

19.1 pp.493-496

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The QT is a theory of how the nominal value of aggregate income is determined.

The QT states that nominal income is determined by movements in the quantity of money. The QT is represented by the Equation of Exchange (EofE), which states that $M\bar{V} \equiv P\bar{Y}$. The EofE states that the quantity of money (M) multiplied by the number of times that is money is spent in a given year (V) must equal nominal income (PY).

Velocity and output would remain constant in the short run and as a result $M\bar{V} \equiv P\bar{Y}$. Based on these assumptions, it is evident that movements in the price level result solely from changes in the quantity of money.

Dividing both sides of the EofE by V yields $M = \frac{1}{V}PY$. Since V is constant, $1/V$ is also constant and can be represented by k . In other words, the Quantity Theory of Money Demand is given by $M^d = kPY$. The demand for money is therefore purely a function of income, and interest rates have no effect on the demand for money.

The empirical findings suggest that velocity fluctuates too much, even in the short run, to be treated as a constant.

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Keynes identified the following three motives behind the demand for money:

Transactions motive: People hold money because it is a medium of exchange that can be used to carry out everyday transactions. How much money people hold for transactions is influenced by their level of transactions, which is positively related to income.

Precautionary motive: People hold money as a cushion against unexpected need. Again, how much money people hold as precaution is influenced by their level of transactions, which is positively related to income.

Speculative motive: Individuals can choose between holding money and holding bonds. They will only hold money if its expected return is greater than the expected return on bonds. As money did not earn interest in Keynes' days, its expected return is zero. There is an inverse relationship between the interest rate and the price of bonds. As the interest rate increases, the prices of bonds fall, and vice versa. Individuals also assume a certain "normal" level of the interest rate. If the interest rate is below the "normal" interest rate, people will expect the interest rate to rise, thus lowering the price of bonds and leading to capital losses. Subsequently they would rather hold money, as the expected return on money (zero) is bigger than the expected return on bonds (negative). If the interest rate is above the "normal" interest rate, people will expect the interest rate to fall, thus increasing the price of bonds and leading to capital gains. Subsequently they would rather hold bonds, as the expected return on money is now smaller than the expected return on bonds.

The liquidity preference function illustrates the relationship between money demand and the interest rate and money demand and income:

$$\frac{M^d}{P} = f(i(-), Y(+))$$

Transactions demand

The basic idea of the Baumol-Tobin analysis is that there is an opportunity cost of holding money. By investing that money into other assets (e.g. bonds) interest can be earned. The lower an individual's average cash holdings – which imply higher investment in bonds – the more interest can be earned. There is, however, a trade-off: The individual must pay brokerage fees and he will also take time to sell his bonds to raise cash. If he holds a little cash, he can earn a lot of interest on bonds, but he will incur greater transaction costs. The higher the interest rate, the benefits of holding bonds will be high relative to transaction costs and vice versa. This implies a negative relationship between the transactions demand for money and the interest rate.

Precautionary demand

There are certain benefits of holding precautionary money balances, but there is also the opportunity cost of the interest foregone by holding money. Similar to the transactions demand analysis, there also exists a trade-off. As the interest rate rises, the opportunity cost of holding precautionary balances rises and vice versa. Therefore the precautionary demand for money is negatively related to the interest rate.

Speculative demand

Keynes' analysis implies that individuals would only hold both money and bonds if the expected return on both is exactly equal (a rare occurrence). There is therefore no room for diversification in Keynes' speculative demand analysis.

Tobin expanded on this theory, by incorporating the riskiness of the returns from each asset – specifically, he assumed that most people are risk-averse (that they would be willing to hold an asset with a lower expected return provided it is less risky). While the return on money is certain (and zero), bonds can have substantial fluctuations in price and their returns can subsequently be quite risky, and even negative. People might therefore be willing to hold more money, even if its returns are lower than those of bonds, because money is less risky. People can therefore diversify by holding both bonds and money, and subsequently reduce their risk exposure.

Friedman assumed that the demand for money must be influenced by exactly the same factors that influence the demand for any asset. He formulated his demand for money as follows, based on the familiar Theory of Asset Demand:

$$\frac{M^d}{P} = f(Y_p^e(+), r_b - r_m^e(-), r_e - r_m^e(-), \pi^e - r_m^e(-)) \text{ where}$$

Y_p^e = permanent income (expected average long-run income)

r_m^e = expected return on money

r_b = expected return on bonds

r_e = expected return on equity

π^e = expected inflation rate

Higher permanent income (or wealth) increases the demand for an asset. Individuals can also store wealth in other forms besides money, such as bonds, equity and goods. The holding of these assets will be determined by their expected returns relative to the expected return on money. E.g. if the expected return on bonds is higher than the expected return on money (in other words $r_b - r_m^e > 0$) and individual would rather hold bonds than money, and the demand for money will fall (hence the negative sign in the equation). Exactly the same argument goes for the expected returns on equity relative to money. The final term $\pi^e - r_m^e$ represents the expected return on goods relative to money. The expected return from holding goods is the expected rate of capital gains that occurs when prices rise and is therefore equal to the expected inflation rate.

