

NEW ZEALAND SCHOLARSHIP 2004

ECONOMICS

QUESTION ONE: THE ELECTRICITY MARKET

Sample of assessed candidate work – Outstanding Performance – Performance Descriptor 1

(a) (i) Explain the likely elasticity of supply and demand for electricity.

The demand for electricity is likely to be inelastic. There are many factors which influence the elasticity of demand for a product, and what follows explains the factors in relation to electricity.

Electricity is a necessity. Business require electricity to produce, households require electricity to provide warmth, the ability to cook food, and the ability to store food in a refrigerator. Firms cannot go without electricity, as their production would have to cease, so their revenue flow would stop. Households cannot maintain a reasonable standard of living without electricity. As electricity is a necessity, and necessities tend to have inelastic demand, electricity should have inelastic demand. Necessities have inelastic demand as they are required to maintain satisfactory standards of living, as explained above in relation to households and firms, so cannot easily be expended with in the event of a price rise. Necessities also have very few substitutes, which also causes inelastic demand.

Electricity has no substitutes (except perhaps diesel generators which can only be afforded by large firms). For this reason when there is a price change, consumers cannot simply switch to the substitute. There is a very small substitution (or none) when prices change, so the relative change in quantity demanded will be small, ie inelastic demand.

One factor which would appear to work against electricity have having inelastic demand is that electricity bills often take up a large proportion of consumer income.

Goods that take up a large proportion of consumer income will tend to be elastic in demand, as any price change will have a large effect on the consumers ability to purchase other goods, e.g. If a good that takes up 50% of your income in spending has a price rise of 20%, and you continue purchasing the same amount of that good, 60% of your income will now be spent on that product. However if a good only takes up 5%, the same change will result in 6% of your income now being spent on the product. The income effect of changes in price is higher, so the good will tend to be elastic. In the whole however, demand for electricity will be inelastic.

The short term supply of electricity will be inelastic. In the short term, factors of production cannot be altered to increase or decrease supply, as the dams in New Zealand (hydro stations) will have a limited capacity and the quantity supplied cannot easily be increased to respond to higher prices. There may be limitations as to how quickly the dams gates can be switched on and off, so in the short run, the quantity supplied will not be

Continued over.

very responsive to changes in price, ie inelastic supply. In the medium-term, the electricity producers would be able to change variable factors of production to regions to price changes, such as running generators for less hours each day in response to lower prices, or by purchasing more coal to burn in response to higher prices. The medium term supply will be more elastic. In the long run the supply will be even more elastic, as firms can respond to high prices by building new power stations, or low prices by shutting down power stations.

Spot prices are subject to short term changes, so both supply and demand will be inelastic.

- (ii) Use supply and demand analysis to illustrate the rapid increase in the price of electricity in the wholesale market. Briefly explain your answer.

When supply and demand are both inelastic, any excess demand or excess supply will require a large change in price to achieve the required change in quantity to reach equilibrium.

eg The market for electricity in NZ

[Candidate's graph omitted]

When bad weather disrupted transmission lines, supply was reduced from S to S_1 , as at each price, less is able to be produced. When people returned from holiday, demand rose from D to D_1 .

As the curves are both inelastic, the resulting excess demand at the old market price of \$50 required a large increase in price for the market to clear, up to \$1000 per megawatt hour.

- (b) Draw the curves illustrating a profit-maximising level of output where it is better to temporarily shut down rather than continue producing. Explain your answer.

[Candidate's graph omitted]

Winstone Pulp

For a firm aiming to maximise profits, they should produce the quantity where $MR=MC$. Above this output, marginal cost (MC) exceeds marginal revenue (MR), so the additional output incurs marginal losses and reduces total profit. Below this output, $MR>MC$, so further output would give marginal profits, adding to total profit.

Profit max therefore occurs at $MR=MC$. However, if the average revenue received at this output (price) is less than the average variable costs of production, the firm is not receiving enough revenue to cover variable costs. They would be better off shutting down production, as there production is incurring losses, so is not providing any revenue which could go towards paying for fixed costs. The loss minimising output is zero, so they should temporarily shut down. It costs change in the future, it may be better off to start producing again.

- (c) Evaluate the merits of a price control system in the wholesale electricity market. Illustrate with appropriate diagrams.

A price control system in the wholesale electricity market could involve setting a price cap. At times the market equilibrium would be below this and there would be no effect. In situations where market equilibrium temporarily exceeds the price cap, the following diagram can illustrate the market situation.

