

Inquiry into the Future Monetary Policy Framework

Submission by Keith Rankin
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1. To consider the causes of inflationary pressures.

Inflationary pressures have a number of causes.

Inflationary pressure is not inflation.

- Inflationary pressures may or may not lead to unacceptable inflation.
 - *Unacceptable inflation* is defined in New Zealand as a process in which the consumers price index (CPI) consistently rises by more than three percent per annum.
 - More generally, inflation is defined as an increase in the price level, or as a decrease in the purchasing power of money.
 - Debate about inflation is often confused by ambiguous definitions. For some discussants, inflation means an indefinite process (like a runaway train that can only be stopped by the application of brakes or some form of "hard landing"), whereas for other discussants inflation simply represents any increase in the general price level.
 - The definitional impasse can be resolved by contrasting the terms *unacceptable inflation* (an indefinite process) and *acceptable inflation* (a self-correcting episode). It is critically important that we learn to distinguish acceptable from unacceptable inflation.
 - Modern anti-inflationary policy, which draws on the "theory of rational expectations", is applicable only to inflationary processes (Mishkin pp.615,639); ie to unacceptable inflation.
 - Short-lived inflationary events (such as the 4% inflation of December 2000) do not meet our definition of unacceptable inflation. In other words, such events can be classed as acceptable inflation.
 - Unacceptable inflation includes negative inflation; ie deflation.
- Inflationary pressures may lead to acceptable inflation. Acceptable inflation, which does not require policy intervention, is either/or:
 - a process of ongoing inflation averaging around 2% per annum.
 - a self-correcting event involving measured inflation rates in excess of 3% per annum.
- In some economies, inflationary pressures are relieved, with minimal inflationary outcomes, by an increased propensity to purchase imports.
 - A major determinant of the propensity to import is a country's exchange rate.
 - An appreciating exchange rate increases a country's propensity to import.
 - *An appreciating currency is not a beneficial solution to inflationary pressures.* Rather it postpones any inflationary consequences until whenever that appreciation is reversed.
 - The short-term disinflationary benefits of an appreciating currency are outweighed by the adverse consequences to the balance of payments, and by the hard-to-reverse contraction of that country's tradable goods and services sectors.
- Inflationary pressures can be beneficial to a country's economy.
 - Inflationary pressures create incentives for entrepreneurs to make decisions that enhance productivity through capital investment and innovation.
 - The extent to which new or existing firms make such decisions is linked to other current and historical factors: especially past experiences of innovation; current interest rate settings; current exchange rate settings; current wage rates; current expectations of future settings of interest rates, exchange rates and wages.

In a very general sense, inflation is a market mechanism for correcting imbalances between sectors, regions or countries. *Imbalances per se are inflationary pressures.*

Therefore, policies that perpetuate imbalances are important sources of unacceptable inflationary pressure.

- Imbalances imply "unexploited profit opportunities". In a globalised market economy, as domestic and foreign market participants take advantage of unexploited profit opportunities, prices change and unexploited profit opportunities are eliminated. Imbalances are usually temporary.
 - Inflation that arises from allowing market forces to bring balance to imbalances, is usually self-correcting. Such inflation comes to an end of its own accord.
 - The unusually protracted price bubble in the New Zealand housing market reflects imbalances in the New Zealand economy as a whole (between the tradable and non-tradable sectors) and in the relationship of the New Zealand economy to other countries' economies (huge differences in interest rates between countries, contravening the "law of one price" that applies to the world economy as a whole).
 - The monetary policies that have created *and perpetuated* these imbalances remain. Hence these imbalances remain. Money continues to flow into New Zealand in huge volumes, and domestic resources flow from the tradable to the non-tradable sector.
- The inflations of the 1980s, including New Zealand's, were slowing as that decade progressed. Measures such as the 1989 Reserve Bank Act were not necessary to bring inflation rates down to acceptable levels.
 - New Zealand's inflation experience of the late 1980s was distorted by the introduction of goods and services tax (GST) in 1986 and the 1989 increase in the rate of GST. Thus some sources present late-1980s' inflation data to make it look as though the 1989 Act was a necessary response to an otherwise unstoppable inflationary crisis.
 - Inflationary pressures were generally absent in New Zealand in the 1990s on account of the unemployment legacy of the 1988-92 recessions.
- When monetary or fiscal authorities intentionally or unintentionally act to preserve or exacerbate existing imbalances, then inflation becomes an (unacceptable) ongoing process rather than an (acceptable) short-term event.
 - Unacceptable inflation is therefore commonly a consequence of inappropriate policies.
 - Such inflationary pressures are best resolved by the discontinuance of such policies.

