SOME "STYLIZED MACROECONOMIC FACTS"

In macroeconomics, everything tends to depend on everything else. However, we can distinguish primary and secondary effects of particular developments. The following aims to present a rough sketch of some empirical regularities in modern western economies. The emphasis is on the short run and long run effects of active monetary and fiscal policies on the level of economic activity (GDP), inflation and the balance of payments. However, to initiate the discussion, the first couple of points characterize some direct relations between economic activity, inflation rates and interest rates.

1) At any given point in time, we may think of the economy as having a "full employment capacity" to produce goods and services, called the "potential real GD?" or "potential output". This represents the total amount of goods and services that can be produced with a "normal" low rate of unemployment, such as 4-5%. The potential output grows as the labor force and the fixed capital (plant and machinery) increases, and the productive processes are improved (technical progress). Expansionary forces in the economy work quite differently depending on the level of actual GDP relative to potential output. When the economy is close to the potential output, expansive forces tend to result in higher prices, i.e. inflation. If there is slack in the economy, i.e. capital and labor is underemployed, expansionary forces tend to have relatively more impact on real GDP and relatively less on inflation. Nonetheless, the rule: GDP ↑ implies inflation ↑ remains valid. It is the strength of the relative increases in the two economic variables which differs across the various states of the economy. Concern about inflation is due to the consensus that economies work most effectively when prices are stable and predictable. This allows the market system (price signals) to perform its allocational role without distortions due to unexpected inflation or deflation.

2) For longer horizons, **the real interest rate** - the interest rate over and beyond the rate necessary to compensate for inflation - **tends to be rather stable**. This rate describes the trade-off between goods today and in the future. It must be linked to the productive capacity in the economy, i.e. investment projects can only service real interest rates of, say, 2% if the returns from the investments exceed the initial outlays by an average rate of at least 2% per year. Highly productive economies will tend to have high real interest rates. Moreover, capital will tend to flow to countries (and projects) that promise high real rates of return. This tends to equilibrate long run real interest rates across nations. The fact that real interest rates are fairly stable implies that long horizon nominal interest rates reflect the expected inflation rate over this period. It must (approximately) equal the real rate plus the expected inflation (the Fisher effect). In conclusion, we should **expect interest rates and inflation rates to move together over the long run.**

3) **Monetary Policy** is in the hands of the Central Bank (or Fed) but the degree to which the Central Bank is independent from the political administration differs across countries. The Central Bank has the power to determine short term interest rates and exert influence on longer term interest rates through their reserve requirements on banks, the rate they charge in the Feds funds market, and their trading in the government bond markets (open market operations). By pursuing **tight money** policies, i.e., raising reserve requirements and short term interest rates, and by making short term credit and money tight, the Central Bank can push up short term interest rates market wide. This will also put upward pressure on longer-term interest rates via arbitrage relations in the term structure. However, the link to the longer-term interest rates is complicated by the effects of the high short interest rates and the slowdown in the rate of growth in the money supply. These factors tend to reduce economic activity in the short run and inflation in both the short and long run. The lowering of inflationary expectations should reduce the longer-term

interest rates due to the Fisher effect from 2) above. The reverse policy of **loose money** will have the opposite effects. Now short-term interest rates are lowered, money and credit is plentiful, and economic activity and inflation will rise. The split between quantity (production) and price increases will to some extent depend on the slack in the economy as discussed under point 1). Longer-term interest rates may actually increase because of the heightened inflationary expectations.

4) **Fiscal Policy** involves determining the extent and character of direct government involvement in the economy. It determines the magnitude and composition of government (federal, state and local) spending and the amount and type of taxes imposed on the private sector. Hence, the budget deficit is, to a large extent, determined by the stance of fiscal policy. However, the general level of economic activity (via tax revenues) and monetary policy (via interest paid on past government debt) are also important determinants of the budget deficit. Fiscal policy is a powerful short run tool for management of economic activity. By increasing government expenditures without raising taxes, the government can provide an immediate boost to GDP. This comes at the cost of an increased budget deficit, and the long run impact on the economy depends on the response of the economy to the expansionary policy. Only if private investments are increased in response to the action should we expect the action to have a long lasting positive effect on the economy. Otherwise, the increased GDP and budget deficit will tend to produce inflation and higher interest rates in the longer run. This may have direct counterproductive effects on investments. Moreover, activist fiscal policies along these lines also imply a need to contract government spending when the economy is strong. The idea is to reduce government expenditures when the economy is operating at close to full employment, and most of the expansionary forces will result in inflation rather than GDP growth. Then the resulting budget surplus (higher tax revenues, reduced spending) can be used to finance the budget deficit during recessions. However, it is very hard to perform this fine-tuning of government intervention in the economy. It is truly a matter of timing, and the ability of the government to appropriately expand and contract in tune with economic activity is widely questioned. In particular, cutting back spending appears to require a lengthy political process which jeopardizes the whole strategy and gives the policy an inflationary bias. Hence, the appropriate conduct of fiscal policies are hotly debated. Moreover, the composition of government expenditures, not only the level, is important. Investments in infrastructure, education, and R & D may have substantially different economic effects than increases in defense spending, social security, health care, funding for the arts etc. On the other hand, the weighting of the spending categories is not, and should not be, based exclusively on economic considerations. First of all, even the economic importance of each component is not clear, and, secondly, the preferences over the various types of expenditures remain legitimate political issues. It is only safe to ascertain that some types of spending have different implications for future economic growth than others due to their impact on future technological progress, education, infrastructure, the environment etc.

