

INFLATION IN A SMALL OPEN ECONOMY

by Ian Rowell

THIS ESSAY deals with the determinants of inflation in a small open economy, but I will begin by explaining the importance of price stability to economic theory and policy. Central to the Keynesian-Classical debate is the question of whether, after a shift in demand, adjustment to a new equilibrium is achieved by a change in the quantity of production or by a change in the price level. Keynesians say either that prices will be stable or that most of the adjustment will come from a change in the quantity of output. Classicists postulate that changes in demand will change prices rather than quantities. The crux of the argument is that the authorities may be unwilling to contemplate a rise in short-term production quantities at the expense of price stability, since sustained inflation will eventually damage the long run level of output.

THE COSTS OF PRICE INSTABILITY

The output costs of inflation will vary according to whether it is perfectly anticipated or not. Perfect anticipation comprises accurate prediction of the inflation rate together with the indexing of all nominal sums mentioned in contracts. Here there are two main output costs. Firstly menu costs are attached to changing prices, especially when inflation is high. Secondly, the price mechanism is weakened. What makes markets efficient is that they allocate through relative price changes, directing producers to produce more of a popular good and directing consumers to buy where goods are cheapest. Inflation, which is a rise in the general level of prices, obscures these changes.

Unanticipated inflation, as well as the latter two output costs of anticipated inflation, has a further output cost due to the uncertainty which it causes about future prices. This hampers decision making. Fewer fixed price orders will be placed or accepted if the future rate of inflation is unknown. This uncertainty means that planning will be hampered and investment will fall. More will also be invested in inflation hedges like gold rather than in productive assets. Moreover inflation means a loss in competitiveness for the open economy unless it is offset by a change in the exchange rate. But when the rate of inflation is unknown, the exchange rate change is unlikely to be accurate.

Unanticipated inflation also effects equity, since it redistributes income and wealth. Firstly, it transfers money from the private sector to the public sector as tax bands are unindexed. A rise in nominal income (with no rise in real income) where

tax bands are unchanged means a larger fraction of real income will be taxed at higher or marginal rates. Secondly, if borrowing and lending are done on fixed nominal rates, inflation will redistribute money from borrowers to lenders, (i.e. the real interest rate is a negative function of inflation). Thirdly, those on flexible incomes do better than those on inflexible incomes, such as state pensions, which are adjusted only after a large lag. The elderly, who are both net creditors and living on inflexible incomes are particularly hurt by inflation.

INFLATION IN THE CONTEXT OF A SOE WITH FIXED EXCHANGE RATES

So given that price stability is desirable as a secondary policy objective, (i.e. as a means to the end of higher output and a "fairer" income distribution), the question moves on as to how it can best be achieved. The Keynesian-Classical debate summarized above is not really relevant to policy makers in the small open economy, as demand policy is outside of their control. However inflation can still be largely determined by the choice of exchange rate regime.

In a small open economy with a fixed exchange rate, the price level depends on that abroad, according to purchasing power parity (PPP) theory. The economy's openness means that the traded sector forms a large part of national income. A price rise in the traded sector means a similar rise in the domestic price level. Consider the case where the world price level exceeds the domestic price level, and the two cannot be equalized by a currency appreciation. Home producers will export more, which reduces supply and pushes up domestic prices. The country will not be able to import if higher prices can be fetched abroad, so prices will rise. The converse occurs where domestic prices are higher than foreign prices. Price level movements in the non-traded sector will follow those in the traded sector where the economy is small for two reasons. Firstly, price rises lead to higher wage claims across all sectors. Secondly, the price of intermediate goods will rise.

A weaker form of PPP theory accounts for movements in inflation. It says that the rate of change in world prices, or

$$\pi_d (\text{domestic inflation}) = \pi_w (\text{world inflation}) + e (\% \text{ exchange rate})$$

where the exchange rate is fixed, $e = 0$. But you cannot fix the exchange rate to a world currency. If it is fixed to that of country 1, then

$$\pi_d = W_1 \pi_1 + W_2 (\pi_2 + e)$$

Where the rest of the world is country 2, e is the percentage exchange rate between countries 1 and 2, and the W s are weights summing to one and indicating the share of trade with those countries. If PPP theory holds between the country to which the SOE is pegged and the rest of the world, then

$$\pi_d = W_1 \pi_1 + W_2 \pi_2 \text{ as } \pi_1 = \pi_2 + e$$

or

$$\pi_d = (W_1 + W_2)\pi_1 = \pi_1$$

In other words, PPP theory says that inflation in the SOE is equal to inflation in the country to which it pegs its currency. In this framework, domestic inflationary pressures do not affect the price level except in the short term : they may however effect employment as people shift from Irish to foreign goods, or as firms hire fewer workers.

THE CASE OF IRELAND

Irish evidence suggests that such a relationship existed between Ireland and Britain for most of the sterling link, and between Ireland and Germany in the ERM from 1988 until a few months ago. However the latter link took ten years to be established. Subsequent studies found that there did not exist a strong PPP link between Britain and Germany, which meant that $\pi \neq \pi + e$. This was to be expected since they are both large open economies. In fact Sterling's real exchange rate appreciated over the period, which meant that $\pi + e > \pi$. This did not show up under the Sterling link because when Britain was country 1, W_1 was larger than when Germany was country one, and so the lack of a PPP link between the two countries was less important. So if the country is pegged to a large open economy with which only some trade is done, both its inflation and the inflation of the other trading partners will be important. Indeed, Irish inflation in the 1980's can be explained by a weighted average of British and German rates.

INFLATION UNDER A FLOATING EXCHANGE RATE REGIME

Where the exchange rate is not fixed, domestic factors become more important. This is because the exchange rate fluctuates to eliminate differences between domestic and foreign price movements; inflation rates themselves do not adjust.

Inflation is now caused by the growth in the money supply over and above output growth. Government monetary policy is determined by two factors : its own fiscal policy and the dangers which a restrictive monetary policy may pose to output. In its fiscal policy, it may seek to appropriate a higher share of national income by increasing inflation without indexing the tax bands. Politically this is less noticeable than an increase in tax rates. It may also try to prevent public borrowing from crowding out the private sector by increasing the money supply. If we assume that money supply follows money demand, then public borrowing automatically increases inflation.

Tight money may cost jobs if wage claims are high. If firms increase prices in line with wages, and the government has not increased the money supply, then

the real money supply and consumption will fall and unemployment will rise. If firms do not increase prices, they will hire fewer workers. The government may be tempted to prevent the fall in consumption by increasing the money supply, which allows the increase in prices to be sustained without immediate output costs. So the government may stimulate inflation to prevent immediate unemployment. The extent of the use of this policy instrument will depend upon the strength of unions to force up wages and their ability to resist the downward pressure which the resulting unemployment may put on wage rates. Another factor is that jobs in inefficient industries are unlikely to be regained after a recession. So the government's willingness to tolerate inflation will depend upon the intensity of labour market rigidities and the condition of a country's industrial base.

CONCLUSION

So a fixed exchange rate means external inflation rates are the main determinants of the SOE's inflation rate; a flexible exchange rate means that fiscal policy and labour rigidities are the main determinants. But what determines exchange rate policy? Ultimately the authorities. If they choose to fix the exchange rate then it is partly because they feel the economy can adjust to foreign inflation rates without excessively damaging unemployment. So domestic influences on the domestic inflation rate exist indirectly even in a fixed exchange rate regime.

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