The expected return on money is influenced by two factors: (i) The services provided by banks on deposits; and (ii) The interest payments on money balances. If any of these two factors improve, the expected return on money will increase.

Friedman argued that competition and provision of services in the banking sector would cause $r_b - r_m^e$ to remain relatively constant even if interest rates fluctuate. He argued that interest rates should have little effect on the incentive terms in the money demand function, as any rise in the expected returns on other assets as a result of a rise in interest rates would be matched by a rise in the expected return on money.

Empirical evidence supports

- the liquidity trap situation (ΔM has little effect on Δi) does not occur in practice
- interest rates do affect the demand for money
- Up to 1970, M_d may have been stable. After 1973, the money demand function was also affected by the rapid pace of financial innovation

The overall conclusion is that the demand for money function is unstable, and that the setting of rigid money supply targets to control aggregate spending may thus be ineffective.

The purpose of the ISLM model is to show the links between the major macroeconomic variables. It shows how the real components of Y ($Y = C + I + G + NX$) are related to each other, as well as how these real variables are related to the monetary variables M and i .

However, any model is necessarily a simplification or stylisation of reality and the realism of a model is a matter of judgment. In the real world i is set exogenously by the central bank. ISLM tells us that (i, Y) are endogenous and that M is exogenous. Endogenous variables are determined within a model, while exogenous variables are determined outside the model. The ISLM model also assumes that P is constant because there is no variable within the model that represents the aggregate price level. This is a simplifying assumption that does not agree with reality. We can, however, live with it if we apply the ISLM model to the short-term and if inflation is low.

The assumption of ISLM that i is endogenous (determined within the model by the supply of and demand for money) and that money is exogenous (in the sense of being determined outside the model by the central bank) is unacceptable. In many countries, including South Africa, the interest rate is controlled by the central bank while M is free to find its own level as influenced by i . This implies that the LM curve is horizontal at the interest rate fixed by the central bank.

In SA the SARB automatically provides as much accommodation as required at the repo rate: Because the repo rate is controlled by the central bank while M is free to find its own level M is therefore endogenous. While we can still use ISLM if we assume that the LM curve is horizontal at the interest rate fixed by the central bank it remains at best an approximation for the real world.

Structural model evidence:

Structural model evidence examines whether one variable affects another by using data to build a model that explains the channels through which this variable affects the other. A structural model is a description of how the economy operates using a collection of equations that describe the behaviour of firms and consumers in many sectors of the economy.

Advantages:

- Each transmission mechanism can be separately evaluated
- Easy to predict the effect of changes in M on Y
- Easy to predict how institutional changes in the economy might affect the link between changes in M and Y

Disadvantage:

- Difficult to know the correct structure of the model
- Failure to include relevant variables might result in a serious misjudgement.

Reduced-form evidence:

Reduced-form evidence examines whether one variable has an effect on another simply by looking directly at the relationship between the two variables. Such a model would look at e.g. whether movements in Y has a high correlation with movements in M .

Advantage:

- No restrictions are imposed on the way monetary policy affects the economy

Disadvantage:

- Correlation does not necessarily imply causation

The early Keynesians (during the 1950s and 1960s) believed that the quantity of money is an insignificant causal factor in the explanation of total demand, while the monetarists emphasised that money plays an important role in this regard.

The early Keynesian position was based on structural model evidence and focused on the $\Delta M \rightarrow \Delta i \rightarrow \Delta I \rightarrow \Delta Y$ link, while the monetarist view focused on reduced form evidence and uses three types of evidence: timing, statistical and historical evidence.

The Keynesians believed that monetary policy did not matter at all to movements in aggregate output and the business cycle, in other words that money is neutral. This belief stemmed from three pieces of structural model evidence:

- They believed that monetary policy affected aggregate demand solely through its effect on nominal interest rates. During the Great Depression interest rates were incredibly low, which should have led to an increase in aggregate output. Yet the US economy suffered its worst contraction in history. This led the Keynesian to believe that changes in the money supply had no effect on aggregate output.
- While the Keynesians believed that changes in the money supply (and thus interest rates) affected aggregate demand via investment spending, early empirical studies found no linkage between movements in nominal interest rates and investment spending.
- Surveys of businesspeople revealed that their decisions on how much to invest in new physical capital were not influenced by market interest rates.

