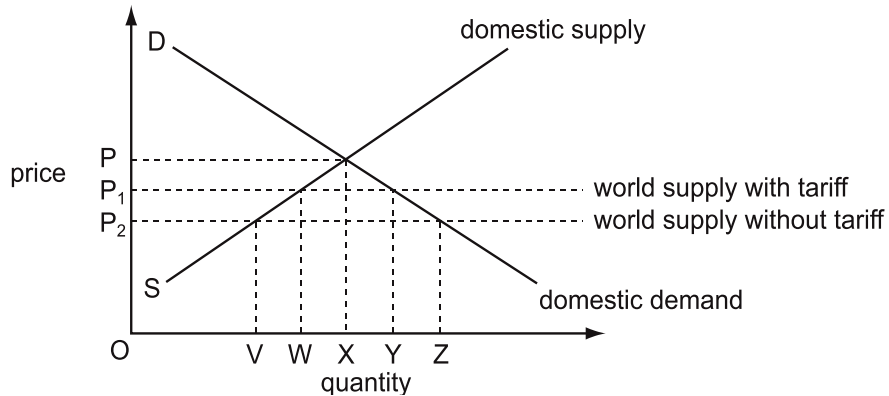
- A** Chinese steel producers and Japanese car manufacturers
- B** Japanese steel producers and US car manufacturers
- C** US steel producers and Chinese steel workers
- D** the US government and Japanese steel workers

J/11/1/19

- 21** An argument against trade protection is that it will increase
- (A)** competition for domestic industries.
 - (B)** domestic price levels.
 - (C)** opportunities for domestic infant industries.
 - (D)** the current account deficit.

N/11/1/19

22 A government removes the tariff on a product as shown in the diagram.



What will be the change in domestic production?

- (A) a reduction of WV
- (B) a reduction of XV
- (C) a reduction of XW
- (D) a reduction of ZY

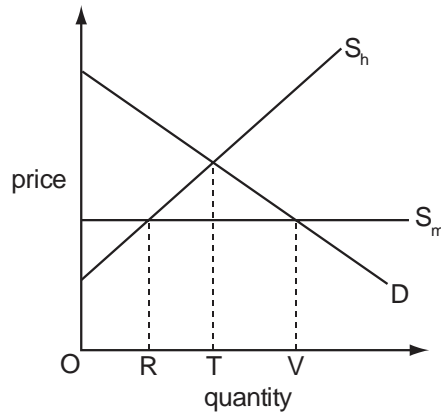
J/12/1/21

23 Which statement about the impact of a tariff and a quota is correct?

- A A tariff leaves the quantity of imports unchanged while a quota decreases the quantity of imports.
- B A tariff raises government revenue while a quota benefits the seller of the imports.
- C A tariff raises the price of imports while a quota leaves import prices unchanged.
- D A tariff shifts the supply curve of imports while a quota shifts the demand curve for imports.

N/12/1/11

24 The diagram shows a market for a good which is supplied partly from domestic production and partly from imports. S_h represents domestic supply and S_m represents imports.



What will be the level of consumption and the associated quantity of imports?

	Consumption	Quantity of imports
A	OT	RT
B	OT	OT
C	OV	RT
D	OV	RV

N/12/1/19

25 Why might a government decide to reduce tariffs on agricultural imports?

- A** to develop greater specialization
- B** to increase government revenue
- C** to promote job creation in rural areas
- D** to protect small businesses

N/12/1/20

26 A government believes that it can reduce its trade deficit by the introduction of a tax on its main export.

When is this likely to be most effective?

- A** when demand for the export is price elastic
- B** when the exporting country is a member of a customs union
- C** when the exporting country is the major world supplier of the product
- D** when the terms of trade of the exporting country are favourable

N/12/1/30

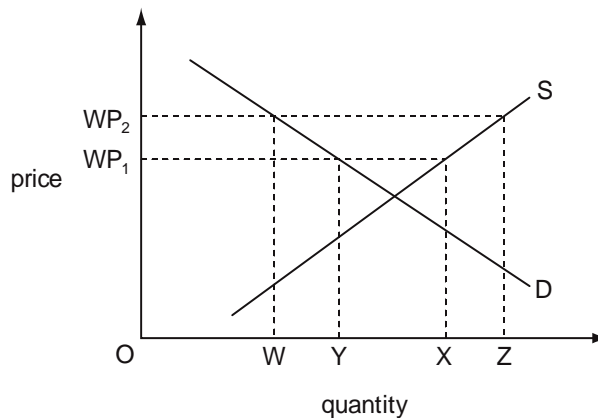
- 27** When is the imposition of a tariff on a good most likely to reduce a trade deficit?
- A** when the country has a potential comparative advantage in producing that good
 - B** when the country is a member of an economic union
 - C** when the elasticity of supply of the good domestically is zero
 - D** when the price elasticity of demand for the good is zero

J/13/1/20

- 28** What is the most likely aim of a government that increases the level of tariffs on imported manufactured goods?
- A** a fall in interest rates
 - B** a fall in the exchange rate
 - C** a rise in domestic employment
 - D** a rise in the general price level

N/13/1/10

- 29** The diagram shows a country's domestic supply of, and demand for, a commodity that it both consumes and exports.



The world price changes from WP_1 to WP_2 .
What are the resulting changes in domestic consumption and exports?

	domestic consumption	quantity of exports
A	OX to OZ	OY to OX
B	OX to OZ	OY to OZ
C	OY to OW	YX to WZ
D	OY to OW	YX to OZ

N/13/1/20

- 30** What is the least likely outcome for participating countries of a move towards freer trade?
- A** greater international specialisation
 - B** greater product choice
 - C** higher standards of living
 - D** more equal distribution of income

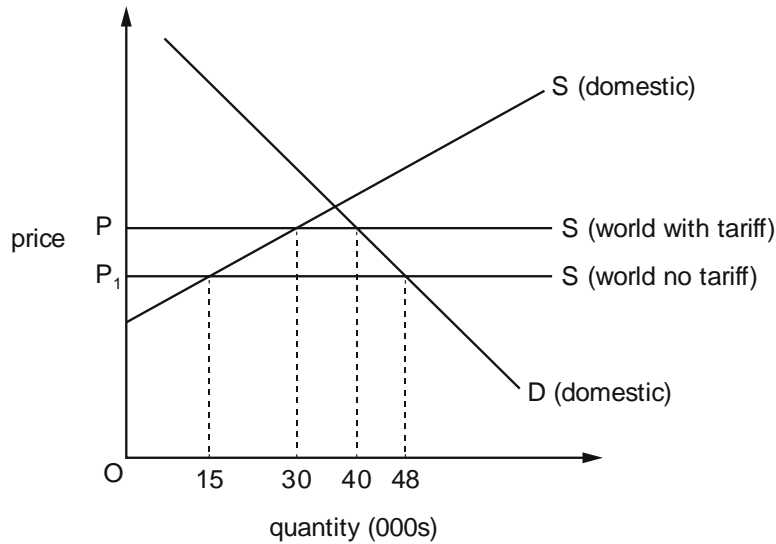
J/14/1/20

31 A country produces washing machines. The government lowered both the tax on washing machines produced in its country and the quota on imports of foreign washing machines. What is the likely result?

- A** Government revenue increased.
- B** Home production decreased.
- C** Prices of foreign washing machines fell.
- D** The balance of trade in goods improved.

J/14/1/21

32 The diagram shows the effect on the quantity of an import to the domestic market of the removal of a tariff that reduces the import's price to P_1 .

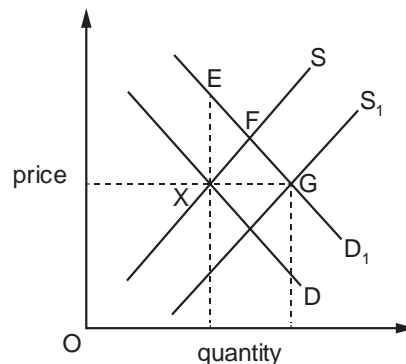


By how much will the quantity of imports increase?

- A** 8000 tonnes
- B** 10 000 tonnes
- C** 23 000 tonnes
- D** 33 000 tonnes

N/14/1/17

- 33** The diagram shows the demand for and supply of a foreign-made mobile (cell) phone. The initial position in the domestic market is X.



Importers increased the supply of the phone and there was an increase in demand for the phone.

The government considered whether to protect domestic manufacturers with a limit on imports which would keep the supply at the initial quantity.

How would the price change between the new equilibrium without a limit on imports and the equilibrium with a limit on imports?

- | | | | |
|----------|------------------------|----------|------------------------|
| A | a movement from E to F | B | a movement from F to G |
| C | a movement from G to E | D | a movement from G to F |

N/14/1/19

- 34** What is an effect on a country of free trade?
- A** greater diversification of locally produced goods
 - B** greater efficiency in the resource use
 - C** greater independence in production
 - D** greater security for local industries

N/14/1/20

- 35** What is meant by dumping in international trade?
- A** selling products in a foreign market at a price below cost
 - B** selling products in a foreign market at a price below that of other firms
 - C** selling products in a foreign market that are of a lower quality than those of domestic firms
 - D** selling products in a foreign market that are of a lower quality than those of other foreign firms

J/15/1/20

- 36** How might trade protection reduce a country's ability to compete in export markets?
- A** by increasing firms' profit margins on goods supplied to the domestic market
 - B** by increasing the cost to the country's manufacturers of imported components
 - C** by increasing the real disposable income of the country's consumers
 - D** by making the country more attractive to inward investors

N/15/1/20

37 What is the most likely reason why Pakistan might reduce its trade barriers on imports?

- A** to help Pakistan increase its gain from comparative advantage
- B** to help Pakistan invest more abroad
- C** to raise its foreign exchange rate
- D** to reduce government borrowing and international debt

SECTION 23

ECONOMIC INTEGRATION

The process through which regional trading blocs emerge is referred to as economic integration. It involves deliberate ways in which national economies agree to merge their economic affairs into a single economic organization. This blurring of boundaries allows countries to be much more closely linked to each other in terms of regulations and trade. There are several types of trading areas, depending on the extent of integration member countries agree to have between them.

FREE TRADE AREA

A free trading bloc is a loose form of organization where member countries remove trade restrictions among themselves but maintain separate policies on trading with the external world. Customs inspectors must still police the borders between members to tax or prohibit trade that otherwise may avoid some members' higher barriers by entering (or leaving) the area through low-barrier countries.

NAFTA, North American Free Trade Agreement, remains one of the most powerful trading blocs today and includes the USA, Canada and Mexico. South Asian Free Trade Area (SAFTA) is a recently formed trading block including Pakistan, India, Sri Lanka, Bangladesh, Bhutan, Nepal, Afghanistan and Maldives. ASEAN, Association of South East Asian Nations is another example of a free trade area.

CUSTOMS UNION

A customs union is one in which member countries remove trade barriers among themselves and adopt a common set of external barriers, thereby eliminating the need for customs inspection at internal borders. Southern African Customs Union (SACU) makes a good example of a customs union, being the oldest and still existing.

COMMON MARKET

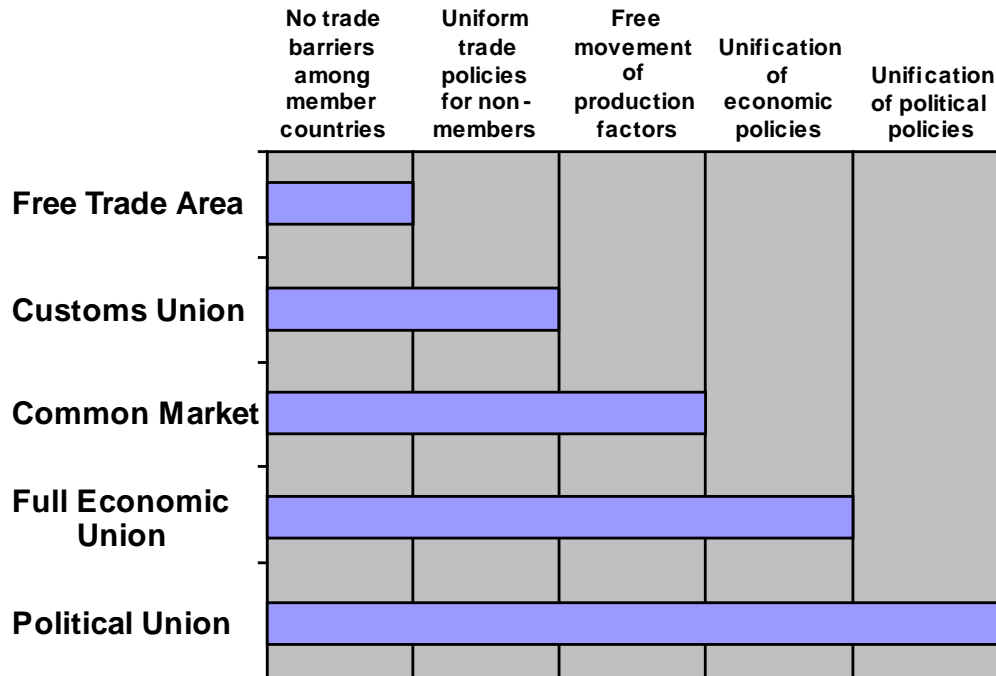
A common market is one in which members allow full freedom of factor flows (migration of labour or capital) among themselves, in addition to having a free-trade area.

FULL ECONOMIC UNION

An economic union such as the European Union (EU) also aims at increased trade and co operation among member countries by disallowing trade barriers between them. Unlike free trade areas however, economic unions call for a deliberate harmonization of all laws and regulations between member countries including common external trade barriers, monetary, fiscal and welfare policies and factor migration.

POLITICAL UNION

In addition to unifying all economic policies, a political union unifies all political policies too. United States of America (USA) is an example of political union while European Union (EU) aspires to be one.



Economic Integration – For Better or Worse?

Does economic integration actually benefit world trade and increase overall welfare? The answer depends on its:

- Trade creation effect, and
- Trade diversion effect

Trade creation refers to the extra output generated due to the freeing up of trade between member countries. The removal of trade restrictions such as tariffs and quotas greatly enhances the volume of trade among member countries of a trading bloc. Such trade creation carries the greatest potential benefit for countries whose domestic markets are too small to allow economies of scale in production or who face substantial barriers to their exports. In addition, increased trade may result in greater employment opportunities in member countries and a constant pressure to remain efficient in production. Trade creation is also in line with comparative advantage- member countries increasingly specialize in goods that have relatively lower opportunity cost compared to the rest and less efficient producers are driven out of the market as imports replace them. There may thus be better allocation of scarce resources.

Increased trade enhances the pace of economic activity by boosting exports and increases living standards as consumers gain access to a variety of imported goods and services. However, the net welfare gain from trade creation remains uncertain as regional trading blocs may also give rise to trade diversion.

The trade diversion effect is caused when trade shifts from natural low cost producers outside the trading area to high cost producers within it. The law of comparative advantage stands violated and there is inefficient resource allocation in production. Consumers remain at a disadvantage when trade diversion occurs as they purchase goods and services at a higher price than is available outside the trading bloc. Society however, may still enjoy a net welfare gain as long as the decrease in consumer surplus and loss of tariff revenue is outweighed by the increase in profit to producers.

Whereas small producers benefit from economies in production, preferential trading may very well bring with it diseconomies of scale. There is a huge cost involved in administering the trading system and there may be greater oligopolistic collusion between various member countries. Smaller member countries may become increasingly dependent on larger, dominant ones for mutual trade. However, there is little denying the fact that trading blocs do provide dynamic advantages like increased competition, efficiency, a rapid spread of technology and often better bargaining power and terms of trade.

MULTIPLE CHOICE QUESTIONS

J/02/1/20

- 1 Which of the following is a characteristic of a customs union but **not** of a free trade area?
- (A) a common external tariff
 - (B) a common tariff between member countries
 - (C) the abolition of all tariffs between member countries
 - (D) fixed exchange rates between member countries

N/02/1/19

- 2 Why might the establishment of a customs union lower economic welfare?
- (A) The exchange rate is realigned.
 - (B) Labour mobility is increased.
 - (C) Trade is created.
 - (D) Trade is diverted.

J/03/1/19

- 3 Country X joins an existing customs union, comprising Y and W, which has a common external tariff equal to X's initial tariff. After joining the customs union, X imports cars from Y which it previously imported from country V. How will this affect the price of cars in country X and the cost of producing the cars imported into country X?

	price	cost of production
(A)	lower	lower
(B)	lower	higher
(C)	no effect	lower
(D)	no effect	higher

J/03/1/21

- 4 A particular good in the Barbados market could be supplied by domestic producers, or producers in Trinidad & Tobago, or producers in the USA, at the following prices in US dollars:

origin of production	price
Barbados	\$1.00
Trinidad & Tobago	\$0.85
USA	\$0.75

Originally Barbados had a 20% ad valorem duty on imports from Trinidad & Tobago and the USA.

Barbados then formed a customs union with Trinidad & Tobago, with a common external tariff, also of 20%.

From which countries would Barbados import the good, before the formation of the customs union and after the formation of the customs union?

	before	After
(A)	USA	USA
(B)	USA	Trinidad & Tobago
(C)	neither	USA
(D)	neither	Trinidad & Tobago

N/03/1/20

5 A group of countries introduce a single common currency to replace their national currencies.

What will result from this policy?

- (A) easier price comparisons between countries
- (B) higher transaction costs
- (C) increased interest rate differentials
- (D) identical prices in all countries

N/04/1/21

6 What is present in a customs union but not in a free trade area?

- (A) a common monetary system
- (B) a common external tariff with the rest of the world
- (C) a common system of taxation
- (D) the free movement of all goods, services and factors of production

J/05/1/21

7 In some parts of the world economic unions have been established. These have introduced a common currency.

What could be an economic disadvantage of introducing such a common currency?

- (A) Absolute and comparative cost advantages would disappear as a basis for trade.
- (B) Devaluation of a member's currency would no longer be possible.
- (C) Prices of goods and services would be the same over the whole union.
- (D) Trade creation would take place.

N/08/1/21

8 Which feature is found in both a customs union and a free trade area?

- (A) a common currency
- (B) a common external tariff
- (C) freedom from internal trade barriers
- (D) uniform tax rates

J/09/1/21

9 Which statement about economic integration is correct?

- (A) A customs union has a common currency.
- (B) A customs union has a common external tariff.
- (C) A free trade area has internal trade barriers.
- (D) A free trade area has no external trade barriers.

J/10/1/20

10 A group of countries decides to change from being a customs union to being an economic union.

What additional feature will this give the group?

- (A) a common external quota on imports from non-members
- (B) a common external tariff on imports from non-members
- (C) the removal of restrictions on the movement of capital and labour between members
- (D) the removal of tariffs and quotas on product exchanged between members

N/10/1/21

11 What is found in a customs union but not a free trade area?

- A** a common currency
- B** a common external tariff
- C** fixed exchange rates
- D** free movement of labour

N/11/1/20

12 Country X joins an existing customs union comprising countries Y and Z. Country W remains outside the customs union.

Both X's initial tariff and W's tariff are at the same level as the customs union's common external tariff.

What is likely to be the effect on trade flows when X joins the customs union?

	trade between X and W	trade between Y and Z
(A)	unchanged	decrease
(B)	decrease	decrease
(C)	unchanged	increase
(D)	decrease	increase

J/13/1/21

13 What is a characteristic of a customs union but is not of a free trade area?

- A** abolition of import quotas
- B** abolition of tariffs between member countries
- C** a common currency
- D** a common external tariff

N/13/1/21

14 A country joins a trade organisation, where the only requirements are that members must have identical tariff rates towards non-members and no trade barriers to fellow members. With which possible change in status for the country is this condition consistent?

- A** from independent trade to membership of a free trade area
- B** from membership of a customs union to membership of an economic union
- C** from membership of a free trade area to membership of a customs union
- D** from membership of a free trade area to membership of an economic union

J/14/1/22

15 A group of countries join together to form a single market with a single common currency. Which term best describes the resulting organisation?

- A** customs union
- B** economic union
- C** free trade area
- D** trade union

N/14/1/21

- 16** As a result of a trade agreement, toys produced in Africa can be supplied to European markets. These toys are much cheaper than similar toys produced in Europe but are not of such good quality. What will happen in Europe to expenditure on toys, employment in European toy companies and imports from Africa?

	expenditure	employment	imports
A	decrease	decrease	decrease
B	increase	decrease	uncertain
C	increase	uncertain	increase
D	uncertain	uncertain	increase

J/15/1/21

- 17** What is found in an economic union but not in a customs union?