Specific kinds of imbalance that may lead to inflationary events or processes are:

- Unsustainable growth of expenditure; ie excessively rapid increases of "aggregate demand".
 - Inflation that results from this form of pressure is called "demand-pull inflation".
 - From late 2003, the Reserve Bank of New Zealand has been concerned about excessive aggregate demand pressure creating unacceptable demand-pull inflation.
 - When wages, land rents and other input prices are bid up by excessive aggregate demand pressure, we say that these cost increases are *induced* by demand-pull inflationary pressures.
 - What constitutes an "excessively rapid" increase of aggregate demand depends on the prevailing level of unemployment. The higher the unemployment the faster aggregate demand can rise without that increase being regarded as likely to cause unacceptable inflation.
 - Demand-pull inflation is more likely to occur in an environment in which it is difficult for businesses to respond by increasing their capacity to produce.
 - The New Zealand business environment is currently likely to be unresponsive because of labour shortages, price signals that discourage fixed capital investment, an exchange rate that renders uncompetitive most production in the tradable sector, and an understandable "twice bitten thrice shy" mentality.

- Because producers modify their decision-making in light of past experiences, if and when the exchange rate of the \$NZ does fall to levels that make widespread production of tradable goods and services viable, prospective producers will expect the exchange rate to stay at such levels only briefly and may therefore choose not to invest in new productive capacity.
- Autonomous (ie non-induced) increases in input prices (especially but not only wage increases) create inflationary pressures. Pressures of this kind, if they lead to inflation will lead to "cost-push inflation".
 - Cost-push inflation leads to decreased economic activity, and rising prices. It is popularly known as "stagflation".
 - In a modern economy with capital-intensive production and outstanding debt subject to floating interest rates, **high and rising interest rates constitute a significant source of cost inflation.**
 - All businesses in a capitalist economy are under pressure to pay competitive dividends to their owners. Thus, when interest rates rise, it is necessary to pay shareholders higher dividends in order to prevent excessive selling of company shares. Pressure to pay increased dividends is a form of inflationary pressure.
 - Other cost pressures include high transaction costs, and high levels of defensive consumption.
 - Transaction costs are the costs of doing business. Essentially, all producer services and government administrative services represent transaction costs to the purchasers of those services.
 - Defensive consumption can be defined as consumer spending on goods or services to counter the negative impacts of choices made by other market participants. Examples include increased spending made necessary by (real or perceived) congestion, pollution, crime, stress, interpersonal competition. Such additional spending may be on childcare, gaining a tertiary qualification sufficiently high to gain access to a well-paid job, security products, personal financial products. Hirsch (1976) is the seminal work on how the spending decisions of some impose additional expenditure requirements on others.
- Monetary inflationary pressures arise when people (both domestic residents and "foreign investors") lose confidence in their own country's currency.
 - Symptoms of a loss of confidence in a currency include fear-induced widespread selling on foreign exchange markets and a general unwillingness by domestic residents to hold savings in that currency. This kind of inflation through currency depreciation is common in Latin America where \$US is the favoured money of account.
 - Domestic residents respond to monetary inflationary pressures either by spending their earnings more quickly, or by saving in real assets (eg real estate, gold) or in assets denominated in foreign currencies.
 - Widespread selling of a currency is not necessarily induced by fear, and is therefore not necessarily an inflationary pressure. In Japan, selling of Yen is induced by low interest rates. Inflationary pressures in Japan are very low.
 - Rapid domestic expansion of a country's money supply (popularly known as "printing money") may lead to loss of confidence in a currency, and therefore is a form of inflationary pressure.
 - Excessive monetary expansion is not a sufficient condition for inflation to occur. Globally, money supply growth has been rapid since 2003 (the year of the US invasion of Iraq), yet there is still no sign of a global inflation similar to that associated with monetary growth at the time of the Vietnam War.
 - Hyperinflations such as that currently experienced by Zimbabwe are often blamed on excessive monetary growth. In reality they take place because the productive infrastructure of the affected country is in a state of collapse, almost totally

unresponsive to any incentives or pressures. ***The most significant inflationary pressure of all is the incapacity of a country's productive sectors.***

