

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

September 2021

CB2 – Business Economics Core Principles

Introduction

The Examiners' Report is written by the Chief Examiner with the aim of helping candidates, both those who are sitting the examination for the first time and using past papers as a revision aid and also those who have previously failed the subject.

The Examiners are charged by Council with examining the published syllabus. The Examiners have access to the Core Reading, which is designed to interpret the syllabus, and will generally base questions around it but are not required to examine the content of Core Reading specifically or exclusively.

For numerical questions the Examiners' preferred approach to the solution is reproduced in this report; other valid approaches are given appropriate credit. For essay-style questions, particularly the open-ended questions in the later subjects, the report may contain more points than the Examiners will expect from a solution that scores full marks.

The report is written based on the legislative and regulatory context pertaining to the date that the examination was set. Candidates should take into account the possibility that circumstances may have changed if using these reports for revision.

Sarah Hutchinson
Chair of the Board of Examiners
December 2021

A. General comments on the aims of this subject and how it is marked

The aim of the Business Economics subject is to introduce candidates to the core economic principles and their relevance to the business environment.

The subject provides a grounding in the fundamental concepts of micro- and macro-economics as they affect the operation of insurance and other financial systems, both for individuals and their requirements for financial security, and for financial institutions and their ability to provide products that meet individual and institutional clients' needs.

The examination paper is designed to assess candidates' knowledge and understanding as well as application of economic concepts and exploration of the linkages within the wider economy, and the marking scheme duly reflects this aim.

B. Comments on candidate performance in the examination.

A good proportion of candidates performed well in this examination. Performance in multiple choice questions was similar to previous diets.

Good responses were also provided to questions requiring calculations.

Responses to short answer questions aimed at testing candidates' understanding of economic concepts within a chosen context were mixed; some answers were confined to a discussion of theory without adequate reference to the context, resulting in lost marks.

Longer answer questions, where a deeper analysis was required, proved more challenging.

C. Pass Mark

The Pass Mark for this exam was 60
833 presented themselves and 585 passed.

Solutions for Subject CB2 – September 2021

Q1	C	[1½]
Q2	D	[1½]
Q3	A	[1½]
Q4	A	[1½]
Q5	D	[1½]
Q6	C	[1½]
Q7	B	[1½]
Q8	D	[1½]
Q9	D	[1½]
Q10	C	[1½]
Q11	B	[1½]
Q12	D	[1½]
Q13	B	[1½]

Q14	A	[1½]
Q15	A	[1½]
Q16	C	[1½]
Q17	D	[1½]
Q18	C	[1½]
Q19	C	[1½]
Q20	B	[1½]
Q21	A	[1½]
Q22	D	[1½]
Q23	C	[1½]
Q24	A	[1½]
Q25	D	[1½]
Q26	C	[1½]

Overall, performance in answering multiple choice questions was good. Candidates generally found Questions 1, 4, 7 and 19 more challenging than other questions. These questions required a deeper understanding of the concepts to be able to discriminate between various options and to make the correct choice.

Q27

The economic concepts of scarcity and choice can be applied when finding a new home in the following ways:

Scarcity in funds is likely, as someone may not have the funds available for an initial deposit (where that is applicable) or the repayments. If funds are available, those funds cannot be used for something else and this would also represent scarcity for the individual. This can be applicable in both the rental and purchase market. The funds needed to secure the property may be scarce and those funds may be used for other purchases. Therefore, there is a choice and an opportunity cost. The individual may need to forgo some activities in order to save for a deposit on a home or to be able to afford the repayments. An individual may need to choose between going on holiday/ buying a car or other large purchases to secure a deposit. In the case of repayments, it might be smaller scale choices, such as reducing expenditure on entertainment, hobbies. Scarcity may mean that there are not suitable homes available and this can arise in both the rental and purchase market in the short run. Supply of homes may be fixed in the short run whereas the population may be increasing. There may be scarcity of resources.