The monetarists argued that the Keynesian structural model was severely flawed, and therefore they objected to the assumption of neutral money. They further argued that monetary policy was in fact contractionary during the Great Depression: While certain interest rates were low, all interest rates did not move together over time, as is generally the case. The structural flaw of the Keynesian model therefore was that it only incorporated certain interest rates (such as US treasury bills), and did not take other interest rates into account as well. In addition, low nominal interest rates do not tell the whole story. During the Great Depression the US economy was experiencing **deflation** (a negative inflation). According to the Fisher equation, negative inflation rates would have a negative effect on the real interest rate, **regardless of low nominal interest rates**. As such, the Keynesian weak link between *nominal* interest rates and investment spending does not rule out the strong link between *real* interest rates and investment spending.

The monetarist view used the following three types of evidence:

Timing: Empirical studies found that money growth causes business cycle fluctuations, but its effect on the business cycle operates with long and variable lags.

Statistical: The Monetarists used a simplified Keynesian structural model to show that the money supply is the source of fluctuations in aggregate spending. There was some criticism against

Historical:

this model, however, namely: They ignored the possibility of reverse causation; they oversimplified the Keynesian model which exaggerated the effect of money; their measure of autonomous expenditure was constructed poorly.

The Monetarists found several instances where the changes in the money supply appeared to be exogenous events, thus providing further credibility to their argument: that money growth caused a business cycle expansion.

When the SARB changes the repo rate, it sets in motion a chain of economic events. Economists refer to this chain of developments as the "transmission mechanism of monetary policy". The main links in the transmission mechanism of monetary policy can be briefly described as follows:

The operational instrument of monetary policy is the repo rate. The repo rate has direct effects on other variables in the economy, such as other interest rates, the exchange rate, money and credit, other asset prices and decisions on spending and investment. Hence changes in the repo rate affect the demand for and supply of goods and services.

The pressure of demand relative to the supply capacity of the economy is a key factor influencing domestic inflationary pressures. Inflation is, inter alia, the result of pressures originating in the labour market and/or the market for goods and services as well as of imported inflation, which is influenced by exchange rate movements.

If market interest rates, the exchange rate of the rand, credit or other asset prices do not respond meaningfully to changes in the repo rate, monetary policy will have little effect on the economy – that is, the channels will be blocked or not fully functional.

In South Africa, the repo rate affects the economy through a number of channels such as the interest rate, asset price and credit channels. Various theoretical models have been developed to better understand the channels through which monetary policy affects aggregate demand and ultimately inflation. The complexity of these channels give rise to lags in the transmission mechanism, that is, the time period between the policy action takes place and its ultimate effect on the economy. In South Africa, these lags vary between 12 to 24 months.

The interest rate channel can be presented as follows:

↑repo rate → ↑interest rates → (↓Inv, ↓C) → ↓Y

where Y is real income, C: real consumption and Inv: real fixed capital formation.

The interest rate impact (changes in the repo rate) initially influences the interest rates on retail financial products. Soon after the repo rate is changed, domestic banks are inclined to adjust their lending rates usually, but not necessarily, by the same amount as the policy change. In South Africa, the Reserve Bank repo rate, the prime overdraft rate of commercial banks and the interest rate on fixed deposits generally move in tandem.

Firms and individuals respond to the change in interest rates by altering their investment and spending patterns. As a result, consumer spending (C), fixed capital formation (Inv) and real output (Y) start to respond. It is through this channel that demand pressures feed through changes in the output gap to inflation.

Other asset prices can transmit monetary effects through the economy. Firstly, the prices of foreign exchange act as a channel for the transmission of monetary effects. When South African real interest rates fall, deposits denominated in rand become less attractive than deposits denominated in foreign currencies, and the rand depreciates. The lower value of the rand (ER) makes foreign goods more expensive than domestic goods, causing a rise in net exports (NX), and hence in aggregate output. In South Africa, there is a strong inverse relationship between net exports (its share of GDP) and the real prime rate. The schematic illustration of the exchange rate channel is as follows:

↓repo rate → ↓interest rates → ↓ER → ↑NX → ↑Y

A further significant consequence of the depreciation of the rand (ER) is that it directly increases the cost of imported goods and therefore leads to increases in the domestic aggregate price level, and hence increases inflation.