- Inflationary pressures also exist when expectations of future inflation are high.
 - Even when inflationary events do not constitute a process, many participants in a country's economy may believe that current events do constitute an inflationary process.
 - Workers subject to such beliefs may ask for higher wages than they would otherwise ask for. House purchasers may be willing to pay more for their properties than they otherwise would be willing to pay. Banks and other lenders may be more willing to lend to support expenditure at higher prices if they believe that the value of the collateral they hold is appreciating.
- Some economists (known as "monetarists") argue that inflationary pressures can only lead to an inflationary process if those pressures are "accommodated" by increases in the money supply.
 - Monetarists argue that an unacceptable inflationary process can only occur if there is an accommodating expansion of the money supply. They say that *unacceptable inflation is caused by bad policies, and fixed by the discontinuance of such policies.*
 - Monetary expansion, although not a sufficient cause of inflation, certainly constitutes a form of inflationary pressure.
 - New Zealand faces an excessive monetary stimulus from abroad. Foreign money is attracted to New Zealand on account of New Zealand's unusually high interest rates, and because, since 1985, foreign investors who have sought to gain high returns from investments denominated in \$NZ has generally been well-rewarded.
 - Inflationary pressures arising from monetary inflows from abroad have been deferred by the appreciating \$NZ exchange. The short-term impact of these monetary inflows has been the growing imbalance between the tradable and non-tradable sectors.
- Unacceptable inflationary pressures arise in New Zealand from high interest rates rather than from excessive aggregate demand.
 - Excessive expenditure in New Zealand is satisfied by imports. Hence excessive aggregate demand is not currently a source of inflationary pressure. A high exchange rate acts as a signal for consumers, businesses and government all to increase their propensity to purchase goods and services with substantial imported content.
 - Interest rates are a source of inflationary pressure in two ways: directly as a cost of production (ie as a source of cost-push inflationary pressure), and indirectly because they pull foreign money into New Zealand's banking system.
 - It is a rising exchange rate rather than rising productivity that keeps inflation at bay.
 - If other countries follow New Zealand's lead by raising interest rates, then global inflationary pressures will increase, and the \$NZ exchange rate will come under pressure, thereby releasing deferred inflationary pressures.

Inflationary pressures in New Zealand have steadily increased in New Zealand since 2002.

Conventional wisdom within the Reserve Bank is that these pressures are almost entirely of the domestic expenditure "demand-pull" variety, and that "inflationary expectations" that might arise from domestic expenditure must be defused.

Evidence supporting the alternative views that cost pressures and external monetary pressures have increased substantially since 2002 has been given insufficient weight by the Reserve Bank.

2. To examine the interaction of monetary policy with other elements of the economic policy framework including fiscal policy.

Fiscal Policy

An expansionary fiscal policy (reduced taxation, increased government expenditure or transfer payments), or a less contractionary fiscal policy, may create additional demand-pull inflationary pressures.

- Such a policy can be generally beneficial if it acts as a stimulus to productivity growth.

A contractionary fiscal policy as a means to reduce inflationary pressures, especially in the form of reduced provision of collective goods, can increase transaction costs and defensive consumption.

- For example, reduced public healthcare and reduced policing increase the demand for insurance and personal security products. And increased incidence of serious illness and crime increase the amount of expenditure that victims must make to recover from these adverse experiences.

In an environment where expansionary fiscal policy is automatically offset by contractionary monetary policy, there is a general reluctance by government to use fiscal policy.

- By adopting a more relaxed monetary policy – that only deals with emergencies, and doesn't attempt to fine-tune – then government can more easily address fiscal anomalies such as the unusually high rates of tax on low incomes, and the lack of some form of universal assistance to families with children.

Both fiscal and monetary policy have important roles to play in getting a country out of economic crises such as those faced by New Zealand in the early 1930s (the Great Depression) and in the late 1980s and early 1990s.

- As such, it is better for monetary and fiscal policy to be working together to achieve the same ends.
- At all other times, it is better that both monetary and fiscal policy, as tools to restrict aggregate demand within a single nation's economy, should be used sparingly.