- A** a common external tariff on trade with non-member countries
- B** an absence of quotas on trade between member countries
- C** an absence of tariffs on trade between member countries
- D** free movement of labour and capital between member countries

N/15/1/21

- 18** A particular good in the Barbados market could be supplied by domestic producers, or producers in Trinidad & Tobago, or producers in the USA, at the prices shown in US dollars. Originally, Barbados had a 20% ad valorem duty on imports from Trinidad & Tobago and the USA. Barbados then formed a customs union with Trinidad & Tobago, with a common external tariff, also of 20%. From which countries would Barbados import the good, before the formation of the customs union and after the formation of the customs union?

origin of production	price
Barbados	\$1.00
Trinidad & Tobago	\$0.85
USA	\$0.75

	before	after
A	neither	Trinidad & Tobago
B	neither	USA
C	USA	Trinidad & Tobago
D	USA	USA

J/16/1/26

- 19** What is not associated with greater economic integration between countries?

- A** increased financial flows
- B** increased quotas
- C** increased trade creation
- D** increased trade diversion

SECTION 24

BALANCE OF PAYMENTS

Balance of payments is a systematic record of all of a country's transactions with the rest of the world. Balance of payments has two components:

- (i) Current Account
- (ii) Financial (Capital) Account

(i) CURRENT ACCOUNT

It records the inflows and outflows of foreign exchange for the exports and imports of goods and services. Current account has two sections:

(a) Balance of trade

Also known as the visible section of current account, balance of trade records the exports and imports of goods only. The transactions occurring at international borders of a country (airports, sea ports, dry ports) are recorded in balance of trade. Balance of trade is the most important component of balance of payments as it reflects the competitiveness of the manufacturing sector of the country. The exports and imports of all goods, including consumer and capital goods as well as primary and manufactured goods, are recorded in balance of trade. However, exports of primary goods such as oil can be shown separately to clearly figure out the competitiveness of the manufacturing sector.

(b) Invisible section of current account

This section records the export and import of services only. Wages remitted by overseas workers, interest payments earned from foreign bank accounts, rent received on foreign property or profits earned from overseas operations of businesses are recorded in this section.

Decreased interest rate directly improves invisible section of current account but balance of trade gets worse since decreased interest rates increase spending on locally made goods as well as on imports.

(ii) FINANCIAL (CAPITAL) ACCOUNT

It records the inflows and outflows of (financial) capital meant for investment. They could be either short term or long term flows. Short term capital flows are generally speculative. They are usually portfolio investments where an investor invests a certain portion of his investment in either the stock exchange or currency market of a foreign country. A comparatively higher interest rate attracts capital inflows and discourages capital outflows. Speculative capital flows are also attracted when investors perceive national currency to be under valued and expect an increase in its value.

Long term flows are usually direct foreign investments (DFIs) and are invested in real business activities. Political and economic stability of a country, availability of cheap and skilled labour, law and order, low tax rates, expectations of healthy profits and friendly government policies are few factors encouraging long term capital inflows.

Balance of payments is always balanced. In case inflows of foreign exchange exceed outflows, the official reserves of foreign currencies held by a government pile up (shown by a negative sign in balance of payment-surprisingly though!). The official reserves deplete when outflows exceed inflows (shown by a positive sign in balance of payments).

All inflows of foreign exchange are credited (+ sign) in balance of payments and all outflows are debited (- sign). Assuming Pakistan to be the home country, the following examples explain hypothetical transactions and their impacts on balance of payments:

Transaction	Impact on Balance of Payment of Pakistan		
	Current Account		Financial Account
	Trade Balance	Invisible section	
Export of textile items to European Union (EU)	Credit	-	-
Import of oil from Saudia	Debit	-	-
Import of machinery from Japan	Debit	-	-
Import of spare parts of F-16	Debit	-	-
Pakistani workers remitting their salaries earned in UAE	-	Credit	-
Pakistani army being paid for taking part in a peace mission arranged by UNO.	-	Credit	-
Pakistani cricket team winning the World Cup and getting prize money of \$25 million.	-	Credit	-
A Pakistani receiving rent from his property of London	-	Credit	-
A Pakistani family enjoying holidays in Disney World Hong Kong.	-	Debit (However, tickets purchased from PIA will not be recorded in balance of payments.)	-
A Japanese firm building an automobile plant in Pakistan	-	This transaction is credited in financial account. However, profits of this Japanese firm, when sent back, will be debited in the invisible section of current account. Thus, a credit item of financial account is likely to lead to a stream of debit items in the invisible section of current account and vice versa.	Credit
A Pakistani investor investing in New York stock exchange	-	This transaction is debited in financial account. However, dividends and capital gains, if any, will be credited in the invisible section of current account.	Debit

A BALLAD OF PAYMENTS!

Any day on the tube Of capital movements
You may hear it said	Both short and long.
That our balance of payments	Add their loans to us
Is again in the red.	Minus ours. That's not wrong:
But whether it's said by	We look at our borrowing
Mudd, Rather, or Herman	As an exported claim
The balance referred to	While lending is seen
Is hard to determine.	As an import of same.
Let's start at the top	Now move down the page
And work our way through	To the line at the bottom
Trade balance comes first	And add liquid balances
We will explain that to you.	(if it's them who has got 'em)
It's value of exports of	Or if it is we
Goods, don't you see,	Who own more of their money
Less value of imported	We debit accounts,
Goods; and now we	Although that looks funny.
Add to the plus side	So down at the bottom
The net sales of things	After all of this fuss
Labeled as services,	The difference is zero,
And that now brings	Neither minus nor plus.
Us to balance of payments	In a technical sense, then,
On current account;	The sheiks in their raiments
But now we must reckon	Can never unbalance
With the amount	Our balance of payments
	Bruce Glass burner

BALANCE OF PAYMENTS PROBLEMS

A balance of payments is always balanced but the question is how. Official reserves of foreign currencies can be used to finance a balance of payment disequilibrium. Official reserves deplete if there is a deficit on current and financial account and pile up in case of a surplus. Government officials can be required to look for other policy options if problems of balance of payments deficit or surplus persist. These policy options are discussed in detail in the last section of this book.

Why is a trade deficit bad?

As stated earlier, balance of trade is the most important component of balance of payments and a trade deficit (exports of goods falling short of imports) is a real worry for the officials. A trade deficit withdraws demand from the economy and could be of help to countries with inflationary pressures. However, trade deficit poses threats to economies that operate at, or near full

employment. Withdrawal of demand, for such countries, intensifies recession and increases unemployment.

Governments can deplete official reserves to finance a trade deficit. This option can be used indefinitely, provided trade deficits are temporary. A persistent trade deficit is more dangerous as official reserves drain out and governments either have to deflate their economies or devalue their national currency. The use of deflationary policies may increase unemployment.

A trade deficit is of lesser concern if caused by the imports of capital goods. Import of capital goods and machinery may increase the production capacity of the country and help it produce more exportable commodities in future.

Why is a trade surplus bad?

A trade surplus, compared to a trade deficit, poses fewer challenges to the officials. However, even a trade surplus can be a cause of concern.

- A trade surplus is inflationary because of the following reasons:
 - (i) A trade surplus (exports of goods exceeding imports) injects demand into the economy. Demand injection can benefit economies operating below full employment as real output can be increased by using unemployed resources. However, a trade surplus is more likely to be inflationary for an economy operating at, or near full employment. In such a case, the extra demand caused by trade surplus will only be followed by a rise in price level.
 - (ii) A trade surplus means that the demand of the national currency exceeds its supply in the international market. The currency would appreciate if the exchange rates were flexible. However, the government committed to defend exchange rates will have to increase the supply of national currency to prevent the exchange rate from rising. The increased supply of money i.e. too much money chasing too few goods is inflationary.
 - (ii) A trade surplus means excess demand of national currency in the international market. Had the exchange rate been flexible, the national currency would have appreciated. Thus, in case of fixed exchange rates, the national currency is undervalued. Undervalued national currency means undervalued exports and overvalued imports. Undervalued exports remove the pressures on local producers and laborers to be cost efficient. The inefficiency of firms and workers and expensive imports trigger cost push inflation.
- A trade surplus can invite retaliation from countries facing a trade deficit. Retaliatory actions taken by deficit countries can affect income and employment opportunities in the surplus countries. The fear of a possible retaliatory action by the American government and its effects on the job market forced the Japanese government to voluntarily restrict its exports of automobiles to the US market.
- The official reserves of foreign currencies pile up when there is a trade surplus. This is a healthy sign but a persistent trade surplus leads to huge currency reserves of the deficit country. Fear of massive devaluation of the currency of the deficit country makes these reserves less attractive and officials either try to get rid of these reserves or try to reduce trade surplus.

MULTIPLE CHOICE QUESTIONS

J/02/1/19

- 1 Which of the following items is **not** included in the current account of a country's balance of payments?
- (A) interest on foreign loans (B) invisible exports
(C) profits from foreign investments (D) the purchase of foreign assets

N/02/1/22

- 2 What is likely to improve the visible trade balance of Mauritius but to worsen its invisible balance?
- (A) A Mauritian company sets up a subsidiary company in France.
(B) A US company builds a factory in the Mauritius to serve the African market.
(C) The Mauritian government removes import controls on semi-manufactured goods.
(D) The Mauritian government increases interest rates with a view to strengthening the exchange rate of the Mauritian rupee.

J/03/1/27

- 3 A Japanese company builds a factory in the UK to supply both the UK market and the market in the rest of Europe.
What is likely to be the long-run impact on the UK's visible trade balance and on its current balance?

	visible trade balance	current balance
(A)	worsen	uncertain
(B)	worsen	improve
(C)	improve	uncertain
(D)	improve	improve

J/04/1/21

- 4 The World Cup in 2002 caused a rise in demand by Japanese fans for football shirts made in Brazil, and increased travel to Japan by Brazilian fans using Japanese airlines. What would be the effect on Brazil's balance of payments?

	Exports of goods	Imports of services
(A)	decrease	decrease
(B)	decrease	increase
(C)	increase	decrease
(D)	increase	Increase

J/04/1/27

- 5 The table gives information about the trade between Singapore and New Zealand during 2001, the first year after they signed a free trade agreement. The values are given both in Singapore dollars (S\$) and New Zealand dollars (NZ\$).

	S \$m	NZ \$m	percentage change from 2000
Singapore exports to New Zealand	508	618	+20%
Singapore imports from New Zealand	331	403	-17%

What can be concluded from the table?

- (A) New Zealand gained more than Singapore from the trade agreement.
- (B) New Zealand's trade position with Singapore improved in 2001.
- (C) Singapore had a trade surplus with New Zealand in 2001.
- (D) The exchange rate in 2001 was approximately NZ\$1 = S\$1.2.

N/04/1/26

- 6 What is the most likely consequence of an increase in a country's balance of payments deficit?
- (A) an increase in the foreign value of the currency of the country
 - (B) an increase in the level of income within the country
 - (C) a reduction in the quantity of money within the country
 - (D) a reduction in unemployment within the country

J/05/1/27

- 7 What combination is most likely to cause a surplus in a country's trade in goods and services?

	inflation	currency
(A)	high	strong
(B)	high	weak
(C)	low	strong
(D)	low	weak

N/05/1/22

- 8 What is an export of services in Jamaica's current account?
- (A) an inflow of funds to Jamaica to buy shares
 - (B) earnings from US tourists visiting Jamaica
 - (C) earnings of Haitian workers in Jamaica sent to Haiti
 - (D) the export of Jamaican coffee

N/05/1/27

- 9 A Japanese company builds a factory in the UK to supply both the UK market and the market in the rest of Europe.

What is likely to be the long-run impact on the UK's balance of trade in goods and on its current balance?

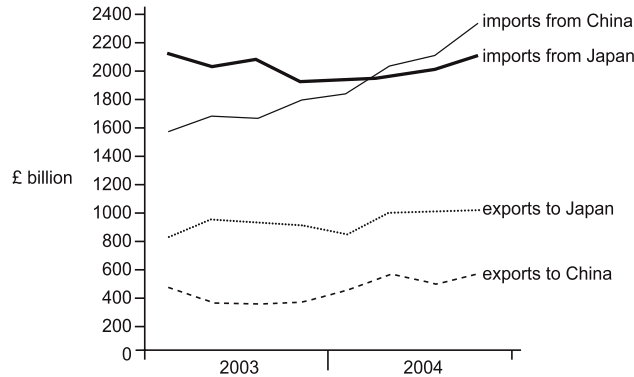
	balance of trade in goods	current balance
(A)	worsen	uncertain
(B)	worsen	improve
(C)	improve	uncertain
(D)	improve	improve

J/06/1/22

- 10** What will improve Cuba's current account balance immediately?
- (A) a Cuban buying sports equipment produced in the US
 - (B) a US resident investing in property in Cuba
 - (C) a US multi-national company building a new factory in Cuba
 - (D) Cubans working in the US sending money to their relatives in Cuba

N/06/1/22

- 11** The diagram shows the UK trade balance with China and Japan in 2003 and 2004.



How did the trade balance of the UK change between the start of 2003 and the end of 2004?

- (A) There was a fall in the trade surplus with China.
- (B) There was a fall in the trade surplus with Japan.
- (C) There was a rise in the trade deficit with China.
- (D) There was a rise in the trade deficit with Japan.

N/06/1/27

- 12** The table shows items from the balance of payments for countries A, B, C and D. Official financing is excluded from the Financial Account.

Which country has the greatest disequilibrium on its balance of payments?

	Current Account \$m	Capital Account \$m	Financial Account \$m
(A)	-41	13	28
(B)	44	12	25
(C)	-32	-5	-37
(D)	-15	-17	4

J/07/1/22

- 13** The table shows the balance for four items in a country's current account for two years.

	visible	invisible	income	transfers
year 1	-72	86	12	-24
year 2	-87	46	-3	-44

What can be concluded about the changes between year 1 and year 2?

- (A) Income has moved from a net inflow to a net outflow.
- (B) The difference between the value of exported and imported services has increased.
- (C) The value of exported goods has fallen.

(D) Transfers into the country have increased.

J/07/1/27

14 In which situation **must** a country's balance of trade in goods and services improve?

- (A) Export orders rise more than import orders.
- (B) Export prices rise more than import prices.
- (C) Export revenues rise more than import revenues.
- (D) Export volumes rise more than import volumes.

N/07/1/22

15 The table shows all of the items on the current account of a country's balance of payments.

	\$ million
exports of goods	143
import of goods	156
exports of services	75
imports of services	72
net transfers	+5

What is the value of the current account balance?

- (A) \$13 m deficit
- (B) \$10 m deficit
- (C) \$5 m deficit
- (D) \$3 m surplus

N/07/1/27

16 A UK resident buys shares in a Spanish company.

What will be the immediate and subsequent effects on the UK's balance of payments?

	immediate effect on financial account	subsequent effect on current account
(A)	credit	Credit
(B)	credit	Debit
(C)	debit	Credit
(D)	debit	Debit

J/08/1/22

17 Which item is recorded in the financial account of a country's balance of payments?

- (A) a receipt of a gift of cash from abroad
- (B) a receipt of a subsidy from abroad
- (C) a receipt of interest from abroad
- (D) a receipt of funds for long-term investment from abroad

J/08/1/27

18 In 2004, when international demand for oil was high, Bolivia encouraged investment by foreign firms in order to exploit its oil and gas resources, mainly to improve its balance of payments position.

What impact would this have on the balance of payments of Bolivia?

- (A) definitely favourable, as Bolivia could increase its exports of gas and oil
- (B) definitely unfavourable, as the foreign companies would transfer profits out of the country
- (C) uncertain, as there would be inflows and outflows of currency

(D) zero, as Bolivia itself would use the gas and oil produced

N/08/1/27

19 A country succeeds in attracting foreign direct investment. How is its effect recorded in its balance of payments in the short run and long run?

	short run	long run
(A)	a credit item in the current account	a debit item in the financial account
(B)	a debit item in the current account	a credit item in the financial account
(C)	a credit item in the financial account	a debit item in the current Account
(D)	a debit item in the financial account	a credit item in the current Account

J/09/1/26

20 A developed country has a price-inelastic demand for oil, all of which it imports. The oil-producing countries decide to provide more oil to the market. What is likely to happen as a result in the developed country to inflation, its balance of trade and the quantity of oil demanded?

	inflation	balance of trade	quantity of oil demanded
(A)	less likely	improves	Rises
(B)	less likely	worsens	Rises
(C)	more likely	improves	Falls
(D)	more likely	worsens	Falls

J/09/1/27

21 Why is it that a country's balance of payments must always balance?
 (A) Exchange rate changes will correct any deficit or surplus.
 (B) One country's deficit is matched by another's surplus.
 (C) The current account is balanced by the capital and financial accounts.
 (D) The government must act to correct any disequilibrium.

N/09/1/21

22 The table shows the balances for four items in a country's current account on the balance of payments for two years.

	visible	invisible	income	current transfers
year 1	-72	84	12	-24
year 2	-87	46	-3	-4

What can be concluded about the changes between year 1 and year 2?

(A) The current account balance has moved into deficit.
 (B) The difference between the value of exported and imported services has increased.
 (C) The earnings from ownership of foreign assets have increased.

(D) The value of exported goods has fallen.

N/09/1/25

23 The table gives details of some parts of a country's balance of payments. In which year did the country have its largest visible trade deficit?

	value of exports of goods (\$m)	value of imports of goods (\$m)	value of net income and transfers (\$m)
(A)	3914	3005	+110
(B)	3950	4073	+80
(C)	4774	4781	-65
(D)	5226	5102	-101

N/09/1/26

24 The table shows indicators of a country's economic performance over a two-year period.

year	exchange rate index	volume of exports index	volume of imports index	balance of trade in goods and services(\$)
1	100	100	100	zero
2	100	90	100	+500 million

What is consistent with the above information?

- (A) There has been a fall in the price of exports.
- (B) There has been an improvement in the terms of trade.
- (C) There has been an increase in the level of real income per head.
- (D) There has been an increase in the price of imports.

J/10/1/21

25 The table shows the balance in \$ million for four items in a country's current account for two years.

	visible	invisible	income	transfers
Year 1	-72	84	-3	-24
Year 2	-87	96	12	-44

What can be concluded about the changes between Year 1 and Year 2?

- (A) Income has moved from net inflow to a net outflow.
- (B) The difference between the value of exported and imported services has increased.
- (C) The value of exported goods has fallen.
- (D) Transfers into the country have increased.

J/10/1/26

26 When is a deficit on the current account balance of payments likely to worsen?

- (A) when the government adopts a deflationary macroeconomics policy
- (B) when the government devalues the currency
- (C) when the price of imported products that are demand-inelastic increases significantly

(D) when tariffs are placed on imported products that are demand-elastic

J/10/1/27

27 What would identify a country with a balance of payments disequilibrium?

- (A)** alternate annual deficits and surpluses in the current account
- (B)** a continually growing balancing item
- (C)** a large short-term outflow of foreign direct investment
- (D)** a persistent rise in foreign currency reserves

J/11/1/21

28 A government wishes to present its final balance of payments account. It has calculated the current account balance, the capital account balance and the financial account balance.

What additional information is required to complete the task?

- (A)** change in foreign currency reserves
- (B)** foreign aid
- (C)** net errors and omissions
- (D)** speculative currency flows

J/11/1/25

29 A Japanese company builds a factory in the UK to supply both the UK market and the market in the rest of Europe.

What is likely to be the long-run impact on the UK's balance of trade in goods and on its current balance?

	balance of trade in goods	current balance
(A)	improve	improve
(B)	improve	uncertain
(C)	worsen	improve
(D)	worsen	uncertain

J/11/1/26

30 A country experiences changes in the value of its exports and imports of goods and services and its inflow of incomes and transfers. These are shown in the table.

Which set of changes is most likely to cause a depreciation in its floating exchange rate?

	export value	import value	net inflow of incomes and transfers
--	--------------	--------------	-------------------------------------

(A)	fall	fall	fall
(B)	fall	rise	fall
(C)	rise	fall	rise
(D)	rise	rise	rise

N/11/1/22

31 The table shows all of the items on the current account of a country's balance of payments.

	\$ million
exports of goods	143
imports of goods	156
exports of services	75
imports of services	72
net transfers	+ 5

What is the value of the current account balance?

- (A) \$13 m deficit (B) \$10 m deficit
 (C) \$5 m deficit (D) \$3 m surplus

N/11/1/26

32 The table shows items from the balance of payments for countries A, B, C and D. Official Financing including changes in reserves is excluded from the Financial Account. Which country has the greatest disequilibrium on its balance of payments?

	Current Account \$m	Capital Account \$m	Financial Account \$m
(A)	-41	13	28
(B)	44	12	25
(C)	-32	-5	-37
(D)	-15	-17	4

N/11/1/27

33 What must be the necessary result of a surplus in the current account of a country's balance of payments?

- (A) a depreciation of the currency
 (B) an improvement in the terms of trade
 (C) an increase in foreign exchange reserves
 (D) an increase in net holdings of foreign assets

J/12/1/22

34 A firm borrows money from a bank based abroad in order to pay a lower rate of interest than that available from banks in its own country.

Which two parts of the balance of payments accounts will be affected by this transaction?