↓ER → ↑Cost of imports → ↑P

Monetary policy can also affect the economy through its effect on equity prices. As monetary policy is relaxed, the public finds that it has more money to spend, and one potential place for spending this money is the stock market. The higher demand for stocks leads to an increase in its prices. Combining higher equity prices with higher fixed capital formation leads to the following schematic transmission of monetary policy:

↓repo rate → ↑equity prices → ↑Inv → ↑Y

Household wealth is another asset that operates as a channel for transmitting monetary effects. For households, wealth is a vital component of their lifetime financial resources. Portfolios consisting of common stocks and property form a major part of an individual's wealth. Monetary policy has the ability to influence consumers' balance sheets (ie their wealth). Relaxing monetary policy will result in an increase in equity and property prices, thereby increasing consumers' financial resources and consequently raising their consumption. Schematically, this transmission channel is as follows:

↓repo rate → ↑(prices on equity, property, land) → ↑C → ↑Y

This channel operates, firstly, through bank lending. Certain borrowers will not have access to credit markets unless they borrow from banks. Expansionary monetary policy increases bank reserves and bank deposits, thus increasing the amount of loans available. This increase in loans will cause fixed capital formation and consumer spending to rise.

Schematically, the monetary policy effect is represented as:

↓repo rate → ↑bank deposits → ↑bank loans → (↑Inv, ↑C) → ↑Y

A significant implication is that monetary policy through this channel will have a greater effect on those more reliant on bank loans, such as smaller firms, since larger firms have recourse to obtaining funds by issuing new share capital. As circumstances and restrictive regulatory frameworks change to allow banks greater ability to raise funds, the potency of this channel will be reduced.

Secondly, credit affects the balance sheets of households and firms and also arises from asymmetric information in credit markets. The higher net worth of firms and households leads to an increase in collateral available for loans and the banks' potential losses from adverse selection decreases. This, coupled with the improvement in the cash-flow situation of firms and individuals, can be depicted in the following schematic illustration for the balance sheet channel of monetary policy transmission:

↓repo rate → ↑price expectations → ↑cash flow → ↓adverse selection → ↓moral hazard → ↑lending → (↑Inv, ↑C) → ↑Y

Friedman stated that the source of all inflation episodes is a high growth rate of the money supply. By simply restricting the growth rate of the money supply, inflation can be prevented.

The proposition is based on reduced-form evidence which shows a high correlation between inflation and the rate of growth in the money supply. However, because reduced-form evidence may contain reverse causality or the effect of an outside factor which drives both M and P, it is important to recognise that the high correlation does not necessarily mean that inflation is caused by the growth in the money supply.

In the case of the German hyperinflation (1921-1923) the change in the money supply was, however, an exogenous event. It was caused by the government's need to finance expenditures post-World War I, and the fact that their expenditure far exceeded their revenue. They could not raise taxes or borrow money, so they had no option but to print money. In addition, following the French invasion of the Ruhr, the German government also started making payments to striking workers in the Ruhr area. Government expenditure and the printing of money exploded and led to a dramatic rise in the price level.

In several Latin American countries during the 1980s, the money supply also increased dramatically. This was brought about by governments' unwillingness to raise taxes to finance government expenditure; instead they resorted to printing money. As in the German case, this sharp increase in the money supply was an exogenous event which led to extremely high rates of inflation.

24.2 pp.87-88 (SG)

(8)

Inflation is measured as the % increase in the price of a basket of goods over a period of time, customarily expressed as an index number relative to a base year. Baskets are compiled in order to capture the spending pattern of the average consumer or producer in a country and are updated every few years. The price of such a basket of goods can be regarded as the aggregate price level.

The consumer price index (CPI) measures the cost of consumption of an average household. It measures market prices which includes product taxes.

The production price index (PPI) records prices of manufactured goods at the factory door. The aim of the PPI is to measure the cost of production.

"Core inflation" is the CPI net of prices of items that are highly volatile in the short term or set by government. The aim of the core inflation rate is to measure the sustained inflationary tendency in the economy.

24.3 pp.88-89 (SG)

(8)

Inflation does not refer to a momentary, once-off increase in the general price level but to a spiral of sustained price increases. Inflation is a dynamic process rather than an event. An inflationary impulse is a once-off rise in the price of a single good – or a "first-generation effect". The initial single price rise can occur at the initiative of the supplier. Suppliers may increase prices in order to increase their profit margin (called profit-push). In addition to cost/profit push, the price of a good can also increase in reaction to higher demand for the good (demand-pull). An inflationary impulse does not yet constitute inflation. An inflationary spiral (or inflation) refers to the spiral of 2nd, 3rd, and later generation effects, which follow from the first-generation impulse. Inflation is a sustained spiral of price increases. Whether inflation ensues depends on the reaction to this initial (first-generation) price rise.

When a market price increases, suppliers raise their claims on real wealth at the expense of demanders (first-generation effect). Demanders can subsequently react to these losses, not only by simply accepting them or by compensating for them through increasing their real wealth creation (produce and sell more), but also increasing their price on other demanders when acting as supplier themselves. Price increases feed on themselves and total income claims keep on running ahead of total real wealth creation at existing prices (second-, third-, up to 15th-generation effect). In order to achieve ex post equality between total income claims and real wealth creation, the nominal value of the latter is then inflated.