[3]

The homes may not be in a location that someone wants or perhaps are not in the style or number of rooms that are desired. This leads to people making choices which are acceptable to the individual. This may be a smaller home or a home further out of the locality of choice. Finally, when an individual is making a choice about whether to rent or buy, the responsibilities commonly associated with rental and home ownership differ. In a rental property it may not be possible to decorate, have a pet and so on. However, unlike owning a home, when an individual rents a property they are not likely to be liable for common repairs.

[2]

This question was generally answered well, Most candidates were able to demonstrate an understanding of the concepts of scarcity and choice although some did not explore various aspects of scarcity such as funding the purchase of a house or renting a property.

Q28

One of the principle assumptions of traditional economics is rational choice. According to the traditional consumer theory, a rational individual aims to maximise utility when they make their choice between goods. However, behavioural economics attempts to explain irrational behaviour. It recognises individual's biases and impulses when making a choice. [1]

It shows, for example, that in reality, the context of a decision is important. People react differently when the same choice is presented differently. For example, if an individual is faced with something that is on "special offer" they interpret the purchase as being a "good buy". This is due to how the situation has been framed. They are led or nudged to believe that they are getting a bargain or a good deal and that is sufficient to encourage purchase despite the price being the same. The idea is expanded into the 'nudge' theory that is used in marketing. [2]

Another principle exposed by behavioural economics is the principle of bounded rationality. A consumer may not be able to maximise utility due to facing complex choices and imperfect information. Acquiring information may be time consuming and costly. So consumers' rationality is 'bounded' by their circumstance. In making their choices, therefore, they would resort to past experience, best guess or similar choices that turned out to be good in the past. In the case of purchasing a product of the same brand as another that the consumer owns, it is the previous successful choice of a washing machine that leads the individual to select the same brand dishwasher despite the fact that other products on the market might be better. [2]

Candidates were expected to explain consumer behaviour in the given context in terms of economic theory. Most candidates mentioned how behavioural economics focuses on irrational behaviour and were able to explore consumers' response in the given context. To obtain full marks for this question candidates needed to explain consumer behaviour within a theoretical framework which only a few candidates were able to do.

Q29

Supply side shocks may lead to speculative behaviour in food markets such as wheat, rice or other non-perishables. In the case of a shock such as a pandemic, civil war or political unrest, the risk of suppliers being able to continue production and get products such as wheat/rice/non-perishables to market may lead to speculative behaviour by consumers. If there are predictions in the media that there could be shortages in supply, consumers may respond by purchasing higher than normal volumes of such products, this effectively builds a buffer stock for consumers against the risk of not being able to secure supplies. Reassurances that there are sufficient supplies may do little to curb excessive purchasing behaviour. [2]

Speculative behaviour when there is a fear over the stability of supply, may lead to suppliers facing unprecedented levels of demand. Stocks could potentially decline very quickly as a result of excessive demand and any hoarding behaviour of consumers. Stock levels would not have been planned to meet unanticipated levels of demand, as a result prices will rise and firms may seek to increase supply in response to such demand pressures but may not be able to meet them. Food is relatively price inelastic and thus will still be consumed even if price rises are fairly significant. [2]

Society as a whole may experience queuing and rationing in order to curb demand. We may also observe the presence of secondary markets in some cases, with the product being sold at significantly higher prices. In some cases we may observe government intervention, with the imposition of price floors or restrictions on the number of purchases that a consumer can make. [2]

The answer to this question needed to be related to a particular type of food or group of foods and needed to explore the demand side, the supply side and the impact on the society. Most candidates explored the demand and supply side but very few responses covered the impact on the society and so many candidates did not score the full marks for this question.