Balance of Payments policy

For most of the 20th century, macroeconomic policy was concerned about the balance of payments.

The floating of the exchange rate in 1985, implemented as a balance of payments policy, was expected to create an automatic adjustment mechanism that would resolve balance of payments issues.

- Before the end of 1985, it had become apparent that current account deficits would not necessarily place downward market pressure on the exchange rate.
- New Zealand's only balance of payments policy since 1985, the floating exchange rate, has been known to be a failure as a balance of payments policy for over 20 years.
- The floating exchange rate has been retained through that time as an essential ingredient of anti-inflation monetary policy, in the full knowledge that counter-

inflationary appreciations of the currency are detrimental to balance of payments policy objectives.

- Policymakers have largely dealt with the issue by simply pretending that balance of payments imbalances don't matter so long as the government is not a major overseas borrower.

Understanding the basic mathematics of balance of payments relationships enables us to understand the full extent of the damage that high interest rate monetary policies can do to New Zealand.

- The Balance of Payments Identity is: (Mishkin p.465)

$$\text{Current Account Balance} + \text{Capital Account Balance} = \text{change in Official Reserves}$$
- Prior to March 1985, when New Zealand had a fixed exchange rate, economic growth generated an increased demand for imports. Thus, the usual balance of payments problem was an *autonomous* decline in the current account balance, generated by excessive import growth.
 - In order to prevent a decline in official reserves, government and private sector borrowing would fund the growing current account deficit. In other words, *a growing current account deficit would induce a growing capital account surplus*.
- In 1985 at the time the \$NZ was floated, policymakers expected the autonomous decline in the current account balance to continue.
 - Rather than have official reserves decline or overseas borrowing increase, the expectation was that excess selling of the \$NZ (to fund imports) would lead to a fall in the equilibrium exchange rate, and that the fall in the exchange rate would reduce imports and raise exports, thereby negating the autonomous growth of imports.
 - The balance of payments relationship continues to be expressed by commentators in a way that reflects the nature of the pre-1985 New Zealand economy. That is now the "wrong way around".
- From 1985, restrictive monetary policies pushed New Zealand interest rates up to record high levels. These high interest rates generated an autonomous inflow of debt finance.
 - Since 1985, the most usual balance of payments situation New Zealand has faced has been an *autonomous increase in the capital account surplus*.
 - Under a fixed exchange rate this would lead to a build up of official reserves.
- Under a floating exchange rate, an autonomous capital inflow creates an excess demand for New Zealand currency. Thus, the \$NZ exchange rate appreciated, the very opposite of what pundits had expected prior to the 1985 float.
 - Under this scenario, the *increased capital account surplus induces an increased current account deficit*.
 - The exchange rate rises as much as it has to in order that the decline in net exports (ie decreased exports and increased imports) matches the autonomous inflow of "investment" funds.
 - Much of the inflow of investment funds is invested through the New Zealand banking system into real estate. This pattern of investment is required because the appreciating currency makes investment in the tradable sectors very unattractive.
 - Thus it is the autonomous inflow of foreign money seeking high fixed-interest returns that necessarily generates the appreciating currency, the balance of payments crisis, the contraction of manufacturing and non-dairy exports, and the real estate bubble. All four problems have been dominant features of New Zealand's economy since 2002.

- The only article I have seen that adequately discusses the way the balance of payments relationships impact on the exchange rate and the housing market is "Banks' lending surge fuels distortions", by David Tripe (published in the *Independent Financial Review* on 24 January 2007)
 - Tripe gets the key point, but fails to explain that the autonomous capital account surpluses are in fact generated by the Reserve Bank's actions to raise interest rates.
 - Raises to the Official Cash Rate (OCR), ostensibly conducted to reduce inflationary pressures, by attracting foreigners' savings, are the principal single cause of the inflation-suppressing but ultimately catastrophic appreciation of New Zealand's currency, and of the inflationary housing bubble.