The inflationary process is dynamic of nature. While inflationary impulses can be a matter of either cost-push or demand-pull, inflationary spirals are a matter of cost-push only.

24.4 pp.616-617, pp.89-90 (SG)

(10)

An inflationary impulse of the cost/profit push variety is initiated by suppliers and does not have monetary implications. However, once such an impulse turns into an inflationary spiral, with demanders buying the good at the higher price and making up for the loss by increasing their own prices when acting as suppliers themselves, there are monetary implications because demanders require extra finance to buy the same number of goods at higher prices. An inflationary impulse of the demand-pull variety requires a prior increase in the financial resources of demanders.

To obtain the necessary extra money, agents can dis-board (which has a limit), sell real or financial assets (which does not help the economy as a whole), or borrow more from the banking sector, which soon becomes the only option. That is essentially why the money stock needs to increase during an inflationary process. The causal direction can go from $P \uparrow$ to $M \uparrow$, since $P \uparrow$ raises the financial needs of buyers (goods cost more) which inclines them to borrow more from the banking system, thus causing $M \uparrow$.

If the money stock does not increase (or does not increase sufficiently), a contraction in sales volume is inevitable, demanders reacting to increased prices by reducing their real purchases, which, if it goes on for too long, could lead to job losses. Prices can rise without an increase in the money stock for a little while, but the economy will eventually and inevitably run out of finance to buy up the same amount of goods. That is why central banks often allow the money stock to increase in accordance with the inflation rate, although they are careful not to let the money stock increase with more than the inflation rate and thus fan the inflationary flames by way of an additional demand-pull impulse.

The well-known dictum of Milton Friedman that inflation is always and everywhere a monetary phenomenon is correct insofar as it points to the fact that persistent price increases require an increase in the total money stock if the volume of transactions is not to shrink. However, it is incorrect insofar as it suggests that inflation is always and everywhere a demand-pull phenomenon facilitated by increases in the money stock ("too much money chasing too few goods"). Cost/profit push factors can also play a role as inflationary impulses, while inflationary spirals are propelled by cost-push factors only – that is, by the desire to protect real wage rates and profit margins by consistently carrying forward cost increases into higher prices.

24.5 pp.90-93 (5G)

(18)

If there is a rise in the price of a good, and demanders accept the loss and do not raise the price of the goods (including labour) they supply themselves, the initial inflationary impulse is stopped – no inflationary spiral occurs. However, when demanders compensate for that loss by raising the price of the goods (including labour) they supply themselves, an inflationary spiral is set in motion. Inflation is thus essentially a symptom of conflict over income distribution.

(1) An economy is prone to inflationary spirals when it regularly faces sudden significant price increases. Smaller increases in goods prices tend to be absorbed. But if there is a sudden significant increase in the price of a good which is a major determinant of the cost of production of producers or the cost of living of consumers, the effects on real income cannot be ignored. Then producers and consumers compensate for the loss in real income (by raising prices and wages) and inflationary spirals are set in motion.

(2) An economy is prone to inflationary spirals when its major sectors (business, government and labour), are all large and powerful enough to protect the real value of their income by increasing their own prices. This is partly due to the lack of competitiveness in both its goods and its labour markets. When business can increase its prices without fear of losing sales volume, unions can secure higher wages without fear of compromising employment levels, and government can increase taxes without fear of incurring a tax revolt, there is little incentive to resist price increases. They will be inclined to pass on cost increases rather than absorb them (lower real profit margins, wages rates and tax rates). Only when firms are major exporters and in danger of compromising their international competitiveness if they give in to overly high wage demands at home, will there be an incentive to resist such demands.

(3) An economy is prone to inflationary spirals if the money stock is highly elastic, as it is under a modern fiat money system. Then demand-pull impulses are more easily facilitated by increases in credit demand and inflationary spirals are more easily accommodated by similar increases in credit demand. If the money supply were more inelastic, firms would be more hesitant to pass on cost increases to their customers in the form of higher prices for fear of losing sales volume. The precise aim of tight monetary policy as a counter-inflationary measure is to simulate a more inelastic money system by restricting money creation through high interest rates. When there is less money and the demand for goods is scarcer, firms are encouraged to absorb more cost increases and accept lower profit margins.

24.6 pp.91-93 (5G)

(20)

(a)

In SA, the foreign sector claims about 25% on the social product. About 25% of the cost of production of domestic industry consists of imported inputs (mainly tools and machinery). Most import and export prices are determined in the international markets and denoted in US Dollar (\$).

(a.i)

When the rand price of imports changes due to movements in the R/\$ rate, then the claims of foreigners (in R terms) on the social product of SA change.

