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Money and Monetary Policy in an Open Economy

Mehdi Monadjemi; John Lodewijks

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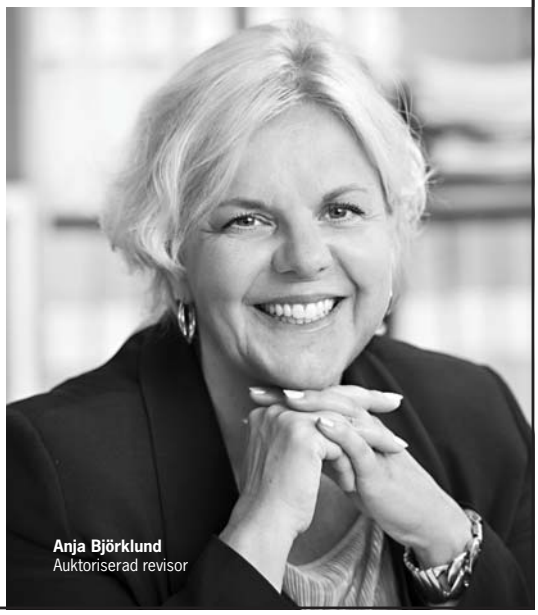

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Preface

The June 13–19, 2015 issue of *The Economist* magazine declares that the battle against financial chaos and deflation has been won. They are referring to the Global Financial Crisis that so paralyzed economic activity seven years earlier. In 2015 for the first time since 2007 every advanced economy is expected to show positive growth rates. In the Euro zone unemployment is falling and prices are rising. The magazine says the global economy still faces hazards – the Greek debt saga, China's overheated stock market and Japan's deflationary trend – but for the time being there is economic recovery. However, with interest rates at historically low levels (near zero in the Euro area and Japan) and government debt levels inhibiting further fiscal expansion, another episode of global financial instability would be a difficult challenge for policy-makers.

Macroeconomic management in turbulent times is one theme of this book. However, what is particularly clear is that the financial sector decisions have a decisive impact on economic performance. What used to be reported on the back pages of newspapers (stocks and bonds, interest rates, bank loans and the allocation of credit) are now front page news. Financial shenanigans and 'obscene' finance executive remuneration schemes capture the public's attention. High frequency traders are immortalized in books by Michael Lewis – *Flash Boys*, 2014 – and Scott Patterson – *Dark Pools*, 2012. The exploits of one trader is graphically depicted in the movie "The Wolf of Wall Street". The misbehavior of commercial banks is meticulously documented in Andrew Ross Sorkin's *Too Big to Fail* (Allen Lane 2009) while the mysterious but deadly Hedge Funds are superbly dissected by Sebastian Mallaby in *More Money than God* (Bloomsbury, 2010). The importance, indeed almost total preoccupation, of Presidents and governments with financial chaos is brilliantly chronicled in Ron Suskind's *Confidence Men: Wall Street, Washington, and the Education of a President* (HarperCollins 2011). Financial fraud and its consequences for the perpetrators are disturbingly analyzed in Matt Taibbi's *Divide: American Injustice in the Age of the Wealth Gap* (Random House 2014).

We wish we could write as eloquently as the writers named above or make highly successful movies. We wish we could also capture the public's imagination and indignation as they come to grips with toxic financial assets and executive bonuses paid by the taxpayer. Our purpose, however, is more mundane. While all these financial episodes are in the background we present the reader with a primer on how financial markets are conventionally analyzed. We present the basic models and approaches to understanding banking, finance and monetary management in both closed and open economies. The first five chapters give a succinct treatment of standard monetary analysis and the last four chapters deal with some of the more pressing policy concerns. Understanding exchange rates and global capital flows are two particularly important issues examined. An understanding of the basic models, and the insights and implications that follow for financial markets, provides the reader with a more knowledgeable base on which to evaluate and discuss financial market performance issues.

M.M. & J.L.
July 2015

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Introduction

International financial developments have become an influential factor affecting the daily lives of people throughout the world. Unrestricted capital flows have created financial crises that have caused falling output and living standards in the affected and have proved contagious for other places in the world. Interconnected and integrated global financial markets now mean that no country is safe from economic crises that originate far from its own borders.

The purpose of this book is to provide a theoretical framework for implementation of monetary policy in open economies. In chapter 1 money and official measurements of money in UK and European Union is defined. The role of the central bank and the effects of monetary policy on the money supply though the balance sheet of the central bank and commercial banks is also discussed. In addition, William Poole's criterion for choosing interest rate control or money control as a strategy for monetary policy is presented in the first chapter.

Chapter 2 attempts to examine the historical developments of ideas on the effectiveness of monetary policy. It includes classical views, Keynesian's criticisms and the Monetarists counter-revolution highlighting the use of monetary policy as an effective tool for controlling inflation. In addition, several related issues such as rules or discretionary policy, central bank independence, central bank transparency and recent monetary policy strategy after the financial crisis of 2007–2008 are also discussed. The IS – LM curves are discussed in the appendix to chapter 2.

International macroeconomic issues are discussed in chapter 3. The balance payments and its components, the relationship between saving, investment and the current account are examined. The foreign exchange market including floating and fixed exchange rate systems are presented in this chapter. Other forms of exchange rates including the real exchange rate as a measure of international competitiveness, and trade weighted index are also included in chapter 3. The effects of depreciation on the trade balance, the Marshall – Lerner condition, and the purchasing power parity are also discussed. The difference between prices in rich and poor countries, interest parity condition and rael interest parity condition are presented in the final sections of chapter3. The relationship between spot and forward rates is presented in the appendix to chapter 3.

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Chapter 4 presents macroeconomic policy in open economies. It starts with the interest parity condition as a criterion for international capital flows. The capital market equilibrium, changes in the exchange rate as a result of changes in foreign interest rate and expectations are also discussed. The open economy IS – LM curves are derived and the effects of monetary and fiscal policy under fixed and flexible exchange rates (Mundell – Fleming model) is developed. The long run effects of a permanent change in money supply, and the Dornbusch (1976) over-shooting exchange rate model is presented. The topic of international capital mobility (ICM) and testing for changes in ICM are also discussed. Some concluding remarks regarding the destabilizing effects of uncontrolled ICM and floating exchange rate are also presented in this chapter.

Chapter 5 deals with fixed exchange rate systems, the central bank interventions and regional currency arrangements, such as the European Monetary System (EMS) and European Monetary Union (EMU). In this chapter central bank's intervention to keep the exchange rate fixed and how speculative attacks and capital flight occurs under the fixed exchange rate system are presented. EMS and EMU are classical examples of fixed exchanges rate system. In the latter case there is no exchange rate between members of the union. Also in this chapter the role of the central bank a under currency union (EMU) and under a currency area (EMS) are compared. The optimum currency area as a theoretical framework for the EMU is discussed and the condition of symmetric business cycles as an essential requirement for the success of the EMU is also presented in this chapter.

Global financial instability is presented in chapter 6. Three cases of instability; the Asian financial crises 1997–1999, the global financial crises 2007–2009 and the ongoing euro zone debt crises are discussed in this chapter. In the case of the Asian crises the appropriateness of uncontrolled capital flows and suitability of the host country's financial institutions are examined. The global financial crises was mainly result of over-lending to sub-prime mortgages and securitization. These issues are discussed in this chapter. The debt crises in the EMU is presented as a result of the lack of political union and asymmetric business cycles. It is argued in this chapter that a monetary union without a political union is unlikely to be successful.

Chapter 7 considers global capital instability and possibilities of controlling international capital flows. The foreign exchange market as source of instability is discussed. Tobin tax as measure to reduce speculative capital flows is presented. It is argued that speculative capital movements can be reduced by adding extra cost on speculative transactions. The pro and con arguments regarding capital market liberalization is also discussed in this chapter. Furthermore, the activities of the large hedge funds as a source of currency speculation and hence a major reason for countries to contemplate capital controls is analysed. Finally, introduction of foreign capital control as measure for reducing financial instability is presented in chapter 7.

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Chapter 8 presents the international monetary system including the gold standard, Bretton Woods system and the managed float system after the breakdown of Bretton Woods. The gold standard system as a fixed exchange rate system is presented and the breakdown of the system during the war period is discussed. The introduction of Bretton Woods fixed exchange rate in 1944, the role of the US dollar and operation of the International Monetary Fund is also analysed in this chapter. The breakdown of the fixed exchange rate system and the introduction of the managed float system in 1973 and the beginning of a turbulent period in the international financial system is discussed.

The last chapter of the book, chapter 9 is concerned with instability in emerging countries and international institutions and arrangements designed to minimize the occurrence of instability in emerging markets. Developing or emerging market economies may be faced with economic instability in the form of either or both external and internal imbalance. Member countries may look for financial support from the world's two main multilateral aid and financial institutions, the World Bank and the International Monetary Fund. The role of IMF as an institution to deal with balance of payments problems, the World Bank for providing financial facility for infrastructural project and the activity of GATT, now called the World Trade Organization, in the context of trade liberalization are discussed in this chapter. The debate on the issue of structural adjustment mechanism is also presented in this chapter.

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1 Money and Monetary Policy

This chapter is designed to introduce money by defining its functions, some of its historical background and how it is measured officially. Also the relationship between monetary base and the supply of money and the role of the money multiplier is examined.

Changes in the supply of money depend on changes in the monetary base. The sources of change in monetary base originate from the balance sheet of the central bank. From the balance sheet of the central bank all sources of change in monetary base and ultimately the supply of money can be identified. The role of the central bank and implementation of the monetary policy by the central bank is discussed. It is also explained why central banks cannot control both the quantity of money and the rate of interest.

1. **Money**

   Throughout history, many objects have served as money. These objects mainly include gold, silver, copper and paper money (notes). Prior to the introduction of money, a barter system was used for exchanging goods and services. In barter, goods are exchanged for goods. In this system a successful exchange depends on the existence of double coincidence of wants. That is, the seller of a commodity has to find the buyer who wants to buy his produce and who also could offer in return something the seller wants to buy, otherwise; trade is not possible. There is no agreed standard measure into which both seller and buyer could exchange commodities according to their relative value of all the various goods and services. Furthermore, perishable goods cannot be stored and hence the producer of these goods has to trade quickly, otherwise; some of his needs remain unfulfilled. For these reasons under the barter system, trade is slow and difficult. By introduction of a commodity money, trade in all other commodities becomes easier and faster. Many societies around the world eventually developed the use of commodity money. Historically gold and silver were used as the most popular form of money.

   The importance of money is its general acceptability for exchanging goods and services and not its content value. Specifically anything can serve as money as long as it performs the following functions:

   a) Medium of exchange; money must be generally acceptable for exchanging goods and services. This is the most important function of money. Anything, which performs this function, is called money.
   b) Store of value; money can be saved and spent in the future. Any object where its general acceptability changes through time cannot be called money.
   c) Standard of value; all of the values and prices are expressed in terms of money.

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Official Measurements of Money in UK and European Union

M0 = Cash outside of Bank of England + banks' operational deposits with Bank of England.
M4 = Cash outside of banks (individuals and non bank private firms) + private sector retail bank and building society deposits + private sector wholesale retail bank and building society deposits and certificate of deposits.

European Union:
M1 = Currency in circulation + overnight deposits.
M2 = M1 + deposits with maturity up to 2 years + deposits redeemable at a period of notice up to 3 months.
M3 = M2 + repurchase agreement + money market fund shares / units + debt securities up to 2 years.

2. **The Role of the Central Bank**
   All of the countries in the world have a central bank. The oldest central bank in the world is the Bank of England. A central bank performs the following functions:

   Banker of the banks, banker of the central government, custodian of nation's gold and foreign exchange reserves, implementation of monetary policy and issuer of currency (only notes).

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All of the banks hold an account with the central bank. This account is used for the settlement of transactions between banks and banks hold their legal reserves in this account. Addition to these accounts adds to the liquidity of the banks and increases their lending ability. Central governments collect taxes and pay for national health expenditure, unemployment benefits, roads construction, etc. All of the government transactions are debited from or credit to their account at the central bank. All of the nation's gold and foreign exchange reserves are held with the central bank. To influence the exchange rate, sometimes central banks use these reserves to intervene in the foreign exchange market. One of the most important functions of the central bank is implementation of monetary policy. All of the notes in circulation are printed by the central bank. Traditionally, notes are obligations of the central bank. Under gold standard, one was able to exchange his note at the central bank with some gold. Gold standard has been suspended and confidence in the currency depends on the performance of the economy.

3. **Monetary Policy**

Monetary policy is conducted by the central bank. By changing the supply of money and the rate of interest, the central bank attempts to influence output, employment and the price level. The instruments under the control of the central bank for conducting monetary policy are the quantity of government bonds held by the bank, the rate of interest (under the control of the bank) and the foreign exchange reserves of the bank. By buying and selling government bonds and foreign currency the supply of money and ultimately the rate of interest changes. By changing the controlled rate of interest, the market rate of interest changes. To maintain the new rate of interest the central bank has to stand ready to buy or sell government bonds. The relationship between monetary base (the basis for change in the supply of money) can be developed using the balance sheet of the central bank.

Assts		Liabilities	
Gold and Foreign Exchange Reserves GFX		Currency (notes) in circulation	C
Government Bonds	GB	Commercial banks' Reserves	BR
Bank Loans	BL	Government Account	GA
Other Assets	OA	Other Liabilities	OL
		Net Worth	NW

Table 1 Simplified Balance Sheet of the Central Bank

Two sides of the balance sheet must be equal. Accordingly, identity 1 can be written:

$$GFX + GB + BL \equiv C + BR + GA + (OL - OA + NW) \quad (1)$$

Or

$$C + BR \equiv GFX + GB + BL - GA \quad (1)'$$

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For our purpose OL – OA + NW are not important and usually they are not large. For this reason the sum has been dropped from identity 1'. In 1' C + BR is monetary base (MB) or high powered money. Changes in the items on the right hand side of 1' cause changes in MB.