It is absolutely essential that monetary policy takes account of the simple mathematical relationship that requires autonomous changes in the capital account of the balance of payments to induce (through changes in the exchange rate) equal and opposite changes in the current account balance. *The worsening current account deficits have been induced by increased capital account surpluses.*

- Consumers have been asked to change their spending behaviour by, among others, Dr Alan Bollard, the Governor of the Reserve Bank, and Dr Michael Cullen, Minister of Finance.
 - Specifically, households have been asked to save more and spend less.
 - *If consumers save more, as requested, then it will require a larger appreciation of the exchange rate to absorb the autonomous capital inflows that New Zealand is being subjected to.*
 - Indeed increases in the exchange rate in June and July 2007 have most probably been, in part, a result of less spending on imports.
- Under a regime of floating exchange rates and fixed official reserves, a given autonomous inflow of capital requires that net exports must fall by a comparable amount.
 - If the propensity to import more that arises from the appreciating exchange rate is offset by other factors (such as moral exhortation to save more) then *the burden of current account adjustment falls more firmly on exporters.*

New Zealand's huge current account deficits (approaching 10% of GDP) are a necessary result of an autonomous net inflow of foreigners' savings in a floating exchange rate environment.

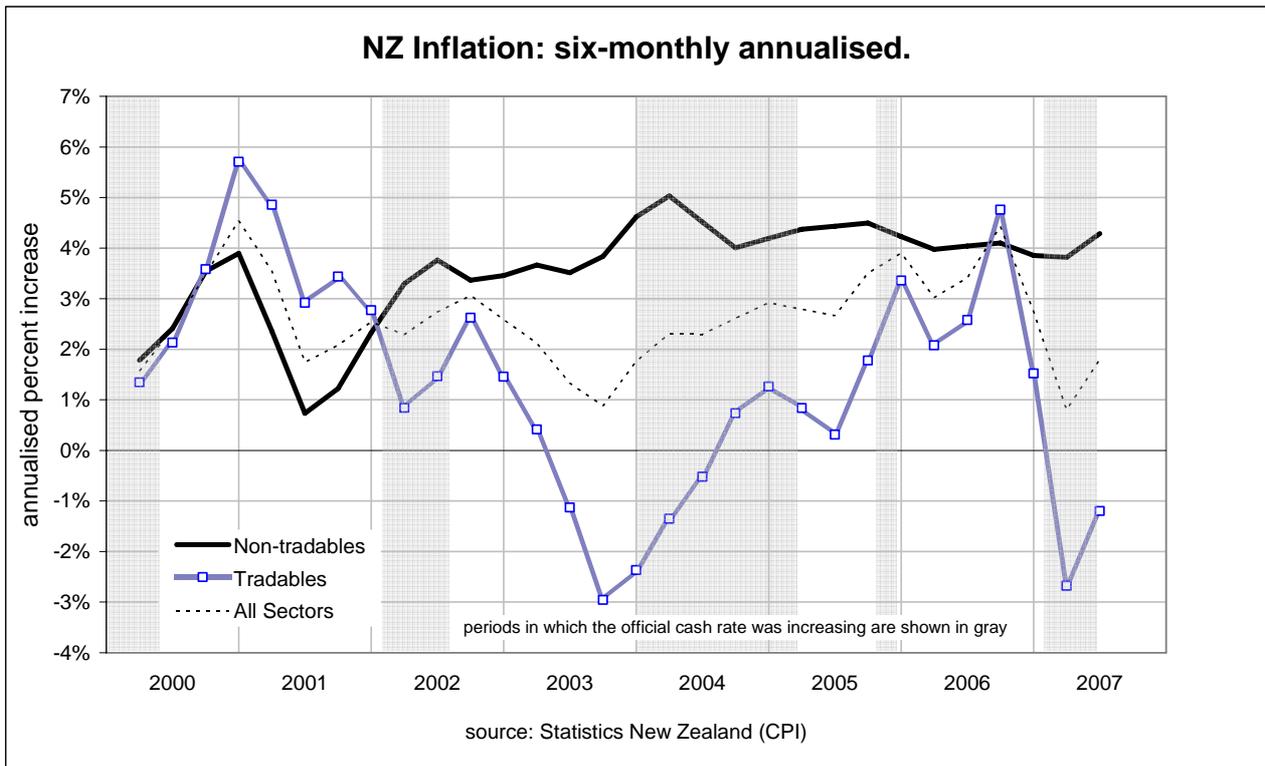
- The inflow of foreign savings is a direct consequence of a monetary policy that requires NZ to have higher interest rates than just about any other open economy.
- These interest payments cannot be serviced by increased output in NZ, because current world prices render our entire tradable sector (dairy and luxury boat building excepted) uncompetitive.
- These interest payments can only be funded from additional overseas debt.
 - This is called Ponzi Finance (Earl and Wakeley, p.531). Like Pyramid Schemes (and perpetual motion machines) for instant self-enrichment, perpetually servicing old loans by raising new loans ends in financial disaster.
 - The principal unknown is: When will such a disaster will take place?
 - Such a financial disaster may have severe, unacceptable and seemingly unstoppable inflationary consequences.