- A capital account and currency reserves
 B capital account and trade in services
 C financial account and net income flows
 D financial account and net current transfers

J/12/1/27

- 35** A government decides to reduce the quota on imported cars from 2000 to 1000 per year. What is likely to happen?
A The balance of trade may improve. **B** The demand for the good will increase.
C The good will become cheaper. **D** The government's revenue will decline.

N/12/1/22

- 36** The table shows in millions of US\$ the balance for four items in a country's current account for two years.

	goods	services	income	transfers
year 1	-72	84	12	-24
year 2	-87	46	-3	-44

What can be concluded about the changes between year 1 and year 2?

- A** Income has moved from a net inflow to a net outflow.
B The value of exported goods has fallen.
C The value of imported services has increased.
D Transfers into the country have increased.

N/12/1/27

- 37** The table shows the Canadian current account of the balance of payments in 2005 and 2006.

	2005 (\$m)	2006 (\$m)
goods	62 372	-4 568
services	12 055	-22 663
investment income	-22 917	-14 145
transfers	-1 498	-2 148
total	25 902	-43 523

The change in which item contributed the least and the change in which item contributed the most to the move from surplus to deficit in the Canadian current account balance between 2005 and 2006?

	item contributing the least	item contributing the most
A	investment income	goods
B	investment income	services
C	transfers	goods
D	transfers	services

J/13/1/27

- 38** When is a balance of trade deficit likely to be considered a particularly difficult problem for a country?

- A** when the imported goods are identical to domestic products
- B** when the imported goods are items of capital equipment
- C** when the imported goods are the raw material for exports
- D** when the imported goods are to cover a temporary shortage

N/13/1/26

- 39** A UK resident buys shares in a Spanish company.
What will be the immediate and subsequent effects on the UK's balance of payments?

	immediate effect on financial account	subsequent effect on current account
A	credit	credit
B	credit	debit
C	debit	credit
D	debit	debit

N/13/1/27

- 40** The table gives details of some parts of a country's balance of payments.
In which year did the country have its largest trade deficit?

	value of exports of goods (\$m)	value of imports of goods (\$m)	value of net income and transfers (\$m)
A	3914	3005	+110
B	3950	4073	+80
C	4774	4781	-65
D	5226	5102	-101

J/14/1/27

- 41** What would lead a country to move from a surplus to a deficit on the current account of the balance of payments?
- A** a depreciating exchange rate combined with a high rate of inflation and falling productivity
 - B** a depreciating exchange rate combined with a low rate of inflation and rising productivity
 - C** an appreciating exchange rate combined with a high rate of inflation and falling productivity
 - D** an appreciating exchange rate combined with a low rate of inflation and rising productivity

N/14/1/22

- 42** Which international transaction is correctly matched to the part of the balance of payments account in which it is recorded?

	transaction	part of account
A	the outflow of funds from national reserves to foreign residents	balancing item
B	the provision of banking	financial section

C	services to foreign companies the purchase of shares in foreign banks	capital section
D	the receipt of interest on loans to foreign companies	income section

J/15/1/22

43 The table shows the balance in \$million for four items in a country's current account for two years.

	goods	services	income	transfers
Year 1	-72	84	-3	-24
Year 2	-87	96	12	-44

What can be concluded about the changes between Year 1 and Year 2?

- A** Income has moved from a net inflow to a net outflow.
- B** The difference between the value of exported and imported services has increased.
- C** The value of exported goods has fallen.
- D** Transfers into the country have increased.

N/15/1/22

44 A Japanese car manufacturer established a successful factory in France. How would this be shown in the Japanese balance of payments?

	investment in the factory	dividends and profits from the factory
A	negative entry in the financial account	positive entry in the current account
B	negative entry in the current account	positive entry in the financial account
C	positive entry in the financial account	negative entry in the current account
D	positive entry in the current account	negative entry in the financial account

N/15/1/27

45 At a time when international demand for oil was high, Bolivia encouraged investment by foreign firms in order to exploit its oil and gas resources. What overall impact would this have on the balance of payments of Bolivia?

- A** definitely favourable, as Bolivia could increase its exports of gas and oil
- B** definitely unfavourable, as the foreign companies would transfer profits out of the country
- C** uncertain, as there would be inflows and outflows of currency
- D** zero, as Bolivia itself would use the gas and oil produced

J/16/1/19

46 In 2012, high street shops reported a fall in sales as domestic demand in an economy fell. However, the impact on the overall economy was not as unfavourable as was first feared.

What might have lessened the impact on the economy?

- A** Exports increased. **B** Imports increased.
C Savings increased. **D** Taxes increased.

J/16/1/22

47 In July 2013, orders for durable US manufactured goods from computers to aircraft fell 7.3%, the biggest fall for a year.
What might explain this change in trade and how would it have affected the US balance of payments?

	reason for change	effect on balance of payments
A	an expansion in domestic production	increased outflow in the current account
B	an expansion in foreign markets	reduced inflow in the financial account
C	a recession in domestic production	increased outflow in the financial account
D	a recession in foreign markets	reduced inflow in the current account

SECTION 25

EXCHANGE RATES

Exchange rate is the external value of a currency expressed in terms of a foreign currency or a basket of foreign currencies.

NOMINAL EXCHANGE RATE

The nominal exchange rate between two currencies is the number of units of foreign currency that can be purchased with one unit of domestic currency.

REAL EXCHANGE RATE

The price of domestic goods relative to foreign goods-equivalently, the number of foreign goods someone gets in exchange for one domestic good is called the real exchange rate.

PURCHASING POWER PARITY THEORY

Traditional exchange rates are determined by the flow of tradable commodities i.e. exports and imports only. Purchasing power parity theory however, determines exchange rates by taking into account not only the flow of tradable commodities but also non-tradable commodities. Non-tradable commodities such as a hair cut, car repair, dentist's treatment and all services which are provided at an arm's length distance are cheaper in developing countries. The exchange rate moves favourably for developing countries, once non-tradable commodities are also included while determining exchange rates.

According to purchasing power parity theory, exchange rates should be determined in such a way that a certain amount of a currency should have the same purchasing power when spent in different countries. For example, if a basket of commodities costs £10 in UK and costs \$20 in USA, the exchange rate according to purchasing power parity theory should be £1 = \$2. The currency of a country with comparatively higher inflation rate depreciates faster restoring the purchasing power. For example, a 10% inflation rate in UK means that the basket of commodities now costs £11. Assuming zero inflation in USA, the purchasing power is restored if exchange rate of £1 decreases to \$1.82.

Question: A product that costs \$10 in America costs £8 in UK. Assuming purchasing power parity, what is the exchange value of \$1, in terms of £.

Answer: Purchasing power parity means that \$10 and £8 have same value.

$$\$10 = £8$$

$$\$1 = £0.8$$

Therefore, \$1 equals £0.8 or £1 equals \$1.25

Students should now attempt question N/02/1/26.

Question: A product costing \$40 in America is worth \$30 in UK. Given this information, what can be deduced about the exchange rate of \$, in terms of £.

Answer: The given information suggests that at current exchange rates, \$, when converted to £, enjoys greater purchasing power. Only \$30 are needed to purchase the product in UK which

costs \$40 in America thus \$ is overvalued by 33% $\left(\frac{40}{30}\right)$ and £ is undervalued by 25% $\left(\frac{30}{40}\right)$.

Hence, \$ must depreciate by 33% (and £ must appreciate by 25%) to ensure that \$ enjoys the same purchasing power in both countries.

Students should now attempt question J/02/1/28.

Per capita income (national income divided by the population) is usually expressed in US dollars for comparison between different countries. Using purchasing power parity theory to express per capita income in place of traditional exchange rate improves the figure for developing countries. Determining exchange rates this way better reflects the buying potential of an economy. While making investment decisions, multinational companies and investors should consider per capita income determined through purchasing power parity theory.

Trade weighted exchange rates

In trade weighted exchange rates, the value of a currency is expressed in terms of a basket of foreign currencies, all of which are assigned weights according to their relative importance in trade relationships. Thus, the exchange rate becomes more sensitive to changes in the values of currencies occupying greater portions in the nation's international trade.

There are three ways of determining exchange rates:

Flexible or floating exchange rates

In flexible exchange rate regime, demand and supply forces are allowed to determine the external value of a currency, free of any government intervention. Changes in external value of national currency are either appreciation or depreciation.

Fixed exchange rates

In fixed exchange rate regime, governments peg the external value of their currency at a certain level and tailor other policies to keep the exchange rate at the predetermined level. Governments may revalue or devalue their national currency when pegging a certain exchange rate requires too much domestic adjustment.

MANAGED FLOATING

Managed floating is a combination of both flexible and fixed exchange rates. In this regime, governments allow demand and supply forces to determine exchange rates within a certain range but intervene when exchange rates step out of the range.

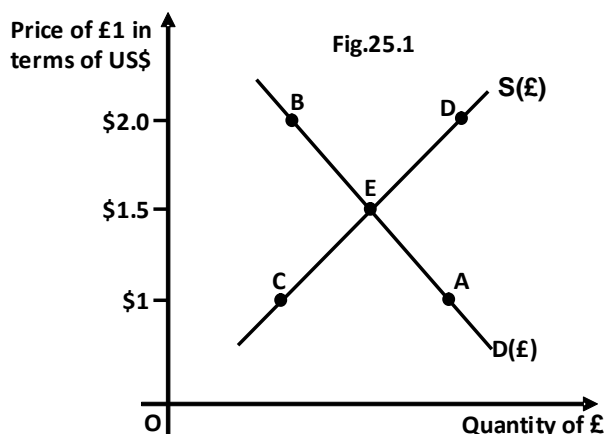
FLEXIBLE OR FLOATING EXCHANGE RATES

In order to understand the flexible exchange rate mechanism, we assume a two nation world, comprising the United Kingdom (home country with (£) as its currency) and United States (foreign country with (\$) as its currency). Transportation costs are assumed to be zero.

Exports of goods and services and foreign capital inflows for investment and speculative purposes determine the demand of national currency in the world market. Thus, the demand of a currency is a derived demand.

Imports of goods and services and capital outflows for investments and speculation determine the supply of the national currency in the international market.

The following figure explains the process of determining exchange rate under flexible exchange rate regime.



In Fig. 25.1, the quantity of £ is taken along x-axis and the price of £ in terms of US \$ is shown along y-axis. Assuming an exchange rate of £1=\$1, a British product worth £2 costs \$2 in America. However, increasing the exchange rate to \$2 (i.e. an appreciation of £) raises the price of British product in America to \$4. Americans would demand fewer units of British products and thus, fewer pounds. This is shown by a movement along the demand curve for £ from point A to B.

Appreciation of a currency makes locally made goods and services more expensive for foreigners. Exports decrease and fewer units of national currency are demanded internationally, which is shown by a downward sloping demand curve.

An American product worth \$2 in America costs £2 in the British market if £1 can be exchanged for \$1. The same American product costs £1 if exchange rate of £1 moves to \$2. Decreased price of American goods increases their demand in the British market. British citizens now purchase more American products and supply more £ in the international market. This is shown by an upward movement along the supply curve, from point C to D.

The supply curve of a currency slopes upwards, as higher exchange rates call for increased demand of imported goods in the international market and hence, increased supply of the currency.

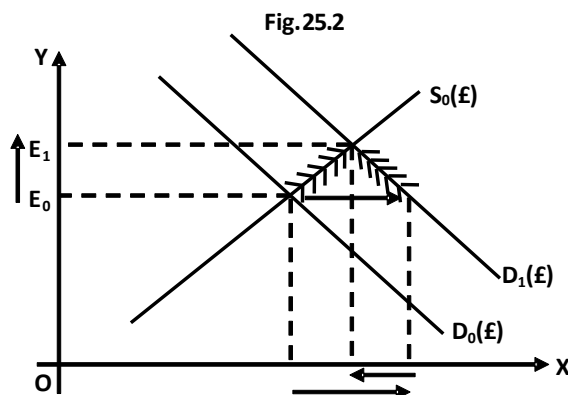
Demand and supply curves intersect each other at point E and determine the exchange rate at £1 = \$1.5.

CHANGES IN EXCHANGE RATES

Increase in the demand or a decrease in the supply of £ makes £ expensive. This can either be termed as an appreciation of £ in terms of \$ or a depreciation of \$ in terms of £. Higher interest rates, relatively lower domestic inflation or successful export promotion and import substitution increase the demand of a currency and decrease its supply. A currency's demand may also increase if other countries relax trade barriers. Its supply may decrease when trade barriers are imposed on imports.

Appreciation of a currency means that its value in terms of a foreign currency has increased. More units of a foreign currency can then be acquired with a given quantity of domestic currency or fewer units of domestic currency have to be given up to get the same quantity of the foreign currency. Appreciation of a currency makes locally made goods and services expensive for foreigners and their goods and services, cheaper in our market. Simply put, appreciation makes exports expensive and imports cheaper.

Fig. 25.2 shows the impacts of increased demand for £ on the exchange rate. Demand curve, D_0 and supply curve, S_0 are the original curves for £. The equilibrium exchange rate is E_0 . A rightward shift in demand curve to D_1 causes a shortage of £ in the international market, pushing exchange rate upwards. Higher exchange rate makes exports expensive and imports cheaper. Expensive exports decrease the demand of British exports as well as the demand for £, shown by a movement along the demand curve. Cheaper imports increase the demand for imports and the supply for £ increases, shown by a movement along the supply curve. The new equilibrium exchange rate is E_1 .



A currency depreciates either when its demand decreases or, when its supply increases in the international market. Depreciation of a currency means that the value of a currency in terms of a foreign currency has decreased. Fewer units of a foreign currency can then be acquired with a given quantity of local currency or more units of local currency have to be given up to get the same quantity of the foreign currency.

Depreciation of a currency makes locally made goods and services cheaper for foreigners and their goods and services, expensive in our market. Simply put, depreciation makes exports cheaper and imports expensive.

FIXED EXCHANGE RATES

Government officials can make adjustments in the economy to maintain the fixed exchange rate. Apart from other economic policies that they can implement, governments can use official reserves of foreign currencies to defend exchange rates. If trade deficits persist and demand for national currency falls short of its supply, our official reserves of foreign currencies deplete until supply and demand for foreign exchange equal each other again, at the fixed exchange rate. However, governments will have to forego defending a fixed

exchange rate and accept a reduction in the external value of national currency when the official reserves are no longer available for rescue.

Governments must allocate funds for pegging exchange rates. However, this policy could be self financing if governments buy foreign currencies when they are cheap (to prevent an appreciation of national currency) and sell them when they become expensive (to prevent a depreciation of national currency).

The exchange rate of £ is likely to increase in case demand of £ increases or its supply decreases. However, to counter upward pressure on exchange rate, the British government can increase the supply of £ and purchase foreign currencies. The official reserves of foreign currencies pile up and exchange rate is prevented from rising. Similarly, the government's decision to buy £ from the international market by giving away foreign currencies from its official reserves prevents exchange rate from falling.

Thus, under a fixed exchange rate regime, changes in demand and supply of a currency cause changes in the official reserves of foreign currencies, but exchange rates remain unchanged. However, under a flexible exchange rate regime, changes in demand or supply of a currency change the exchange rates so official reserves need not be maintained.

MANAGED FLOAT

An economy can defend a fixed exchange rate as long as the depletion of official reserves and domestic adjustments suffice to defend it. Else, it can avoid too many domestic adjustments by devaluing its currency and pegging it to a new official exchange rate.

Officials can try to change the exchange rate gradually, till a new equilibrium is reached. During the movement to a new equilibrium, they can devalue the national currency at a pre-announced, steady rate per day (the gliding band), or in larger steps at a pre-announced frequency (the crawling peg), or at their unannounced, day to day discretion (the dirty float).

The following table summarizes the impacts of changes in demand and supply of £ on exchange rates and official reserves under different exchange rate policies:

	Flexible exchange rate regime (No change in official reserves)	Fixed exchange rate regime (No change in exchange rate)	Managed float
Increase in the demand for £	Appreciation of £	Official reserves pile up	Reserves pile up and/or £ appreciates
Decrease in the demand for £	Depreciation of £	Official reserves deplete	Reserves deplete and/or £ depreciates
Increase in the supply for £	Deprecation of £	Official reserves deplete	Reserves deplete and/or £ depreciates
Decrease in the supply for £	Appreciation of £	Official reserves pile up	Reserves pile up and/or £ appreciates

ADVANTAGES & DISADVANTAGES OF FIXED & FLOATING EXCHANGE RATES

Flexible exchange rates automatically eliminate a trade deficit or a trade surplus, this being their biggest advantage. A trade deficit (export revenues falling short of import expenditures) means excess supply of the national currency in the international market. The exchange rate decreases making exports cheaper and imports expensive. Exports rise and imports fall and the currency continues to depreciate till the trade deficit is eliminated. In case of a trade surplus, excess demand of the national currency pushes exchange rates upwards (appreciation of the national currency), making exports expensive and imports cheaper. The trade balance balances out, at a higher exchange rate.

Since trade balance is automatically balanced, trade deficit or surplus ceases to act as a policy issue for officials. Thus, flexible exchange rate mechanism allows governments to concentrate on other macro-economic objectives such as decreasing unemployment or controlling inflation, without worrying about the impacts of their policies on the balance of payments. For example, the use of demand expansionary policies to raise national income and employment is likely to increase imports but balance of payments can still be balanced, if exchange rates are flexible.

On the other hand, fixed exchange rates limit the ability of a country to use fiscal and monetary policies to achieve macro-economic objectives. For example, reflating the economy to reduce unemployment can increase either domestic price level or real income. As a result, imports rise and so does the trade deficit. Thus, under a fixed exchange rate regime, the opportunity cost of reflating economies is a rising trade deficit.

Fixed exchange rate regime is criticized for importing unemployment from the rest of the world when a trade deficit exists and importing inflation when there exists, a trade surplus. Government's insistence on defending exchange rates, even with a persistent trade deficit requires deflation of the economy. Deflationary tools can lead to low economic growth and increased unemployment. Thus, the opportunity cost of keeping exchange rates fixed in a country with a trade deficit is increased unemployment.

Flexible exchange rates provide insulation to a nation from importing inflation or unemployment from rest of the world since balance of payments, under this regime, is always balanced.

However, the fact that balance of payments is always balanced removes the pressure from authorities to be financially disciplined and control inflation. One of the reasons that officials worry about inflation is a rising trade deficit. However, trade deficit is no longer a problem when exchange rates are flexible so firms and governments can lose discipline and thus trigger inflationary pressures. For example, firms won't resist workers' demand for higher wages knowing that flexible exchange rates will automatically depreciate, in case their products become less price competitive in the foreign market. The depreciation of the national currency restores price competitiveness and protects the inefficiencies of local producers.

Fixed exchange rate mechanism is also criticized on the notion that currencies are either overvalued or undervalued. A trade deficit means imports exceed exports and demand for national currency falls short of its supply. The exchange rate should decrease but government's insistence to defend the exchange rate prevents it from falling. Thus, the national currency is overvalued in case of a trade deficit. A trade surplus means exports exceed imports and demand

for national currency exceeds its supply. The exchange rate should increase but the government makes adjustments to defend the exchange rate at the existing level. Thus, the national currency is undervalued in case of a trade surplus.

On the other hand, under flexible exchange rate regime, changes in exchange rates truly reflect changes in comparative advantage and trade patterns of countries. National currency automatically appreciates when the nation gains a comparative advantage and its products become more popular, both at home and abroad.

Advocates of fixed exchange rates disagree with the fact that flexible exchange rates always determine a true and fair value of the exchange rate. According to them, in today's world, most of the currency flows are speculative and do not only reflect changes in comparative advantage - so currencies can be under or overvalued in case of flexible exchange rates too.

Fixed exchange rates are considered to be more certain and reliable whereas flexible exchange rates are uncertain and encourage speculation. These uncertainties make long term contracts as well as costing and pricing decisions even more difficult.

One of the benefits of flexible exchange rate is that governments don't need to invest resources in official reserves of foreign currencies.

To enjoy the dual benefits of stability (predictability and certainty) and flexibility, most of today's governments use a combination of fixed and flexible exchange rate regimes i.e. managed float.

POLICIES TO CORRECT BALANCE OF PAYMENTS DISEQUILIBRIUM

The following discussion concerns various policy options (and their impacts) which governments can use to correct balance of payments disequilibrium, i.e. either a deficit or surplus. Since balance of trade is the most important component of balance of payments, the following discussion focuses on correcting trade deficit and surplus.

Policies to correct a trade deficit

In the short run, a trade deficit can be financed by increasing interest rates. High interest rates attract capital inflows and discourage outflows, leading to a surplus in the financial account. Another way of financing a trade deficit in the short run is by borrowing in the international market.

Official reserves of foreign currencies can be used to finance a trade deficit. This option can be used indefinitely by countries which have short lived deficits. Trade deficits in few years and trade surplus in others enable the country to use official reserves without worries. However, countries with a persistent trade deficit have fewer options. For them, reserves eventually drain out and officials are forced to consider other options. A country with a persistent trade deficit can still be lucky and use the option of official reserves without tears if its currency is a 'hot' one, like US dollars!