When central bank intervenes in the foreign exchange market and purchases foreign currency (sells domestic currency), MB increases. Similarly, open market purchase of government bonds by the central bank leads to an increase in MB. The central bank is the banker of the government. When government spends from GA or deposits tax revenues in GA, MB changes. Finally, MB changes, when banks lend more or less to the private sector. The terms on the right hand side of identity 1' are the only sources of change in MB and eventually lead to a change in the supply of money (MS).

Following equations explain the relationship between MB and MS.

$$MB = C + BR \tag{2}$$

$$r_d = BR/D \text{ or } BR = r_d \times D \tag{3}$$

In (3) D is banks' deposits and r_d is reserve requirement ratio (percentage of deposits banks are legally obligated to hold in reserves) respectively.

$$MS = C + D \tag{4}$$

In (4) money supply is cash in circulation plus bank deposits.
Assume that cash deposit ratio c = C/D, which is less than unity, $0 < c < 1$.

$$MS/MB = C + D / C + BR = (C/D + D/D) / C/D + BR/D \tag{5}$$

$$MS = MB\ (c + 1) / (c + r_d) \tag{6}$$

The ratio $(c + 1) / (c + r_d)$ in (6) is greater than 1 since c and r_d are less than 1. This ratio is called the money multiplier and shows that every one-dollar change in MB leads to a larger change in the supply of money.

Below is a hypothetical example for explaining the relationship between MB and MS.

For simplicity assume that there is no cash leakage from the banking system, all of the deposits in the banking system remains in the system (the possibility of cash leakage will be shown later). Consider changes in the simplified balance sheet of a commercial bank when $100 from outside of the banking system (not withdrawn from another bank) is deposited in Bank A.

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Bank A

Assets		Liabilities	
Cash	+$10	Deposits	+$100
Reserves	+$10		
Loans	+$80		

funds and whoever receives them will deposit in his account at Bank B. The changes in the balance sheet of Bank B is:

Bank B

Assets		Liabilities	
Reserves	+$16	Deposits	+$80
Loans	+$64		

Banking System

Assets		Liabilities	
Reserves	+$100	Deposits	+$500
Loans	+$400		

It is possible to show multiple expansions of deposits in the presence of cash leakage. Assume that c percentage in form of cash leaks out of the banking system whenever a certain amount is deposited in a bank. The cash leakage percentage can be treated like the reserve requirement ratio. Both percentages are not available for lending. Using this assumption, the deposit multiplier becomes 1 / (c + r_d) which is smaller than $\frac{1}{r_d}$.

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It can be shown the money multiplier in 6 includes deposit multiplier and cash multiplier.

$$(c + 1) / (c + r_d) = 1 / (c + r_d) + c / (c + r_d) \quad (8)$$

In 8, $1 / (c + r_d)$ is the deposit multiplier and $c / (c + r_d)$ is the cash multiplier. The sum of the two terms is the money multiplier.

In 8, $1 / (c + r_d) > 1$ which implies that one dollar increase in deposits of a bank leads to a larger increase in the deposits of the banking system.

The above analysis can help to indicate the power of monetary policy. For example, suppose the central bank purchases $100 million government securities (open market operations) from the private sector and the sellers deposit the funds in the banking system. As a result of this expansionary monetary policy, the supply of money in circulation rises by larger than $100. The same conclusion is valid if the central bank intervenes into the foreign exchange market and purchases foreign currency from the private sector. Increase in bank lending and implementation of fiscal policy through changes in GA held at the central bank leads to a change in money supply. The supply of money changes whenever a new deposit is received by the banking system, which leads to a change in MB.

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4. **Money or Interest Rate Control**

The central bank can conduct monetary policy targeting interest rate or money. It is impossible for the central bank to control both money and interest rate. This argument is similar to the price and quantity control in demand and supply analysis. When the demand curve shifts, both price and quantity change. To keep the price constant, the quantity has to change and to keep the quantity unchanged, price has to change.

Poole (1970) showed the dilemma of the central bank in the context of IS – LM framework (see appendix 1 for IS – LM derivation).

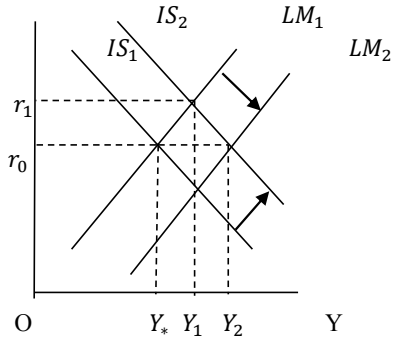

Figure 1.1

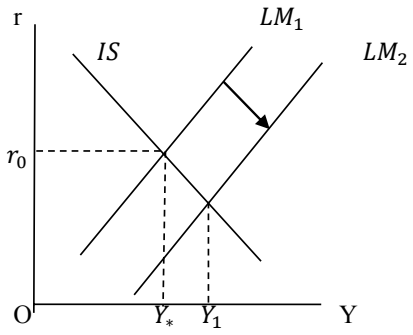

Figure 1.2

Poole assumed that economic shocks originate from the real sector or from the financial sector. The objective of the monetary authorities is to minimize variations of output.

In Figure 1.1 assume that OY_* is the desired level of output. Because of a real sector shock (investment, consumption or export booms) IS curve moves to IS_2 *and* output changes from OY_* to OY_1. If the authorities attempted to keep money constant (LM curve stationary) output remains at OY_1. However, if they control interest rate, they should increase money supply causing output to increase to OY_2. In this case, in terms of minimizing variations of output, money supply control is preferable.

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In Figure 1.2, a financial shock (availability of credit facilities, financial innovations, financial de-regulations, etc.) causes the demand for money to decline leading the LM curve to shift to the right. Because of this shock, Output changes to OY_1, if authorities decide to keep money supply constant. If interest rate is to remain constant, money supply has to decline causing the LM curve to return to its original position, leaving output unchanged at OY_*. Accordingly, interest are control is preferable when shocks originate from the financial sector.

Monetary targeting was a popular strategy in the 1970s and early 1980s in many industrialized countries when inflation was a serious problem. Under this strategy, consistent with the goals of price stability and growth, monetary authorities specified certain range for the growth of money supply. They manipulated the supply of money whenever the actual growth rate of money supply was outside of the target range. Money supply targeting started giving misleading signals because of financial deregulations and financial innovations.

Monadjemi and Kearney (1990) showed that in the 1970s in the United States, United Kingdom, Canada,, Germany and Australia monetary targeting was successful used for reducing inflation. During the 1980s, financial innovations and financial deregulations caused a considerable instability in the velocity of money. Fluctuations in the velocity of money introduced several problems in conducting monetary targeting. For example, financial deregulations led to a significant expansion of bank deposits and the supply of money (money supply include bank deposits). An increase in the supply of money without a corresponding rise in nominal GDP led to a fall in velocity of money[1]. Most of the above-mentioned countries suspended monetary targeting in the 1980s.

During the 1990s, some countries such as Australia, Brazil, Britain, Canada, Chilli, Norway, South Africa, Korea, and New Zealand commenced conducting monetary policy based on inflation targeting. This strategy consists of specifying a target range for the expected rate of inflation. The central bank conducted monetary policy by changing the controlled rate of interest such that the expected rate of inflation remains within a specified range. The idea of Inflation targeting originated by Phelps (1968) and Friedman (1968) that in the long run macroeconomic policy has no effect on output and employment. This idea was also reemphasised by Rogoff (1985) where it was argued that society's welfare is maximized when the objective function of the central bank is different from the objective function of the society. In other words, in the Objective function of a conservative central bank priority is placed on the goal of price stability rather than output and employment. Selection of a conservative central banker depends on the independence of the central bank. The topic of central bank independence will be discussed in detail later.

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Countries that exercised inflation targeting were successful in keeping their rate of inflation within the targeted range. Some of the above-mentioned countries exercised inflation targeting until the financial crises of 2007–2008.

When interest rates are near zero, to inject additional liquidity into the banking system, central banks use quantitative easing. This method involves purchasing assets from banks and other financial institutions. Bank of England and the Federal Reserve System exercised quantitative easing during the financial crises of 2008–2009.

Recently Bank of England has inflation target of 2 percent and sets the base rate to maintain the target rate. In addition, Bank of England considers consumer confidence, spare capacity in the economy, exchange rate, real estate prices and economic growth. The base rate is the rate that Bank of England charges banks and other financial institutions for short-term loans. Variation of base rate affects other interest rates such as deposit rates, mortgage rate, overdraft rates etc.

References

Monadjemi, M. and Kearny, C. (1990) "Deregulation and the Conduct of Monetary Policy", *The Economic and Labour Relation Review,* December, pp. 18–33.

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Poole, W., (1970), "Optimal Choice of Monetary Instruments in a Simple Stochastic Macro Model", *Quarterly Journal of Economics*, 84, May, pp. 197–216.

1.1 Appendix 1 IS – LM Framework

The IS – LM framework is a model for determination of output and interest rate in a closed economy holding prices constant. IS stands for equilibrium in goods market (equality of saving and investment) and LM stands for equilibrium in the money market (equality of liquidity, demand for money, and supply of money). Figures 1.3a and 1.3b show derivation of the IS curve.

Figure 1.3a

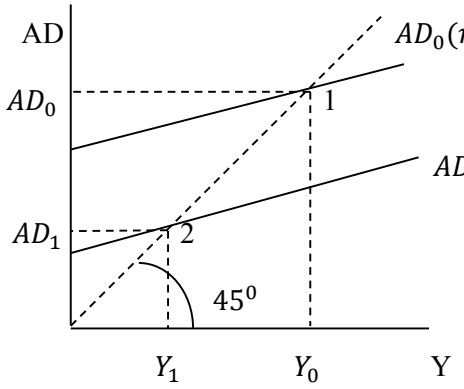
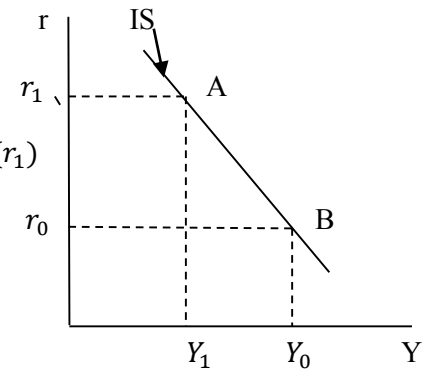


Figure 1.3b



The IS curve shows all combinations of interest rates and output that produce equilibrium in the goods market, that is equality of aggregate demand (AD) and output, Y. In figure 1.3a, at the interest rate r_0, aggregate demand is AD_0 and the equilibrium in the goods market is point 1 at the output Y_1. Combination of r_0 and Y_0 represent point A on the IS curve. If interest rate falls to r_1, the aggregate demand falls to AD_1 and the goods market equilibrium falls to point 2 at the output level Y_1. Again, point B is another point on the IS curve. Similarly other points on the IS curve can be derived.

Changes in r and Y cause movements along the IS curve. Any point on the IS curve shows equality of injections and leakages, that is;

$$I + G + X = T + S + M$$

Where all of the variables stating from the left respectively are, private investment expenditure, government spending, exports, taxes, private savings and imports. Increases in injections and private consumption shifts the IS curve to the right and increase in leakages shifts the curve to the left.

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The LM curve represents all of combinations of interest rates and output that produce equilibrium in the money market that is equality of money demand and money supply. Derivation of the LM curve is shown in Figures 1.4a and 1.4b. In figure 1.4a the money supply, MS, is exogenously determined by the central bank, it is independent of the rate of interest. The demand for money, L, is function of interest rate and aggregate income. L is inversely related to the rate of interest, movements along the curve. Changes in income cause shift of the curve, upward for an increase in income and downward as a result of a reduction in income.

Figure 1.4a

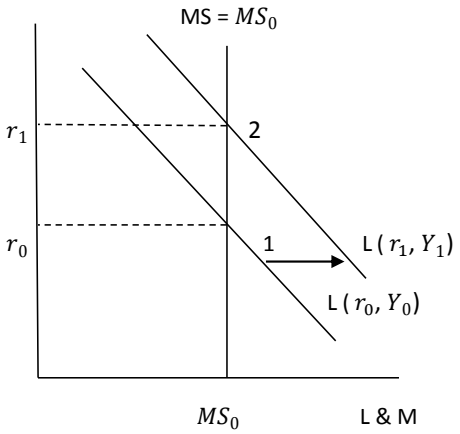
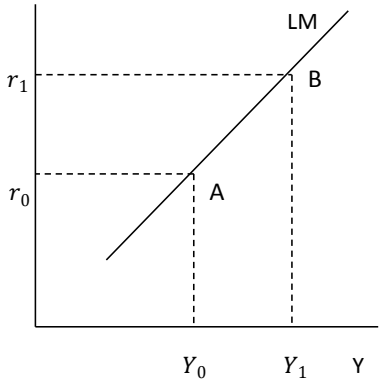


Figure 1.4b



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Initially the money market is in equilibrium at point 1 where demand for money is equal to the supply of money. An increase in income causes the L curve to shift up generating point 2 as a new equilibrium. Point B at r_1 and Y_1 is another point on the LM curve where L = MS_0. Similarly other points on the LM curve can be derived.

Changes in the rate of interest or income cause movement along the LM curve. An increase in the supply of money shifts the LM curve to the right and n increase in demand for money shifts the curve to the left.