3. To consider the effectiveness of current monetary policy in controlling inflation.

The fact that annual inflation has averaged 2.7% this century so far, and has not exceeded 3.5% (calculated on a four-quarter average basis), then inflation has been within the requirements of the post-1996 policy targets agreements.

The issue is one of counterfactual speculation. Would the inflation rates this century have been higher or lower (or about the same) in the absence of the "inflation-targeting" monetary policy regime that was mandated by the 1989 Reserve Bank Act?

- Lower inflationary outcomes than New Zealand's have been experienced by many other countries, despite a much higher rate of currency appreciation (65% against all other currencies in 6 years) in New Zealand. Generally, and to date, the other countries we compare ourselves with have continued to experience low inflation while resisting the impulse to pursue monetary policies to the same high interest extremes.
- There has been no outburst of inflationary expectations in recent years, despite high global levels of liquidity.



- Graphical analysis suggests that rising interest rates have done nothing to slow inflation, and may well have aggravated it. The dominant theme is one of domestic inflation sitting at 4% per annum for five years. This compares with inflation rates of about 2% for our OECD trading partners.

Current monetary policies, which emphasise the need to reduce aggregate demand and inflationary expectations by raising interest rates, are aggravating the supply-side inflationary pressures while also increasing defensive consumption.

Policy responses so far have aggravated inflationary pressures, but have not had a substantial impact on actual inflation because market responses continue to provide a buffer against these pressures.

- In particular, easy access to foreigners' savings has enabled the growth of spending in New Zealand (especially spending on imports) to rapidly outstrip the growth of national income.
- Other countries have averted inflation so far by keeping supply-side inflationary pressures in check.

Current policy responses have been effective at creating deflation in the tradable sector, by causing the exchange rate to appreciate.

Deflation (negative inflation) is a form of unacceptable inflation.

- In the six months to June 2007, inflation has been running at an annualised rate of below zero (-1.2%) in the tradable sector, combined with inflation of 4.3% in the non-tradable sector averages out at 1.8%.
- Since June 2002, prices have increased by 2.3% in the tradable sector and 22.6% in the non-tradable sector.
- Current policy "works" only to the extent that it reduces inflation in the tradable sector that is already inflating below the minimum acceptable rate of 1%.
- Current policy can only reduce inflation in the non-tradable sector by creating substantial unemployment (known in the financial markets as a "hard landing").
- Financial conditions in 2007 are comparable with what they were in 1987. The recession that followed lasted until early 1993, and imposed huge costs on New Zealanders' relative living standards. New Zealand has not come close to restoring the relativity with Australian living standards that applied in the mid-1980s.

For some forms of inflationary pressure, the appropriate policy response is to do nothing more than to keep a watchful eye.

Imbalances tend to be self-correcting. That's the fundamental truth of market economics; systems tend to adjust towards an equilibrium position of balance.

- The classic Alan Greenspan response in the USA through the 1990s was to do very little. Subsequent productivity increases proved that inflationary pressures do not always lead to inflation, and can easily prove to be a catalyst for economic growth.
 - In other words, inflation is not the only way through which inflationary pressures express themselves.
 - By responding too readily to inflationary pressures, we deny ourselves one avenue for achieving market-led productivity growth.
- Greenspan was quick to respond in the case of a potential crisis of deflation, in 2001. Indeed the art of monetary policy, it can be argued, is to deal with crises as and when they happen, and not as a hands-on tool to override market forces.

Since World War 2, monetary policy has been conducted worldwide in accordance with either a Keynesian or a classical (monetarist, rational expectations) macroeconomic framework.

Both theoretical models apply essentially to closed economies, and tend to fall apart when applied to economies as open as New Zealand's.

- Policy-makers, like "old admirals" tend to continue fighting wars that are long over. Just as policy-makers in the third quarter of the 20th century continued to fight the Great Depression of the 1930s, so today's policy-makers continue to fight the inflations of the 1970s.