Q30

A hairdressing salon is more closely associated with a monopolistic market structure as there tends to be many different salons, rather than a few which would characterise an oligopolistic structure. As there are many, a monopoly would not particularly apply to this type of firm. Potentially, a hairdressing salon could operate as an oligopoly because there could be large chains which are franchised. On balance, the vast majority of firms in this sector tend to be smaller and therefore would be more closely associated with monopolistic competition on the basis of the number of firms. Hairdressing salons would tend to have relatively low barriers to entry, whereas oligopolies tend to have high barriers to entry and would be represented more closely by the cosmetics industry, for example where there are some larger firms that control a large share of the overall market. Hairdressing salons would tend to offer a differentiated product and therefore are not associated with perfect competition, nor is the product unique, so again monopoly does not apply. [2½]

A firm in the cosmetics industry would be more closely associated with an oligopolistic structure. Barriers to entry into the industry are likely to be relatively high given significant advertising costs of establishing a brand. In terms of price, a firm will have to think carefully about the price of its rivals who would be relatively few in comparison. Firms in the cosmetics industry may engage in product proliferation which is associated with this market structure. [2½]

Most candidates identified the type of market structure for the industries correctly but to gain full marks the characteristics of these structures needed to be explored within the context of these industries rather than theoretically.

Q31

(i)
Example: 16 Units of Good X and 7 Units of Good Y. (Budget must sum to £150) [1]

(ii)
Example: 12 Units of Good X and 8 units of Good Y. (Budget must sum to £100) [1]

(iii)
A 50% fall in the price of Y would mean an increase in consumption of Y to 7 units at the price of £5. As £35 would be spent on consumption of Y, the consumer would be able to consume $100-35 = 65/5=13$ units of Good X. More of Good Y has been substituted for Good X [1]

(iv)
The budget line will shift in a parallel manner inwards to the left and its slope will remain the same, that is, -0.5.
Slope is P_x/P_y . If the initial price for Y is taken to be 10, the slope would be -0.5 before and after the change but the budget line will shift left. If the initial price for Y is taken to be £7 then the slope would be $(5/7= -0.7)$ before the change and -0.5 after and the budget line would shift left. [1]

The substitution effect will lead to a rise in consumption of Good X and the income effect will also lead to a further increase in the consumption of Good X. [1]

[Total 5]

This question was generally answered well. In parts (i) and (ii) all combinations of the two goods that were possible with given budgets were accepted. In part (iv) answers based on both starting prices of £7 and £10 were accepted.

Q32

GDP at market prices = $C + G + I + X - M + (\text{taxes} - \text{subsidies})$
Gross Domestic Product at market prices = $80 + 50 + 30 + 25 - 40 + (20 - 15)$
= £150 million [1]

GDP at basic prices = $C + G + I + X - M$
Gross Domestic Product at basic prices = $80 + 50 + 30 + 25 - 40$
= £145 million [1]

GNY at basic prices = GDP at market prices + net income from abroad
= $C + G + I + X - M + \text{net property income from abroad}$
Gross National Income at basic prices = $80 + 50 + 30 + 25 - 40 + 20$
= £165 million [1]

NNY at basic prices = GNY at basic prices – depreciation
= $C + G + I + X - M - \text{depreciation}$

Net National Income at basic prices = $80 + 50 + 30 + 25 - 40 + 20 - 5$
= £160 million [1]

NNY at market prices = GNY at market prices – depreciation
= C + G + I + X – M + net property income from abroad-
depreciation - (taxes – subsidies)
Net National Income at market prices = 80 + 50 + 30 + 25 – 40 +20 – 5 + (20 – 15)
= £165 million [1]

Most candidates were able to demonstrate an understanding of the various methods of measuring economic activity. Where the answer to a part was based on previous calculations, credit was given provided that the approach was correct.

Q33

Government deficit arises when the government budget is not balanced. Effectively, what the government has spent exceeds their income (from tax receipts). In such cases the government will borrow to fund expenditure. [2]

This amount is then added to the overall national debt, the amount that the government owes, which is accumulated whenever spending exceeds income. [2]

Most candidates were able to define the two concepts well.