In Figure 1.5 the intersection of IS and LM curves shows a pair of income and interest rate that both goods market and the money market are simultaneously in equilibrium. IS – LM is used for showing the effects of monetary and fiscal policy in a closed economy when price level is held constant. The open economy macroeconomic framework will be developed in chapter 4.

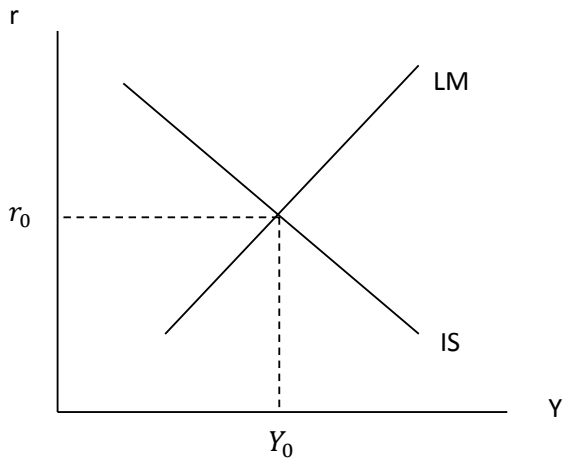

Figure 1.5

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2 Monetary Policy and Economic Activity

This chapter attempts to examine the historical development of ideas regarding the effectiveness of monetary policy. It covers classical views, Keynesian's criticisms and the Monetarist counter-revolution highlighting the use of monetary policy as an effective tool for controlling inflation. In addition, several related issues such as rule or discretionary policy, central bank independence, central bank transparency and recent monetary policy strategy after the financial crisis of 2007–2008 are also discussed.

The relationship between monetary policy and economic activity has been subject of long debate in the economic literature. Classical economists such as Adam Smith, David Ricardo and David Hume argued that there are forces in the capitalist economies that always move the economy towards full employment and maximum production. This was referred to as Say's Law. These forces are wage, price and interest rate flexibility. For example, using more modern concepts, if aggregate demand falls, price level falls, real wage increases and unemployment develops. With excess supply of labour money wages fall, real wages fall proportional to fall in price level, restoring the original real wage and full employment. In this system, there is no need for government intervention to stabilize the economy. Economic fluctuations are temporary, as long as wages and prices are fully flexible. Because of automatic macroeconomic stabilization, classical economists ignored macroeconomic instability and concentrated mainly on microeconomic issues and long term economic growth. The classical economists' full employment labour market mechanism is illustrated in Figure 2.1.

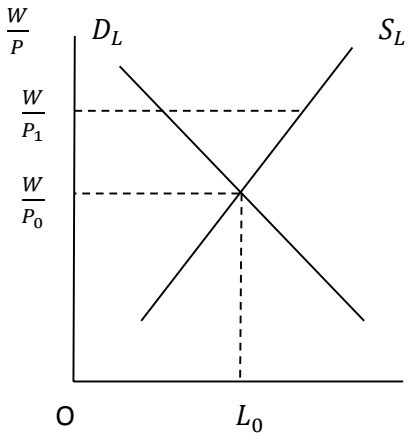

Figure 2.1

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In Figure 2.1 the real wage and employment are measured on the vertical and horizontal axis respectively. The labour market is in full employment when the real wage is $\frac{W}{P_0}$. Because of a fall in aggregate demand, price level declines to P_1 causing the real wage to increase to $\frac{W}{P_0}$ where $D_L < S_L$. At this real wage, unemployment develops and money wages start to fall. Money wages continue to fall and real wages keep rising, until $\frac{W}{P_0}$ is restored and labour market is in full employment at OL_0. At $\frac{W}{P_0}$, wages and prices fall proportionally leaving real wage constant.

The Great Depression of the 1930s in capitalist economies showed that the labour market can remain in less than full employment for an extended period of time. The depression lasted for 10 to 12 years and unemployment in some countries reached as high as 25 percent. The wage and price flexibility without government intervention was not successful to compensate for the fall in aggregate demand. The classical theory of wage and price flexibility and full employment did not fit the real world.

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In 1936 John Maynard Keynes in *General Theory of Employment Interest and Money* emphasised the role of government intervention and argued that government intervention is needed to compensate for the fall in private sector's demand for goods and services. Keynes' work provided the theoretical rationale for discretionary macroeconomic policy. A free market economy, without macroeconomic management, was not automatically self-adjusting but was susceptible to severe fluctuations in output and employment. This economic instability was clearly demonstrated during the Great Depression where economies were stuck in situations of stagnating output and very high levels of unemployment. There was insufficient spending power (or lack of effective demand) to put people back to work and to induce increases in production and income. Governments, in these circumstances, could and should pursue activist stabilization policy to stimulate aggregate demand to restore output to full employment levels. Expansionary fiscal policy (through increased government spending and lower taxes) and accommodating monetary policy (through lower interest rates) were the keys to maintaining economic prosperity. Keynes believed that even if we had perfect wage and price flexibility it would not help the situation. Wages are not only a cost of production but also a source of income and hence expenditure. Income and substitution effects that work in opposite directions may not lead to an increase in the demand for labour. Similarly a fall in average prices (deflation) may not encourage firms to expand production and hire more workers. But practically speaking, t because of trade unions, wages are rigid downward and prices are inflexible due to the existence of monopolies in the goods market.

He also argued that in a recession the private sector would not increase consumption and investment. In this situation, an increase in government expenditure and a reduction in taxes (expansionary fiscal policy) can compensate for the fall in private demand and move the economy closer to the full employment.

Keynes believed that interest elasticity of investment demand is low and in a deep recession at a very low rate of interest, the demand for money becomes infinitely elastic (liquidity trap). As a result, monetary policy becomes ineffective. Fiscal policy is the only solution for recovery towards full employment.

Figure 2.2

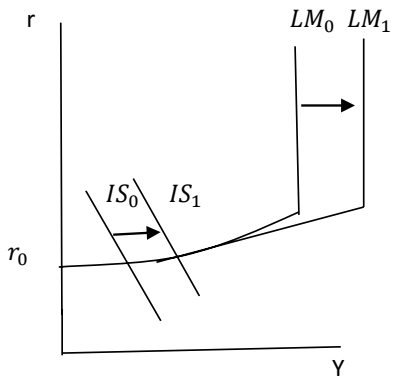
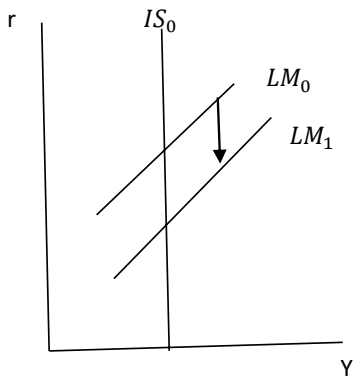


Figure 2.3



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Weakness of monetary policy in deep recession and when investment demand is inelastic is demonstrated in Figures 2.2 and 2.3. In 2.2 an increase in money supply shifts the LM curve to the right. However, the shift of the LM curve in the horizontal section of the curve leaves output and the rate of interest unchanged. In the liquidity trap, monetary policy is ineffective because interest rate cannot become lower than r_0. In this situation an expansionary fiscal policy by shifting the IS curve can increase output. In Figure 2.3, the IS curve becomes vertical when the investment curve is inelastic. In this case an increase in the supply of money has no effect on output. Monetary policy is ineffective because an increase in money supply lowers the rate of interest but investment remains unchanged and hence output does not change.

Monetary and Fiscal Policy in the 1970s

The period 1950 to 1973 has often been described as a 'golden age' of unparalleled prosperity where the world economy grew much faster than it had ever done before and this dynamism affected all regions. Average incomes rose rapidly. The business cycle, with its erratic swings of high unemployment and then high inflation, virtually disappeared. The impressive growth performance was attributed to a liberal international order, with explicit and rational codes of behaviour and institutions created to regulate the international monetary system, and the ensuing rapid rate of technical progress. Particular emphasis is placed on domestic macroeconomics policies which were self-consciously devoted to the promotion of high levels of demand and employment – policies that were explicitly Keynesian in nature. Activist discretionary fiscal policy was successful in promoting growth and reducing unemployment in 1940s, 1950s and the 1960s when inflation was not a serious problem. During this period Keynesian fiscal recommendations were implemented by various industrial countries to defeat their chronic high unemployment.

Since the golden age, per capita income growth has been less than half as fast. Economic instability has been severe and the divergence in performance in different parts of the world has been sharply disequalising. How can we account for this rapid deterioration in economic performance? Substantial oil price increase by the OPEC in the 1970s, from 2 dollars per barrel to 11 dollars, caused inflation and unemployment (stagflation) in the oil importing countries. Fiscal policy is not helpful when there are unemployment as well as inflation. An increase in aggregate demand for reducing unemployment causes further increase in prices. Milton Friedman was very influential in emphasising the importance of monetary policy for reducing inflation. Friedman and Schwartz (1963) showed a close relationship between money and prices in the United States over a period of 100 years. Furthermore, Friedman (1968) and Phelps (1968), using adaptive expectations, showed that an expansionary macroeconomic policy in the short run reduces unemployment and increases inflation. In the long run unemployment returns to the natural rate but inflation remains at a higher level. Accordingly, in the long run macroeconomic policies are ineffective to reduce unemployment. In the long run an expansionary fiscal and monetary policy increases inflation.

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This message was very attractive for politicisations and policymakers who attempted to control inflation by reducing the growth of money supply. Those countries that conducted monetary policy based on monetary targeting such as Unites States, United Kingdom, Canada, Australia and New Zealand were able to successfully control inflation. However, in some countries such as UK, unemployment remained high for a long time.

Those economists who believed in rational expectations argued that even in the short run macroeconomic policies have no effect on output and employment. They assumed that private sector has access to all of the information needed to fully anticipate the outcome of government policies and they act to offset the effects of policies. Only unanticipated policies can influence output and employment. For example, government may try to increase money supply for reducing unemployment. The private sector anticipates that prices will rise if money supply increases. They act by demanding higher money wages causing real wages and employment to remain unchanged. Under rational expectations central banks' monetary policy is completely ineffective.

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Monetary Policy under Rule or Discretion

During the 1960s there erupted a fierce battle between Keynesians (sometimes called 'fiscalists') and Monetarists over macroeconomic theory and policy. The main issues at stake were who was responsible for producing economic instability – the private or public sector – and what role was there for discretionary policymaking by government? The Monetarist view was that major fluctuations were due to ill-conceived and poorly timed government actions. The benefits of policy activism were not worth the costs, as stabilization policy in practice proved destabilizing in impact, because of the limitations of forecasting abilities, the long and variable lags involved, and imperfect knowledge concerning the functioning of our complicated economy. These views led many central banks to move to monetary targeting and governments to sacrifice employment objectives in the fight against inflation. A more extreme anti-Keynesian virus was associated with New Classical macroeconomists who stated that econometric flaws permeated Keynesian macroeconometric models used for forecasting and policy evaluation purposes. Furthermore, key Keynesian policy concepts such as involuntary unemployment, full employment output and gaps between potential and actual output were seen as is vacuous and meaningless in this assault. The anti-Keynesian approach was to focus on alternative stable, predictable policy rules, minimizing the role of discretionary economic management. These fixed non-reactive policy rules included a constant money supply growth rate and balanced budget rule, with no conscious alteration of government spending in responses to cyclical changes in economic activity permitted, to abolish activist macroeconomic management.

Friedman (1948) argued that a discretionary monetary policy instead of smoothening the cycles, increase the fluctuations. He believed that monetary policy affects the economy with long and variable lags. The monetary authorities do not have accurate knowledge about the timing of the lags. Accordingly, when they implement discretionary policy they may create a cycle rather than smoothing an existing one. Friedman preferred rules rather than discretion. For example, a constant growth of money supply consistent with the growth of the economy.

Kydland and Prescott (1977) examined the choice between discretion and rule in the context of rational expectations. The authors showed that a policy rule leaves the society at the optimum level of unemployment and inflation whereas, a discretionary policy increases inflation with no change in unemployment.

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In figure 2.4 there are social welfare indifference curves (IC) and linear Philips curves based on inflation and unemployment. IC that are located to the left are socially preferred because they show lower inflation at each level of unemployment. The difference between unemployment and the natural rate of unemployment $(u_t - u^*)$ is measured on the horizontal axis and inflation $((x_t))$ is plotted on the vertical axis. Assuming rational expectations, $x_t = x_t^e$. Each Philips curve represents a particular level of expectations. When $u_t = u^*$, $x_t = x_t^e$ and the Philips curve passes through the origin at point o. When a discretionary policy is exercised, the equilibrium is point c where unemployment is equal to the natural rate but inflation is positive. With a rule authorities attempt to drive inflation to zero and since $x_t = x_t^e$, unemployment is at the natural rate and inflation is zero. Under the rule the equilibrium is point o which is preferable to point c.