A weakening/depreciating Rand (the exchange rate falls) $\uparrow R/\$ \rightarrow \uparrow R$ price of both imported and exported goods. When $\uparrow R/\$,$ the asymmetric situation arises in which SA importers pay higher import costs but foreigners still receive the same amount of \$ (assuming the \$ price did not change). And $\uparrow R/\$ \rightarrow$ higher R income for SA exporters $\uparrow R$ income without foreign buyers experiencing a loss of \$ income.

A strengthening/appreciating Rand (the exchange rate improves), $\downarrow R/\$$ will make South African buyers of imported goods better off in R terms without making foreign sellers of these goods worse off in \$ terms and SA sellers of exported goods worse off in R terms without making foreign buyers worse off in \$ terms.

(a.ii)

While R-prices increase sharply when $\uparrow R/\$$ (\uparrow import costs), they are inclined to decrease much slower and hesitantly when the exchange rate strengthens again. This is an indication of the lack of competitiveness of firms.

Firms are much slower to lower R-prices when import costs fall (strengthening of the R), in which case firms enjoy higher profit margins. If profit margins are to remain the same, there should be a drop in prices in absolute terms when the R cost of imports decreases, not only smaller and slower price increases.

(b.i)

The increasing export orientation of SA since reintegrating into the international economy led to prices of several exportable locally produced goods being increasingly \$ denominated. When local producers are able to export, local consumers must compete with foreign consumers to purchase these goods. Because foreign consumers are prepared to pay a \$ price for goods, local consumers must be prepared to pay at least the same price (dollar parity pricing). A fall in the value of the R means that the \$ price of the good translates into a higher rand price – something that obviously benefits local producers at the expense of local consumers.

However, when the R strengthens, and the international \$ price translates into a lower rand price and local consumers gain at the expense of local producers. In other words the principle can work both ways. Provided that local producers do actually drop their prices in absolute terms when the rand strengthens. Local maize prices rose sharply during 2002 after the dramatic fall in the rand and fell just as sharply when the rand strengthened in the next two years, in spite of the fact that the cost of maize production did not change that much. Similarly, since Iscor has been sold to Mittal, local steel prices have also become dollar parity prices – hence an increase in the international dollar price or a weakening of the rand raises the local R price of steel.

(b.ii)

A rise in the oil price coupled with $\uparrow R/S$ means that the foreign sector dramatically increases (in R terms) its claim on the real wealth of SA. Paying more \$ for oil and paying more R for \$, SA have no choice but to accept a lowering real income. When real economic growth falls and foreign claims on SA increases, the necessary and unavoidable real income sacrifice is painful.

24.7 p.93 (SG)

(17)

(a) Inflation cannot come down unless real income sacrifices are made. To stop an inflationary spiral, the increased cost must either be borne by local business in the form of lower profit margins, or by households or government in the form of a reduction of real income. If none of these carry the cost, then people who hold money carry the cost, since inflation reduces the purchasing power of money. If people refuse to carry this purchasing power loss by raising their wages, accelerated inflation sets in.

The essence of any anti-inflationary policy is to try to convince business, labour and government to absorb some of the inflationary cost increases and accepting some reduction in real profit margins, wage rates and tax rates, so that inflation can gradually be squeezed out of the system.

(b) A structural solution to inflation would entail a reduction in the inflation proneness of the economy. This requires greater stability in the most important input prices (exchange rate, wage rate and oil price), more competition in goods and labour markets, and a less elastic money supply. This requires major institutional changes.

(c) A reduction in the inflation rate does not require a reduction in prices in absolute terms (say from R7,50 per litre of milk to R6,80 per litre of milk). It suffices for prices to rise more slowly. In the present social climate, it is impossible for nominal wages to come down in absolute terms, and the prices of local, labour-intensively produced goods are unlikely to decrease in absolute terms as well.

(d)

The price of imported inputs falls in absolute terms when the value of the R increases (the exchange rate strengthens). It may be possible for the price of locally produced goods to decrease in absolute terms when a large part of the total cost of production consists of imported inputs. An absolute reduction in the price of goods will have a strong downward influence on the inflation rate, and a strengthening of the value of the currency is an effective and powerful way of reducing inflation. A weakening of the R, however, has a strong inflationary impulse.

24.8 pp.94-95 (SG)

(18)

(a)

Authorities institute price controls, when they fix prices by law. But experience all over the world has shown that such a policy does not work and has serious detrimental side effects. It leads to the development of black markets, reduces supply if the fixed price does not allow sufficient cost recovery (all the shops go empty, as happened in Zimbabwe), stifles competition and cannot do anything about the prices of imports. Moreover, its inflation-dampening effect tends to be short-lived and nullified by accelerated inflation once the price controls are lifted.