The market for electricity in New Zealand

[Candidate's graph omitted]

At the maximum price, (???) there will be an excess demand. As supply and demand for electricity are both inelastic, this excess demand will never be very large, as the curves do not quickly diverge from each other. A price control system would be likely to cause some blackouts, as the supply does not meet the demand. This could be a preferable system to the spot market price system, as only a few firms at any time of excess demand will experience a blackout (as the excess demand will never be very large). The number of firms affected by the blackout may not be much more than would stop production if the price rose higher under the spot system. However, all firms who do not suffer from the blackouts will benefit greatly from the much lower production costs, increasing profitability (lower price).

The theoretical deadweight loss of the maximum price is shaded in black. Producer surplus is reduced by area abcd. Consumer surplus is increased by area afcd – area etb. Consumers of electricity are much better off after the price maximum is imposed/improved??

The high spot prices could also discourage investment by firms due to the volatile and unstable market. Faced with highly variable costs, the firm looking to invest will be uncertain as to the effect on profitability that their investment will have, so they will be less likely to invest. A maximum price would remove some of the uncertainty, encouraging investment. Investment is likely to be better for the economy in the long term as firms will become more efficient and it may end up reducing demand for electricity if electrical efficiency is improved.

On the other hand, increased investment may lead to increased demand for electricity, making blackouts a greater problem at the price cap. It would be difficult to choose a suitable cap which prevented too many blackouts while still allowing firms a degree of predictability in prices.

On the whole a price cap seems to be a logical solution, with the inelastic market allowing unnecessary and counterproductive changes in price.

This analysis could be improved with more information on the size of New Zealand's generating capacity, and the size of New Zealand demand for electricity at peak times. This would allow a greater confidence for assessing the likelihood of blackouts and the extent with which they would affect New Zealand. An alternative policy could be the government building new generating facilities to increase the supply.

General Comments

This essay includes all the elements required for outstanding scholarship. It:

- **Is a sophisticated economic analysis.** The candidate has identified the key economic ideas and used them to make generalisations, draw conclusions and synthesise.
- **Effectively communicates.** Economic models drawn show an excellent understanding of the economics, eg in the market for electricity, the S/D curves are both inelastic and clearly illustrate the dramatic price increase.
- **Is complete.** Very full discussion of all factors affecting elasticity of supply and demand for electricity, profit maximisation and short-run shut-down.
- **Has depth in critical thought.** Appropriate theory was introduced in support of arguments for and against price controls in this market.

QUESTION ONE: THE ELECTRICITY MARKET continued

Sample of assessed candidate work – Performance Descriptor 2

(a) (i) Explain the likely elasticity of supply and demand for electricity.

Both supply and demand for electricity are price inelastic; whilst this is most true in the short term when there are fixed factors of production and this extends to the long-term given societies dependence on electrical appliances.

Electricity producers face an inelastic supply curve for several reasons. Firstly, due to the nature of power plants, companies make very large capital investments, however variable costs are comparatively small, until capacity is reached. Consequently to reach breakeven point in the long run it is necessary for producers to maximize profits by producing near to capacity where $MC = MR$ (to maximise profits). This may mean the the industry, acting in an oligopoly, or like fashion may purposefully undersupply the market. However given the well documented electricity shortage in New Zealand, prices have increased, suggesting that electricity producers are now able to utilise less efficient means of production to meet demand. This in turn suggest that production is at capacity reinforcing the idea that supply of electricity is inelastic.

For consumers consumption of electricity is also very inelastic. Electricity acts as a complement to the many aspects of society – light bulbs, televisions, stoves, cellphones, washing machines, etc. Given that many of these conveniences are regarded as necessities in daily life demand for electricity becomes inelastic. Due to the mainly positive externalities associated with electricity consumption – such as the ability to use more efficient technologies therefore enhancing the productivity of the labour force) demand is also inelastic because the externalities are exponentially higher than the price of electricity.

(ii) Use supply and demand analysis to illustrate the rapid increase in the price of electricity in the wholesale market. Briefly explain your answer.

The wholesale price of electricity increased so rapidly because supply rapidly dropped in an under supplied market with inelastic demand for electricity.

[Candidate's graph omitted]

The price increase so exponentially because electricity is a complement to so many goods regarded as necessities in a daily life. Equally because the value positive externalities associated with electricity consumption is far greater than the price of electricity – meaning that collectively the market is prepared to push the price up. (See end of Q.1.A. i for more.)

- (b) Draw the curves illustrating a profit-maximising level of output where it is better to temporarily shut down rather than continue producing. Explain your answer.

Monopoly Cost and Revenue Structure for Winstone Pulp

[Candidate's graph omitted]

Because at this optimal level of output (where $MC = MR$) the firm is still not even covering variable costs it is operating below the shut down point. Consequently it is minimising losses by not producing anything. This is because then the firm will only incur losses equal to fixed costs, as opposed to losses from fixed costs and the losses from variable costs minus revenue.