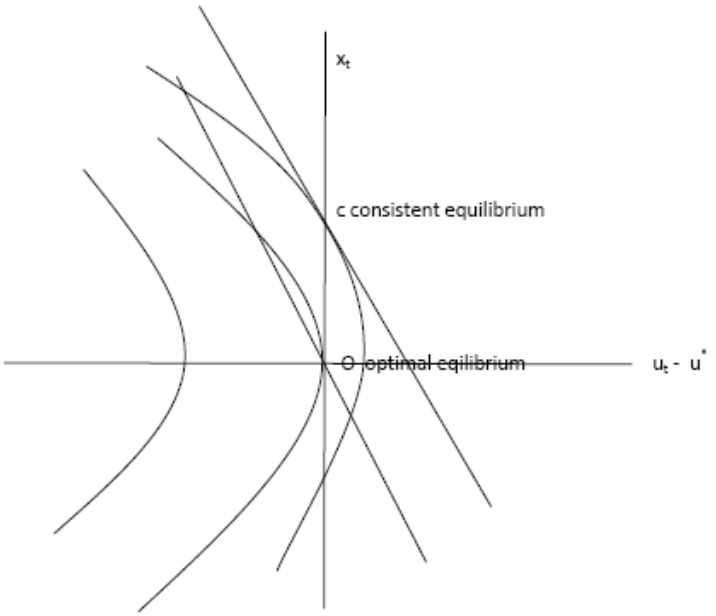

Figure 2.4 Inflation and Unemployment Trade-off

Central Bank Independence and Inflation

e topic of central bank independence gained popularity in the 1980s and the 1990s when monetary policy was mainly conducted for reducing inflation. It was argued that those countries that have an independent central bank have experienced lower rates of inflation. Germany, Switzerland and Japan central banks are the most independent in the world and their respective countries have historically experienced low inflation. A classical example of an independent central bank is the central bank of New Zealand. During 1955–1988, the central bank of New Zealand was dependent on the policies of the government. During that period the annual average inflation was 7.6 percent. After 1988 provision of certain laws and regulations emphasised independence of the central bank and low inflation. The annual average inflation during 1989–2000 dropped to 2.7 percent.

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An independent central bank conducts anti-inflationary monetary policy irrespective of expansionary fiscal policies of the central government which are designed to attract votes. Government policymakers create inflation as they attempt to finance expansionary policies by borrowing from the central bank (printing money). An independent central bank that prefers price stability can halt the inflationary process by limiting provision of finance for government projects.

Alesina and Summers (1993) examined independence of central banks in relation to inflation, growth and employment in 16 OECD countries. The authors showed that an independent central bank maintains price stability but there is no evidence of influence on other real macro variables. In this study the independence of central bank was divided into political independence and economic independence. Political independence depended on the ability of the central bank to conduct monetary policy without government interference. This ability depended on several factors such as appointment of the governor and board members of the bank by the government and duration of their appointments, existence of government representative on the board, final approval of monetary policy by the government and whether price stability is the prime objective of the bank.

Economic independence mainly depended on the extent to which government budget deficits are financed by borrowing from the central bank.

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Country	Average index of independence	Average annual inflation	Average annual growth rate	Average rate of unemployment
New Zealand	1	12.2	1.5	NA
Spain	1.5	12.4	2	NA
Australia	2	9.5	2.8	6.6
Italy	1.75	12.5	2.4	8.4
United Kingdom	2	6.7	1.6	8.8
France	2	8.2	2.1	7
Denmark	2.5	8.6	1.9	7.5
Belgium	2	6	1.7	2.8
Norway	2	8.2	3.9	2.2
Sweden	2	8.3	1.8	2.3
Canada	2.5	7.2	3.3	8.7
Netherlands	2.5	4.3	1.7	9.7
Japan	2.5	4.5	3.7	2.3
United States	3.5	6.4	2.4	7.2
Germany	4	3.4	1.8	6.2
Switzerland	4	3.1	1.1	NA

Table 2.1 Central Bank Independence and Macroeconomic Performance (1973–1988)
The indices of central bank independences are based on methods proposed in Barina and Pakin (1982) and Alesina (1988).
NA means not available.

In Table 2.1 average indices of central bank independence, average annual rate of inflation, average rate of growth and average annual rate of unemployment for 16 OECD countries during high inflation period of 1973 to 1988 are presented. The index of independence rages from 1 to 4 with 4 denoting highly independent central banks. Columns 1 and 2 show a clear relationship between those countries with more independent central banks having lower inflation rates. Germany and Switzerland with most independent central banks have lowest average rate of inflation. Countries with least independent central banks such as Spain, Italy and New Zealand, have highest average rate of inflation. Finally, United States, Netherlands and Japan with relatively high level of central bank independence experienced relatively low average rates of inflation. Alesina and Summers (1993) found no distinct relationship between indices of independence and growth and unemployment.

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Grilli, Masciandarso and Tabllini (1991) distinguished between political and economic independence of central banks. The authors argued that the credibility of the central bank is an important issue in controlling inflation. Fiscal authorities generally attempt to benefit from the inflation tax by spending more and creating inflation. This development increases private sector's expected inflation which leads to a higher inflation if the central bank is not credible. However, private sector's expected inflation will not rise if the central bank is independent and credibly sets price stability as its primary objective.

Grili etal argue that independence of the central bank also helps to keep the government budget in balance. This is because avoidance of financing budget deficits and lower inflation allows the government to balance its budget. Accordingly, those countries with relatively independent central bank experience lower inflation and balanced government budgets. The authors also note that the opportunity cost of lower inflation is larger fluctuations of aggregate output because the central bank doesn't react to unexpected output shocks. In practice existence of credibility is the most important factor in maintenance of central bank independence. In this article central bank independence means the ability of the central bank to keep the rate of inflation at a low level.

Similar to Alesina and Summers (1993), Grilli etal (1991) also divide the central bank independence into political and economic independence. Political independence means that the central bank is able to choose the ultimate target for conducting monetary policy. Economic independence means that the central bank has the ability to choose proper tools for maintaining the ultimate target.

Grilli etal (1991) present the following items for determining the political independence of the central bank:

1. The governor of the central bank is not appointed by the government.
2. The appointment of the governor of the bank is longer than five years.
3. Not all of the board members of the bank are appointed by the government.
4. The appointment of the board members is longer than five years.
5. The presence of government representative in the board meetings is not obligatory.
6. Approval of monetary policy strategy by the government is not obligatory.
7. Maintenance of monetary stability is legal responsibility of the central bank.
8. There are laws that can increase the power of the central bank against the government.

Based on the above 8 factors, the index of central bank independence is constructed and is presented in Table 2.2 for 18 countries.

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Country	Index of Political Independence	Index of Economic Independence
Australia	3	6
Austria	3	6
Belgium	1	6
Canada	4	7
Denmark	3	5
France	2	5
Germany	6	7
Greece	2	2
Ireland	3	4
Italy	4	1
Japan	1	5
Netherlands	6	4
New Zealand	0	3
Portugal	1	2
Spain	2	3
Switzerland	5	7
United Kingdom	1	5
United States	5	7

Table 2.2 Political and Economic Independence Grilli etal Method
In each case larger numbers represent higher degree of independence.

If the government is able to influence the quantity and the terms of which it borrows from the central bank, it will have the ability to change the monetary base and reduce the economic independence of the central bank. Economic independence of the central bank depends on their independence in choosing monetary policy instruments. This independence in turn depends on the nature of monetary policy instruments and the extent of the influence of government in borrowing from the central bank.

Grilli etal (1991) identified the following factors for determining the economic independence of the central bank:

1. Provision of direct credit facility for the government: not automatically.
2. Provision of direct credit facility for the government: market rate of interest.
3. Provision of direct credit facility for the government: not permanently.
4. Provision of direct credit facility for the government: limited quantity.
5. The central bank does not participate in the open market purchase and sales of government securities.

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6. The discount rate is determined by the government.
7. The supervision of the banking system is not the responsibility of the central bank or is not solely the responsibility of the central bank. Positive responses to 1 to 7 indicate stronger independence of the central bank.

According to Grilli etal (1991) central banks of Germany, Netherlands, Switzerland and United States are the most politically independent central banks among the 18 selected countries. Almost the same conclusion is revealed by the indices of economic independence except that in this category Canada replaces the Netherlands.

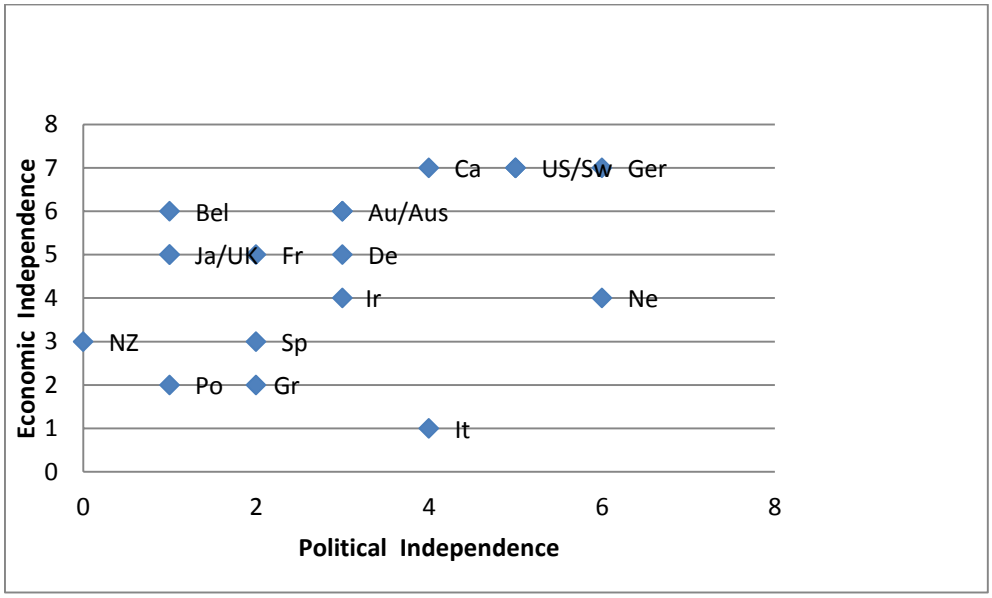

Figure 2.5 Grilli etal Central Banks Political and Economic Independence
Au=Austria, Aus=Australia, Bel=Belgium, Ca=Canada, De=Denmark, Fr=France, Ger=Germany, Gr=Greece, Ir=Ireland, It=Italy, Ja=Japan, Ne=Netherlands, NZ=New Zealand, Po=Portugal, Sp=Spain, Sw=Switzerland, UK=United Kingdom, US=United States.

Figure 2.5 is constructed based on data in Table 2.2. There are 4 countries on the upper right hand side of the graph that have strongest level of central bank independence. The four countries located on the lower left hand side are least independent and the rest of the countries fall between these two extreme categories.

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Walsh (1991) is an additional study in the area of central bank independence which introduces the relationship between government and the central bank based on a contract. The contract is based on principle-agent framework where the government is the principle and the central bank is the agent. Walsh argues that by creating incentives for that head of the central bank, inflationary bias of discretionary policy is removed and socially optimum monetary policy response is reached. In Walsh's model the objective function of the central bank is different than the objective function of the society. A conservative central banker weights price stability more than output stability. This objective function is opposite of the society's where output and employment are more important.

The income of the central banker is in form of a transfer from the government where the central banker attempts partly to maximize his transfer. When the transfer income and social welfare both appear in the objective function of the central banker, the optimal contract is similar to an inflation targeting rule, although such rules are not optimal in response to supply shocks.

In Walsh's study inflation target is equal to the monetary growth. The rewards of the central banker depend on the monetary growth. His rewards decline if actual growth of money exceed the target and increase if growth is less than target. Walsh's proposal was implemented in New Zealand where according to the 1989 ruling, the employment contract of the governor of the central bank was contingent to the maintenance of inflation targets.

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Central Bank Transparency

Generally professional economists, policymakers and financial practitioners believe that central bank transparency (CBT) is beneficial for the society. Jensen (2002) argues that CBT is a controversial issue because there are trade-offs involved in the optimal degree of transparency. Discussions in this section are mainly based on Jensen (2002) article. The most well-known trade-off is the trade-off between credibility and flexibility. Extra transparency leads to a more "disciplined" policy of the bank, which is beneficial if the central bank is not credible, but it is not beneficial if the economy needs to be stabilized in response to internal and external shocks. This trade-off is ignored in other discussions of transparency, since they do not consider forward-looking economic agents. Those studies may then ignore the effects of market expectations on current aggregates that reduce the effects of stabilization policy. The author argues that the results of the study are not conclusive with respect to how central bank should behave with respect to transparency.

Macroeconomic Policy leading up to the Global Financial crisis

Macroeconomic policy leading up to the GFC departs radically from the post-war Keynesian consensus. Policy priorities changed as had the importance of policy tools. There was now less concern about short-term fluctuations. This can be rationalized on a number of levels. Policy makers may not be very good at forecasting fluctuations and policy lags may lead to perverse policy outcomes. The focus was now much more on the medium term and the long-run. Far more attention was focused on promoting economic growth and there is less interest in delicately fine-tuning the economy. Monetary policy became the main stabilization tool. Fiscal policy had fallen by the wayside in terms of short term economic management and was directed at longer term priorities. Unemployment was regarded as less of a macroeconomic problem and more of a microeconomic one, while inflationary targeting preoccupied Central Banks. Short term interest rates emerged as the prime instrument of monetary policy after the demise of monetary targeting.

Fiscal policy now played a far less of a role in alleviating short-term instability. There appeared strong opposition to using expansionary fiscal policy. New fiscal policy strategies emerged that concentrated on moving the budget into actual (not just cyclically-adjusted) surplus so as to retire more public debt and thereby reduce net interest payments. It is argued, in line with pre-Keynesian thinking, that this would reduce the government's demand for private savings, facilitate a low interest rate environment and help reduce the need for foreign borrowing. To the extent that fiscal policy was now aimed at boosting domestic saving, this means that its focus has moved from the short-term stability objective to longer-term growth considerations. Partly this change of emphasis seems to reflect the perceived inability of governments to correctly anticipate the timing of fluctuations in economic activity. Accurate forecasting is essential in attempting to fine-tune the economy. Perhaps the move to concentrate on longer-term objectives is an admission that forecasting skills are overrated or that there is limited flexibility in fiscal management.