To eliminate a trade deficit in the long run, a country can either deflate its economy or devalue its currency. The use of deflationary tools such as decreased government spending, increased taxes or higher interest rates withdraw demand from the economy and decrease either the real output, or the price level, or both. A decreased price level makes locally made goods more price

competitive, both at home and abroad, leading to increased net exports. This is expenditure switching, as households are encouraged to switch their expenditures from expensive foreign made goods to cheaper locally made ones. The withdrawal of demand may also decrease real output. Decreased output i.e. national income forces household to reduce expenditures, both on domestically made goods as well as imports. This is the expenditure reducing or expenditure dampening aspect of deflationary policies.

A country facing a trade deficit and inflation can deflate its economy to solve both problems simultaneously. Deflationary policies, by withdrawing demand, not only control inflation but also help increase net exports, as locally made goods become more price competitive both at home and abroad. However, a country facing a trade deficit and unemployment confronts a trade off between the two policy objectives. The use of the deflationary policies can help reduce trade deficit but intensifies the problem of unemployment. To reduce unemployment, officials need to reflate the economy, which is likely to increase the trade deficit. In order to decrease unemployment as well as trade deficit, officials can decide to forego the aim of defending exchange rates and revert to flexible exchange rate mechanism. Flexible exchange rates take care of the trade deficit and the officials are free to employ reflationary policies to reduce unemployment. In case reflationary policies raise the inflation rate, the national currency automatically depreciates to keep the balance of trade balanced.

Another way of eliminating a trade deficit is by devaluing the national currency i.e. decreasing the external value of national currency. Failure to finance a persisting trade deficit can force officials to devalue it to a new level. Devaluation makes exports cheaper and imports expensive. Hence, the demand for exports rises and that for imports, falls. However, the impacts of devaluation on net export revenues (export revenues – import expenditures) depend on the price elasticities of demand for exports and imports. According to Marshall Learner, devaluation of the national currency raises net export revenues if the sum of price elasticity of demand of exports and price elasticity of demand of imports exceeds unity. Devaluation is essentially expenditure switching, contrary to deflation, which could be either expenditure switching or expenditure dampening.

Devaluation can improve trade deficit (i.e. increase in net exports) if:

- P.E.D for net exports exceeds unity
- There are no supply bottlenecks i.e. producers have excess capacity to meet extra demand
- Other countries don't devalue their currencies

The impacts of changes in exchange rates (appreciation or depreciation of national currency) on balance of payment and on domestic economy are summarized in the following table:

	Description	Price of export	Price of import	Terms of trade	Volume of export	Volume of import	Net export revenue	Aggregate Demand	Demand pull inflation	Cost push inflation	Unemployment
Increase in exchange rate	Appreciation/revaluation of national currency	Increases	Decreases	Increases	Decreases	Increases	Increases If $Ed (X_n) < 1$	Decreases	Decreases	Decreases	Increases
Decrease in exchange rate	Depreciation/devaluation of national currency	Decreases	Increases	Decreases	Increases	Decreases	Increases If $Ed (X_n) > 1$	Increases	Increases	Increases	Decreases

Tariffs, quotas and exchange controls can also help governments achieve the objective of reduced trade deficit. Like devaluation, these measures are expenditure-switching in their impact. *Expenditure-switching strategies are a set of tools which encourage consumers to switch expenditures to locally made goods and services by making imports expensive.* Such strategies not only reduce trade deficit but also unemployment as new job opportunities are created. However, they are more likely to be inflationary when local businesses do not have the capacity and/or willingness to raise production to meet extra demand.

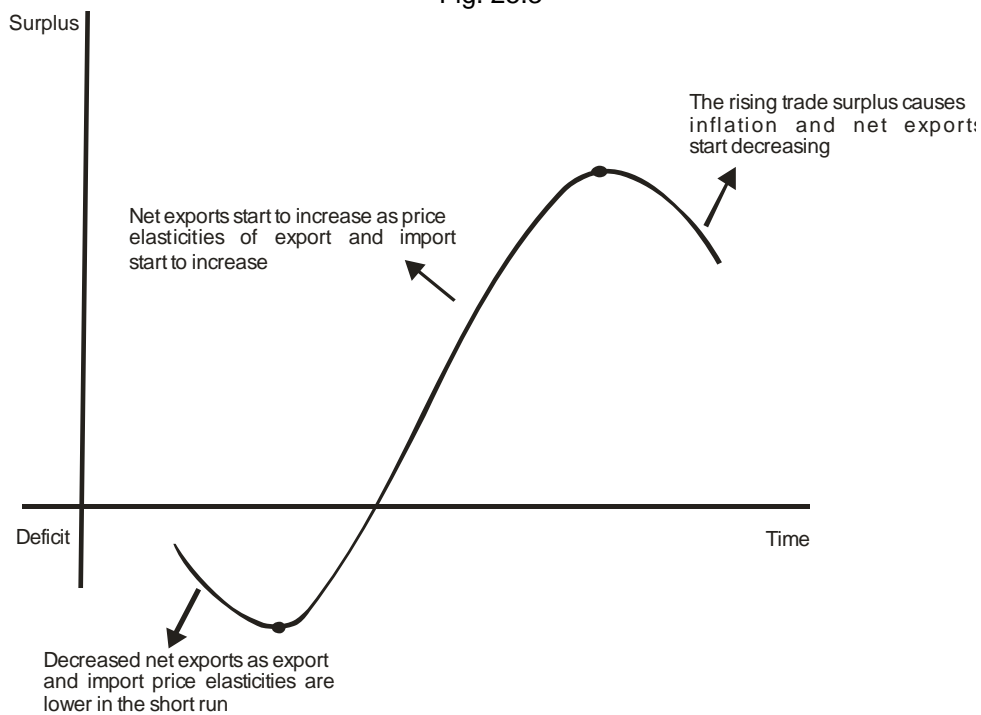
Expenditure-dampening or reducing policies are a set of tools that compel consumers to reduce their spending on locally made as well as imported items. Generally speaking, contractionary demand management policies have an expenditure reducing impact. Such strategies reduce trade deficit but are likely to increase unemployment since domestic businesses are forced to reduce their production. However, inflationary trends, if any, will be neutralized.

The following table summarizes the impacts of the use of expenditure reducing and expenditure switching strategies on unemployment and inflation.

	Trade Deficit	Aggregate Demand	Unemployment	Inflation
Expenditure reducing/dampening policies e.g. deflationary policies (increased interest rates and taxes, lower government spending)	Decreases	Decreases	Increases	Decreases
Expenditure switching strategies such as devaluation, trade barriers and exchange controls	Decreases	Increases	Decreases	Increases

Fig. 25.3, also called a J-curve, shows time along x-axis and surplus and deficit along y-axis. It illustrates the impacts of devaluation on a trade deficit. Devaluation increases the trade deficit in the short run, where the price elasticities of demand of exports and imports are usually low. Trade deficit starts to decrease in the long run, when elasticities of demand increase. However, increased net exports may inflate the economy and locally made goods and services may lose price competitiveness. Trade deficit once again starts to increase in that case.

Fig. 25.3

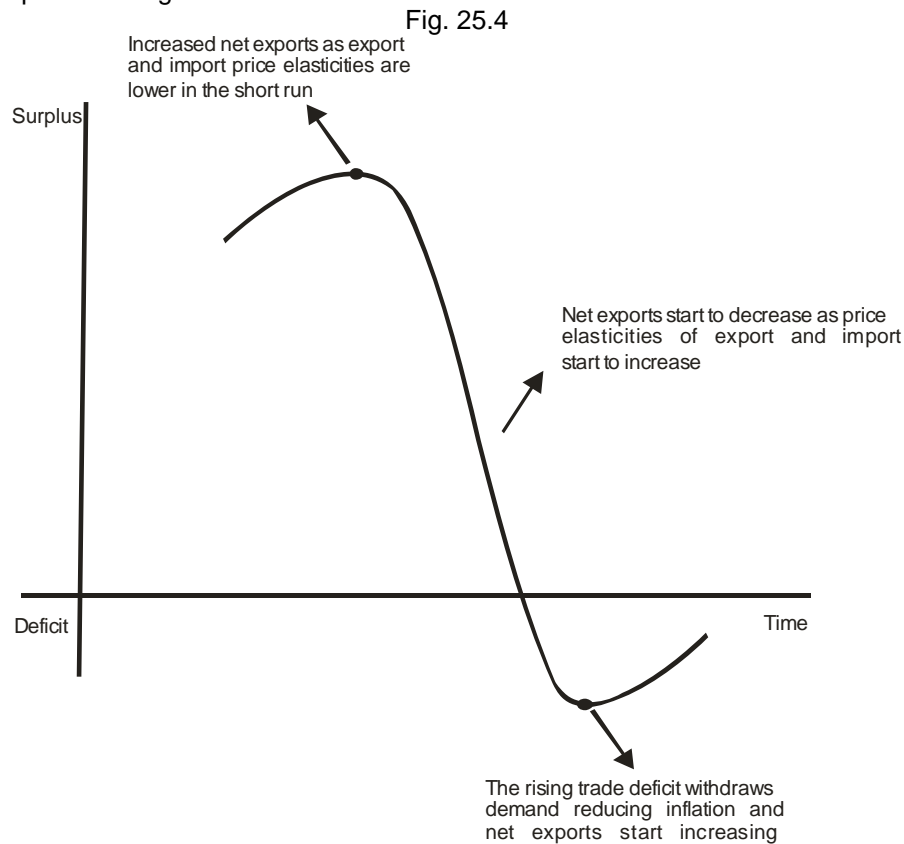


POLICIES TO CORRECT A TRADE SURPLUS

Trade surplus poses fewer problems, compared to trade deficits. Officials can either reflate the economy or revalue the national currency to get rid of the surplus. A country facing unemployment and trade surplus, can reflate the economy to solve both problems simultaneously. Reflationary policies increase employment and real output, inducing households to increase spending on locally made goods as well as on imports and reduce trade surplus. However, the use of reflationary policies in a country experiencing high inflation rate may help reduce trade surplus but intensifies the problem of inflation.

The other tool to reduce trade surplus is revaluation of the national currency. Revaluation makes exports expensive and imports cheaper, causing an increase in the demand for imports and a decrease in the demand for exports. However, net export revenues fall only if the sum of export and import elasticities exceeds unity.

The reverse J-curve drawn below shows the impact of revaluing the currency on trade surplus. Trade surplus initially increases, since price elasticities of demand of exports and imports are low in the short run but decreases in the long run, when elasticities increase. Lower net exports withdraw demand and offset inflationary pressures, making locally made goods price competitive so trade surplus once again starts to increase.



The impacts of changes in the external value of currency on the prices of exports and imports and trade balance are summarized below.

Devaluation → exports become cheaper, imports become expensive → terms of trade move unfavourably → demand for exports increases, demand for imports decreases → net export revenues increase if the sum of export and import elasticities exceed unity and net export revenues decrease when the sum of export and import elasticities is less than unity.

Revaluation → exports become expensive, imports become cheaper → terms of trade move favourably → demand for exports decreases, demand for imports increases → net export revenues decrease if the sum of export and import elasticities exceed unity and net export revenues increase when the sum of export and import elasticities is less than unity.

What should a country do	Trade deficit	Trade surplus
Devalue national currency	$P.E.D (X_n) > 1$	$P.E.D (X_n) < 1$
Revalue national currency	$P.E.D (X_n) < 1$	$P.E.D (X_n) > 1$

Trade offs between macro-economic objectives

The following paragraphs discuss policy options for achieving different macro-economic objectives.

Officials can deflate economies by using demand management policies to solve the problems of trade deficit and inflation simultaneously. However, countries facing unemployment and a trade deficit face a trade off. The use of demand management policies to reduce unemployment increases trade deficit and an attempt to decrease trade deficit by deflating the economy increases unemployment. Such countries may use one of the following options:

Option 1

The government can revert to flexible exchange rate mechanism to solve the problem of trade deficit and use demand management policies to reduce unemployment.

Option 2

It can employ supply side tools, such as providing more incentives and tax concessions to producers to increase production and exports. Subsidies can also be given for producing import substitutes. This export led growth can increase employment as well as net export revenues.

Option 3

The two demand management policies, fiscal and monetary policy, can be used in differing directions to simultaneously reduce unemployment and trade deficit. Contractionary monetary policy i.e. increased interest rates can be used to attract capital inflows to finance the trade deficit and its effects on economic activity and employment can be off set by using expansionary fiscal policy i.e. increasing government spending or decreasing taxes.

Officials can reflate economies by using demand management policies to simultaneously solve the problems of trade surplus and unemployment. However, a trade off occurs when trade surplus and unemployment co-exist. In such a case, officials can forget about defending

exchange rate and revert to flexible exchange rate regime. Flexible exchange rate regime gives the freedom to officials to use demand management policies to solve the problem of inflation.

The given table summarizes the policy options just explained.

	Inflation	Unemployment
Trade deficit	Use expenditures dampening/deflationary policies to solve both problems simultaneously	Flexible exchange rate to solve the problem of trade deficit and reflationary policies to reduce unemployment OR The use of expenditure switching strategies such as devaluation, trade barriers and exchange controls
Trade surplus	Flexible exchange rate to solve the problem of trade surplus and deflationary policies to control inflation OR The use of expenditure switching strategies such as revaluation, export controls, removing import barriers	Use reflationary policies to solve both problems simultaneously

IMPACTS OF CHANGES IN INTEREST RATE

Understanding the impact of changes in interest rate on domestic employment, price level and balance of payment is extremely crucial for the students. An increase in the interest rate attracts (financial) capital inflows and discourages capital outflows, increasing the demand and reducing the supply of national currency in the world market. Increased capital inflows and decreased capital outflows improve the financial (capital) account of balance of payment. National currency appreciates if exchange rate is flexible and official reserves of foreign currencies pile up if exchange rate is fixed.

Increased interest rate also slows down domestic economic activity and forces consumers to reduce expenditures on domestically produced goods as well as on imports, resulting in improved balance of trade. Thus the impact of increased interest rate on balance of trade (when exchange rate is flexible) is uncertain. However, increased interest rate is likely to improve trade balance if exchange rate is fixed.

Government and financial institutions have to make higher interest payments on borrowed funds from overseas. This causes a worsening of invisible section of current account.

Briefly speaking, increased interest rates

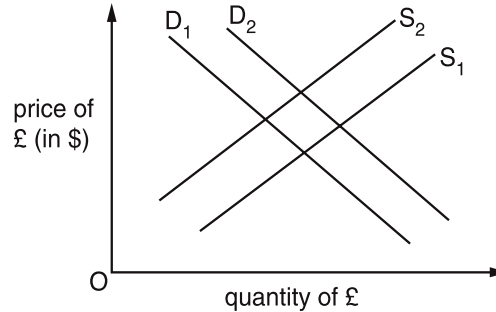
- Increase demand for national currency in international market
- Decrease supply for national currency in international market
- Increase net capital inflows
- Improve financial account of balance of payment
- Increase exchange rate

- Have an uncertain effect on trade balance if exchange rate is flexible
- Improve trade balance if exchange rate is fixed
- Deteriorate invisible section of current account
- Slow down the pace of economic activity
- Decrease consumers' expenditures
- Decrease investment expenditures
- Decrease national income and employment
- Decrease inflation rate
- Increase unemployment

MULTIPLE CHOICE QUESTIONS

J/02/1/26

- 1 In the diagram D_1 and S_1 are the initial supply and demand curves of the pound sterling (£) on the foreign exchange markets.



What will cause the demand curve to shift to D_2 and the supply curve to S_2 ?

- (A) a depreciation of the pound sterling
- (B) a decrease in UK interest rates
- (C) an increase in the price levels of other countries
- (D) an increase in the level of UK import tariffs

J/02/1/27

- 2 Which of the following combinations indicates that a country has a freely floating exchange rate?

	nominal exchange rate	foreign currency reserves
(A)	depreciates by 20%	Decrease by \$1 billion
(B)	depreciates by 20%	unchanged
(C)	unchanged	Decrease by \$1 billion
(D)	unchanged	Unchanged

J/02/1/28

- 3 In the United States a representative basket of goods costs \$4000. At the current actual exchange rate between the US\$ and the £ sterling the same basket of goods in the UK would cost \$5000.

What can be deduced from this?

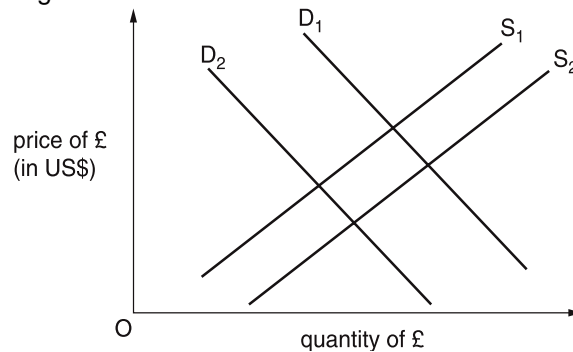
- (A) The £ sterling is 25% over-valued against the US\$.
- (B) The £ sterling is 20% under-valued against the US\$.
- (C) The purchasing power parity exchange rate of the £ sterling is \$1.25 to the £.
- (D) The purchasing power parity exchange rate of the £ sterling is \$0.80 to the £.

J/02/1/30

- 4 What is likely to be the effect of a depreciation of a country's currency?
- (A) an improvement in its terms of trade
 - (B) an increase in unemployment
 - (C) a decrease in the profit margins of exporters
 - (D) an increase in the rate of inflation

N/02/1/25

- 5 In the diagram D_1 and S_1 are the initial demand and supply curves of the UK pound (£) on the foreign exchange markets.



What will cause the demand curve to shift to D_2 and the supply curve to S_2 ?

- (A) an appreciation of the pound (B) an increase in the price level in the US
 (C) an increase in incomes in the US (D) a decrease in UK interest rates

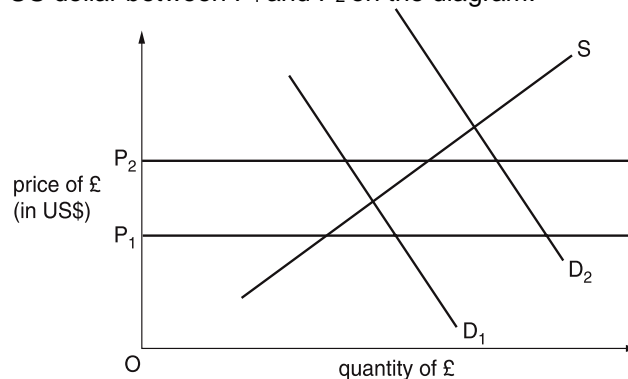
N/02/1/26

- 6 A representative basket of goods costs \$2500 in the United States. The same basket of goods costs £2000 in the UK. What can be deduced from this?

- (A) The £ sterling is 25% over-valued.
 (B) The £ sterling is 20% under-valued.
 (C) The purchasing power parity exchange rate of the £ sterling is \$0.80 to the £.
 (D) The purchasing power parity exchange rate of the £ sterling is \$1.25 to the £.

N/02/1/27

- 7 The British monetary authorities are committed to maintaining the exchange rate of the UK £ against the US dollar between P_1 and P_2 on the diagram.



What might they do if demand changes from D_1 to D_2 ?

- (A) impose controls on UK investment overseas
 (B) increase interest rates
 (C) sell \$ out of foreign exchange reserves
 (D) sell £ on the foreign exchange markets

N/02/1/28

- 8 What do the weights used to calculate a country's trade-weighted exchange rate reflect?
- (A) the relative importance of different goods in a country's balance of trade
 - (B) the relative size of a country's trade with different countries
 - (C) the relative importance of trade as a percentage of a country's GDP
 - (D) the relative size of a country's trade as a percentage of world trade

N/02/1/29

- 9 Which of the following combinations of changes indicates that a country is operating a managed float?

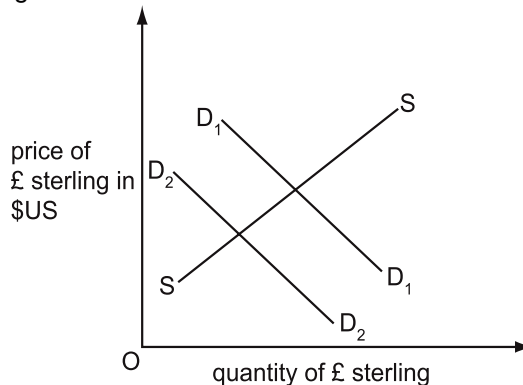
	nominal exchange rate	foreign currency reserves
(A)	depreciates by 20%	decreases by \$1 billion
(B)	depreciates by 20%	Unchanged
(C)	Unchanged	Unchanged
(D)	Unchanged	decreases by \$1 billion

J/03/1/28

- 10 Country X trades with only two countries, USA and Japan. 90% of the country's trade in goods and services is with the USA and 10 % is with Japan. The original value of the trade-weighted exchange rate index is 100. The change in the value of country X's currency against the US\$ is +10%. The change in the value of country X's currency against the Japanese yen is +50%. What will be the value of country X's new trade-weighted exchange rate index?
- (A) 114 (B) 115 (C) 130 (D) 160

J/03/1/29

- 11 In the diagram, curves D_1D_1 and SS relate to the demand for and supply of £ sterling in the foreign exchange market.