It is argued by monetarists that inflationary processes are always and everywhere monetary phenomena.

- This means that, whatever the cause of the inflationary pressure, inflation can only be sustained by increases in the money supply.
 - This claim has often been misrepresented as a claim that "printing money" always causes and is always the cause of inflation. It follows from this view, and from this view alone, that inflation has a single cure.
 - From this "popular monetarist" perspective, raising interest rates is tantamount to contracting the money supply, and therefore as the one and only cure for inflation.
- An "open economy" monetarist analysis would argue that:
 - High interest rates in an individual country with a fixed exchange rate would be a source of inflation, because capital inflows would augment the country's monetary reserves, leading to an increase in the money supply, and therefore inflation.
 - In such an analysis, an appreciating currency is the price that must be paid to prevent a build-up of a country's monetary reserves.
 - In this analysis, intervention to increase a nation's monetary reserves (what the Reserve Bank has been doing since 11 June 2007 in order to reduce the appreciation of the \$NZ) is inflationary because it adds to the domestic money supply.
 - Such intervention however may actually increase the rate of currency appreciation, because it allows foreign investors to believe that a dramatic currency depreciation (their principal fear when buying New Zealand currency) is less likely.

It is argued by Keynesian economists that inflation is directly or indirectly an outcome of excess spending.

- By this view, which appears to be the view held by the RBNZ under the stewardship of Dr Alan Bollard, interest rate changes have a significant impact on planned spending ("aggregate demand") and a negligible impact on the costs of production ("aggregate supply").
- This view may have been valid to some extent for much of the 20th century, when almost all loans were contracted at fixed interest for the life of the loan.
 - In a 21st century environment, however, a rise in "base interest rates" represents an immediate and direct increase in business costs. That is, existing loans as well as future loans become more expensive.
 - Further, in a capitalist economy, interest represents the opportunity cost of equity capital (including private equity capital). Rising interest rates require the payment of increased dividends to shareholders, and increased rents to landlords. Company shares that cannot match fixed interest yields are subject to selling pressure.
 - In an increasingly capitalist global economy (ie an economy that uses relatively and absolutely more capital), the cost of capital becomes increasingly significant relative to the cost of labour as a source of cost inflation.

If we give due allowance, in a modern capitalist economy, to the impact of rising interest rates on the costs of production ("aggregate supply"), then we would understand better that the favoured means to reduce demand inflation (higher interest rates) simultaneously aggravates cost inflation.

- We see the cost inflationary impact of high interest rates best when we focus only on the non-tradable component of the Consumers Price Index (CPI).
- Cost inflation also impacts on the tradable sector (all businesses which compete principally with foreign suppliers). But the tradable sector has to sell its outputs at world market prices, so cannot pass on its rising costs.
 - The tradable sector reacts to cost inflation by becoming smaller. When the tradable sector contracts, resources (eg labour, bank loans) are transferred to the non-tradable sector (very apparent in New Zealand over recent years).
 - When high interest rates lead to higher exchange rates, the cost inflation is effectively exported by the tradable sector, creating the illusion of anti-inflationary conditions.
 - If all nations are fighting inflation simultaneously by raising interest rates, then no nation is able to shift its inflation to another country. Under these conditions, rising interest rates are a recipe for global stagflation (cost inflation combined with rapidly increasing unemployment in both tradable and non-tradable sectors).
- Rising interest rates are the principal source of increased financial risk. Banks respond by increasingly lending to sectors (such as property, and sometimes shares) which offer collateral.
 - Financial bubbles arise in particular from a high interest environment in which increasing lending to borrowers with collateral such as mortgages push up (often for many years) the value of that collateral.
 - Financial crises become more likely when a banking system dependent on collateral faces reductions in the values of the assets used to secure its loan assets.

Both the monetarist and Keynesian models of inflation are essentially "closed economy" models

- Closed economy models apply to a country with minimal financial interaction with the rest of the world.
- The world as a whole – ie the globalised world economy – is a closed economy.
- The theory of floating exchange rates allows such closed economy models to be applied to countries that participate in international trade, but have little other interaction with the rest of the world.
- Closed economy models (even allowing for floating exchange rates) cannot be usefully applied to national economies located within a world economy characterised by unfettered movements of financial capital between nations.