Q34

Savings would not benefit an economy where there is high unemployment, if the government wished to have economic growth (i.e. to get the economy out of a recession) as spending would be desirable in this scenario. [1]

Savings are a withdrawal from the circular flow of income model as household income leaves the flow of income between firms and households. Financial institutions redirect these funds back into the system via investment. [1]

However, with increased saving, consumption will be lower. Demand for goods and services will therefore fall and firms are likely to react by reducing their production so that stocks do not build up and reduce investment given a potential lack of confidence about future spending. It is possible, if the level of savings is sufficiently high that demand falls significantly resulting in a rise in unemployment. Increased levels of savings need to be redirected back into investment activity to increase long term economic prospects. [2]

The initial increase in savings (and fall in consumption) will have a multiplier effect and make the initial fall in national income even larger. [1]

Where there are inflationary pressures and high unemployment, savings would tend to increase unemployment by reducing consumption. [1]

Most candidate explained how increased savings would dampen economic activity and cause unemployment. However very few answers explored the impact fully.

Q35

(i)

One of the advantages of the division of labour is that it enables people to specialise in an activity and in principle should mean they become more efficient at the task, increase the amount produced and effectively increase productivity. Some workers may specialise in the hydraulics systems of the aircraft, some workers may specialise in the programming of the electronic equipment and some the interior of the cabin. Each worker would work on the same area of the aircraft on a regular basis. As a consequence of this, we would anticipate a fall in average costs which may raise profitability for the firm. Without specialisation workers would have to be trained to carry out many different tasks which could increase training costs. [2]

However, whilst there may be an advantage to specialisation, this is commonly associated with people carrying out very specific and relatively confined tasks. Some workers, for example, could be working on ensuring correct opening and closing of the doors or perhaps the system which controls the lights.

Long term this may limit the skill capacity of an individual and put them at risk of technological unemployment if the activity were to change. The ability of the individual to change into another role may be significantly constrained. Someone working on cabin interiors would not be necessarily qualified to work on a hydraulics system on an aircraft.

The concern of repetition also links to the risk that an individual may become alienated and/or demotivated in their role. Undertaking the same activity time and time again will tend to raise levels of boredom due to its repetitive nature. If these behaviours begin to arise, management may find that errors start to arise and rather than increase productivity, the decline in quality could reduce productivity and raise costs. [2]

Overall the advantages of specialisation outweigh the disadvantages since whereas efficiency and cost reduction are important factors, strategies could be used to reduce the effect of the disadvantages. [1]

Other factors such as different firms producing parts, reliance on other firms, local or overseas specialisation, logistical as well as exchange rate risks could be considered.

(ii)

Countries have different endowments of resources (land, labour, capital) and therefore may have comparative advantage in some activities due to having an abundance of a resource and being able to produce more efficiently than others. This would lead to the country being able to produce some components of an aircraft at a lower opportunity cost than others. [3]

For example, fabric used for the interior cabin may be produced in a country such as Bangladesh or Turkey where textiles are produced more readily, due to the abundance of labour. The electronic components needed to control the lighting in the aircraft may be produced in China with a high end electronics manufacturing sector. Engines, may be produced in the USA or Europe where there are high levels of engineering skill amongst the labour force. [2]

[Total 10]

The answers to this question were varied. In part (i) the answer needed to be related to the aircraft industry and focus on specialisation of labour to gain the full marks. Part (ii) was generally answered well. A good answer would include a discussion of opportunity cost and some examples.

Q36

Following a shock such as a pandemic, we are likely to observe both demand and supply changes.

The main shock to the supply side of the economy is that a number of areas of activity may be closed by governments. This limits the availability of inputs into other areas of the economy and as a result a shortage of consumer goods and whilst some sectors may not be directly affected by closure, shut downs in other areas could severely limit productive capacity elsewhere and have knock on effects across a number of supply chains.

There may also be challenges with workers attending work in the case of a pandemic due to self-isolation rules that may be in place or needing to withdraw from work if childcare facilities are closed.

Firms may therefore find that they need to cease production and reduce stocks in the interim until the supply chain recovers, which may take some time. If goods are sourced from overseas, the disruption could be highly variable given that governments may take different approaches globally in terms of the measures introduced to combat a pandemic situation.