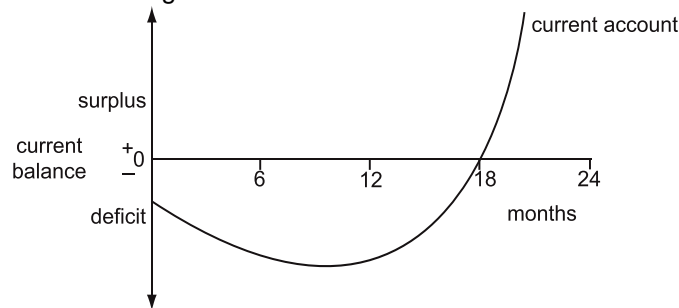


What may cause the demand curve to shift from $D_1D_1D_2D_2$?

- (A) an increase in UK interest rates
- (B) an increase in the price of US goods sold in the UK
- (C) the abolition of UK tariffs against US goods
- (D) the development of US substitutes for UK goods

J/03/1/30

- 12** A country at the beginning of a given period seeks to improve the current account of its balance of payments by devaluing its currency. The effect of this policy in the following two years is shown in the diagram.



Which of the following statements is likely to explain this performance?

- (A) The elasticity of demand for imports diminished after 12 months.
- (B) The domestic inflation rate fell after 12 months before having the desired result.
- (C) In the short run, the price elasticity of demand for exports and imports was very low.
- (D) The policy was ineffective and other factors must have led to an improvement in the current account.

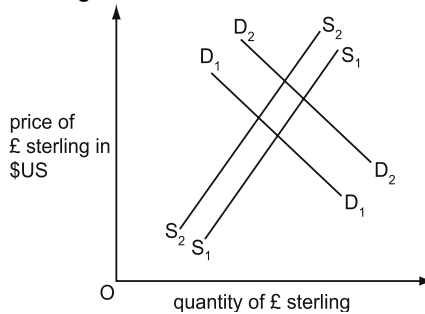
N/03/1/27

- 13** What is the likely effect on the volume of exports and imports if a country on a fixed exchange rate experiences a higher rate of inflation than its trading partners?

	exports	Imports
(A)	increase	Decrease
(B)	decrease	Increase
(C)	increase	Increase
(D)	decrease	Decrease

N/03/1/28

- 14** In the diagram, D_1D_1 and S_1S_1 are the initial demand and supply curves of the pound sterling (£) on the foreign exchange market.



What will cause the demand curve to shift to D_2D_2 and the supply curve to S_2S_2 ?

- (A) an appreciation of the pound
- (B) an increase in UK interest rates
- (C) a reduction in the level of UK import tariffs
- (D) a reduction in the quality of UK goods

N/03/1/29

- 15** The table shows alternative price elasticities of demand for exports and imports of country X. There is a depreciation of the currency of country X. Assuming there are no supply bottlenecks, which combination of price elasticities offers the best prospect for an improvement in the balance of trade?

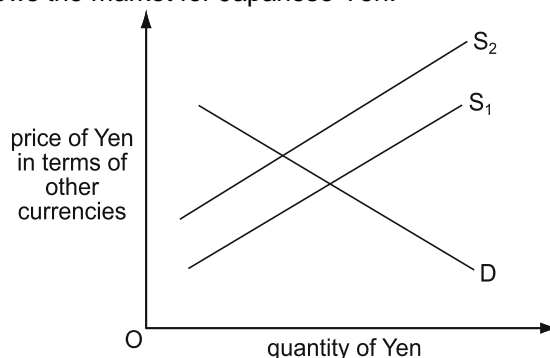
combination	exports	imports
(A)	0.5	0.5
(B)	0.8	1.2
(C)	1.5	1.5
(D)	2.0	0.5

N/03/1/30

- 16** In an open economy with a flexible exchange rate, the rate of interest is increased. Other things being equal, what will be the effect of this increase?
- (A) There will be a capital outflow.
 - (B) The exchange rate will appreciate.
 - (C) Inflation will rise.
 - (D) Imports will become more expensive.

J/04/1/28

- 17** The diagram shows the market for Japanese Yen.



- What could have caused the change in the supply of Yen from S_1 to S_2 ?
- (A) a reduction in the level of international investment into Japan
 - (B) a reduction in the level of Japanese tariffs
 - (C) a reduction in the value of foreign goods imported into Japan
 - (D) a reduction in the value of Japanese goods exported

J/04/1/29

- 18** The value of the Swiss franc changes against the US dollar (\$) from \$0.60 to \$0.80. Which statement is consistent with this information?
- (A) Swiss visitors to the US will now be worse off.
 - (B) The cost to the US of maintaining its embassy in Switzerland will decrease.
 - (C) The dollar has depreciated against the Swiss franc.
 - (D) US exports to Switzerland will now be more expensive.

J/04/1/30

- 19** In August 2002, the US President signed a trade agreement which allowed more duty-free access to the US market for Latin American and Caribbean countries. Who might benefit in the short run from this agreement?
- (A) Caribbean countries, because they may export to Latin America
 - (B) Latin American businesses, because they may be able to sell more in the US
 - (C) Latin American governments, because they will not have to pay so much duty
 - (D) the US, because it may export more to Latin America

N/04/1/27

- 20** Which factor determines the purchasing power parity of a currency?
- (A) relative costs of living
 - (B) relative rates of interest
 - (C) the volume of trade creation
 - (D) the visible balance of payments

N/04/1/28

- 21** Which is most likely to cause country X's exchange rate to depreciate?
- (A) an increase in country X's demand for imports
 - (B) an increase in country X's interest rate
 - (C) an increase in foreign demand for country X's exports
 - (D) an increase in tourist visits to country X

N/04/1/29

- 22** A depreciation of the exchange rate of the pound sterling against the US dollar from £1 : \$1.50 to £1 : \$1.00 must mean that
- (A) the pound will be undervalued.
 - (B) US imports from the UK will become more expensive.
 - (C) UK imports from the US will become cheaper.
 - (D) Dollars will become more expensive in terms of pounds.

N/04/1/30

- 23** Which policy would reduce a balance of payments deficit on the current account in the short run?
- (A) a reduction in government subsidies to exporters
 - (B) a reduction in the rate of interest
 - (C) a rise in direct taxation
 - (D) incentives to attract foreign capital

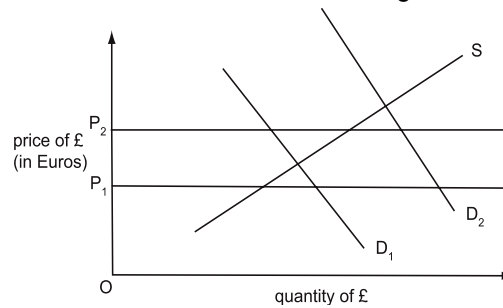
J/05/1/28

- 24** The demand for US imports in Japan is price-inelastic. Assuming there is no change in their dollar price, what would be the effect of a depreciation in the yen on the total value of US goods imported into Japan?

	value measured in yen	value measured in \$
(A)	decreases	decreases
(B)	decreases	increases
(C)	increases	decreases
(D)	increases	increases

J/05/1/29

- 25** The British monetary authorities are committed to maintaining the exchange rate of the UK £ against the Euro between P_1 and P_2 on the diagram.



What might they do if demand changes from D_1 to D_2 ?

- (A) impose controls on UK investment overseas
- (B) increase interest rates
- (C) sell Euros out of foreign exchange reserves
- (D) sell £ on the foreign exchange markets

J/05/1/30

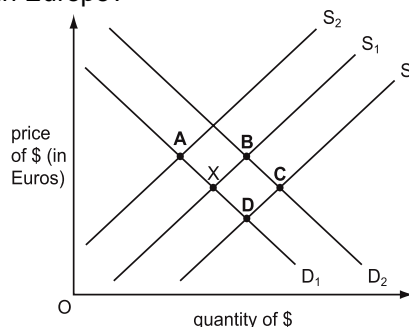
- 26** Why might a 10 % devaluation of a country's currency fail to improve its balance of trade deficit?
- (A) Other countries devalue their currencies by 15%.
 - (B) Other countries revalue their currencies by 15%.
 - (C) The demand for the country's imports is elastic.
 - (D) The supply of the country's exports is elastic.

N/05/1/28

- 27** Why is a balance of payments deficit a potential problem for an economy with a fixed exchange rate?
- (A) Domestic money supply will increase.
 - (B) Rival producers may react with trade protection measures.
 - (C) The economy's foreign exchange reserves may run down.
 - (D) The economy's short-run standard of living will be reduced.

N/05/1/29

- 28** In the diagram the foreign exchange market is initially in equilibrium at X. What could be the new equilibrium position after an increase in demand from US residents for holidays in Europe?



N/05/1/30

- 29** Which policy would be most likely to reduce a balance of payments current account deficit?
- (A) reducing income tax rates
 - (B) reducing subsidies to domestic industries
 - (C) reducing the external value of the currency
 - (D) reducing the level of tariffs

J/06/1/26

- 30** What might explain an increase in the volume of a country's imports?
- (A) an appreciation of the country's exchange rate
 - (B) an increase in the country's tariffs
 - (C) a recession in the country
 - (D) a rise in the country's rate of income tax

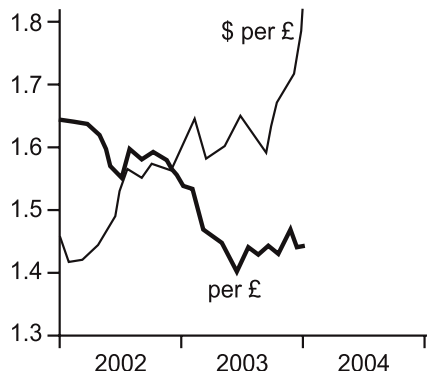
J/06/1/27

- 31** Increased international competition leads to a worsening in a country's current account balance. In the absence of any offsetting factors, how is this likely to affect domestic inflation and the exchange rate?

	inflation	exchange rate
(A)	increase	Appreciate
(B)	increase	Depreciate
(C)	decrease	Appreciate
(D)	decrease	Depreciate

J/06/1/28

- 32** The diagram shows the number of US dollars (\$) and Euros (€) which exchanged for one pound sterling (£) between 2002 and 2004.

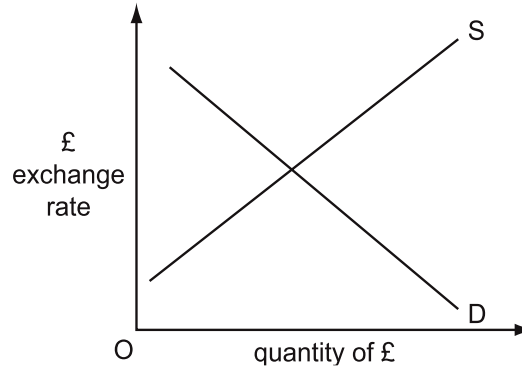


What happened to the exchange rate of the \$ against the £ and € during this period?

	\$ exchange rate against £	\$ exchange rate against €
(A)	appreciated	Appreciated
(B)	appreciated	Depreciated
(C)	depreciated	Appreciated
(D)	depreciated	Depreciated

J/06/1/29

- 33** The diagram shows the demand for sterling and the supply of sterling in the foreign exchange markets.



Other things being equal, if UK interest rates increase, what is likely to happen to the demand and supply curves in the diagram?

	demand curve	supply curve
(A)	shifts to left	shifts to left
(B)	shifts to right	shifts to right
(C)	shifts to left	shifts to right
(D)	shifts to right	shifts to left

J/06/1/30

- 34** In an attempt to correct a balance of trade deficit the government of Indonesia has decided to employ expenditure-dampening methods. Which policy would best fit this description?

- (A) introducing quotas on imported goods
- (B) raising income tax rates
- (C) subsidising home-produced goods
- (D) taxing imported goods

N/06/1/28

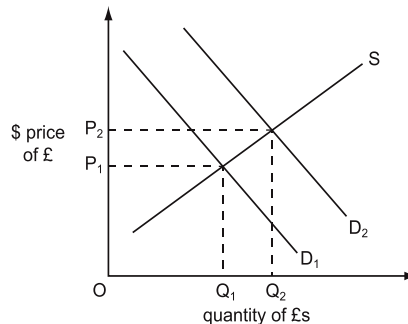
- 35** Turkey can produce a good but also imports some of the good from Egypt. The Turkish currency depreciates against the Egyptian currency.

How might this affect production of this good in Egypt and in Turkey?

	production in Egypt	production in Turkey
(A)	decreases	Decreases
(B)	decreases	Increases
(C)	increases	Decreases
(D)	increases	Increases

N/06/1/29

36 The diagram shows the supply and demand for pounds sterling (£) in the foreign exchange market with the initial US dollar (\$) price of the £ being OP_1 .



What will increase the \$ price of the £ to OP_2 ?

- (A) a large capital inflow into the UK
- (B) a large deficit on the UK current account
- (C) a reduction in interest rates in the UK
- (D) a speculative sale of £s in the foreign exchange market

N/06/1/30

37 In which of the following circumstances will devaluation of the external value of a country's currency have the greatest beneficial effects on its balance of trade?

- (A) There is full employment in the country.
- (B) The government has implemented expansionary fiscal policies.
- (C) The demand for its imports is price-inelastic.
- (D) There is a high price elasticity of demand for its exports.

J/07/1/28

38 According to the Purchasing Power Parity theory, what determines the rate of exchange between two countries?

- (A) relative price levels in the two countries
- (B) the bargaining power of the respective governments
- (C) the comparative advantage of the two countries
- (D) the size of their foreign currency reserves

J/07/1/29

39 In the UK in the summer of 2002 the Euro was worth £0.62. In the summer of 2003 the Euro was worth £0.72.

How was this change likely to have affected the UK?

- (A) higher demand for imports
- (B) higher imported inflation
- (C) higher priced exports
- (D) higher unemployment

J/07/1/30

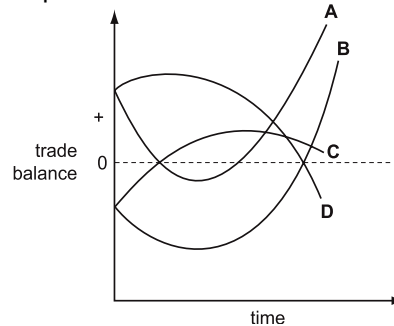
40 A country with a freely floating exchange rate has a persistent deficit on the current account of its balance of payments.

Which policy can be used to correct this disequilibrium?

- (A) devalue the currency
- (B) increase government spending
- (C) increase tax rates
- (D) reduce tariffs on imports

N/07/1/28

- 41** In a country the Marshall-Lerner condition for an improvement in the trade balance is satisfied in the long run, but quantities of imports and exports are slow to respond to price changes. The government devalues its currency to reduce its trade deficit. Which curve indicates the probable behaviour of the trade balance?

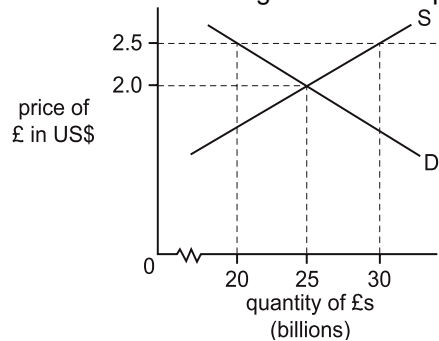


N/07/1/29

- 42** There is a rise in the exchange rate of the US\$. Which would cause the greatest increase in the US current account deficit?
- (A) a high level of domestic unemployment
 - (B) a high price elasticity of demand for imports
 - (C) a low price elasticity of demand for exports
 - (D) a low rate of domestic inflation

N/07/1/30

- 43** The diagram shows the market for £ sterling which is in equilibrium.



What must the UK government do to achieve an exchange rate of £1 = US\$2.50?

- (A) buy £10 billion sterling
- (B) buy £20 billion sterling
- (C) sell £10 billion sterling
- (D) sell £20 billion sterling

J/08/1/26

- 44** What is the likely effect on the volume of exports and imports if a country with a fixed exchange rate experiences a higher rate of inflation than its trading partners?

	exports	imports
(A)	increase	decrease
(B)	decrease	increase
(C)	increase	increase
(D)	decrease	decrease

J/08/1/28

45 What is most likely to cause Australia's exchange rate to depreciate?

- (A) an increase in Australia's demand for imports
- (B) an increase in Australia's interest rate
- (C) an increase in demand for Australia's exports
- (D) an increase in tourist visits to Australia

J/08/1/29

46 The table shows observations of the exchange rate of an economy and its current account balance over six years.

year	exchange rate (US dollars per unit of domestic currency)	current account balance (billions of US dollars)
1	2.0	-3
2	1.5	-5
3	1.5	-4
4	1.5	-3
5	1.5	0
6	1.5	+3

Which concept does the data in the table illustrate?

- (A) exchange rate appreciation
- (B) purchasing power parity
- (C) the J-curve effect
- (D) trade-weighted exchange rates

J/08/1/30

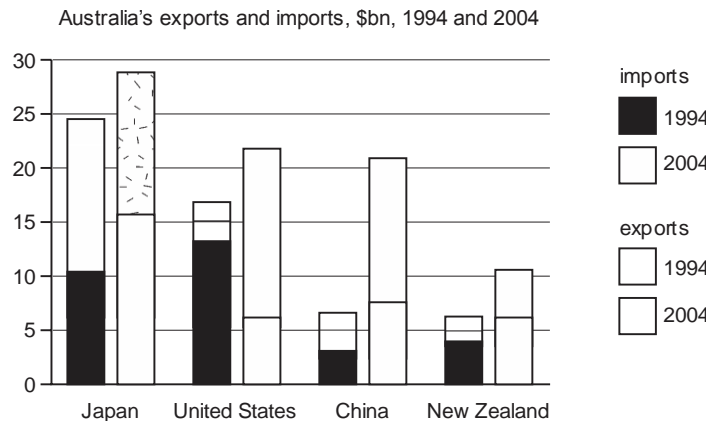
47 A country has a current account deficit.

Which component of its current account balance will be made less favourable as a direct result of a decision by the central bank to increase interest rates?

- (A) net investment income
- (B) net current transfers
- (C) the balance of trade in goods
- (D) the balance of trade in services

N/08/1/26

- 48** The diagram shows Australia's exports to and imports from four trade partners in \$billion in 1994 and 2004.



- With which country did Australia have a trade deficit in 1994 and a trade surplus in 2004?
(A) Japan **(B)** United States **(C)** China **(D)** New Zealand

N/08/1/28

- 49** Under a system of flexible exchange rates, what determines the foreign exchange value of a currency?
- (A)** the overall supply of and demand for a currency
(B) the purchasing power of the currency relative to the purchasing power of foreign currencies
(C) the surplus or deficit on the balance of payments on current account
(D) the differential between domestic and foreign interest rates

N/08/1/29

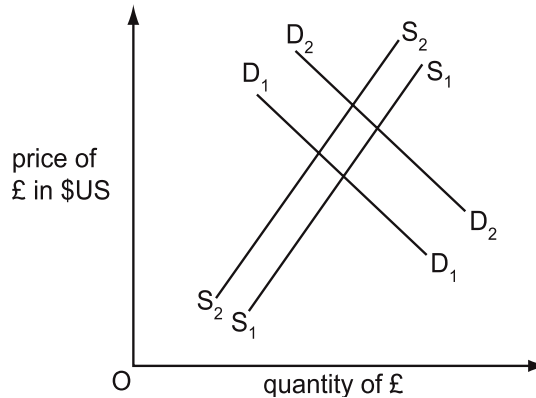
- 50** With an exchange rate of 5 Egyptian pounds (EGP) = 1 US dollar (\$), an American product sells in Egypt for EGP100. Assuming that the dollar price remains unchanged, what will be the price of the product in Egypt if the Egyptian pound appreciates to EGP4 = 1 US\$?
- (A)** EGP75 **(B)** EGP80 **(C)** EGP120 **(D)** EGP125

N/08/1/30

- 51** Which measure to correct a balance of payments current account deficit would be classified as an expenditure-dampening policy?
- (A)** a reduction in interest rates
(B) an increase in direct taxes
(C) an introduction of foreign exchange controls
(D) an upward revaluation of the currency

J/09/1/28

52 In the diagram, D_1D_1 and S_1S_1 are the initial demand and supply curves of the pound sterling (£) on the foreign exchange market.



What will cause the demand curve to shift to D_2D_2 and the supply curve to S_2S_2 ?