4. To examine the role of productivity in the economy, how it can be improved, and the constraints upon it.

Labour productivity is most accurately defined as the quantity of output (ie real gross domestic product; GDP) divided by the number of hours of labour supplied.

In practice, economy-wide labour productivity is most easily computed as GDP divided by the fulltime-equivalent labour force.

Productivity increases convert inflationary pressures into non-inflationary outcomes.

It is very difficult to achieve productivity increases in the absence of inflationary pressures.

Productivity increases arise from decisions by entrepreneurs to innovate. Innovation means:

- to use different mixes of resources in their production functions to reduce unit costs, and
- to offer new products for sale.

Productivity increases also arise from an enrichment of a nation's public domain.

Public domain resources include:

- Natural environment.
- Physical and social infrastructure (built environment).
- Knowledge.
- Social capital; values of trust and empathy.

In the second half of *Social Limits to Growth* (and before the term "social capital" was coined) Hirsch argued that individualistic market values undermine the accumulation of social capital.

- Successful non-inflationary growth needs to nurture (or at least not undermine) the growth of the intangible resources such as social capital that represent the bedrock of capitalist success.
- An obsessive focus on anti-inflation monetary policy takes our eyes off the bigger issues of maintaining economic health.
- *All-round healthy economies have the fewest inflationary pressures, and are the least likely to have unacceptable inflationary pressures.*
- At risk of sounding "new age", inflation is one capitalistic ailment that is best treated holistically.

5. To examine the New Zealand economy's capacity for non-inflationary growth, and how it can be improved.

Non-inflationary growth implies growth through productivity gains, especially gains in labour productivity.

While economic growth can take place for a period of time by increasing labour supply – eg by providing more incentives for parents caring for children to enter the labour force – such an approach to economic growth is ultimately unsustainable.

- Policies to increase the labour force participation rate require a lot of expenditure adjustment by families, much of which can be classed as defensive consumption.
- Hence, attempts to increase growth rates through increased labour supply almost certainly cannot be classed as "non-inflationary".

There are problems in our common conceptualisation of economic growth as rising GDP (gross domestic product).

Economic growth should be understood to mean actual increases in average living standards.

- Narrowly conceived economic growth may or may not achieve increases in living standards.

Increased labour productivity does generally bring about increased living standards but may not increase GDP.

- Growth of living standards may rise if, for a given supply of labour, the output of consumables and exports per person increases.
- Growth of living standards may also rise if, for a reduced supply of labour, the output of consumables and exports remains constant.
 - Reductions of labour supply consistent with increased living standards are:
 - reductions in the labour force participation rate,
 - reductions in average hours of paid work per week,
 - reductions in weeks worked per year, or
 - reductions in years worked per lifetime.
 - Growth of living standards through reduced labour supply significantly reduces the environmental footprint of a nation, and thereby enhances the public domain.
 - Increased environmental costs ultimately prove to be as inflationary as increases in all other types of cost.

Labour productivity increases are the key to non-inflationary improvements in living standards, whether or not economic growth as conventionally measured increases.

New Zealand does have a capacity for non-inflationary growth.

New Zealand policymakers, like those in other countries, must reflect carefully on the type of growth they wish for in a planet with too many constraints on the environment, and on people's use of time.

- Principally, *policymakers must avoid unnecessary "anti-inflation" policies* that create significant cost pressures and in themselves create demands for increased consumption, thereby increasing the likelihood of inflationary episodes becoming intractable inflationary processes.
- Such cost-pressures include the pressures for parents to work long combined hours.

Conclusion

A successful monetary policy for New Zealand is one that requires:

- a market-driven approach to the setting of interest rates.
- a generally relaxed stance towards inflationary pressures, which may facilitate productivity growth, and, if not, will normally generate short-lived inflationary episodes (acceptable inflation) rather than ongoing inflationary or deflationary processes (unacceptable inflation).
- a recognition of the detrimental impact of autonomous inflows of capital on the exchange rate, on the current account of the balance of payments, and on all New Zealand producers of tradable goods and services.
- a willingness to use monetary and fiscal policy in a coordinated fashion if ever New Zealand faces another economic crisis such as the Great Depression of the early 1930s, or even such as the recessionary episodes of the late 1980s and early 1990s.

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