- (d) Evaluate the merits of a price control system in the wholesale electricity market. Illustrate with appropriate diagrams.

The implementation of a price control system on the electricity market is the same as establishing a maximum price. This is designed to support consumers, but will also lead to a disruption of the invisible hand, thus affecting the markets ability to correct the flaw caused by a shortage in supply.

A maximum price seems attractive for several reasons, however only if it is accompanied by a subsidy. Because electricity consumption has positive ??? the state has an interest in sustaining equilibrium. Yet given that a price cap would mean that at times the price could not reach a level necessary for equilibrium to be reached, there will at times be a shortage of supply. To avoid this government would have to subsidise electricity production to ensure demand will be met, even when the price paid by consumers is below equilibrium.

The effect of a maximum price and subsidy on electricity supply

[Candidate's graph omitted]

For consumers this is attractive, because they are more able to plan their expenditure. This is especially important for commercial operators. Consequently there is a certain reliability in the market which encourages investment.

Equally this option is attractive to government because of the positive externalities to society, and the increased investment. This leads to a move outwards of the PPC as the economies capacity to produce increases. Moreover, increased economic activity leads to a higher government for cut-off setting the cost of the subsidy.

However, any subsidy would also lead to a dead weight loss (DWL) – this signals a loss of efficiency in the economy. This means that resources are not being allocatively efficiently allocates. Moreover, by shielding business from the direct costs of their consumption the government is encouraging in effect producers and hindering the markets ability to self correct and streamline itself.

Continued over

Introducing a maximum price is attractive so far that it ensures reliability within the markets – this is important given electricity's pivotal role within the greater economy. However to ensure supply when D??? a subsidy is required – this is inefficient due to DWL. Therefore in the long term it is now desirable for the government to not intervene. However when until the market is slightly closer to equilibrium a compromise makes sense. Namely a maximum price, well above normal equilibrium. (say it \$100 per megawatt hour) to protect against extreme price surges only. The accuracy of the analysis is however hindered by its very nature. Given this is only a model it is apparent all factors have not been considered.

General Comments

This essay has the elements of scholarship only. It:

- **Is a sophisticated economic analysis.** The candidate shows a good understanding of the economics required and the ability to apply it to the electricity market.
- **Effectively communicates.** Despite a lack of a suitable graph of the electricity market, the candidate communicates an understanding of factors affecting demand and supply elasticity, profit maximisation and short-run shut-down.
- **Is NOT complete.** The issue of price controls is evaluated but a lack of precision with the graph work associated with the market for electricity meant the reasons for the dramatic price increases were not shown, nor were the deadweight losses that would result from minimum prices effectively communicated.
- **Doesn't have (sufficient) depth in critical thought.** The candidate has not fully evaluated the merits of a price control system.

QUESTION TWO: ALLOCATIVE EFFICIENCY AND PROPERTY RIGHTS

Sample of assessed candidate work – Outstanding Performance – Performance Descriptor 1

- (a) Using an appropriate economic model, illustrate and explain the difference between productive and allocative efficiency.

While productive efficiency means fully employing all the resources available with the given technology, allocative efficiency the only way to allocate resources to best satisfy consumer's demand and maximize consumer surplus and producers surplus.

[Candidate's graph omitted]

The PPC frontier represents the total quota on the fishes that are allowed to catch. Every point on the PPC represents the total quota has been reached and hence production efficiency is reached because fishing resources have been fully utilized. 70% commercial fishing and 30% recreational fishing is productive efficient but may not be allocative efficiency if it is proved to be true that the 70% commercial fishing is too high that damage fishing resources and have negative externalities of consumption. The point on the PPC curve above where more quota is allocated to recreational fishing at the opportunity cost of commercial fishing can represent allocative efficiency where the society's desire and demand has been satisfied. It is the only point on the PPC where it is impossible to make someone better off without making some else worse off.

- (b) Explain why a high NZ\$ may lead to a reallocation of resources away from the fishing industry.

New Zealand dollar is currently at a very high level compared to our major trading partners. This may cause serious damage to our export sectors as New Zealand is a small economy specialized in production of primary sectors due to comparative advantage, its fishing industry also earns a large amount of revenue through export fishes overseas. But a strong NZ dollar means our fish exports are less price competitive in overseas market or fishery exporters will receive less NZ dollars from exporting exporting fishes. Comparing with other industries where export is not a main way to earn profit fish industry less profitable. For some fishing companies that earns a subnormal profit, they will leave the industry. This leads to reallocation of resources away from fishing industry.