(b)

This counter-inflationary policy option is potentially highly effective. Business, labour and government could sit around a table and work out a compromise on allowable price/wage/tax increases, in an effort to equitably share the necessary sacrifices to squeeze out inflation, which is partially how many European countries got rid of their inflation in the 1980s.

But such a strategy would require a degree of willingness to sacrifice sectional interest for the sake of the interest of the country as a whole, which may not be present in South Africa. The antagonism and mutual distrust between business, labour and government are probably too strong in South Africa for such a cooperation to materialise.

(c)

This option is adopted by most central banks to fight inflation, and probably the only feasible one for SA: tight monetary policy by way of high interest rates.

The only operational variable of monetary policy is the i -rate on bank loans. By $\uparrow i$, the central bank seeks to raise the cost of bank credit, which is meant to reduce the net demand for credit. This, in turn, dampens the total amount of money in circulation, which decreases the total demand for goods.

Faced with a lower demand for goods and the resultant threat of not being able to sell their goods at a higher price, businesses are then encouraged to absorb more of their cost increases and accept lower profit margins. Greater scarcity of demand increases competition between businesses. Apart from encouraging firms to accept lower profit margins, this greater competition also strengthens their resolve to withstand wage demands. By thus forcing business and labour to accept reduced real profit and wage rates, it is envisaged that inflation can be gradually squeezed out of the system.

However, tight monetary policy by way of high i is far from reliable.

(1) Increases in the cost of credit need not immediately lead to lower credit demand. A higher interest rate dampens credit demand only with a long and variable lag – from six months to several years. In the interim, the total money stock and therefore total demand for goods is hardly restrained at all. Nonetheless, there also is a direct effect of raised interest rates on people's disposable incomes, even if it has not been effective in reining in the demand for credit and has not reduced growth in the money stock. Increased interest rates raise the interest payments on a given amount of debt which leaves people with less money to buy goods (i.e. lower demand for goods).

(2) ↑i not only works on the demand side by lowering demand for goods, but also on the supply side by **increasing cost - especially significant for small businesses** which often have significant overdrafts. When ↑i cost increases are passed on to buyers – which is not unthinkable – an ↑i can actually have an inflationary effect!

(3) The success of tight monetary policy in combating inflation requires the cooperation of business and labour, which the central bank does not always enjoy. In South Africa in particular, business has tended to **increase its prices** by more than what is justified in terms of their raised cost and has not always lowered its prices when cost comes down again (such as when the exchange rate strengthens). Unions in South Africa have also tended to claim wage increases far exceeding the inflation target, sometimes even exceeding the current inflation rate. By resisting any real profit margin and real wage rate sacrifices and, even worse, by seeking to gain from the general inflationary climate, business and labour are effectively sabotaging the Reserve Bank's policies. Government itself, awkwardly enough, does not always cooperate that well with its own counter-inflationary policies - it allowed many administered prices (e.g. the price of electricity and telephone calls) and civil servant salaries to increase by more than the inflation target and even by more than the inflation rate. Government seems to forget that if everybody keeps on increasing their prices with the inflation rate, that rate will never come down. Again, a reduction in the inflation rate can only materialise when people accept that their incomes rise by less than the inflation rate, that is, when they make real income sacrifices.

When business, labour and government do not cooperate by restraining their price, wage and tax rate demands, a tight monetary policy could easily lead to recession. The monetary authorities will then be **under pressure** to let go of tight policy and allow **interest rates** to drop in order to stimulate credit demand and total spending. Of course, the interesting point is that such a recession will then have been caused as much by the tight monetary policy as by the refusal of business, labour and government to simultaneously restrain their price and wage demands. Even so, in all likelihood, public opinion will put all the blame on tight monetary policy, which will increase the pressure on central banks to relax their tight monetary policy in an effort to stimulate demand again. Alternatively, they could maintain high interest rates and use fiscal stimulation to achieve the same end, which has the advantage of appearing not to give in to public pressure.

24.9 pp.95-96

The success in lowering inflation during 2004-2007 can be attributed **almost entirely** to the reduced import cost following the strengthening of the rand, rather than to restrictive demand management. During the recent past, the strengthening of the rand has made it possible for us to achieve a lower inflation rate without having to make real income sacrifices. The foreign sector can make real income sacrifices in rand (which is what matters for local inflation) without making any such sacrifices in dollars (assuming that import prices are dollar-determined, as they normally are). An increase in the value of the currency is a painless and effective way of reducing inflation, although it reduces the rand income of SA exporters.