- (A) an appreciation of the pound
- (B) an increase in UK interest rates
- (C) a reduction in the level of UK import tariffs
- (D) a reduction in the quality of UK goods

J/09/1/29

53 With an exchange rate of 5 Egyptian pounds (EGP) = 1 US dollar (\$), an American product sells in Egypt for EGP 100. Assuming that the dollar price remains unchanged, what will be the price of the product in Egypt if the Egyptian pound appreciates to 4 EGP = 1 US\$?

- (A) EGP 75
- (B) EGP 80
- (C) EGP 120
- (D) EGP 125

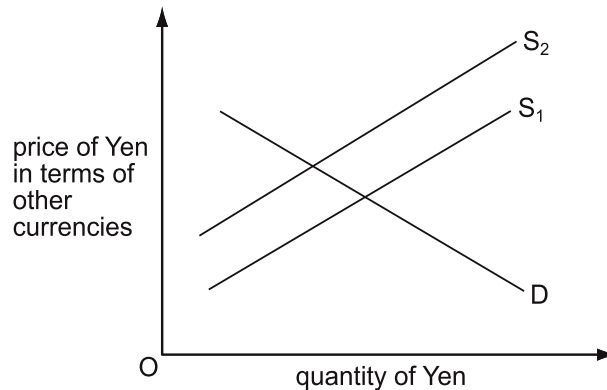
J/09/1/30

54 A country has a large current account deficit. Its government decides to devalue its currency. In which circumstance would such a measure reduce the deficit?

	price elasticity of demand for exports	price elasticity of demand for imports
(A)	0.0	0.0
(B)	0.0	0.5
(C)	0.5	0.5
(D)	0.5	1.0

N/09/1/27

55 The diagram shows the market for Japanese Yen.



What could have caused the change in the supply of Yen from S_1 to S_2 ?

- (A) a reduction in the level of international investment into Japan
- (B) a reduction in the level of Japanese tariffs
- (C) a reduction in the value of foreign goods imported into Japan
- (D) a reduction in the value of Japanese goods exported

N/09/1/28

56 Country X trades with only two countries, the USA and Japan. 90 % of the country's trade is with the USA and 10 % is with Japan. The original value of the trade-weighted exchange rate index is 100. The value of country X's currency against the US\$ rises by 10%. The value of country X's currency against the Japanese yen rises by 50 %.

What will be the value of country X's new trade-weighted exchange rate index?

- (A) 114
- (B) 115
- (C) 130
- (D) 160

N/09/1/29

57 A government with a floating exchange rate wishes to encourage a rise in the international value of its currency.

What should it do?

- (A) Lower the level of domestic interest rates.
- (B) Reduce the amount of foreign currency available to its citizens.
- (C) Reduce subsidies to its exporters.
- (D) Remove trade barriers on imports.

J/10/1/28

58 The table shows the number of Jamaican dollars which exchanged for one unit of other currencies in June and July 2001.

	Jamaican \$ June 2001	Jamaican \$ July 2001
US\$	45.78	45.77
UK£	63.86	64.37
Guyana \$	0.25	0.25
Barbados \$	23.19	23.12

What might be concluded from the table?

- (A) There was an increased demand for US\$ by Jamaicans.
- (B) There was an increased supply of UK£ to Jamaicans.
- (C) There was a reduced supply of Guyana \$ to Jamaicans.
- (D) There was a reduced demand for Barbados \$ by Jamaicans.

J/10/1/29

59 Following a long period of depreciation of the US\$, both the US and UK monetary authorities raised their domestic interest rate.

What will happen to the value of the exchange rate of the US\$ in terms of UK£.

- (A) It will remain unchanged.
- (B) It will fall.
- (C) It will rise.
- (D) The outcome is uncertain.

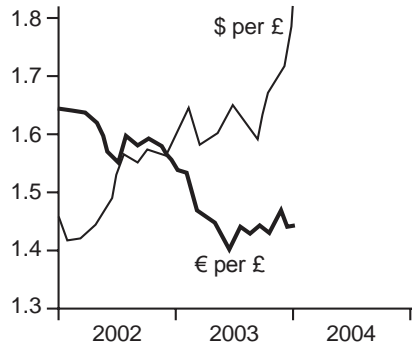
N/10/1/26

60 A government has low reserves of foreign currency. When would it be likely to consider a deficit on current account to be a serious problem?

- A when the country is experiencing a period of high, sustained growth
- B when the deficit alternates regularly with a surplus
- C when the deficit exceeds the sum of errors and omissions in the balance of payments account
- D when the level of international confidence in the country is low

N/10/1/27

61 The diagram shows the number of US dollars (\$) and Euros (€) which exchanged for one pound sterling (£) between 2002 and 2004.



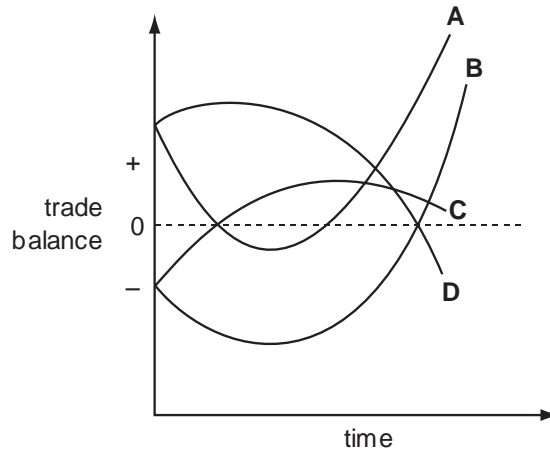
What happened to the exchange rate of the \$ against the £ and € during this period?

	\$ exchange rate against £	\$ exchange rate against €
A	appreciated	appreciated
B	appreciated	depreciated
C	depreciated	appreciated
D	depreciated	depreciated

N/10/1/28

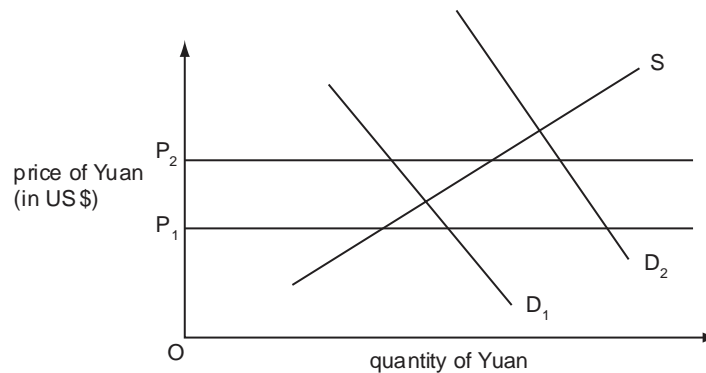
62 In a country the Marshall-Lerner condition for an improvement in the trade balance is satisfied in the long run, but quantities of imports and exports are slow to respond to price changes. The government devalues its currency to reduce its trade deficit.

Which curve indicates the probable behaviour of the trade balance?



N/10/1/29

63 Assume the Chinese monetary authorities are committed to maintaining the exchange rate of China's currency the Yuan against the US\$ between P_1 and P_2 on the diagram.



What might they do if demand changed from D_1 to D_2 ?

- A** Impose controls on Chinese investment overseas.
- B** Increase interest rates.
- C** Sell US\$ out of foreign exchange reserves.
- D** Sell Yuan on the foreign exchange markets.

N/10/1/30

64 In 2008 the Chinese government was under pressure from other countries to reduce its current account surplus on its balance of payments. Which combination of Chinese measures would help to reduce China's current account surplus?

	Chinese rate of tariffs	Chinese subsidies to the country's exporters
A	decrease	decrease
B	decrease	increase
C	increase	decrease
D	increase	increase

J/11/1/27

65 What is likely to happen if there is a rise in the international value of a country's currency?

- (A)** a fall in the foreign currency price of its exports
- (B)** a fall in the volume of its exports
- (C)** a rise in the domestic currency price of its imports
- (D)** a rise in the domestic price level

J/11/1/28

66 The table shows observations of the exchange rate of an economy and its current account balance over six years.

Year	exchange rate (US dollars per unit of domestic currency)	current account balance (billions of US dollars)
1	2.0	-3
2	1.5	-5
3	1.5	-4
4	1.5	-3
5	1.5	0
6	1.5	+3

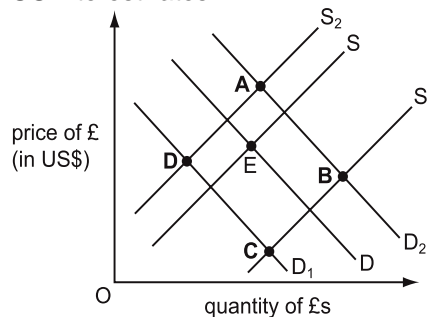
Which concept does the data in the table illustrate?

- (A) exchange rate appreciation (B) purchasing power parity
 (C) the J-curve effect (D) trade-weighted exchange rates

J/11/1/29

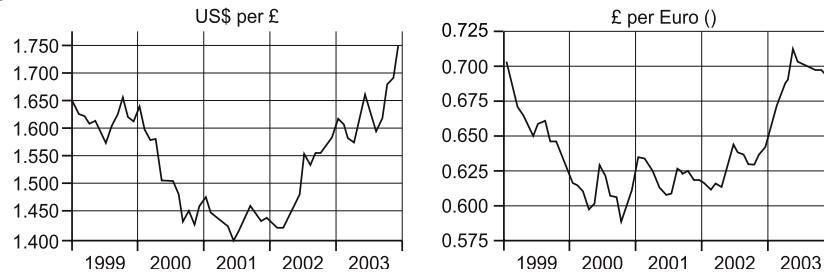
67 The diagram shows the exchange rate for the UK£ in terms of the US\$. The original equilibrium exchange rate is at E.

What will be the new exchange rate equilibrium of the UK£ following a reduction in UK interest rates and a rise in US interest rates?



N/11/1/28

68 The graphs show the changes in the exchange rates of the £ sterling between 1998 and 2003.



What happened to the value of the £ sterling between 2001 and 2003?

- (A) The £ appreciated against the \$ and the €.
 (B) The £ appreciated against the \$ and depreciated against the €.
 (C) The £ depreciated against the \$ and the €.
 (D) The £ depreciated against the \$ and appreciated against the €.

N/11/1/29

- 69** Other things being equal, what will happen if a British company raises the sterling (£) price of goods it sells to Pakistan by the full extent of a depreciation of sterling against the Pakistan rupee?
- (A) The demand for the company's goods will fall in Pakistan.
 - (B) The company's earnings in Pakistan will remain constant in pounds sterling.
 - (C) The company's earnings in Pakistan will remain constant in Pakistan rupees.
 - (D) The profit margin on sales to Pakistan will decline.

N/11/1/30

- 70** When will a country's balance of payments current account deficit be reduced?
- (A) when it raises its rate of income tax
 - (B) when it reduces tariffs on its imports
 - (C) when it revalues its currency
 - (D) when it removes export subsidies

J/12/1/26

- 71** A country has a fixed exchange rate. What is likely to result in an improvement in its balance of payments?
- A a decrease in interest rates in foreign countries
 - B a decrease in the country's interest rates
 - C a decrease in the income of foreign countries
 - D an increase in the country's national income

J/12/1/28

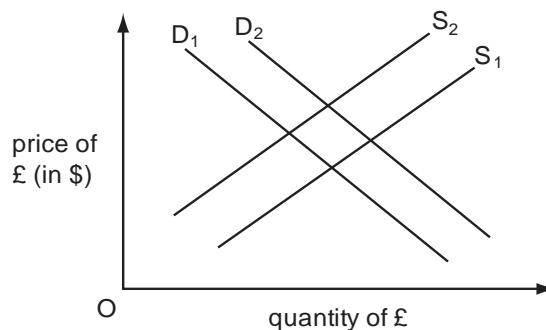
- 72** A representative basket of goods costs \$2500 in the United States. The same basket of goods costs £2000 in the UK. What can be deduced from this?
- A The £ sterling is 25 % overvalued.
 - B The £ sterling is 20 % undervalued.
 - C The purchasing power parity exchange rate of the £ sterling is \$0.80 to the £.
 - D The purchasing power parity exchange rate of the £ sterling is \$1.25 to the £.

J/12/1/29

- 73** In the diagram D_1 and S_1 are the initial supply and demand curves of the pound sterling (£) on the foreign exchange markets.

What will cause the demand curve to shift to D_2 and the supply curve to S_2 ?

- A a depreciation of the pound sterling
- B a decrease in UK interest rates
- C an increase in the price levels of other countries
- D an increase in the level of UK import tariffs



J/12/1/30

74 The currency of a country is fixed by the Central Bank at a certain value in terms of US dollars.

If currency devaluation is not possible, which policy might be used to reduce a current account deficit on the balance of payments?

- A** a decrease in interest rates
- B** a decrease in tax rates
- C** a decrease in tariffs on imports
- D** a decrease in public expenditure

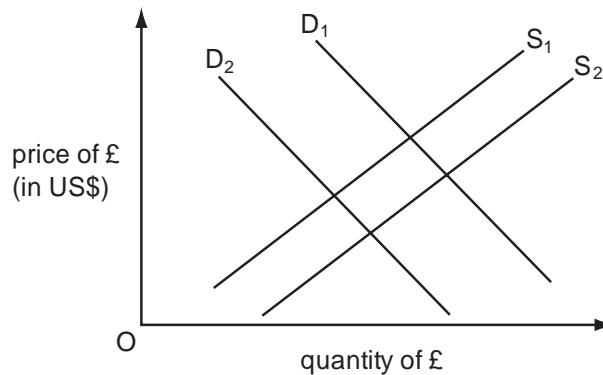
N/12/1/28

75 What is most likely to result from a rising deficit in a country's balance of payments from increased imports of consumer goods?

- A** a rise in aggregate monetary demand in the country
- B** a rise in the country's aggregate supply
- C** a rise in the country's unemployment
- D** a rise in the international value of the country's currency

N/12/1/29

76 In the diagram D_1 and S_1 are the initial demand and supply curves of the UK pound (£) on the foreign exchange markets.



What will cause the demand curve to shift to D_2 and the supply curve to S_2 ?

- A** an appreciation of the pound
- B** an increase in incomes in the US
- C** an increase in the price level in the US
- D** a decrease in UK interest rates

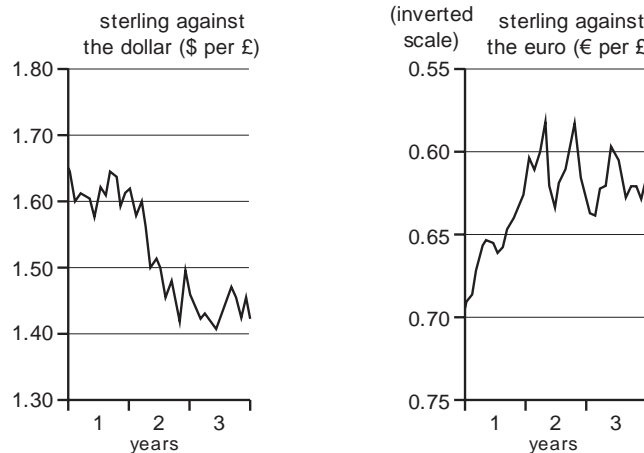
J/13/1/24

77 The exchange rate of the Mexican peso against the US\$ changed from 10 pesos = 1 US\$ to 9 pesos = 1 US\$. During the same period, the general price level in Mexico fell by 10% while the US price level remained unchanged.
What happened to the nominal and real exchange rate of the peso against the US\$?

	nominal peso exchange rate	real peso exchange rate
A	appreciated	appreciated
B	appreciated	unchanged
C	depreciated	depreciated
D	depreciated	unchanged

J/13/1/28

78 The graphs show the changes in the exchange rates of the £ sterling against the US\$ and against the euro. The exchange rate of sterling against the euro is shown by an inverted scale.



Which statement about the period year 1 to year 3 is correct?

- A** the £ appreciated against the \$ and the €
- B** the £ appreciated against the \$ and depreciated against the €
- C** the £ depreciated against the \$ and the €
- D** the £ depreciated against the \$ and appreciated against the €

J/13/1/29

79 In spring 2011 the US\$ exchanged for 81.6 yen.
In spring 2012 the US\$ exchanged for 76.1 yen.
What would be expected to rise for the United States as a result of this change?

- A** the level of unemployment
- B** the price of exports sold in Japan
- C** the rate of imported inflation
- D** the volume of imports

J/13/1/30

80 A country with a fixed exchange rate experiences a balance of payments surplus. Which policy measure will enable it to maintain its exchange rate at its target level?

- A** decreasing government borrowing
- B** decreasing government spending
- C** decreasing the interest rate
- D** decreasing the money supply

N/13/1/28

81 Country X trades with only two countries, the USA and Japan. 90 % of the country's trade is with the USA and 10 % is with Japan. The original value of the trade-weighted exchange rate index is 100. The value of country X's currency against the US\$ rises by 10%. The value of country X's currency against the Japanese yen rises by 50 %. What will be the value of country X's new trade-weighted exchange rate index?

- A** 114
- B** 115
- C** 130
- D** 160

N/13/1/29

82 What is most likely to cause a rise in a country's exchange rate?

- A** a fall in its direct taxes
- B** a fall in its export orders
- C** a rise in its interest rates
- D** a rise in its imports

N/13/1/30

83 An economy has a high level of unemployment and a large balance of payments deficit on the current account. What would be a suitable policy for the government to adopt?

- A** decrease government spending
- B** devalue the currency
- C** increase direct taxation
- D** increase interest rates

J/14/1/28

84 What determines the purchasing power parity of a currency?

- A** relative costs of living
- B** relative rates of interest
- C** the balance of payments current account
- D** the volume of trade creation

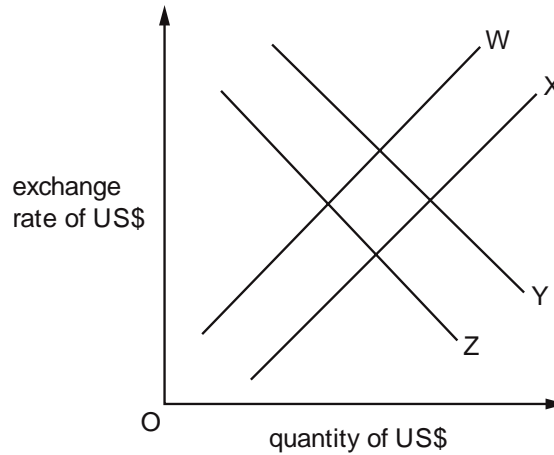
J/14/1/29

85 With an exchange rate of 5 Egyptian pounds (EGP) = 1 US dollar (\$), an American product sells in Egypt for EGP 100. Assuming that the dollar price remains unchanged, what will be the price of the product in Egypt if the Egyptian pound appreciates to 4 EGP = 1 US\$?

- A** EGP 75
- B** EGP 80
- C** EGP 120
- D** EGP 125

J/14/1/30

86 The US Central Bank raises its interest rate to improve its balance of payments position. The diagram shows the resulting changes in the demand for and supply of US\$ in the foreign exchange market.



What should curves W, X, Y and Z be labelled to show the effect of the interest rate rise on the exchange rate? (Assume a change is shown by a move from a curve numbered 1 to a curve numbered 2.)

	W	X	Y	Z
A	S ₁	S ₂	D ₁	D ₂
B	S ₁	S ₂	D ₂	D ₁
C	S ₂	S ₁	D ₁	D ₂
D	S ₂	S ₁	D ₂	D ₁

N/14/1/26

87 What might explain an increase in the volume of a country's imports?

- A** an appreciation of the country's exchange rate
- B** an increase in the country's tariffs
- C** a recession in the country
- D** a rise in the country's rate of income tax

N/14/1/27

88 What is the most likely consequence of an increase in a country's balance of payments deficit?

- A** an increase in the foreign value of the currency of the country
- B** an increase in the level of income within the country
- C** a reduction in the quantity of money within the country
- D** a reduction in unemployment within the country

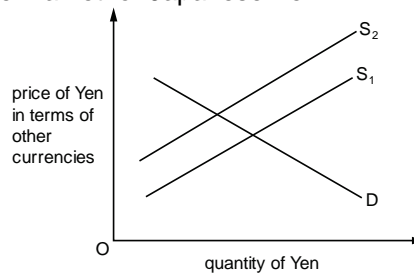
N/14/1/28

89 Which economic change might contribute to both cost-push and demand-pull inflation?

- A** a fall in the exchange rate
- B** a fall in the interest rate
- C** a rise in the productivity of industrial workers
- D** an improvement in the terms of trade

N/14/1/29

90 The diagram shows the market for Japanese Yen.



What could have caused the change in the supply of Yen from S_1 to S_2 ?

- A** a reduction in the level of international investment into Japan
- B** a reduction in the level of Japanese tariffs
- C** a reduction in the value of foreign goods imported into Japan
- D** a reduction in the value of Japanese goods exported

N/14/1/30

91 To reduce a deficit on the current account of the balance of payments, a government imposes a limit on the foreign exchange its people and firms can purchase. Why may this increase the country's inflation rate?