[Candidate's graph omitted]

- (c) Using the ideas of property rights and externalities, evaluate the unregulated and regulated (QMS) approaches to the kahawai fishery.

In unregulated fish industry, fish resources have depleted and limited the possibility for unsustainable growth in the fish industry. Therefore, Kahowai fishery has a negative externalities of production been created.

[Candidate's graph omitted]

The marginal social cost is higher than the private market marginal cost. In the unregulated free market, too many fishes are caught and sold at too low a price, because the cost to the society is not been considered but the private fishery companies. Therefore, there is a market failure occurs and needs government to intervene to correct the market failure by internalizing the externalities, property rights are generally adopted by NZ for fishing industries because it has many advantages over other options such as taxation and fines.

As the quota is sold to fishing companies by government, these companies these companies now have the right to catch up to the number of fishes limited by the quota. These fishing companies can sell the quota to other parties if not used up. This promotes efficient use of resources because fishing companies may try their best to reach the quota that is, catch as many fishes as they within the limit of the quota because this is their main way to help them to earn more revenue. Therefore, waste of resources is likely to be minimized.

[Candidate's graph omitted]

If the quota is set as the socially desirable quantity, then it is more allocative efficient than in free market. However, just because the negative externalities of production resulted from fishing industry cannot be measured reliably in monetary terms, so it is difficult to decide how much the quota should be. The government should ensure sustainable growth by implementing property rights while ensure the fishing industry is not heavily damaged. Because if a region is mainly rely on fishing industry, its shutdown may cause unemployment, regional stagnation and other social problems.

In this analysis, these problems are not discussed and the cost of implementing the regulations (QMS) is not taken into account. But what should be noticed is that sometimes monitoring the fishing industry could result in a higher cost than the cost of externalities. Therefore, a more careful investigation should be carried out in evaluating the effect of the regulated approaches adopted by the government.

General Comments

This essay includes all the elements required for outstanding scholarship performance. It:

- **Is a sophisticated economic analysis.** The candidate has identified and demonstrated a clear understanding of the relationships and linkages between key ideas in the context of the fishery resource.
- **Effectively communicates.** Clear definitions are provided and economic models included clearly illustrate the economic points being made in the answers.
- **Is complete.** Discussion in parts a, b and c shows a sound understanding of Section B of the economics syllabus.
- **Has depth in critical thought.** The case for and against QMS recognises the effects on efficiency and sustainability. The discussion is supported with an appropriate economic model and is concluded with a justified recommendation.

QUESTION TWO continued

Sample of assessed candidate work – Performance Descriptor 2

- (a) Using an appropriate economic model, illustrate and explain the difference between productive and allocative efficiency.

[Candidate's graph omitted]

Productive efficiency is fully utilizing all resources in the best way possible, it is achieved at any point on the PPC. However, allocative efficiency is producing the combination of goods and services that consumers actually demand and it can be only achieved by producing at a single point on the PPC. Points A, B and C are all productive efficient as they all lie on the limit on the PPC, however, only 1 of them, lets say A is allocative efficient. By producing at A, the country produces the right quantity of good X and Y which consumes actually demand.

- (b) Explain why a high NZ\$ may lead to a reallocation of resources away from the fishing industry.

The fishing industry in New Zealand makes most of its profit overseas by exporting their catch and therefore can be mostly considered as exporters. When the NZ\$ is high – that means our currency is worth more compared to others – our exports become less competitive overseas as they will cost more compared to when NZ\$ was lower. This would cause a decrease in overseas demand for New Zealand fish products and therefore less profit for our fish exporters. As the fishing industry sees they are earning less profits, they could reallocate resources to other industries that have more opportunities to earn higher profits shown by:

[Candidate's graph omitted]

This PPC shows producers deciding to shift production from mainly fish products to other products, causing an allocation of resources away from fishing industry.

- (c) Using the ideas of property rights and externalities, evaluate the unregulated and regulated (QMS) approaches to the kahawai fishery.

Kahawai fishing is an activity with a negative externality of production as it causes depletion of resources and reduces in marine life, the more fish that are caught, the larger the damage to society. In an unregulated market, Kahawai is underpriced and over produced causing large total cost to society.

[Graph omitted]

The graph shows the unregulated Kahawai industry with price 'P' and quantity 'Q', then the regulated one with an increase in price and decrease in quantity to internalize the negative externalities. Property rights is the ability to claim ownership and therefore be able to trade something. In this case the QMS is a system that places ownership on the number of Kahawai that can be caught by an individual or firm, which is the amount of the quota. This is a way of internalizing the externalities as it sets a limit on the number of fish that can be caught and the more fish a firm wants to catch, the more money they will have to pay to purchase the quota from someone else. Therefore costs of production will increase, increasing the price and decreasing quantity to a more socially desirable position.