On the demand side, there is likely to be a fall in consumer and business confidence, due to the uncertainty about the economic future of the economy. From the consumer side this could be related to concerns about future employment prospects and for firms this might be due to concerns about the future viability of investments and the ability of firms to meet repayment. A fall in confidence will tend to lead to a fall in GDP given the decline in aggregate demand.

In the case of pandemic, we may also expect government spending on healthcare to increase. This can be due to the need to expand healthcare facilities as well as the number of healthcare workers. This may require investment in training and development for the healthcare workforce and securing additional premises either by rental or building new facilities. The government may also provide supply side financial support to research facilities who operate to combat a pandemic, this could be in the area of medication, protective equipment and testing/cure activities.

We may also observe that tax revenue will fall due to a fall in consumer and investor spending. Overall, the government budget deficit will likely rise and this could have long term effects as it would increase the overall government debt. In addition, transfer payments are also likely to rise, given the expectation of a recession and rising levels of unemployment. If a government uses furlough schemes, this would also represent additional fiscal expenditure in an attempt to prevent rising unemployment by supporting firms to keep people employed.

Whilst a recession is generally not associated with demand-pull inflationary pressure, we may observe pockets of price rises due to changes in purchasing behaviours. Concerns about supply, can lead to hoarding behaviour and drive up prices in some key markets (such as food), whereas there has been a fall in the demand for fuel due to lockdown restrictions across the globe.

On the supply side of the economy, we are likely to observe rising costs. Businesses will likely have increased costs due to necessary changes in their operations. This includes adjustment in business premises to accommodate social distancing measures and PPE equipment. These costs could be temporary but may be more likely to occur at repeated points over time where provisions need to be restocked and therefore cause an ongoing shift in the aggregate supply curve.

High levels of unemployment associated with recession may limit the pressure for wage rises as there is spare capacity within the economy. However, if workers anticipate inflation, together with trade unions, they may seek to sustain real wages and create upward cost pressure on firms and further increase inflationary pressure. Limitations in supply due to the disruption caused by the pandemic could also cause temporary/short term inflationary pressure in some markets, either due to reductions in productive capacity in some markets or due to logistical challenges of getting goods to different locations. Reductions in supply would also put increasing pressures on prices and lead to potential price rises in certain markets.

Interest rates may be lowered in the short run where possible to act as a monetary stimulus as part of the economic recovery and encourage consumer and investor spending. Low interest rates would also discourage international investment if returns were relatively low. If governments engage in Quantitative Easing to stimulate the economy, inflation may result in the longer term. If inflationary pressure does build up within an economy, longer term, we may observe an increase in interest rates as part of a package to curb inflationary pressure.

In the long run, there could be disruption to education if people are unable to participate in schooling/training. This could result in a less skilled workforce in the long run, leading to a less productive future workforce and reduced productive capacity, due to a loss of human capital accumulation (de-skilling of the labour force). This may be compounded by a reduction in R&D (postponed investment effects) with resources being switched to essential services in the short run, leading to reduced technological progress in the longer term.

There is the possibility that the loss of firms in the short run could lead to loss of aggregate supply/loss of output in the long run if productive capacity is not restored by remaining firms or subsequent new entrants. Changes in habits may also prevail which change the demand long term for public services such as transport (with increased flexible working) and some firms (for example, coffee shops/sandwich shops) may experience permanent decreased demand. Likewise, there may be growth in other areas of the economy such as online shopping. Overall, there is a potential for significant structural change and potentially hysteresis.

[Total 10]

The answer to this question required an explanation of the various aspects of a supply shock in both the short and long run although the discussion in the short run was

anticipated to be more extensive and could gain up to 7 marks. The answer to short run impact needed to explore the supply and supply chain, the demand side, the impact on unemployment, the government, inflation and interest rates. The discussion of long-term impacts needed to include growth, education and de-skilling, R&D and structural change. Most answers demonstrated an understanding of the impact of an epidemic on supply, demand and unemployment. A well applied discussion associated with another type of supply shock was also awarded full marks.

[Paper Total 100]

END OF EXAMINERS' REPORT