- A** Firms may have to purchase more expensive, domestically-produced raw materials.
- B** Firms may have to sell more of their output on the domestic market.
- C** The change in demand for foreign currency on the foreign exchange market may lead to an appreciation in the exchange rate.
- D** The change in supply of the domestic currency on the foreign exchange market may reduce the money supply in the domestic economy.

J/15/1/26

92 When is a deficit on the current account of the balance of payments likely to worsen?

- A** when a government adopts a deflationary macroeconomic policy
- B** when a government devalues the currency
- C** when prices of essential imported raw materials increase significantly
- D** when tariffs are placed on imported products with a wide range of domestic substitutes

J/15/1/27

- 93** What is the real exchange rate?
- A** the exchange rate at which foreign currency traders can buy a country's currency
 - B** the exchange rate between a country's currency and the US Dollar
 - C** the exchange rate with international differences in price inflation removed
 - D** the weighted average of a country's exchange rates with its major trading partners

J/15/1/28

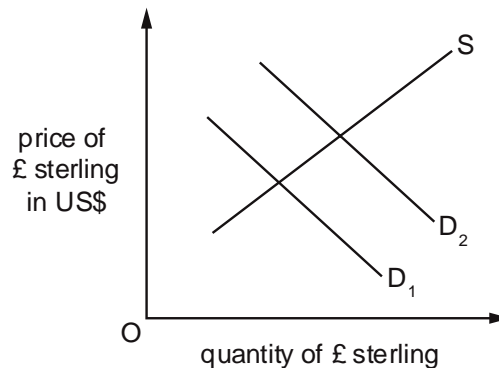
- 94** An appreciation of country X's currency leads to an increase in its foreign currency earnings from tourism. What can be concluded from this about the demand by foreigners for holidays in country X?
- A** It is income elastic.
 - B** It is price elastic.
 - C** It is income inelastic.
 - D** It is price inelastic.

J/15/1/29

- 95** In the diagram, curves D_1 and S relate to the demand for and supply of £ sterling in the foreign exchange market.

What may cause the demand curve to shift from D_1 to D_2 ?

- A** a decrease in UK interest rates
- B** a decrease in the price of US goods sold in the UK
- C** the removal of UK tariffs against US goods
- D** the development of UK substitutes for US goods



J/15/1/30

- 96** A government uses monetary policy to manage its economy. Which sequence correctly describes the most likely consequence of an increase in the country's inflation rate?

	expectations about future interest rates	→ capital inflows	→ exchange rates
A	fall	decrease	depreciate
B	fall	increase	appreciate
C	rise	decrease	depreciate
D	rise	increase	appreciate

N/15/1/28

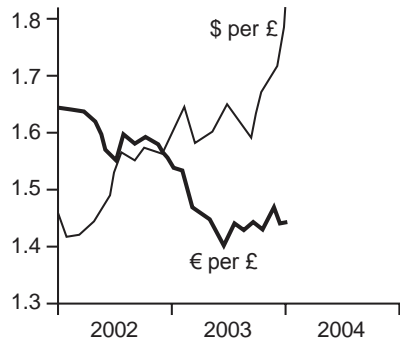
97 An economy with a fixed exchange rate experiences an increased deficit on the current account of the balance of payments.

What is most likely to increase as a consequence?

- A** employment
- B** interest rates
- C** investment
- D** national output

N/15/1/29

98 The diagram shows the number of US dollars (\$) and Euros (€) which exchanged for one pound sterling (£) between 2002 and 2004.



What happened to the exchange rate of the \$ against the £ and € during this period?

	\$ exchange rate against £	\$ exchange rate against €
A	appreciated	appreciated
B	appreciated	depreciated
C	depreciated	appreciated
D	depreciated	depreciated

J/16/1/23

99 The following exchange rates were recorded in the foreign exchange market.

$$£1 = €1.208$$

$$\$1 = €0.727$$

$$€1 = \$1.375$$

Within which range of values should £1 exchange for \$?

- A** £1=less than \$0.50
- B** £1=between \$0.50 and \$1
- C** £1=between \$1 and \$1.50
- D** £1=more than \$1.50

J/16/1/29

100 Possible policies a government might use to reduce a deficit on the current account of the balance of payments include devaluation, government spending cuts, interest rate rises and tariffs.

Which two policies would be classified as expenditure-reducing?

- A** devaluation and government spending cuts
- B** government spending cuts and interest rate rises
- C** interest rate rises and tariffs
- D** tariffs and devaluation

J/16/1/30

101 Which policy, adopted by a government with the intention of reducing the rate of inflation, might cause a greater deficit on the balance of payments?

- A** higher foreign exchange rates for its currency
- B** higher interest rates for domestic customers
- C** higher subsidies to domestic producers
- D** higher tax rates on consumer incomes

Fiscal policy, monetary policy, supply side policies and tax systems are a part of the extension (A2) syllabus, but will be shifted to the core (AS) component with effect from June 2016.

SECTION 26

FISCAL POLICY

Fiscal policy is a deliberate manipulation of government expenditures (G) and taxes (T) to achieve a non-inflationary level of full employment. It is a demand management policy as it tries to reduce unemployment and stabilize price level by managing demand. Keynes argues that unemployment is demand deficient and fiscal tools help by injecting demand into the economy. Thus an expansionary fiscal policy, aimed at reducing unemployment may take up any of the following forms:

- (i) Increased government (public) spending (G)
- (ii) Reduced taxes (T)
- (iii) A combination of both

Increased government spending or reduced taxes i.e. a budget deficit injects demand into the economy and brings a larger increase in national income due to the multiplier effect. Real income increases if demand injections succeed in increasing the volume of output produced. However, demand injections are inflationary if they fail to raise real output and increase the price level instead.

Diagram 26.1 shows an expansionary fiscal policy increasing real output but leaving the price level unaffected. The intersection of Aggregate Demand (AD) and Aggregate Supply determines equilibrium income at Y_0 . Increased government spending or decreased taxes shifts Aggregate Demand from AD_0 to AD_1 and increases real income from Y_0 to Y_1 . Price level does not change since Aggregate Supply curve is a straight horizontal line. Expansionary fiscal policy is, thus, effective in reducing unemployment and raising national income.

Diagram 26.1

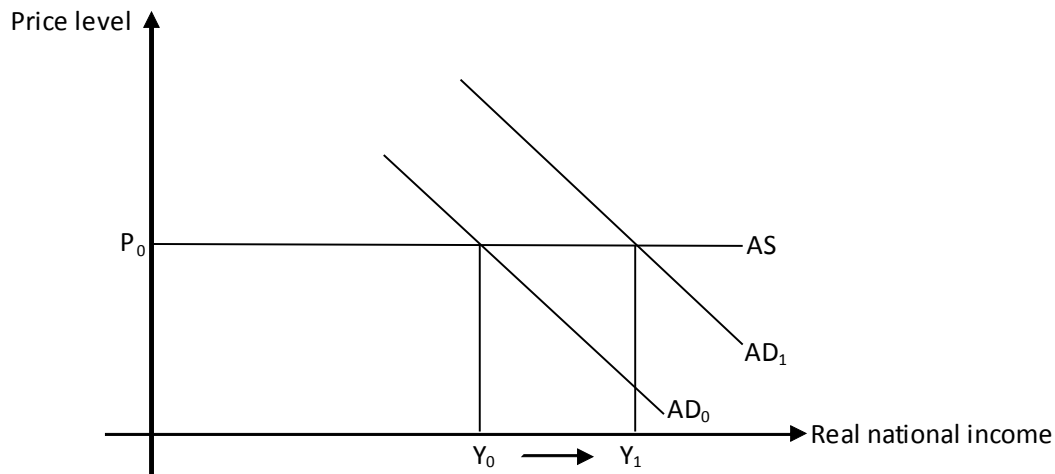


Diagram 26.2 shows an expansionary fiscal policy which inflates the price level but real output remains unaffected. Equilibrium income is determined by the intersection of Aggregate Demand (AD) and Aggregate Supply curves. Increased government spending or decreased taxes shift the Aggregate Demand curve from AD_0 to AD_1 . However, point b is off the Aggregate Supply curve and hence cannot be the equilibrium. Aggregate Demand exceeds Aggregate Supply at this point, forcing the price level to increase from P_0 to P_1 . This increased price level causes an upward movement along Aggregate Demand curve towards point c. National income decreases to Y_0 , leaving an unchanged national income. In such a situation, expansionary fiscal policy completely fails to reduce unemployment and raise national income.

Diagram 26.2

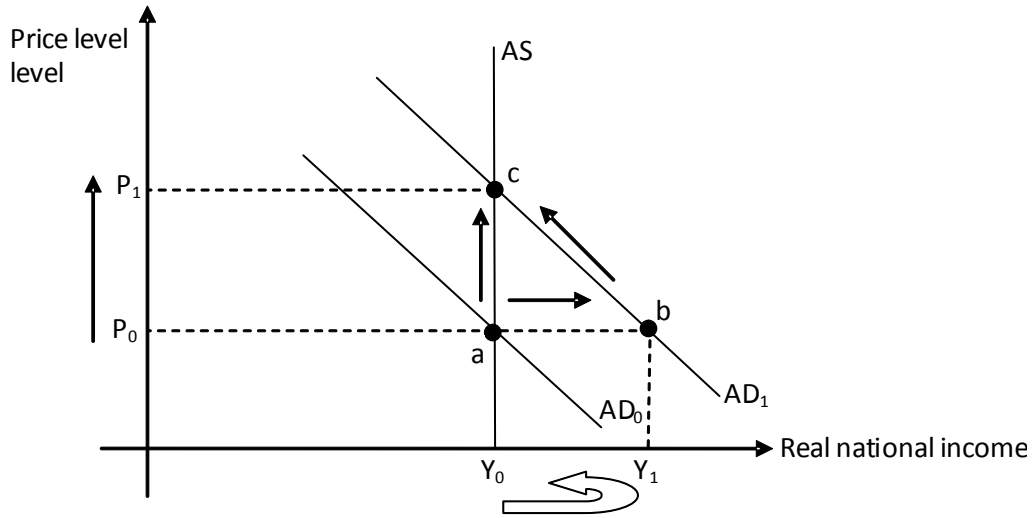
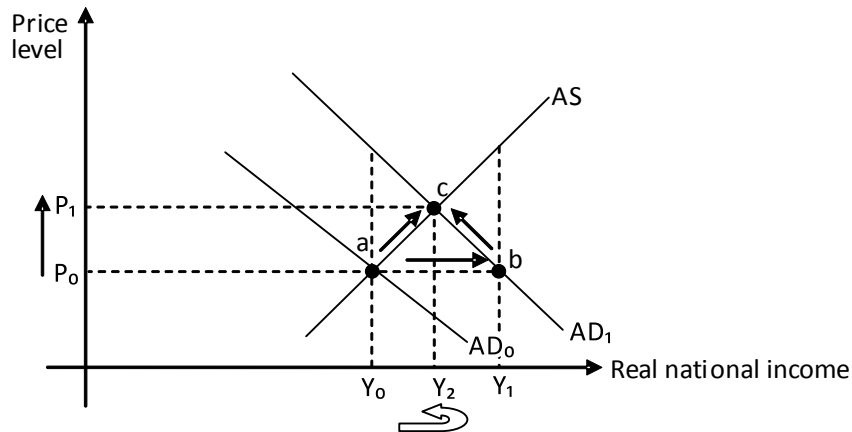


Diagram 26.3 shows a situation where an expansionary fiscal policy both inflates the price level and increases real output. As shown in the previous diagrams, increased government spending or decreased taxes shift the Aggregate Demand curve from AD_0 to AD_1 . Point b does not show equilibrium as in diagram 26.2, rather price level increases here as Aggregate Demand exceeds Aggregate Supply. Increased price level brings an upward movement along Aggregate Demand curve towards point c. Since the impact of increased AD is partially eroded by increased price level (from P_0 to P_1), therefore, real output increases from Y_0 to Y_2 only, and not Y_1 .

Expansionary fiscal policy is more effective in reducing unemployment when excess capacity and unemployed resources are available. Aggregate Supply curve is flatter, meaning increased injections are more likely to increase real output. However, increased injections are more likely to be inflationary in economies operating at or near full employment. Aggregate Supply curve is steeper and increased injections have a smaller impact on real output and a greater impact on price level.

Diagram 26.3



Briefly speaking, expansionary fiscal policy is more effective in increasing real output when:

- Excess capacity is available i.e. Aggregate Supply (AS) curve is flatter
- Money supply is increased as well so that interest rates do not increase
- No other component of Aggregate Demand decreases e.g. increased exchange rates withdraw demand (by making exports expensive) and may erode the impact of increased government spending or reduced taxes
- Government borrows from central bank instead of private center
- Marginal Propensity to Save (MPS) is low

Contractionary Fiscal Policy

One cause of inflation, a persistent increase in price level, could be excess demand. Contractionary fiscal policy may be used to withdraw Aggregate Demand employing any of the following tools:

- Decreased government spending (G)
- Increased taxes (T)
- A combination of both

Decreased government spending or increased taxes i.e. a budget surplus withdraws demand from the economy and brings a larger decrease in national income through the multiplier effect. However, contractionary fiscal policy may increase unemployment.

Policy	Tools	Intended outcome	Consequences
Expansionary fiscal policy	Budget deficit	Decreased unemployment & increased real output	Increased price level
Contractionary fiscal policy	Budget surplus	Stabilized price level i.e. a lower inflation rate	Increased unemployment

MONETARY POLICY

Monetary policy aims to solve economic problems like unemployment and inflation by changing money supply and interest rate. Monetary and fiscal policies are demand management policies as both manage demand to attain a non-inflationary level of unemployment.

An economy's central bank controls its monetary policy and can change money supply or interest rate but not both simultaneously. Increased money supply implies that the central bank must accept lower interest rates and an increase in interest rate is only possible if money supply decreases. Some of the quantitative tools of monetary policy are:

- Open market operations
- Required reserve ratio
- Discount rate

Open market operations

Open market operation involves buying and selling of government securities in the open market by the central bank. Open market operation is the most popular tool of monetary policy and the central bank conducts it on almost a daily basis. In case of unemployment and recession, the central bank can decide to expand money supply by purchasing government bonds and securities either from the general public or commercial banks. Such a purchase increases commercial banks' liquid assets and hence, their ability to create credit money.

To check inflation, the central bank decides to contract money supply by selling bonds in the open market. Selling bonds to commercial banks and /or general public reduces the liquid assets held by commercial banks and hence their ability to create credit money is curtailed.

Required reserve ratio

As stated earlier, an economy's central bank regulates its banking system and forces commercial banks to maintain a certain percentage of their deposits in the form of liquid assets.

The central bank can lower the required reserve ratio whenever it wants to expand money supply and raises it to reduce money supply and hence, inflation rate.

Discount rate

Think of the central bank as the bankers' bank. Banks facing a liquidity crisis approach the central bank which being "the lender of last resort" lends money to commercial banks at a rate higher than the market interest rate.

The central bank increases the discount rate when it wishes to contract money supply. Such an action induces commercial banks to improve their lending portfolios as a liquidity crunch caused by generous lending becomes more expensive to finance.

Monetary policy is more effective when banks operate near their liquidity ratios. For example, purchase of securities raises the excess reserve of commercial banks. This extra liquidity is more likely to be used if existing liquidity was almost zero but a banking system already having unutilized liquidity will not be able to create more credit even if the central bank decides to improve liquidity by purchasing securities.

Expansionary monetary policy is more effective when sound and genuine demand for bank loans exists. Expansionary (loose) monetary policy may encourage imprudent borrowing, further deflating the economy because of increased bankruptcies. The economy benefits more if borrowed funds are invested wisely in economically viable projects, leading to increased rate of economic growth. However, lower interest rates are less beneficial if they encourage hoarding, speculative investments in real estate and lavish and unnecessary spending.

Summing up, the tools for expansionary (loose) monetary policy are:

- Central bank purchasing securities from open market
- Decreasing required reserve ratio
- Decreasing the discount rate

The tools for contractionary (tight) monetary policy are:

- Central bank selling securities in the open market
- Increasing required reserve ratio
- Increasing the discount rate

Other than these quantitative ones, the central bank can also employ qualitative tools to control money supply. They include letters, memos and circulars to commercial banks containing serious word of advice from the central bank. Non compliance then, is not an option for commercial banks since they know it is most likely to result in strict orders and policy changes.

Expansionary monetary policy injects demand into the economy, filling deflationary gaps. However, such a policy may trigger inflationary trends. Contractionary monetary policy withdraws demand from the economy to fill an inflationary gap but may increase unemployment. Where unemployment and inflation co-exist, the government can use expansionary fiscal policy to reduce unemployment and tight monetary policy to control inflation, since monetary policy has a comparative advantage in controlling inflation.

Central bank defines and supervises monetary policy whereas fiscal policy, in democratic countries is regulated by the Parliament, the approving authority of government budgets. Whereas gaining the Parliament's approval may be difficult and time consuming, monetary policy is more flexible since the central bank can make changes on a day to day basis. Fiscal policy is however, more effective when it is backed by monetary policy.

SUPPLY SIDE POLICIES AND NATURAL RATE OF UNEMPLOYMENT

What follows is a list of supply side measures that shift the production possibility curve outwards and increase potential rate of economic growth.

- Government decreases or restricts the provision of transfer payments such as unemployment benefits. Transfer payments are payments received but not earned i.e. no production activity has taken place against such receipts. A reduction in unemployment benefits pressurizes unemployed workers into searching for jobs more aggressively, thus decreasing frictional unemployment.

- Government increases expenditures on training and education. A trained and educated work force is occupationally more mobile and results in reduced structural unemployment
- Lowering top tax rates (tax rates at higher income level) encourages workers and investors to work and invest more, increasing the pace of economic growth and lowering unemployment.
- Improved infrastructure increases workers' geographical mobility, helping them find jobs quickly and reducing overall unemployment.
- Widening inter-regional wage differentials incentivize workers to move to other areas, increasing their geographical mobility and reducing the natural rate of unemployment.
- Narrowing inter-regional house price differentials makes sale and purchase of houses easier, raising the level of geographical mobility and reducing the natural rate of unemployment.
- Checking the number of trade union members weakens their power to demand high wages, in excess of productivity and helps reduce the natural rate of unemployment (try J/07/3/29)
- Abolishing national pay legislation and encouraging local pay agreements also helps reduce natural unemployment.

SYSTEMS OF TAXATION

There exist three tax systems:

- (i) Progressive
- (ii) Proportionate
- (iii) Regressive

Progressive taxation

This system calls for increasing the tax rate with increase in income i.e. rich people pay a greater portion of their income in taxes. Consider the following example of a progressive tax system.

Progressive taxation			
Y (individual's income)	Tax rate(t) = ART	Tax amount (T)	MRT
0	-	0	-
100	10%	10	10%
200	12%	24	14%
300	14%	42	18%

The tax rate, t, rises as the individual's income increases. The tax rate also equals the Average Rate of Tax (ART).

$$\text{Average Rate of Tax} = \frac{\text{Tax amount}}{\text{Income}}$$

$$\text{ART} = \frac{T}{Y}$$

$$= \frac{\text{tax rate} \times \text{income}}{Y}$$

$$= \frac{t \times Y}{Y}$$

$$= t$$

Marginal Rate of Tax (MRT) shows additional tax paid due to an increase in income. It is the ratio of change in tax amount and change in income

$$MRT = \frac{\Delta T}{\Delta Y}$$

For a progressive system of taxation:

- Tax rate (t) increases with every increase in income.
- Tax amount increases more than proportionately when income increases
- Marginal Rate of Tax (MRT) exceeds the tax rate (t).

Proportionate Taxation

This system charges the same tax rate, irrespective of the level of income. The following table presents an example of proportionate taxation.

Proportionate taxation			
Y	Tax rate(t) = ART	Tax amount (T)	MRT
0	10%	0	-
100	10%	10	10%
200	10%	20	10%
300	10%	30	10%

For a proportionate tax system:

- Tax rate (t) stays the same at every income level.
- Tax amount increases proportionately when income increases.
- Marginal Rate of Tax (MRT) equals tax rate (t).