The QMS is an effective way to internalize the negative expenditures of Kahawai fishing as it sets the limit of number of fish that can be caught, lowering the total cost to society of the activity. However, this system could be expensive to enforce as there will have to be officials to ensure limits are not breached. Another way of internalizing the externalities is to impose a tax based on number of fish caught. The tax collected will fund any enforcement costs and can also be used on conservation such as creating marine reserves. The down side to a tax is that the total number of fish caught is not limited by law and a firm can catch more fish than the maximum sustainable number by paying more taxes. Overall, the QMS is the best option as it guarantees sustainability of the industry and minimizes the total cost on society but some funding is required to operate the system.

General Comments

This essay has the elements of Performance Descriptor 2. It:

- **Is a sophisticated economic analysis.** The candidate has identified and demonstrated an understanding of some relationships and linkages between key ideas in the context of the fishery resource.
- **Effectively communicates.** The candidate has demonstrated knowledge of economic terms. Economic models have been included to support the points being made.
- **Is complete.** This essay shows a good understanding of the economic concepts in Section B of the syllabus.
- **Lacks depth in critical thought.** Consideration of the effects on the various groups (fishermen and recreational) not carried out and evaluation of the unregulated and regulated (QMS) approaches to the management of the fishery is incomplete. The justified conclusion is weak.

QUESTION TWO continued

Sample of assessed candidate work – Performance Descriptor 3

- (a) Using an appropriate economic model, illustrate and explain the difference between productive and allocative efficiency.

A production possibility curve can illustrate the difference between productive and allocative efficiency within an economy

[Candidate's graph omitted]

This diagram illustrates the realitive trade-off or opportunity cost of moving from a more productively efficient economy to a more allocative efficient economy.

A productive efficient economy may not necessarily be using its possible resources in the most allocatively efficient way, however the realitive benefits of each approach are speculative. A productively efficient economy may be utilising its resources on future investment or growth opportunities compared with an allocatively efficient use of avoidable resources where the opportunity cost is minimized.

- (b) Explain why a high NZ\$ may lead to a reallocation of resources away from the fishing industry.

A high New Zealand dollar has a detrimental effect on firms which heavily rely on export receipts for their revenue.

A high dollar means export receipts when transferred back in New Zealand Dollar are realitively less. It also effect the competitiveness of our exporters, such as the seafood industry as the price of New Zealand goods become relatively more expensive in the world market. This decline in incomes may force fishing companies out of the industry as they are no longer able to survive and instead utilize their resources to other sectors of the economy.

For example a fishing company may move into the tourism industry, using the boats for scenic crusies after renovation. The resources have been reallocated into an alternate sector which is considered more lucrative creating better allocative efficiency.

The labour involve within the fishing industry will also be re-allocated as a result of the high \$NZ fourcing fishing companies out of business. Those employed will have to find new employment possibly in vastly different sectors of the economy and hence a reallocation of resources.

- (c) Using the ideas of property rights and externalities, evaluate the unregulated and regulated (QMS) approaches to the kahawai fishery.

An unregulated approach to the kahawai fishery would ignore the negative externalities involved with the market. It is essential in terms of sustainable management of the available resources a form of safeguard is applied so fish stock levels are kept at a socially desirable level.

A regulated approach is therefore required in terms of a quota to ensure the number produced or caught is maintained at the social optimum. Without this regulation it is possible the resource will become depleted and possible benefits reduced to nil. It must therefore be made clear the realitive property rights available to those whom catch the fish ie the number allowed to catch within a year. A government regulation would outline the property rights available to firstly commercial and recreational fishers. Commercial fishers as stated in the article are entitled to a percentage of the total quota available – hence their property right is to 70% of the total quota. The property rights are then extended to each individual in an effort to achieve the socially desirable level of output.

It is clear that in the case where externalities result property rights must be developed to ensure a socially optimum level of output is achieved and externalities are internalized sufficiently by the individual producer or catcher.

General Comments

This candidate produces an essay that is near to a **comprehensive economic analysis**. It:

- **Has elements of a sophisticated economic analysis.** The candidate has identified some key elements and identified some relationships and linkages between ideas.
- **Lacks effective communication.** The candidate has demonstrated knowledge of some of the relevant terms. However, there is little in the way of application of economic models to the fishery context.
- **Is not complete.** Although the candidate shows a good understanding of some aspects of section B the essay includes some simple errors, eg in part a, the PPC analysis doesn't clearly communicate the difference between allocative and productive efficiency.
- **Lacks depth in critical thought.** Evaluation is a key requirement for scholarship essays and in this case too little time was devoted to it. Discussion should have been built around a clearly presented graph of the kahawai market showing the regulated and unregulated solutions. A case for and against QMS should have been presented and discussion concluded with a justified recommendation.