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Monetary Policy after 2008 Financial Crises

One unmistakable characteristic of the contemporary economy is the increased importance of the financial sector. This is a mixed blessing. As a result of deregulation, globalisation and advances in information technology this sector offers the potential to substantially improve both our wealth management and its accumulation over time. At the same time, financial fragility and instability is heightened and some of our short-term macroeconomic objectives are thus not always achieved.

Liberalisation of financial markets has increased the scope for pronounced financial cycles that amplify the cycles in the macroeconomy. The basis of this financial instability lies in a wave of optimism generated by favourable developments in the real economy. This optimism contributes to an underestimation of risk, overexpansion of credit, excessive increases in asset prices, overinvestment in capital (especially housing), and buoyant consumer spending. Asset price bubbles emerge demonstrated by unsustainable gaps between share price increases and earnings growth. The price rises appear to be driven largely by a mutually reinforcing process of investor optimism and herding behaviour in financial markets. Eventually, when more realistic expectations emerge, the imbalances built up in the boom need to be rectified, causing severe dislocation in both the financial system and the real economy.

The health of the macroeconomy and that of the financial system have become more closely intertwined. Financial imbalances are seen in credit booms and unsustainable increases in asset (especially housing) prices – although it is much easier to recognize this in retrospect than in advance! Movements in property prices have been central to the most pronounced financial cycles.

Prior to the financial crises of 2007–2008, most of the developed countries, in the context of inflationary targeting, conducted monetary policy based on interest rate setting. The financial crisis occurred mainly in the advanced economies and was followed by a recession that was the worst since the Great Depression of 1930s. Output and employment in affected countries declined severely. The central banks of these countries drove their bench mark interest rates to near zero. However, output and employment did not respond significantly and remained depressed. This situation was similar to the liquidity trap which was introduced by Keynes in the 1930s for ineffectiveness of conventional monetary policy at the very low rate of interest (this was discussed in chapter1). Japan experienced the same developments in the 1990s. Having reached zero rate of interest, Bank of Japan attempted an unconventional approach to monetary policy.

The economist (2013) divides the unconventional monetary policy into two broad categories of asset purchases (AP) and forward guidance (FG).

AP is similar to the conventional open market operations where the central bank purchases or sells short term government securities. However, under AP approach the central bank purchased long term government bonds as well as mortgage backed securities for reducing the long term of interest.

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Quantitative easing (QE) is the term used when the central bank prints money to purchase assets. Most of the central banks of affected countries engaged in QE during financial crises of 2007–2008. In addition, to re-establish confidence in the banking system, governments of several countries nationalized the private banks (Northern Rock in Britain and most of the banks in Iceland) that experienced significant shortage of liquidity. The Economist (2013) argues that QE was successful in reducing the long term rate of interest.

FG applies to more transparency in future policies of the central bank. The Bank of Japan in the late 1990s, the Federal Reserve Bank and the Bank of England during the financial crises attempted to persuade the markets that they will keep the rate of interest at zero level as long as there is no fear of inflation. Similar to QE, FG works in several ways. Central bank's tolerance of higher inflation may stimulate economic activity as private sector anticipates that future interest rates remain low. Also keeping short term rates low, leads to lower long term rates because long term rates are derived from short term rates after allowing for risk premium and inflation.

The Economist (2013) maintains that QE has been successful in reducing short term interest rates. Lower interest rates in Britain and United States have increased output by 2–3 percent. It is also argued that QE tends to reinforce FG as private sector believes the central bank is serious about maintaining low interest rates. Some economists believe in liquidity trap and argue that monetary policy, conventional or unconventional, are ineffective at the zero lower rate of interest. They argue that for expanding economic activity, fiscal stimulants are needed to accompany monetary expansion and lower interest rates. They also advocate that inflationary targets have been set too low and that, rather than inflation, it is deflation that is now a key concern.

References

Alesina, A. and Summers, L., (1993), "Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence", *Journal of Money Credit and Banking*, Vol. 25, pp. 151–162.

Friedman, M. 1948, "A Monetary and Fiscal Framework for Economic Stability", American Economic Review, June, 38, pp. 245–264.

Friedman, M. and Jacobson Schwartz, A., *A Monetary History of the United States 1867–1960*, Princeton University Press, Princeton 1963.

Friedman, M. 1968, 'The Role of Monetary Policy', *American Economic Review*, March 58: 1, pp. 1–17.

Grilli, V., Masciandaro, D. And Tabellini, G. (1991), "Political and Monetary Institution and Public Financial Policies in the Industrial Countries", *Economic Policy*, 13, pp. 341–392.

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Jensen, H. (2009), "Optimal Degrees of Transparency in Monetary Policymaking", *Scandinavian Journal of Economics*", Vol. 104, No. 3, pp. 399–422.

Keynes, J.M., *General Theory of Employment Interest and Money*, Palgrave Macmillan 1936.

Kydland, F. and Prescott, E. (1977), "Rules Rather than Discretion: The Inconsistency of Optimal Plans", *Journal of Political Economy*, 85, June, pp. 473–491.

Phelps, E. 1968, 'Money wage Dynamics and Labour Market Equilibrium', *Journal of Political Economy*', July/August, 76: 4, pp. 678–711.

The Economist (2013), "Monetary Policy after Crash":
http://www.economist.com/news/schools-brief/21586527-third-our-series-articles-financial-crisis-looks-unconventional

Walsh, C. (1995), "Optimal Contracts for Central Bankers", *American Economic Review*, 85, 1, pp. 150–167.

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3 Balance of Payments and the Exchange Rate

The balance of payments (BP) is the summary of all transactions between one nation and the rest of the world, BP consists of two main accounts: the current account (CA) and the capital and financial account (CFA). Main items included in each accounts are shown below.

Current Account

Net exports (NX): exports of goods – import of goods.

Net services (NS): export of services – import of services.

Net income (NI): income received from overseas (dividends, interest, rent, etc.) – Income paid to overseas.

Net transfers (NT): transfers received (gifts, foreign aids, etc. Payments not expected to be repaid) – transfers paid.

Financial and Capital Accounts (FCA)

FCA records all of the financing of the CA and includes financial account and capital account.

Financial Account (FA)

The financial account measures the sales of financial assets to foreigners (capital inflow) and purchases of financial assets from abroad (capital outflow) and official reserve assets (held by the central bank) and official reserve assets held by foreign central banks.

Capital Account (CA)

CA is a record of all non-produced, non-trade and non financial transactions such as copyrights, trademarks and etc. There are no goods and services and financial assets exchanged as a result of capital account transactions. It is usually a small portion of the balance of payments.

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Every transaction in the BP has two sides. One side is for the exchange of goods and services and the other is for financing of the transaction. The exchange of goods is recorded in the CA and the financial side of the transaction is recorded in the FAC account. For this reason the balance of payments has zero balance. For example, a British car dealer sells a Jaguar to an American resident. The sale of the vehicle is a positive entry in the CA. The purchaser pays for the transaction by a cheque on his account at the Bank of America in New York which will be deposited in the account of the car dealer in the Bank of America. This transaction is a capital outflow and is recorded as a debit in the FA of the balance of payments. Positive (negative) balance in the CA is offset by negative (positive) balance in the FAC leaving the overall balance of payments at zero balance.

The following simple relationships may more formally explain why the BP has zero balance.

Assume a floating exchange rate regime where the exchange rate is determined by market forces of demand and supply (this topic will be explored in more detail in this chapter). Suppose the exchange rate is the price of a unit of domestic currency in terms of foreign currency, i.e. 1£ = US$1.50.

When the exchange rate is determined in the market,

$$D_p - S_p = 0 \tag{3.1}$$

where D_p and S_p are demand for and supply of pounds. D_p Originates from overseas residents who wish to purchase UK exports, invest in UK or send a gift to a relative in UK. On the other hand, S_p originates from the UK residents who want to import from overseas, invest in overseas assets or send a gift to a friend in France. Accordingly, equality of demand and supply of pounds yields:

(exports + capital inflow + transfer received) = (imports + capital outflow + transfer paid) or

After re-arrangement of terms,

(NX + NI + Net transfer) – (capital inflow + capital outflow) = 0,

BP = CA – FCA = 0

Under a fixed exchange rate system or a managed float system equation 3.1 doesn't hold and hence under that type of exchange rate regime a country may experience balance of payments deficits or surpluses (this will be discussed later).

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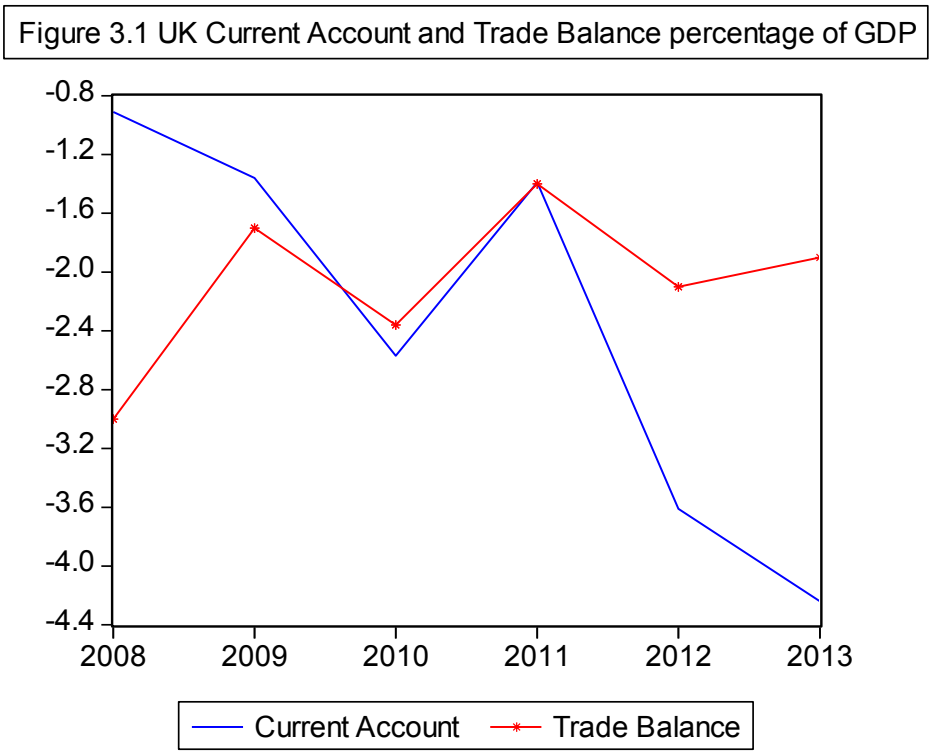
UK Balance of payments: a Historical Review

Figure 3.1 shows UK balance of current account and the trade balance (net export of goods and services) as a percentage of GDP during 2008–2013. The difference between the two series is the balance on income and transfers.



The trade balance and the balance on CA were continuously in deficit during the past 5 years. However, the balance of CA fell sharply after 2011. This development is mainly to a significant rise in foreign investment in UK which the income payments of foreign capital is recorded as debits in the current account.

National Accounts and the Balance of Payments

The relationship between saving, investment and the CA can be derived from the national income identity. In an open economy the current account includes net export of goods and services plus net income and net transfers.

$$Y = C + I + G + NX + I_n$$

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Where Y, C, I, G, NX and I_n are gross national product, private consumption expenditure, gross private investment expenditure, government expenditure, net exports and net income and transfers respectively. CA = NX + I_n.

$$Y = C + I + G + CA$$

$$CA + I = Y - C - G$$

National saving $S_n = S_p + S_g = Y - C - G$

Where $S_n, S_p, and\ S_g$ are national saving, private saving and government saving respectively. Hence, in an open economy S_n – I = CA. The difference between national saving and investment is equal to the current account balance. A country with low private saving or low government saving (high budget deficit), for a given level of investment, experiences CA deficits. CA deficit in any particular year represents addition to the indebtedness of that country to the rest of the word. The CA surplus shows that the rest of the world is in debt to that country. UK, US, Australia and Canada have persistent CA deficits whereas; China, Japan, Korea and Germany have experienced continuous CA surpluses. CA deficits are not necessarily harmful for the country. They represent excess of investment over national savings which is financed by borrowing from overseas. The country will not be worse-off as long as export earnings are sufficient to pay for the interest payments on foreign debt.

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Foreign Exchange Market

The foreign exchange rate is the value of a unit of domestic currency in terms of foreign currency. Usually the rate is expressed in terms of US dollar. The US dollar is the common denominator for all of the currencies in the world. For example, 1 British £ = 1.5 US$, 1 Euro = 1.16 US$. The cross rates are determined by using bilateral exchange rate against the US dollar. In the previous example 1 GBP = 1.29 Euros.

There are three system of exchange rate determinations; floating exchange rate, fixed exchange rate and managed float. These systems are discussed below.

In a pure floating exchange rate system, without government intervention, the rate is determined by the international demand and supply for the currency. Assume that exchange rate, e, is the price of domestic currency. e = 1.5 US$ per British pound. An increase in e is an appreciation of domestic currency and a decrease in e indicates depreciation of the currency. Figure 3.2 presents determination of the Pound exchange rate by market forces.