Regressive Taxation

This system of taxation has a decreasing tax rate for every increase in income. Consider the following tables as examples of regressive taxation

Regressive Taxation

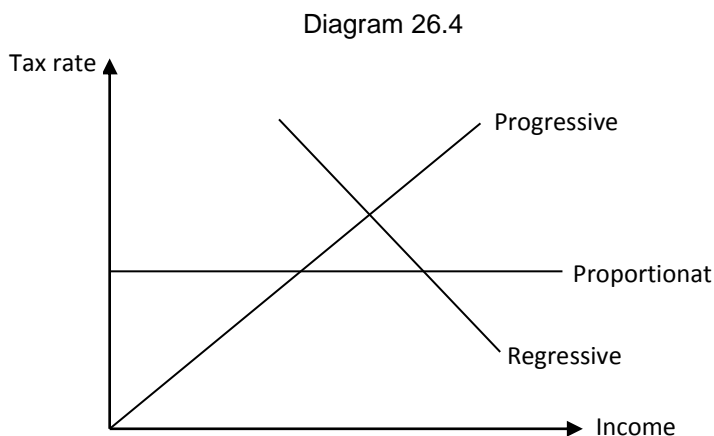
(Case I)			
Y	Tax rate(t) = ART	Tax amount (T)	MRT
0	-	0	-
100	10%	10	10%
200	8%	16	6%
300	6%	18	2%
(Case II)			
Y	Tax rate(t) = ART	Tax amount (T)	MRT
0	∞	10	-
100	10%	10	0%
200	5%	10	0%
300	3.33%	10	0%

(Case III)			
Y	Tax rate(t) = ART	Tax amount (T)	MRT
0	-	0	-
100	10%	10	10%
200	4%	8	-2%
300	2%	6	-2%

For regressive taxation:

- Tax rate (t) decreases with every increase in income.
- Tax amount can increase, stay the same or can even decrease when income increases.
- Marginal Rate of Tax (MRT) is less than the rate of tax (t).
- Marginal Rate of Tax (MRT) is positive when tax amount increases. However, tax amount increases less than proportionately with increases in income. Case I shows a situation where tax rate decreases when income increases but tax amount still increases.
- Marginal Rate of Tax (MRT) is zero when tax amount does not change with increase in income. This happens in the case of autonomous taxes- taxes that do not vary with changes in income, as in case II. All autonomous taxes are regressive in their impact but all regressive taxes are not autonomous.
- Case III shows a situation where tax amount decreases with increase in income. In this case, Marginal Rate of Tax (MRT) is negative.
- All indirect taxes (taxes on expenditures) are regressive in their impact since rich people are less affected by them. Thus countries collecting a greater portion of tax revenues through indirect taxes and less through direct taxes have a less progressive tax system.

Diagram 26.4 provides a graphical representation of the three systems of taxation



Principles (Canons) of taxation and systems of taxation

Equity and efficiency are the two fundamental principles of taxation. A progressive tax system is more likely to satisfy the principle of equity as it leads to a more equal distribution of income. Rich people pay a greater portion of their income as taxes, thus reducing gap between the incomes of

the rich and poor. However, a highly progressive tax system dampens the incentive to work as a high top tax rate (tax rate at the highest income range) discourages people to work and forces them to invest less (try J/08/3/14). High income earners are encouraged to work and invest under a less progressive system of taxation so it is more likely to satisfy the principle of efficiency. However, this comes at the cost of a less equal distribution of income.

Other Principles (Canons) of taxation

- It should be economical to collect taxes
- It should be difficult to evade taxes
- Tax system should be flexible to allow governments to make changes as desired
- Taxes should be convenient and comprehensible for the tax payers

Example: J/02/3/16

Which of the following elements of a tax and benefits system is regressive?

- (A) the taxation of capital gains
- (B) the payment of child benefits to families
- (C) specific taxes on beer and tobacco
- (D) rent subsidies to tenants of publicly owned housing

Option A: Capital gain is the excess of sale and purchase price of an asset and is common in the real estate and stock markets. Investment in real estate and stock markets usually comes from rich people, so taxation of capital gains affects them more, making the system progressive.

Option B: Paying child benefits to families benefits poor income earners more than the rich. Thus, this presents a progressive system of tax and benefit, where rich people pay a greater portion of their income as taxes or get benefits worth a smaller portion of their income.

Option C: This is an example of indirect tax, which does not increase with increase in income. Thus rich people pay a smaller portion of their income as indirect taxes. Indirect taxes are regressive in their impact so option C is the correct answer.

Option D: Publicly owned houses are built by governments for use by poor families who may not afford accommodation otherwise. A subsidy on rent of publicly owned housing benefits poor income earners more, making it an example of progressive taxation.

Note:

For exam practice, students are advised to consult Paper 3 up to Nov 2015 as the topics included in this section belong to the A2 component of the course till Nov 2015.

MULTIPLE CHOICE QUESTIONS
Fiscal Policy

N/03/3/30

- 1 When might the effectiveness of fiscal expansion in increasing the level of output be reduced?
- (A) when it leads to the appreciation of the currency
 - (B) when it results in an increase in the price of government bonds
 - (C) when it is accompanied by an increase in the money supply
 - (D) when the price level remains unchanged

J/05/3/28

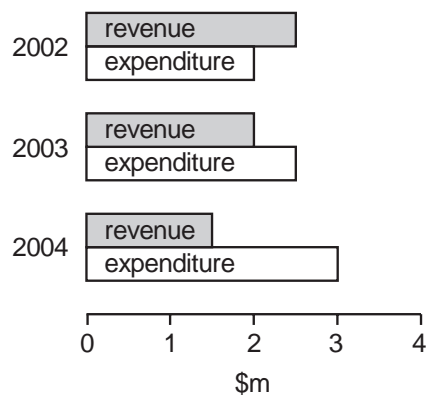
- 2 In an economy with unemployed resources the government increases its expenditure. This would be least likely to increase national income by the full multiplier effect if the
- (A) level of autonomous private investment is increased.
 - (B) marginal propensity to save is reduced.
 - (C) government allows money supply to expand.
 - (D) level of interest rates rises.

N/06/3/25

- 3 What would cause an expansionary fiscal policy to be relatively ineffective?
- (A) a low marginal propensity to import
 - (B) a fixed exchange rate
 - (C) a fixed money supply
 - (D) large-scale unemployment of resources

J/07/3/20

- 4 The diagram shows a government's revenue and expenditure for three years.



What can be concluded from the diagram?

- (A) A budget deficit was replaced by a budget surplus.
- (B) A government net borrowing requirement emerged.
- (C) The economy moved from a recession into a boom period.
- (D) The yield from taxation continuously increased.

J/10/3/28

- 5** An economy has underemployed resources. Which method of financing an increase in government expenditure is likely to have the greatest expansionary effect?
- (A) borrowing from the central bank
 - (B) borrowing from the non-bank private sector
 - (C) increased direct taxation
 - (D) increased indirect taxation

N/10/3/28

- 6** When will taxes be most effective in dampening cyclical changes in national output?
- (A) when the tax yield is independent of national income
 - (B) when the tax yield varies inversely with national income
 - (C) when the tax yield varies less than proportionately with national income
 - (D) when the tax yield varies more than proportionately with national income

J/11/32/18

- 7** What will expand the money supply in an open economy?
- (A) a current account balance of payments deficit
 - (B) an increase in the cash reserve ratio of commercial banks
 - (C) government borrowing from domestic residents
 - (D) government intervention to prevent an appreciation in the foreign exchange value of domestic currency

Automatic Fiscal Stabilizer

N/02/3/25

- 8** Which of the following is likely to intensify a recession following an initial fall in aggregate demand?
- (A) Unemployment benefits increase as the level of activity falls.
 - (B) The yield from income tax falls as incomes fall.
 - (C) Firms maintain a constant ratio of stocks to sales.
 - (D) Interest rates fall as the demand for money falls.

N/02/3/30

- 9** Which of the following is **not** an automatic stabiliser?
- (A) income tax
 - (B) profits tax
 - (C) state retirement pension
 - (D) unemployment benefit

N/04/3/29

- 10** Without any change in government policy, what will be the effect of an economic recession on tax revenue and on government expenditure?

	tax revenue	government expenditure
(A)	decrease	decrease
(B)	decrease	increase
(C)	increase	increase
(D)	increase	decrease

N/05/3/29

- 11 How do automatic stabilisers work?
- (A) by reducing government deficits in times of recession
 - (B) by reducing fluctuations in disposable income
 - (C) by reducing fluctuations in the exchange rate
 - (D) by increasing the size of the investment multiplier

N/06/3/30

- 12 What does a government need to do to maintain a balanced budget?
- (A) allow automatic stabilisers to work
 - (B) keep tax rates and benefit rates unchanged
 - (C) raise taxes in a slump and lower taxes in a boom
 - (D) aim to keep output close to the full employment level

N/08/3/29

- 13 Without any change in government policy, what will be the effect of an economic recession on tax revenue and on government expenditure?

	tax revenue	Government expenditure
(A)	decrease	decrease
(B)	decrease	increase
(C)	increase	decrease
(D)	increase	increase

Monetary Policy

J/02/3/18

- 14 In which circumstance will an increase in the public sector deficit **not** lead to an increase in the money supply, other things being equal?
- (A) The deficit is financed by an increase in government borrowing from private individuals.
 - (B) The rate of interest is held constant.
 - (C) There is large-scale unemployment.
 - (D) Commercial bank lending to the private sector is held constant.

J/02/3/28

- 15 A country has a floating exchange rate, full employment and an expansionary fiscal policy. The government decides to make the central bank independent with the power to determine monetary policy. If the central bank adopts a zero inflation target, what is likely to happen to interest rates and the exchange rate?

	Interest rates	Exchange rates
(A)	fall	fall
(B)	fall	rise
(C)	rise	fall
(D)	rise	rise

J/02/3/29

- 16** Which measure could be expected to reduce the pressure of demand-pull inflation in an open economy?
- (A) a depreciation of the foreign exchange rate
 - (B) a reduction in interest rates
 - (C) a reduction in the rate of tax on goods and services
 - (D) a removal of import controls

N/03/3/24

- 17** Which method of financing a government deficit will leave the money supply unchanged?
- (A) the sale of government securities to the central bank
 - (B) the sale of government securities to the commercial banks
 - (C) the sale of government securities to domestic residents
 - (D) the sale of government securities to overseas residents

J/04/3/30

- 18** What would represent a monetarist anti-inflationary policy?
- (A) an increase in indirect taxation
 - (B) direct foreign exchange rate intervention
 - (C) the introduction of maximum prices
 - (D) the sale of securities on the open market

N/04/3/30

- 19** An economy has a low level of unemployment. The government increases its expenditure. Which method of financing the additional expenditure is most likely to cause inflation?
- (A) an increase in borrowing from the Central Bank
 - (B) an increase in income taxes
 - (C) an increase in sales of state assets to the non-bank public
 - (D) an issue of bonds to the non-bank public

J/07/3/24

- 20** What is likely to happen to interest rates and aggregate demand when a central bank sells government securities?

	interest rates	aggregate demand
(A)	fall	fall
(B)	fall	rise
(C)	rise	fall
(D)	rise	rise

N/07/3/29

21 In which combination of circumstances is an increase in government expenditure likely to result in the largest increase in output?

	initial level of unemployment	means of financing additional expenditure
(A)	high	borrowing from the banking system
(B)	high	increase in tax rates
(C)	low	increase in tax rates
(D)	low	issues of bonds to non-bank private sector

N/08/3/19

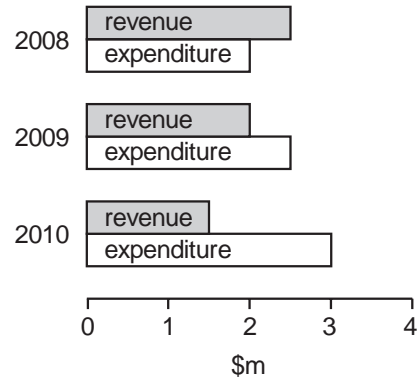
22 What is likely to be the effect on interest rates and the supply of money of a sale of government securities to the public by a central bank?

	interest rates	money supply
(A)	increase	increase
(B)	increase	decrease
(C)	decrease	decrease
(D)	decrease	increase

J/11/32/24

23 The diagram shows a government's revenue and expenditure for three years. What can be concluded from the diagram?

- (A) A budget deficit was replaced by a budget surplus.
- (B) A government borrowing requirement emerged.
- (C) The economy moved from a recession into a boom period.
- (D) The yield from taxation continuously increased.



N/11/32/17

24 Despite a government budget deficit, a country's money supply remains unchanged. What could explain this?

- (A) The country has a balance of payments surplus equal to the government budget deficit.
- (B) The country's foreign exchange rate is fixed.
- (C) The government budget deficit is financed by borrowing from the central bank.
- (D) The government budget deficit is financed by selling government bonds to members of the public.

N/14/32/21

25 A central bank pursues a policy of quantitative easing by purchasing government securities.

What is likely to happen to interest rates and aggregate expenditure?

	interest rates	aggregate expenditure
A	fall	fall
B	fall	rise
C	rise	fall
D	rise	rise

N/14/32/27

26 A government decides to pursue a more reflationary fiscal policy and a more deflationary monetary policy.

Which combination of changes in policy instruments is consistent with this?

	government expenditure	interest rate	taxation
A	decrease	decrease	decrease
B	decrease	decrease	increase
C	increase	increase	decrease
D	increase	increase	increase

J/15/32/18

27 Other things being equal, the money supply in an open economy will increase if

- A** domestic banks increase their lending to foreign borrowers.
- B** the central bank buys foreign currency in the foreign exchange market.
- C** the government sells bonds to domestic residents.
- D** there is an increase in the volume of imports to the economy.

J/15/32/23

28 Why will an inflationary process be brought to a halt if the money supply is held constant?

- A** Consumption will decrease as money incomes decline.
- B** Government expenditure will have to be reduced as government revenues decline.
- C** The rate of interest will rise as more money is required for transactions purposes.
- D** The stimulus to invest will decline as the real burden of company debt rises.

J/16/1/28

29 An increase in interest rates is an example of which type of policy?

- A** contractionary fiscal policy
- B** contractionary monetary policy
- C** expansionary monetary policy
- D** restrictive supply-side policy

Supply side policies

N/15/1/24

30 Which supply-side measure is most likely to produce short-run growth in a country's aggregate supply?

- A** easing of controls on immigration of workers
- B** expenditure on primary education
- C** expenditure on research and development
- D** privatisation of public utilities

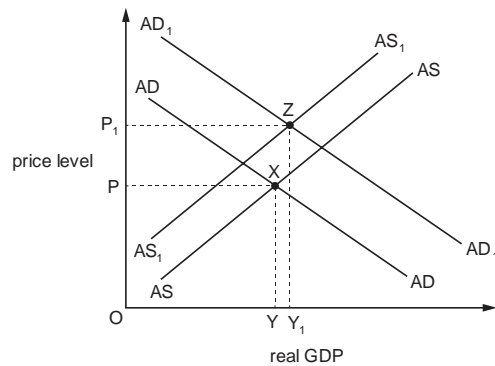
J/16/1/16

31 A country uses an income tax under which the first \$10 000 of income is tax-free, the next \$20 000 is taxed at 20% and any income over \$30 000 is taxed at a top rate of 40%. It also levies a sales tax of 10% on most products, although some essential goods are exempt. Which combination of tax changes is most likely to create a more equal distribution of income in the country?

	income tax	sales tax
A	a higher tax-free allowance	a higher rate of tax
B	a higher top rate of tax	a lower rate of tax
C	a lower tax-free allowance	a higher number of exempt goods
D	a lower top rate of tax	a lower number of exempt goods

J/16/1/20

32 An economy is initially in equilibrium at point X in the diagram. The government then introduces a supply-side policy measure which causes the economy to move to point Z. Which supply-side policy and reaction could explain this change?



- A** a cut in income tax to increase the incentive to work but which results in workers increasing their leisure time
- B** a cut in unemployment benefit which results in more applications for training courses
- C** a rise in government spending on education which increases labour productivity
- D** privatisation of key industries which results in an increase in economic efficiency

ANSWERS

Section: 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
D	C	A	A	C	A	A	D	B	C	C	A	D	B	D
16	17	18	19											
D	D	B	C											

Section: 2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	D	C	A	A	B	A	B	D	C	B	A	C	B	A
16	17	18	19	20	21	22	23	24	25	26	27	28	29	
B	C	D	B	C	C	B	A	B	B	C	C	C	D	

Section: 3

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	C	C	D	D	B	D	B	B	D	D	B	A	C	C
16	17													
A	C													

Section: 4

1	2	3	4	5	6	7	8	9	10	11	12
C	A	B	D	D	B	C	C	A	A	D	D

Section: 5

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
C	C	D	C	B	B	B	A	C	D	C	B	D	C	D
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
C	C	D	C	B	C	A	C	C	B	D	C	B	C	C
31	32	33	34											
D	C	B	B											

Section: 6

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
B	B	D	A	C	B	B	B	B	C	B	A	A	D	C

Section: 7

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
D	C	D	C	D	C	A	D	B	D	B	C	A	B	A
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
B	D	D	C	B	B	C	C	D	C	B	D	D	B	B

31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
C	C	C	C	B	A	C	D	C	B	A	D	B	C	D

46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
B	C	B	B	B	D	D	D	C	A	A	B	B	B	D

Section: 8

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
C	D	A	D	C	B	C	D	A	C	B	C	C	B	D

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
C	B	B	A	C	C	D	B	A	D	C	C	C	B	D

31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
D	A	B	B	A	A	C	D	B	B	C	D	C	C	B

46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
B	D	B	D	B	C	D	C	B	A	A	D	B	C	C

61	62	63	64	65	66	67	68	69	70	71	72	73
C	A	C	C	C	A	C	D	D	A	B	A	A

Section: 9

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
D	C	C	D	B	D	B	C	D	B	D	B	C	B	D

16	17	18	19
D	D	D	A

Section: 10

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
C	B	B	C	A	D	B	A	C	A	B	B	D	A	C

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
C	D	C	C	C	A	D	A	C	C	B	A	D	D	C

31	32	33
C	C	C

Section: 11

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
C	D	A	B	C	B	A	B	A	D	A	A	C	A	C

16	17	18	19	20	21	22	23	24	25	26	27	28
A	B	A	D	D	C	A	D	A	A	B	A	C

Section: 12

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
B	D	A	B	D	D	B	D	D	C	C	D	A	C	D

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D	D	D	B	D	A	D	D	C	A	A	D	C	B	B

31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
D	C	D	C	D	A	B	B	B	B	A	A	A	B	A

Section: 13

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
D	C	D	D	B	D	D	C	C	A	C	B	A	A	C

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
A	B	B	D	D	B	C	C	D	B	D	A	D	B	D

31	32	33	34	35	36
C	B	A	D	C	D

Section: 14

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
D	A	D	C	C	B	B	D	D	C	D	D	B	B	C

16	17	18	19
D	D	B	C

Section: 15

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
B	D	A	B	C	D	B	C	C	A	B	B	B	D	B

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
C	B	B	C	B	A	A	A	C	C	A	A	B	D	C

Section: 16

1	2	3	4	5	6	7	8	9	10	11
C	A	C	A	B	D	C	D	A	B	C

Section 17

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
B	D	C	B	D	A	B	C	D	A	D	C	C	C	C

16	17	18	19	20	21	22	23	24	25	26	27	28
A	D	B	C	D	A	D	C	D	C	B	A	B

Section: 18

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	D	C	B	D	B	D	C	D	D	A	B	D	A	D

16	17	18	19	20	21	22	23	24
D	B	D	D	B	B	D	B	D

Section: 19

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
C	B	B	C	B	B	B	B	D	C	B	A	D	C	D
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D	D	B	D	C	C	D	C	C	D	A	C	D	A	A
31	32	33	34	35	36	37	38	39	40	41				
B	A	B	D	A	C	C	D	C	A	B				

Section: 20

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	B	A	D	C	D	B	D	A	A	A	A	B	D	D
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
C	A	B	B	C	D	C	C	C	B	A	A	C	B	A
31	32	33												
A	D	A												

Section: 21

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
B	C	C	B	A	A	B	B	C	D	C	D	A	C	C
16	17	18	19	20	21									
B	C	C	C	C	D									

Section: 22

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
B	D	A	D	B	B	C	C	B	C	D	C	D	A	A
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
C	C	B	C	B	B	A	B	D	A	C	A	C	C	D
31	32	33	34	35	36	37								
D	C	C	B	A	B	A								

Section: 23

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	D	B	B	A	B	B	C	B	C	B	B	D	C	B
16	17	18	19											
D	D	C	B											

Section: 24

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
D	B	C	D	C	C	D	B	C	D	C	B	A	C	C
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
C	D	C	C	A	C	A	B	B	B	C	D	C	B	B

31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
C	B	D	C	A	A	A	A	C	B	C	D	B	A	C

46	47
A	D

Section: 25

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
C	B	A	D	D	D	D	B	A	A	D	C	B	B	C

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
B	C	C	B	A	A	D	C	C	D	A	C	D	C	A

31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
D	D	D	B	B	A	D	A	B	C	B	B	A	B	A

46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
C	A	B	A	B	B	B	B	D	C	A	B	D	D	D

61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
D	B	D	A	B	C	C	B	C	A	A	D	C	D	C

76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
D	B	C	C	C	A	C	B	A	B	D	A	C	A	C

91	92	93	94	95	96	97	98	99	100	101
A	C	C	D	D	D	B	D	D	B	A

Section 26

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	D	C	B	A	D	D	C	C	B	B	C	B	A	D

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D	C	D	A	C	A	B	B	D	B	C	B	C	B	A

31	32
B	A