QUESTION THREE: INFLATION AND THE MACRO ECONOMY

Sample of assessed candidate work – Outstanding Performance – Performance Descriptor 1

- (a) Explain the likely impact of increases in commodity prices and shipping costs on New Zealand's current account deficit.

The increasing commodity prices have positive effect on New Zealand export systems. Because with a given amount of export, New Zealand exporters are now be able to earn more export receipts and balance on goods and balance on services are expressed to improve, which may reduce New Zealand's current account deficit.

- (b) What impact is a high level of inflation in China likely to have on the New Zealand economy? Use appropriate diagrams to help with your analysis.

The high level of inflation in China is likely to add inflationary pressure to New Zealand because raw materials imported from China will now at a higher price and add to producers cost of production. The aggregate supply curve will shift backwards. On the other hand, more exporters will export to China to earn a higher revenue in New Zealand dollars and pushes up domestic prices for goods and services. Imports from China may be less competitive and lost some market share in New Zealand. Net export is likely to increase which increase aggregate demand.

[Candidate's graph omitted]

As the diagram shown, while the charge in real GDP and national output may not be obvious, the decrease in aggregate supply and increase in aggregate demand both add to the inflationary pressure in NZ economy. This will affect price stability and business confidence, which have negative impact on NZ future sustainable economic growth.

- (c) Contrast the monetary and regulatory policies currently used in New Zealand and China and evaluate the effectiveness of these policies in achieving price stability.

One of the major economic issues now around world is the appreciation pressure of China currency. Because China has adopted a fixed exchange rate, that it 'pegging on US dollar at about 1 US dollar exchange for \$8.27 RMB' as the depreciation of US\$ occurs after "911 attack", China currency has also fallen in value. This add to inflationary pressure in China as the imported raw materials are expensive and add to costs of productions. However, in New Zealand, floating exchange rate system is adopted where the value of NZ dollar is determined by the market demand and supply. This means if NZ government using expansionary fiscal policy and borrow from overseas, it is non-monetised and will not affect money supply in New Zealand.

In China, interest rate is controlled by raising reserve requirement. This limited the secondary expansion in the money market and reduce money supply.

[Candidate's graph omitted]

The higher interest rate discourage consumer spending and investment and hence is expected to lead to a decrease in aggregate demand and the inflationary pressure. However, this policy may not be as effective in controlling price stability. Because strong business confidence has counteract the negative effect of higher interest rate on investment level, and investment spending is still higher than expected. Maximum price controls on businesses will cause shortage and may encourage the rise of 'black economy!' Especially in China, where the market and laws are not as formal as other developed countries, black economy will interfere the normal running of the cause other economic problems. Whereas in New Zealand, the main tool used to control inflation is the Official cash Rate. It is used by RBNZ to influence retails interest rate and hence the level of consumption and investment in the economy. Over the past years, it works well and ahs achieved its 1% to 3% goal over medium term. however, there are also conflicts about the OCR. For example, at present, although NZ economy performs strongly unemployment rate is very low and there is a relatively high inflationary pressure, the RBNZ does not rise the OCR significantly as outsidess expect because the exchange rate of NZ dollar is at a very high level. Rising interest rate is likely to attract more overseas investment and encourage domestic investors retain funds in NZ dollars, which is likely to cause an appreciation in NZ dollar. This can cause heavy damage to our export sector. Therefore a trade-off is also involved in NZ monetary policy. But generally, the monetary policy used by New Zealand is more effective in achieve price stability in china.

What should be noticed is that china and New Zealand has different situation as one is developing country and on is developed country, which make limit the validity of the comparisons made. The world political uncertainties and other several factors are not discussed in this analysis.

General Comments

Even though this essay contains some errors, it includes the elements required for Outstanding Performance – Performance Descriptor 1. It:

- **Is a sophisticated economic analysis.** The candidate has identified key economic ideas and linkages and used them to make generalisations, draw conclusions and included an effective evaluation.
- **Effectively communicates.** The use of economic language and the models used show an excellent understanding of macroeconomic theory, eg in part b of the question, the AD / AS analysis is accurate and concise, and the graphing and its interpretation is excellent.
- **Is complete.** The candidate covers the theory appropriate to the analysis.
- **Has depth in critical thought.** Considerable depth in critical thought is demonstrated particularly in part b and also the second half of part c, where there is a good discussion of the policies used to achieve price stability in the two economies, with a sound judgement of the effectiveness of the policy measures.