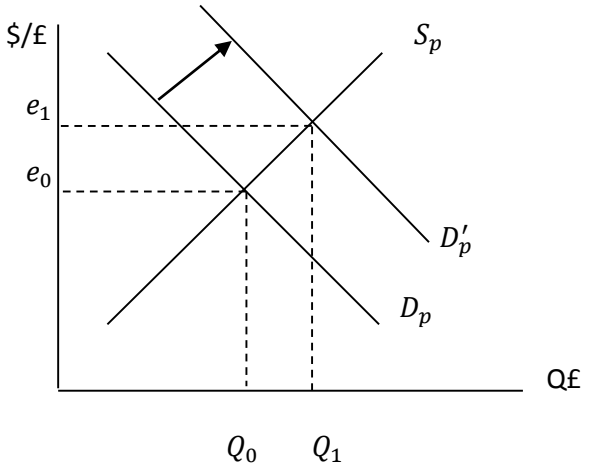

Figure 3.2 the Foreign Exchange Market

D_p and S_p are demand for Pound and supply of Pound respectively. D_p is determined by British exports, foreign investment (capital inflow) in Britain and transfer payments received. D_p originates from foreign residents who wish to buy British Pounds for their needs. S_p Represents British residents who wish to buy foreign currency for imports, invest in foreign country of donate a gift to a foreign resident. D_p increases as the exchange rate depreciates and S_p increases as the currency appreciates. The equilibrium exchange rate e_0 and the equilibrium quantity exchanged Q_0, is determined at the intersection of demand and supply curves.

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The equilibrium exchange rate changes when D_p or S_p shifts. For example, in Figure 3.2 if British export rises of if the rest of the world decides to buy British assets, D_p shifts to the right and the exchange rate appreciates. If British import rises or British residents decide to invest more overseas, S_p shifts to the right (not shown in Figure 3.2) and the equilibrium exchange rate depreciates.

Fixed Exchange Rate

The central bank may maintain a fixed exchange rate by continuous intervention in the foreign exchange market. In Figure 3.3 suppose the government wishes to keep the exchange rate at e_1. Without central bank intervention the exchange rate returns to e_0. However, the central bank may keep the exchange rate at e_1 if it purchases pounds and sells US dollars. At $e_1, S_p > D_p$ indicating that the balance of payments is in deficit. As long as e_1 is maintained the balance of payments remains in deficit. For this reason earlier it was argued that only under the fixed exchange rate system the balance of payments has a non zero balance.

Generally, it is not possible to maintain a fixed exchange rate for a long time. The central bank needs to have unlimited quantity of foreign currency to support the domestic currency continuously. Eventually the currency will be devalued or re-valued. Devaluation means one-off depreciation which after that the currency is fixed at the lower rate. Revaluation is the opposite. Under a fixed exchange rate system, speculators gain profit through anticipation of devaluation or re-valuation. In these situations speculators profit is at the expense of central bank. Examples of these situations British pound crises in 1992, Australian dollar crises in 1981 and Swiss Franc episode in 2015. In all of these three cases thereafter the central bank floated the currency.

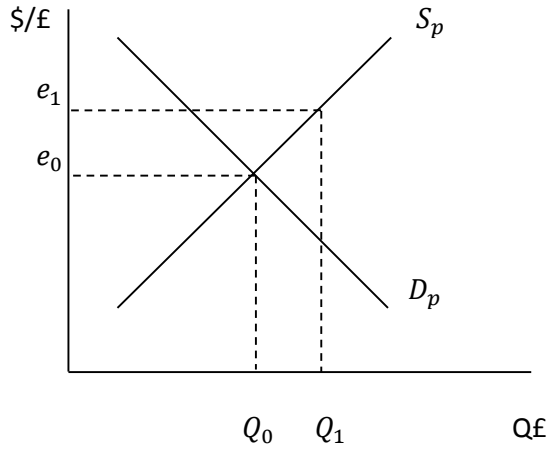

Figure 3.3 a Fixed Exchange Rate System

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A managed float system is a floating exchange rate regime with occasional government intervention. This is the most dominant regime in the developed economies. The central bank occasionally intervenes in the foreign exchange market to prevent excessive fluctuation of the exchange rate. The difference between managed float and fixed exchange rate is that in the latter system the central bank continuously intervenes to keep the exchange rate at the desired level. A variant of fixed exchange rate is crawling peg where the government sets the exchange rate every day before the markets open. This system prevailed in Australia 1983 when the currency was floated.

Other forms of Exchange Rates

The exchange rate against another is called bilateral exchange rate (BLE). The BLE doesn't present the overall fluctuations of one currency against all of the currencies. Trade weighted index (TWI) or the effective exchange rate is a basket of exchange rates against all of the currencies of the countries that a country engages in trade.

$$\text{TWI} = \sum_{j=1}^{n} a_{ij}\, X_{ij} \tag{3.1}$$

In equation 3.1 i is the domestic country and j is the foreign country. Country i trades with n foreign country. a_{ij} is the weight attached to the bilateral exchange rate against currency of country j. The larger is the trade with country j the higher is the weight. X_{ij} is the sum of n exchange rates.

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The weight $a_{ij} = \frac{(X_j + M_j)}{(X_i + M_i)}$ where X_j , M_j, X_i and M_i are exports to country j, imports from country j, total exports of country i and total imports of country i.

The TWI is prepared for some countries; it is not available for British Pound. For the purpose of exposition, The Australian dollar TWI is presented in Figure 3.4. The base year for the index is always 100 at the base year; 1970 in this case. The index stands at 70 in 2014. This means that overall, over 44 years the Australian dollar has depreciated by 30 percent.

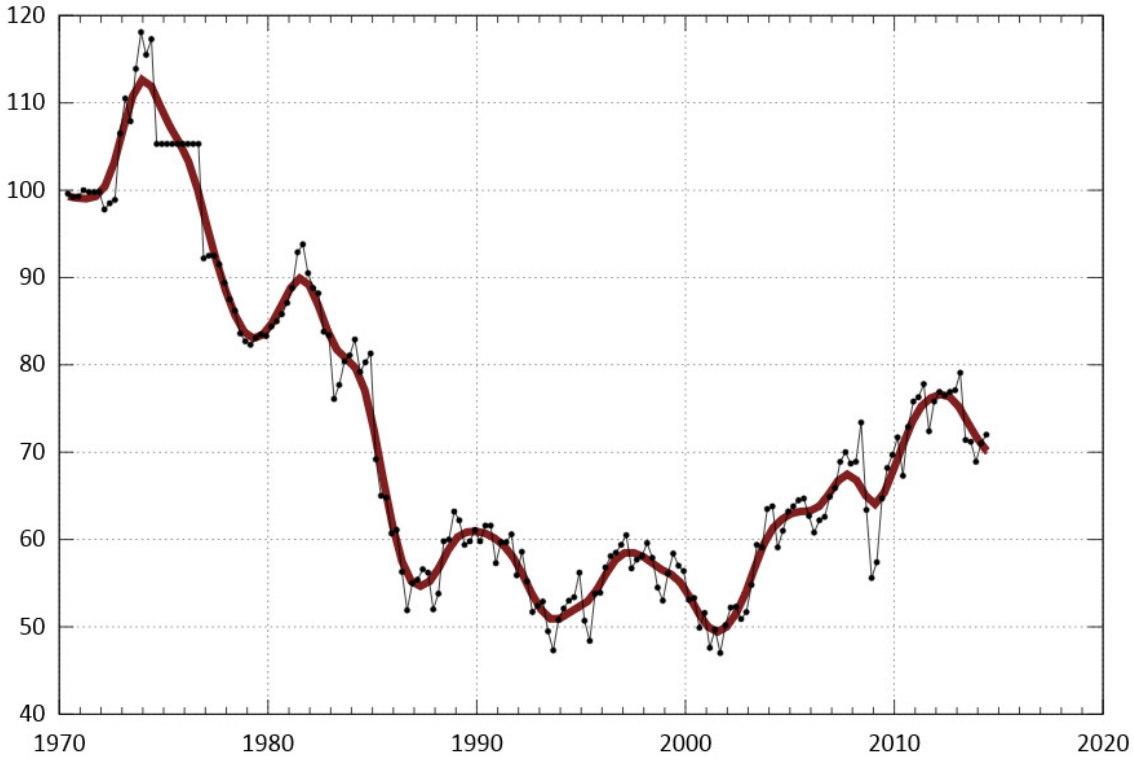

Figure 3.4 Australian Dollar TWI

The Real Exchange Rate (RE)

The RE is the ratio of price levels in two countries expressed in the same currency. For example, The RE between British Pound and Euro is:

$(P_d$ x e) / P_f where e, P_d, and P_f are domestic price level, the exchange rate (price of pound in terms of Euro) an foreign price respectively. The RE shows the ratio of British price level to foreign price level both expressed in Euro.

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RE is a measure of international competitiveness of domestically produced goods. When RE rises (e goes up or domestic prices increase), given the foreign price level, domestically produced goods become more expensive and international competitiveness deteriorates. International competitiveness improves when RE declines (P_f rises, e falls), for a given level of P_d. Real depreciation is necessary for nominal depreciation to improve the trade balance but this is not the sufficient condition.

Marshall – Lerner Condition (ML)

ML argues that for a depreciation to have positive effect on the trade balance the sum of the elasticity of exports and imports must be greater than unity.

The following exposition has been adapted from the Wilkipedia. For the purpose of this exposition assume e is the price of foreign currency where depreciation occurs when e rises and an appreciation is indicated by the fall of e.

$$NX = X - eM \tag{3.2}$$

Where NX, X and eM are net export, exports in domestic currency and imports in domestic currency respectively.

Differentiating 3.2 with respect to e yields:

$$\frac{\partial NX}{\partial e} = \frac{\partial X}{\partial e} - e\frac{\partial M}{\partial e} - M$$

Dividing both sides by X gives:

$$\frac{\partial NX}{\partial e}\ \frac{1}{X} = \frac{\partial X}{\partial e}\frac{1}{x} - = \frac{\partial M}{\partial e}\frac{e}{x} - \frac{M}{x}$$

At equilibrium X = em

After replacement for the equilibrium condition yields:

$$\frac{\partial NX}{\partial e}\ \frac{1}{X} = \frac{\partial X}{\partial e}\ \frac{1}{x}\ -\ \frac{\partial M}{\partial e}\frac{1}{M} - \frac{1}{e}$$

Multiplying through by e gives:

$$\frac{\partial NX}{\partial e}\ \frac{e}{X} = \frac{\partial X}{\partial e}\ \frac{e}{x} - \frac{\partial M}{\partial e}\ \frac{e}{x} - 1$$

$$\frac{\partial NX}{\partial e}\ \frac{e}{X} = \mu_{xe} - \mu_{me} - 1$$

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Where μ_{xe} and μ_{me} are elasticity of exports and elasticity of imports with respect to the exchange rate.

$$\frac{e}{x} > 0, \text{ given that } \mu_{me} < 0$$

$$\frac{\partial NX}{\partial e} > 0 \text{ if } \mu_{xe} + \mu_{me} > 1 \tag{3.3}$$

Equation 3.3 indicates that an appreciation of the exchange rate will improve trade balance (net exports) if sum of the elasticity of exports and imports are greater than 1.

The ML condition is closely related to the topic of "j curve" which argues that depreciation of the currency initially in the short run worsens the trade balance but eventually in the long-rum the trade balance improves. In the short run quantities of exports and imports don't change as currency depreciates. As a result, imports valued in domestic currency increase and exports expenditure in domestic currency remains unchanged, causing the overall trade balance to deteriorate. However, in the long-rum as exports become cheaper and imports more expensive their respective quantities change such that the trade balance valued in domestic currency improves.

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Purchasing Power Parity (PPP)

PPP is the relationship between domestic price, foreign price level and the exchange rate. The absolute version of PPP or the law of one price argues that the exchange rate is determined by the ratio of domestic price to foreign price

$$e = P_d / P_f \tag{3.3}$$

where e is price of foreign currency. Most of the research in this area cannot provide empirical support for PPP.

Krugman and Obstfeld (2009) propose three reasons for failure of PPP:

1. Barriers to international trade, transportation costs and price of services. Existence of tariff, quotas and transportation costs cause prices of same goods in different countries to be different. Also, most services are not traded internationally and are cheaper where wages are lower.[2]
2. Monopolistic elements in the international markets prevent domestic and foreign prices to equalize. International markets are not perfectly competitive; goods are not mobile across the borders. Existence of imperfect competition creates price differences for similar goods in different countries.
3. Price levels in different countries may include different basket of goods and services, and hence there is no reason for the exchange rate to equalize foreign and domestic price level.

The relative version of PPP can be derived from 3.3;

$$\% \Delta e = \pi_d - \pi_f \tag{3.4}$$

Where $\pi_d and \pi_f$ are domestic and foreign inflation respectively. The relative version of PPP argues that percentage change in the exchange rate is equal to the domestic and foreign inflation. There are evidence in support of the relative version of PPP. In the long run high inflation countries such as most of the South American countries have experienced weak currencies. On the other hand, low inflation countries such as Germany, Switzerland, Netherlands and Japan have maintained strong currencies (before introduction of Euro).

In Figure 3.5 inflation rates of selected OECD countries relative to the US inflation over the period of 1973–2014 is plotted. It is shown that over a long period of time, those countries that are known for having strong currencies such as Germany, Switzerland, Austria, Netherlands and Japan, have experienced low rates of inflation. This evidence may provide some support for the relative version of PPP.