However, the August 2008 weakening of the rand, coupled with a dramatic increase in the dollar price of **imported goods** (most prominently oil) has had the **opposite effect** of significantly increasing the foreign sector's claims on our social product (our wealth). Foreigners now demand significantly more of our wealth. Given that the R is not likely to strengthen significantly in the foreseeable future, the only way to bring down inflation is when South Africans as a nation (labour, business and government) temper their nominal income claims in such a way that they accept lower real incomes. Only by accepting the pain of real income sacrifice can the inflation rate come down, even if real growth may somewhat reduce this sacrifice.

The problem with strengthening the rand as a counter-inflationary measure is, of course, that the exchange rate cannot be permanently pushed upwards by the authorities. It cannot be controlled. The lowering of the inflation rate due to a rise in the value of the rand must be regarded as a windfall gain just as a rise in inflation due to falls in the value of the rand is a windfall loss.

24.10 pp.96-97 (SSG)

Influencing the public's inflationary expectations plays a significant role in any counter-inflation policy, of which the inflation targeting framework adopted by the South African government affords a clear example. Widely publicising an inflation target and emphasising the government's resolve to reach that target is, to a significant degree, an exercise in persuasion. By these means the authorities wish to convince the public to revise its inflationary expectations downwards, which is essential because inflationary expectations are a main determinant of future inflation and thus become self-fulfilling prophecies: people factor their inflationary expectations into their current income demands, which is then exactly what makes these inflationary expectations come true in the future.

Pricing decisions by business are normally proactive, raising prices in anticipation of future cost increases. To the extent that the monetary authorities manage to persuade business to revise their inflationary expectations downwards, business will be inclined to raise its prices by less, which would, in turn, incline labour to temper wage demands, thus reducing inflation. When inflationary expectations are subsequently revised downwards, a downward inflationary spiral is set in motion. After all, just as rising inflationary expectations set in motion an upward inflationary spiral, so too do falling inflationary expectations set in motion a downward inflationary spiral.

Productivity: Inflation damages real productivity when it turns economic agents away from productive activity and productive investment, which can happen for three reasons.

Firstly, productive investment of money and effort is discouraged because inflation adds an extra source of uncertainty to estimates of future profitability underlying investment decisions. Generally speaking, it contributes towards a general climate of instability and pessimism which is always bad for investment.

Secondly, inflation means that changes in nominal prices no longer reflect changes in relative prices, which are the prices that agents need in order to make decisions about what to buy or sell. Relative prices can be obtained by deducting the inflation rate from nominal price increases, which is difficult precisely because the inflation rate is normally only known after the fact. Inflation thus tends to distort relative prices, adding to an atmosphere of instability and pessimism which discourages investment.

Thirdly, inflation causes people to divert their effort and capital away from productive enterprise towards non-productive investment merely to protect the real value of their wealth, such as collecting stamps or antiques.

Income distribution: The first category are those who lack the bargaining power to increase their nominal incomes in accordance with the inflation rate or, even worse, who are on contractually fixed incomes – the unemployed, the non-unionised, pensioners, and small business owners.

The second category consists of those people who hold only money, because inflation reduces the purchasing power of that money. It is the poorest in society who are worst hit by this effect: the greatest proportion of their wealth lies in the money they receive as wages. The wealth of richer people is better protected against inflation – a significant proportion of their wealth is in goods and assets (homes, land, shares, etc), the nominal value of which normally keeps pace (increases) with inflation.

The third category consists of creditors – people who have lent money to others. Because inflation means that the purchasing power of money steadily declines over time, creditors are repaid in money units of lower purchasing power. This effect, however, happens only if interest rates are not adjusted upwards to compensate for this loss, as they often are. Only when inflation causes a decline in the real interest rate on debt (roughly determined as the nominal interest rate minus the inflation rate) do creditors lose as a result of inflation or, for that matter, do debtors gain from inflation.

The fourth category: tax payers. Inflation causes people to fall into a higher income tax bracket. SA has a progressive income tax system - higher income brackets, pay a higher % of income tax - without necessarily an increase in the real value of income and as such represents a redistribution of income to the government. Bracket creep occurs unless government adapts the tax brackets, but in the past the SA government has benefited considerably from bracket creep, although it also regularly changes the brackets in an effort to compensate for inflation.

Foreign investment: An inflation rate larger than those of our main trading partners can also discourage foreign investment, because the exchange rate will then fall. This means that foreigners can only withdraw their money at a lower pound, euro or dollar value. The return on investment in rand must make up for this loss, which does not always happen. The damage of inflation to foreign investment also has a purely psychological element: a high inflation rate simply does not look good to foreign investors, especially in a global environment that places a high premium on macroeconomic stability.

However, one is not always so sure about the contribution that foreign investment makes to our economy, especially because it consists for over 90% of highly volatile short-term investments in securities, with very little long-term FDI taking place.