QUESTION THREE: continued

Sample of assessed candidate work – Performance Descriptor 2

- (a) Explain the likely impact of increases in commodity prices and shipping costs on New Zealand's current account deficit.

The impact of increasing commodity prices and shipping costs on New Zealand's current account deficit depends on its impact on New Zealand imports and exports. Increased shipping costs are an increased cost of production for exporters therefore reducing export receipts and worsening the current account deficit. However an increase in commodity prices could mean an increase in the market price for New Zealand exports therefore increasing export receipts. For example income from exporting coal will increase as Chinese power plants are built demanding coal. I feel that in the short term New Zealand's current account deficit will increase as exporters suffer from increased costs of production. However in the long term the deficit will become smaller as China demands more New Zealand exports as their economy grows.

- (b) What impact is a high level of inflation in China likely to have on the New Zealand economy? Use appropriate diagrams to help with your analysis.

An increase in the price level in China will make imports to New Zealand more expensive. This is because China is operating near full capacity with steadily increasing demand.

[Candidate's graph omitted]

This has pushed up prices therefore making cost of production greater and Chinese export prices greater. Export prices will increase further by an appreciating Chinese exchange rate because of foreign investors investing in the expanding Chinese economy. Therefore in New Zealand Chinese imports will be more expensive. Imported factors of production from China will increase cost of production for many firms therefore pushing up prices. As imported goods from China will be more expensive consumers disposable incomes will fall. These will cause a fall in aggregate supply and demand in New Zealand.

[Candidate's graph omitted]

This will reduce growth in New Zealand and if it increases the New Zealand price level it may cause **stagflation** in New Zealand.

- (c) Contrast the monetary and regulatory policies currently used in New Zealand and China and evaluate the effectiveness of these policies in achieving price stability.

New Zealand and China have very different policies to control inflation. The New Zealand monetary policy to reduce inflationary pressures is to increase the Official Cash Rate which will intern increase retail interest rates. This increases the opportunity cost of spending and increases the cost of borrowing.

[Candidate's graph omitted]

This increase in interest rates will reduce the money supply and aggregate demand as consumers save more and spend less and firms invest less.

The fall in aggregate demand will reduce the price level. The NZ government can also use fiscal policy to withdraw money from circulation therefore reducing the money supply to the same effect.

[Candidate's graph omitted]

China uses bank reserves to control the money supply. By increasing bank reserve requirements more money must be kept by the banks – therefore reducing the money supply. In order to increase their reserves banks will call in advances therefore creating a secondary contraction of the money supply. This will reduce investment and consumer spending therefore reducing inflationary pressures. The other Chinese policy is to impose maximum prices. This was used under the Muldoon government in New Zealand but only successful in controlling inflation in the short term and as soon as the maximum prices were removed inflation rapidly continued. This is because the maximum price creates a shortage of that commodity. As demand exceeds supply the inflationary pressures are still present and as soon as the maximum price is removed consumers will bid up prices again. New Zealand monetary and fiscal policy and China's bank reserve policy have very similar impacts on the money supply and price level. However China's policy of maximum prices are not very effective at reducing inflation as it does not remove inflationary pressures.

[Candidate's graph omitted]

General Comments

This essay has the elements of Performance Descriptor 2. It:

- **Is a sophisticated economic analysis.** The candidate shows a good understanding of the macroeconomics required and the ability to apply them to context given.
- **Effectively communicates.** Most of the appropriate terminology and conventions are observed.
- **Is not complete.** The explanation on the impact on New Zealand's current account deficit is incomplete in section a, and, in section b, there is a lack of analysis in the use of the AD / AS model.
- **Doesn't have sufficient depth in critical thought.** The candidate has not fully examined the contrasting situations given or sufficiently evaluated the effectiveness of the policy measures.

QUESTION THREE: continued

Sample of assessed candidate work – Performance Descriptor 3

- (a) Explain the likely impact of increases in commodity prices and shipping costs on New Zealand's current account deficit.

New Zealand is an exporter of commodities, e.g. Aluminium. An increase in the price of these commodities, caused by high demand from China, will increase our export receipts. However, with more and more exporters exporting to China (due to higher prices) the demand for shipping has increased markedly. Shipping is a factor of production for our exports, so this will cause an increase in the costs of production in our exports.

This cost, however, is taken into account when considering the supply curve for commodities, so at high levels the supply curve for commodities becomes very steep. The result is that the increased demand from China causes a large increase in price but little change in quantity eg

[Candidate's graph omitted]

The rising world price, due to increased Chinese demand, causes an increase in New Zealand production from q_p to q_{p1} , and a decrease in local New Zealand consumption from q_c to q_{c1} . Exports rise from X_1 to X_2 , with export receipts rising as the quantity of exports has risen, as has the price.