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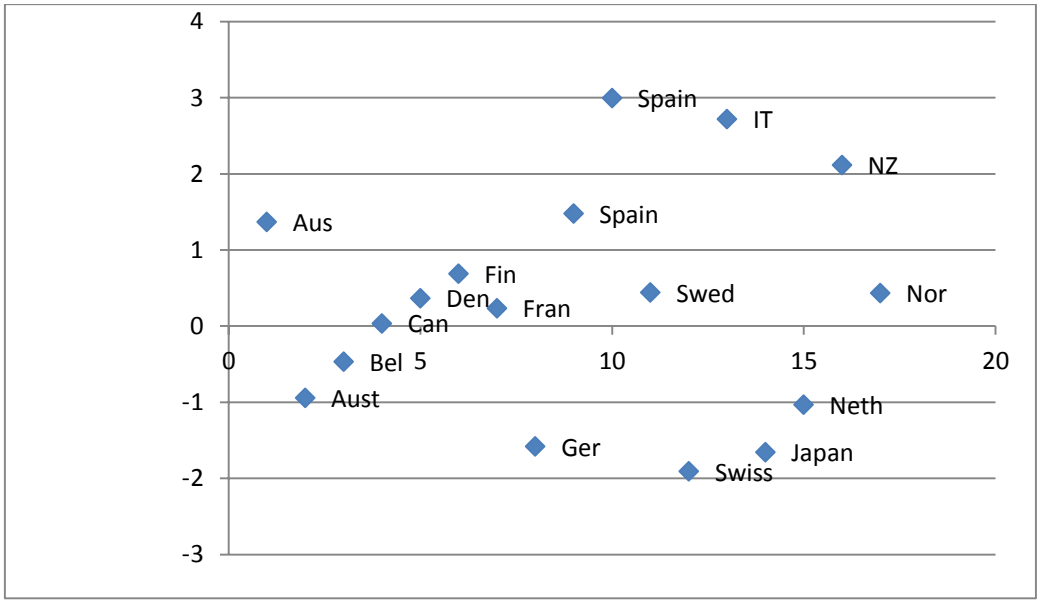

Figure 3.5 Inflation Rates of Selected OECD countries Relative to US Inflation

In this Figure Aus is Australia and Aust is Austria. The inflation rates of those countries above the zero line are greater than US inflation and those below the zero line are less than the US rate.

Why Richer Countries are More Expensive

It is well known that richer countries have higher living costs than poor countries. Sachs and Larrian (1993) argue that differences in prices of non-traded goods (mainly services) cause overall prices to be higher in richer countries.

Equation 3.5 presents overall price level in home country which is weighted average of prices of tradable and non non-tradable goods;

$$\mathrm{P} = \sigma\, P_t + (1 - \sigma)\, P_{nt} \tag{3.5}$$

Where P, P_t and P_{nt} and σ are overall price level, price of tradable and non-tradable goods and weight attached to traded and non – traded goods respectively. The same relationship foreign country after converting in domestic currency (multiplied by e) is presented in 3.6.

$$\mathrm{e}P^* = \sigma\, e\, P_t^* + (1 - \sigma)\, e\, P_{nt}^* \tag{3.6}$$

Assume that tradable goods move internationally and their prices, after allowing for the exchange rate, become equal; $P_t = eP_t^*$ That is PPP holds for tradable goods.

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Subtracting 3.6 from 3.5 yields:

$$P - eP^* = (1 - \sigma)(P_{nt} - e\,P^*_{nt}) \tag{3.7}$$

In 3.7 $P > eP^*$ if $P_{nt} > e\,P^*_{nt}$

That is domestic prices are higher than foreign prices if prices of domestically non-tradable goods (services) are higher that foreign prices of non-tradable goods.

Next one asks why price of non-durables are higher in one country than prices of similar goods in another country. Usually wages in the economy depend on the prices of tradable goods. Prices of manufactured goods set the wage rate in the economy. In a competitive labour market

$w = P_t \text{ x } a_t$ where w and a_t are wage rate and average productivity of labour in tradable goods industry. The same relationship applies to non-tradable goods; $w = P_{nt} \text{ x } a_{nt}$.

Combining two wage rates yields;

$$P_{nt} = P_t(a_t / a_{nt}) \tag{3.8}$$

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The same relationship applies to foreign price of non-tradable goods after adjusting for the exchange rate;

$$eP_{nt}^{*} = P_t(a_t^{*} / a_{nt}^{*}) \tag{3.9}$$

In 3.8 P_{nt} is high if a_t is high. This means that highly productive labour in tradable goods commands high wages causing prices of non tradable goods to be high. Comparing 3.8 and 3.9 indicates that prices of non tradable goods at home and in foreign country depend on average productivity of labour in these two sectors such that $P_{nt} > eP_{nt}^{*}$ if;

$$(a_t / a_{nt}) > (a_t^{*} / a_{nt}^{*}) \tag{3.10}$$

Now one can explain why richer countries are more expensive than poor countries. It was argued that differences between prices of two countries can be explained in terms of differences in prices on non tradable goods. The prices of non tradable goods are higher when average productivity of labour in tradable sector is high commanding overall wage rate in that country to be high leading to a higher prices of non tradable goods.

Based on Bhagwati, Kravis and Lipsey theories, Krugman 2009 offers an alternative theory for differences in prices of non-traded goods in poor and rich countries. This proposal is based on endowment rather than productivity of resources. It predicts that there is a direct relationship between real GDP and prices of non-tradable goods. Assume that prices of traded goods are the same internationally. The Capital output ratio is higher in rich countries than in poor countries. Labour is more abundant in poor country than rich counties causing lower average productivity of labour in poor nations. Services are generally labour intensive. As a result wages are lower in highly intensive service industries in poor nations with lower average productivity of labour causing prices of services to be lower in those countries.

Interest Parity condition (IPC)

There are large numbers of studies in economic literature that examine the validity of IPC condition as a criterion for international capital mobility. International capital mobility causes the IPC to hold. IPC hold when the capital market is in equilibrium.

Assume that the only risk of holding foreign currency assets is the risk of change in the exchange rate. The return on 1 dollar invested in foreign currency is interest rate plus expected change in exchange rate which can be positive or negative that is;

$r^{*} + E\Delta e$. The return of 1 dollar invested in domestic currency is r, the rate of interest.

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Inflow occurs when r > $r^* + E\Delta$ that is return in domestic currency is greater than the return in foreign currency. Capital outflow takes place when r < $r^* + E\Delta e$ IPC holds when **r** = $r^* + E\Delta e$. When IPC holds the capital market is in equilibrium and there is no incentive for capital movement.

The IPC should be modified if there are additional risks such as risk of bankruptcy or political turmoil is associated with holding of foreign assets. In this case a risk premium ρ is added to the right hand side of the IPC, that is r = $r^* + E\Delta e + \rho$. This new IPC means that for the equilibrium to hold domestic interest rate should be a little higher to compensate for additional risk.

IPC is also called uncovered IPC because investors are not covered for the expected change in the exchange rate. The covered IPC is r – r^* = F where F is forward premium or discount. The spot exchange rate is the rate for delivery of currency on spot. The forward rate is the rate for the future delivery of the currency. If r = r^* the spot rate and the forward rate are the same. However, if r > r^*, F > 0 and when r < r^*, F < 0. A positive F means that in the forward market domestic currency is at discount, higher domestic interest rate is offset by weaker value of currency. The opposite is true when F is negative. The covered and uncovered IPC are the same if F = $E\Delta e$ meaning that the difference between spot rate and the forward rate (F), is transacting parties expectation of future changes in the spot rate.

Real Interest Parity condition (RIPC)

Since most of the borrowings and lending transactions continue in the future, expected inflation is an important factor to consider. For this reason real rather than nominal interest rates are more relevant in financial transactions. Real interest rates are nominal rates less expected inflation;

$$R = r - \pi^e \tag{3.11}$$

In (3.11) R and π^e are real interest rate and expected inflation respectively. The difference between domestic and foreign real interest rate is:

$$R - R^* = (r - \pi^e) - (r^* - \pi^{e*}) \tag{3.12}$$

In (3.12) those with * represent foreign variables. The RIPC is presented in (3.13)

$$R - R^* = E\Delta Re \tag{3.13}$$

Where Re is real exchange rate. The following equations show how (3.13) is derived from combination of (3.12) and expected change in real exchange rate.

$$RE = e\, P^*/ P$$

$$E\Delta Re = E\Delta e - (\pi^e - \pi^{*e})$$

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If IPC holds r – r – $r^{\star} = E\Delta e$ then

$$E\Delta Re = (r - \pi^{e}) - (r^{*} - \pi^{e*}) = R - R^{*}$$

Some researchers argue that RIPC is used as criterion for international capital mobility. That is, international investors consider RIPC as a signal for capital movement. This is a debatable issue as IPC and RIPC ignore other political and economic risks between countries except the risk of foreign exchange rate fluctuations.

3.1 Appendix to Chapter 3 Forward Exchange Rate

The forward exchange rate is the rate that applies to future delivery of the currency. It is a premium or discount on the spot exchange rate depending on the difference between domestic and foreign interest rates. If two currencies interest rates are equal, spot and forward rate are the same and F is zero. Generally, r – $r^{\star}$ = F.

If r > $r^{\star}$, F > 0 meaning that domestic currency is at discount, the positive interest differential on domestic currency is offset by the depreciation of the currency in the forward market. If r < $r^{\star}$, F < 0 implying that domestic currency is at premium in the forward market. The relationship between interest rate differential and forward premium, the covered interest parity condition is explained below.

Suppose an investor buys 1dollar worth of euro bond today and receives 1 + $r^{\star}$ which is (1 + (1 + $r^{\star}$)/e euro at the end of the year. The investor can neutralize the risk of exchange rate changes by selling euro assets in the forward market when the bond matures. He will receive F (1 + F (1 + $r^{\star}$)/e if he invested in 1 dollar in euro bond and receives 1 + r if he invested 1 dollar in a domestic bond. Because two transactions have the same return (no exchange rate risk);

$$1 + r = F\ (1 + r^{\star})/e \tag{3.14}$$

Equation (3.14) can be reduced to yield;

$$r - r^{\star} = (F - e)/e \tag{3.15}$$

The right hand side of (3.15) is forward premium or discount over the spot rate.

References

Krugman, P. and Obstfeld, M. *International Economics Theory and Policy*, Addison Wesley, 2009.

Sachs, J. and Larrian, F. *Macroeconomics in the Global Economy*, Printice Hall, 1993.

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4 Macroeconomic Policy in an Open Economy

Open economies are characterised by high trade relative to GDP and high capital inflow and outflow with few restrictions. The UK trade (exports plus imports) to GDP ratio was 61.6 in 2013, higher from 51.6 in 2003. This is a high trade ratio and UK is considered an open economy. In 2013, in terms of openness among G8 countries, the UK only followed Germany and Canada. In terms of comparisons, the UK ranked 27th (out of 37 including OECD, China Russia and South Africa). Other open economies are Australia, Germany, Canada, Japan and generally most of the members of European Union countries.

The effects of macroeconomic policy (monetary and fiscal policy) are different than the effects of policies in a closed economy. The main different is the exchange rate and the flow of capital. Here, the IS – LM framework will be modified to allow for the effects of exchange rate changes and integration of capital flows based on uncovered interest parity condition. The modified version of IS- LM model was presented in an appendix in Krugman and Obstfeld (2009). The modified IS – LM model is also known as Mundell – Fleming model introduced separately by Robert Mundell (1968) and Marcus Fleming (1968).

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Assume that assets located in two different countries are different only in terms of exchange rate; there is no other risk involved in holding foreign currency assets and IPC holds:

$$r - r^* = \mathrm{E}\Delta e \tag{4.1}$$

$\mathrm{E}\Delta e = (e^e - e) / \mathrm{e}$ where e^e is expected exchange rate. Substituting into (4.1) yields:

$$r - r^* = (e^e - e) / \mathrm{e} \tag{4.2}$$

In (4.2) for a given level of r^*, e^e and fixed r, there is an inverse relationship between e and IPC. This relationship is plotted in Figure 4.1.

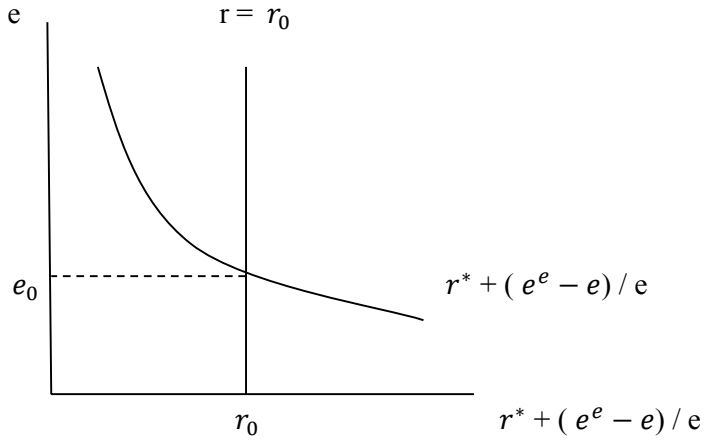

Figure 4.1 Capital Market Equilibrium

Figure 4.1 is called capital market equilibrium because it applies to equilibrium in the money market and foreign exchange market. The exchange rate is measured on the vertical axis and the foreign currency return is measured on the horizontal axis. The exchange rate is the price of foreign currency, upward movements show depreciation and downward movements represent appreciation of the local currency. At e_0 IPC holds and there is no tendency for the capital inflow or outflow. At any other exchange rate above or below the equilibrium capital movements cause the exchange rate to appreciate (decline) or depreciate (increase) towards the equilibrium. A reduction in money supply increases the interest rate causing the vertical line to move to the right leading to an appreciation of the exchange rate. Other changes in the equilibrium exchange rate are caused by changes in r^* or e^e Both of these changes shift the foreign currency return curve upward causing depreciation of the local currency. The effects of a reduction in money supply and a rise in foreign interest rate are presented in Figures 4.2 and 4.3. A reduction in the supply of money increases the rate of interest causing the exchange rate to appreciate to e_1. In Figure 4.3 the rise in foreign interest rate leads a depreciation of domestic currency to e_1.