To summarize: an increase in government spending (or a decrease in taxes) and the budget deficit will be expansionary, but the impact on long run economic growth remains uncertain, and may at times be negative. Moreover, the impact on long run inflation and interest rates is likely to be detrimental unless the increase in the budget deficit is reversed at some later date. On the other hand, a reduction of the budget deficit via spending cuts and increased taxation will be contractionary. If administered at the wrong point of the business cycle it may push the economy into recession, deflate sales expectations, and reduce private investments and future economic growth. In any event the action should reduce inflation and interest rates.

5) **The Merchandise or Trade Account** on the Balance of Payments is linked to domestic economic developments. It represents exports minus imports. Underlying any long run trend in this account is the strength or competitiveness of the industries in the export and import sectors. Beyond this fundamental factor the main systematic determinant of changes in exports is the development in the relative prices of the domestic products on the world markets. These are captured, broadly speaking, by the change in the **real exchange rate.** Exports tend to increase with an increase in the real exchange rate as the domestic products are less expensive relative to foreign goods on the world markets. A second influence is the level of economic activity among the trading partners. Everything else equal exports will be higher when the foreigners spend more. Likewise, the level of imports will depend primarily on the real exchange rate and the domestic level of economic activity. In the short run, a depreciation of the real exchange rate may actually result in an increase in the local currency import bill since the price effect (paying more for each unit of imports) may dominate the quantity effect (reduced import purchases). This corresponds to the initial phase of the so-called J-curve. However, in the intermediate to long run the improvement in the relative prices will induce less imports (the long run price elasticity of demand is higher than the short run elasticity). Moreover, a reduction in the domestic GDP will lead to less expenditure on all kinds of products including imports. These observations explain how **austerity measures** can improve the trade account. A tight fiscal policy will tend to reduce economic activity, inflation, and interest rates. This, in turn, should reduce imports directly. The impact on the real exchange rate is uncertain. However, if the economy achieves a lasting reduction in inflation, the currency should strengthen in the long run and provide for a more stable domestic economic environment in the future. However, the long run benefits are not necessarily automatic, and may hinge on implementation of structural reforms and other economic policy strategies. The punchline is that austerity measures by themselves will not correct fundamental economic problems. It can help eliminate excess spending and assist in flushing out inflationary expectations from the domestic economy. If other problems are present they must be addressed separately. These may be rooted in structural problems, inefficient regulation, inadequate incentives, and distorted tax and social welfare systems.

6) The **Capital Account** of the balance of payments is given by the net excess of foreigners' purchases of domestic assets over domestic residents purchases of foreign assets. Shifts in the preferences for financial assets denominated in one currency vis-a-vis another can induce very large capital flows. The equilibrium exchange rate must accommodate such shocks by adjusting to the level at which the existing stocks of assets are held willingly by the investors. In particular, the relative value of the two currencies must reflect the expectations about future exchange rate movements which are influenced by virtually every economic, political, and social factor via their impact on the expected future course of the economy, national policies, the current account etc. The general conclusion is that the exchange rates will reflect the relative attractiveness of holding assets denominated in the different currencies. This depends on the perceived risk-return trade-off of the domestic assets relative to foreign assets.

The main factors behind a strong appeal of a particular currency include **high expected real rates of returns on the domestic assets**, i.e., high interest rates and high expected (risk adjusted) rates of return on financial assets, a **low domestic inflation rate,** a **high relative growth rate of the GDP,** a **current high rate of relative wealth accumulation, positive balances on the national budget and current accounts,** and a **stable political and economic environment.** Moreover, these conditions must be expected to persist. Hence, the monetary and fiscal policies must be credible.

7) The overall balance of payments is, of course, by construction zero. Hence, the balance on the capital account (including the official reserves account) must be offset by a corresponding balance of an opposite sign on the current account. Any change in the exchange rate represents (in the absence of FX intervention by the Central Bank) an equilibrium between the forces of demand and supply for the currencies. The driving force behind a change in the exchange rate may originate in either the current or capital account. However, in the short run the capital account entries are crucial due to the enormous daily turnover on the FX markets which for the most part is unrelated to current account transactions. The U.S. in the early 1980's may serve to illustrate this line of reasoning. The investment climate in the U.S. was perceived as very attractive, and foreign capital was being drawn to the U.S. This had the effect of bidding up the value of the dollar on the FX market. The current account weakened due to the deteriorating competitiveness of U.S. industries on world markets. Hence, the capital account was the driving force, and the negative development on the current account was a result.