The rise in shipping costs is likely to rise the price of imports, as the cost of transporting goods from overseas to New Zealand will be borne by the consumer, as New Zealand is a price taker. This increase in the price of imports could either cause a rise in import payments, or a fall. This analysis could be improved if it was known if New Zealand imports or exports, shipping services.

If New Zealand does not import shipping services, the resulting decrease in quantity imported due to the price change would decrease import payments. If NZ imports shipping services, the import payments would rise with inelastic demand (which NZ imports are likely to have, e.g. oil) and fall with elastic demand. Then import payments are likely to rise due to rising oil prices. The net effect on New Zealand's current account is likely to be a reduction in the deficits, with the $\uparrow x$ likely to exceed the $\uparrow m$.

- (b) What impact is a high level of inflation in China likely to have on the New Zealand economy? Use appropriate diagrams to help with your analysis.

A high level of inflation in China is likely to be beneficial to the New Zealand economy. Prices of Chinese goods and services will rise faster than prices of New Zealand goods and services. Chinese goods will become less attractive for New Zealand to purchase, so imports will decrease (note, oil, which was described as inelastic, is not imported from China.) The New Zealand goods will become more attractive for Chinese consumers, so ... x will rise.

As $AD = C + I + G + X^M$, AD will also rise.

Continued over

The following graph illustrates the change.

[Candidate's graph omitted]

As is also likely to fall slightly, as the cost of imported raw materials from China rises. The resulting change in equilibrium of the New Zealand economy shows inflation, with the price level changing from PL to PL₁. It also shows increased growth with real GPP changing from Y to Y₁. With this will come a reduction in unemployment, as Y₁ is closer to Y_{full} than Y.

- (c) Contrast the monetary and regulatory policies currently used in New Zealand and China and evaluate the effectiveness of these policies in achieving price stability.

In New Zealand, the Reserve Bank has the role of operating monetary policy to maintain Price Stability. Price Stability is defined in the current policy target agreement as inflation in the CPI of between 1% and 3%, on average, over the medium term.

The main tool the reserve bank uses to maintain price stability is the official cash rate. This rate is set by the reserve bank and influences retail interest rates by requiring that banks have a positive balance in their settlement accounts with the reserve bank overnight. Banks tend to lend to each other to maintain a positive balance, in a 0.5% corridor around the OCR. If the government of NZ wishes to reduce inflation it will raise the official cash rate. This will cause an increase in the retail interest rate. Consumer spending will decrease, as saving is more attractive, due to the now higher rate of return, and credit purchases are now more expensive, as interest payments will be higher. Investment will decrease, because the cost of interest payments on borrowed money will be more expensive, so investments will not increase profitability as much as previously, so investment will fall. A high interest rate will cause the \$NZ to appreciate, as foreign savers demand NZ\$ to save in NZ where they can now gain a higher rate of return. $\uparrow D$ for NZ\$ \rightarrow \uparrow exchange rate.

The \uparrow exchange rate is likely to lead to a decrease in export receipts, as exporters swap their foreign currency earnings for less \$NZ, and as the price of imports will fall if the exchange rate rises, an increase in import payments (assuming elastic demand).

$$AD = C + I + G + C - M.$$

AD must decrease. So demand pull inflation decreases. As the price of imports decreases, the cost of imported raw materials decreases, lowering costs of production, so $\uparrow AS$. \therefore cost push inflation also decreases.

One of the Chinese policies to control inflation is increasing the reserve requirements of banks, reducing the money supply to increase interest rates. The increased interest rates will lower inflation as explained earlier.

Money market for China

[Candidate's diagram omitted]

Another policy used by the Chinese government is setting maximum prices. This results in an excess demand at the maximum price.

[Candidate's diagram omitted]

This policy will be ineffective. A black economy will exist, as the excess demand will create pressures where suppliers realise they could get a better price and so sell illegally.

Policy will change interest rates are much more effective at controlling inflation, by reducing AD and increasing AS. The Chinese policy of changing reserve requirements may not be as effective as the OCR policy, as the policy does not have as direct an effect on interest rates.

Maximum prices are only effective if set below equilibrium.

General Comments

This essay includes some of the elements required for scholarship performance because it:

- **Effectively communicates.** Most of the economic models are used effectively though there is less rigour than essays at level Performance Descriptor 1 or Performance Descriptor 2.
- **Is complete.** The candidate covers most of the macro-economic theory that is appropriate to the analysis.
- **Is a comprehensive economic analysis** but it lacks depth in critical thought as a result of an incomplete discussion of the policies used to achieve price stability in the two economies, with a relatively superficial evaluation of the effectiveness of these policy measures.