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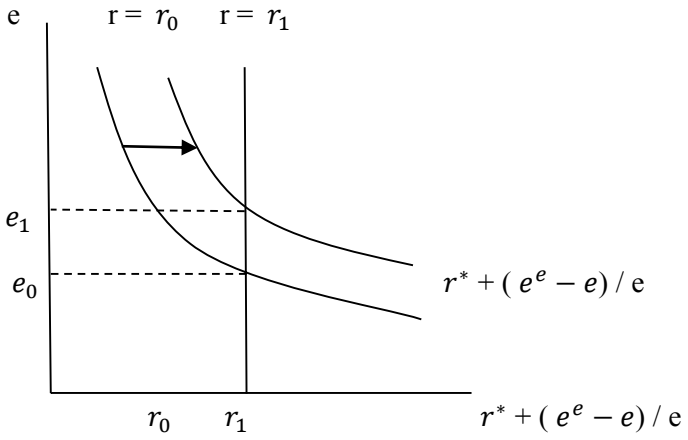

Figure 4.2 A Reduction in Money Supply

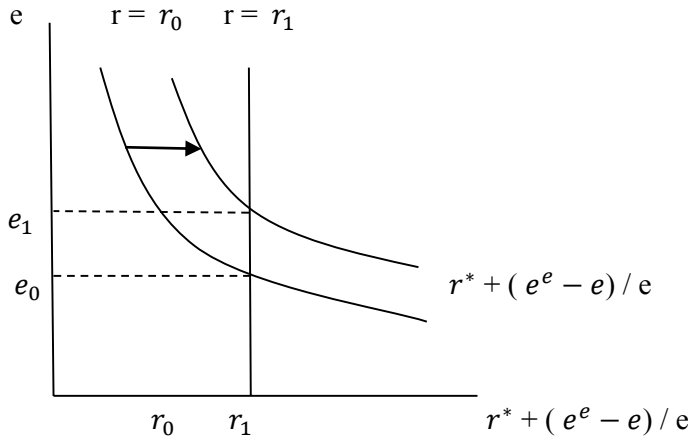

Figure 4.3 An Increase in Foreign Interest Rate

IS – LM Framework in an Open Economy

A modified version of IS – LM model is presented in Figure 4.4. In this model the exchange rate and the IPC are explicitly included. The model will be use to show effects of monetary and fiscal policy on macro economic variables.

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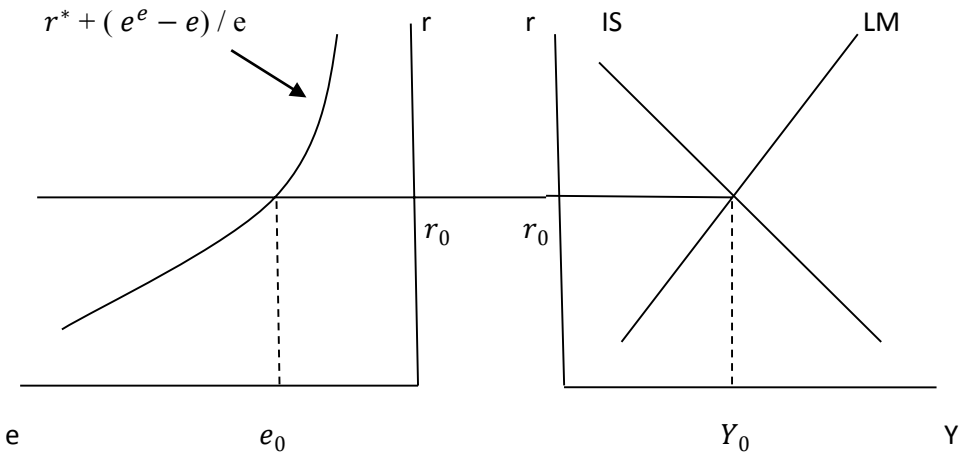

Figure 4.4 Open Economy IS – LM Model

In Figure 4.4 at the intersection of IS – LM curves Y_0 and r_0 show equilibrium in the goods and money markets. Given the interest rate r_0 and the foreign currency return curve, e_0 represents the equilibrium in the foreign exchange market.

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Monetary and Fiscal Policy under a Fixed Exchange Rate Regime

In a fixed exchange rate system the central bank attempts tp maintain a fixed exchange rate by purchasing or selling foreign currency. When a central bank buys foreign currency (sells domestic currency) the supply of money in circulation rises and when the central bank sells foreign currency (buy domestic currency) the money supply declines. These changes in the supply money as the central bank intervenes in foreign exchange market, affect the outcome of fiscal and monetary policy under a fixed exchange rate regime.

The effects of a fiscal expansion in a fixed exchange rate system is illustrated in Figure 4.5. Initially the equilibrium is at point 1 at the intersection of IS_0 and LM_0. An increase in government spending or a reduction in taxes shifts the IS curve to the right causing interest rate to rise and the exchange rate to appreciate. The central bank purchases foreign currency and sells domestic currency to prevent appreciation of the currency. As a result of the intervention the money supply rises, LM curve moves to LM_1 and the final equilibrium is at point 3 at the output Y_1. In this case a fiscal expansion has a large effect on the economy because it is mixed with a monetary expansion.

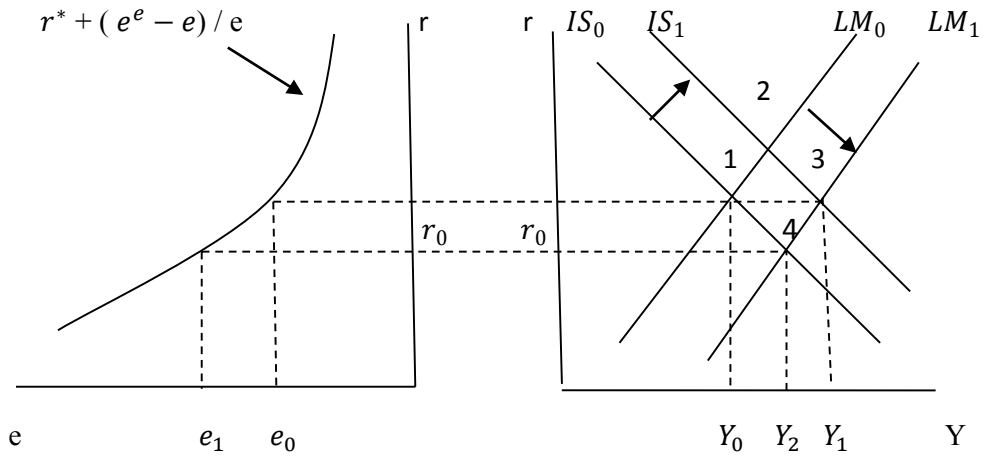

Figure 4.5 Fixed Exchange Rate and Fiscal Expansion

A monetary expansion shits the LM curve to LM_0, with IS_0 the equilibrium moves from point 1 to point 4. At point 4 the interest rate is lower causing the exchange rate to depreciate. The central bank attempts to maintain the exchange rate at e_0 by selling foreign currency (buying domestic currency). The intervention of central bank reduces the money supply, the LM curve returns to its original position at point1. Under a fixed exchange rate regime monetary policy has no effect on output.

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Monetary and Fiscal Policy under a Floating Exchange Rate

Under a fixed exchange rate the exchange rate is not expected to change. However, under a floating regime the exchange rate is expected to change and e^e plays an important role in the effects of macroeconomic policy. Krugman and Obstfeld (2009) distinguish between permanent and temporary effects of a policy. A permanent change in policy leads to a change in expected exchange rate where as a temporary change has no effect on the expectations.

In Figure 4.5 a temporary increase in money supply shifts the LM curve to the right and the equilibrium moves to point 4 causing interest rate the exchange rate to depreciate and output to rise to Y_2. These are the effects of a temporary increase in money supply.

The effects of a permanent rise in money supply is presented in Figure 4.6. A permanent rise in money supply shifts the LM curve to the right and the equilibrium moves from point 1 to point 2 where output is higher, interest rate is lower and the currency has depreciated to e_1 The effect of a permanent rise in money supply on output is stronger that the effect of a temporary rise because it is accompanied by an expected depreciation of the currency which stimulates net exports and shifts the IS curve to the right (the inclusion of expected exchange rate in the IS – LM model will be discussed in the appendix to this chapter).

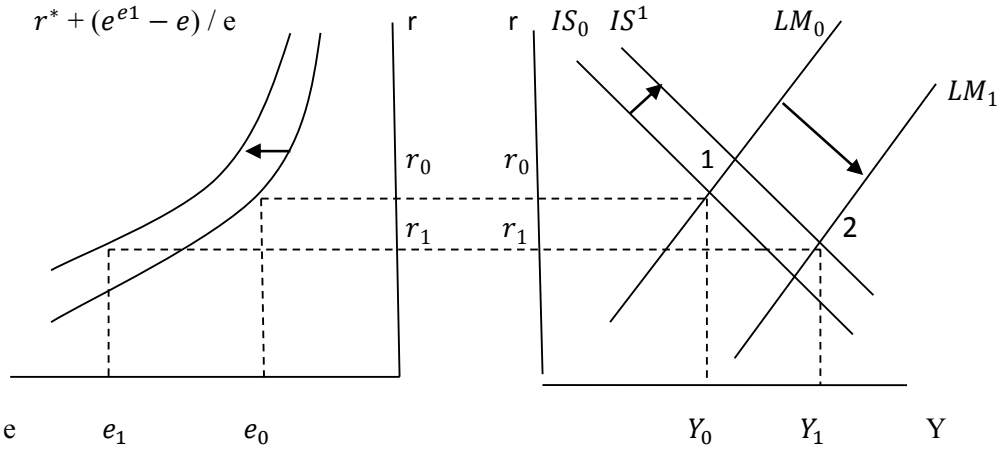

Figure 4.6 Floating Exchange Rate and a Permanent Rise in Money Supply

Effects of a permanent fiscal Expansion

A permanent fiscal expansion leads to expected appreciation of the currency which in turn shifts the IS curve back to its original position. Overall, a permanent fiscal expansion has no effect on output. The fall in net export completely offset the effect of the fiscal expansion.

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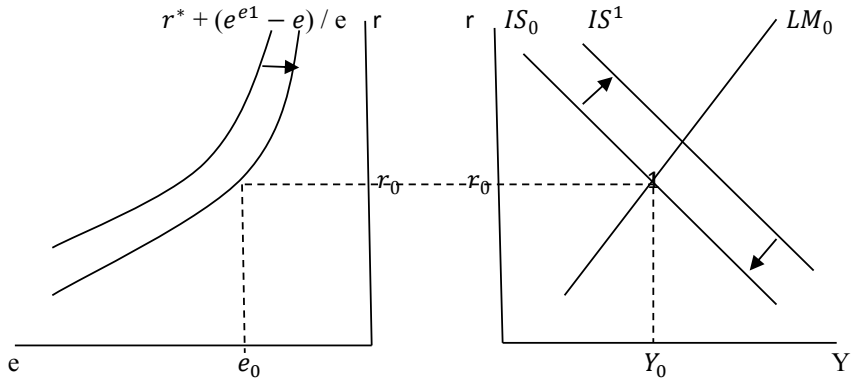

Figure 4.7 Floating Exchange Rate and Permanent Fiscal Expansion

In Figure 4.7 the effect of fiscal expansion on output is completely offset by a significant appreciation of the currency. Overall output and interest rate remain unchanged.

Long Run Effects of a permanent increase in Money Supply

The IS – LM model is used for the effects of macroeconomic policy in the short run when price level is constant. In the long run price level is assumed to flexible. The effect of flexible price level is incorporated in the model through the money market equilibrium.

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The following equations show money market equilibrium with flexible price level.

L = L (r , Y) Demand for money

MS / P = MS_0 / P Real supply of money

L (r , Y) = MS_0 / P Money market equilibrium

The LM curve is derived from the above equations and shifts to the right when price level falls

(MS / P rises) and shifts to the left when price level rises (MS / P falls). The long run effects of a permanent rise in money supply is shown in figure 4.8.

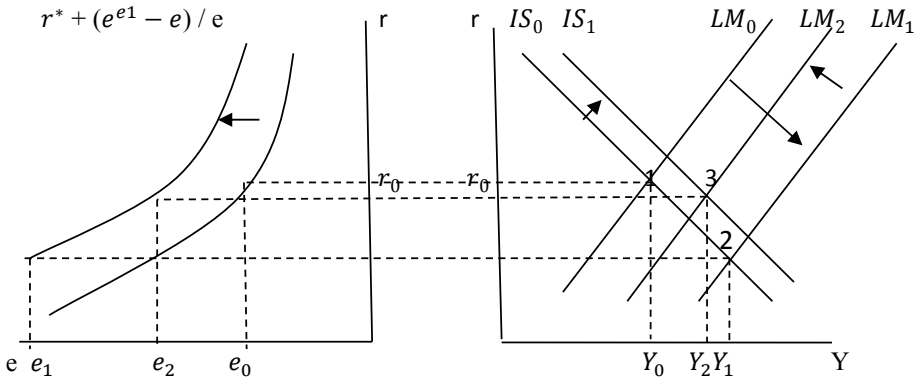

Figure 4.8 Long Run Effects of a Permanent Rise in Money Supply

Initially the equilibrium is point 1 at Y_0, e_0 and r_0 A permanent rise in money supply shifts the LM curve to LM_1, interest rate falls and because of expected depreciation the foreign currency return curve moves to the left causing substantial depreciation of the currency to e_1, the exchange rate overshoots its long run equilibrium. In the long run prices rise, real value of money supply falls and the LM curve moves to LM_2. Higher prices cause the real exchange rate to appreciate and net exports to fall. The fall in net exports shifts the IS curve to the left to IS_1. The final equilibrium is at point 3 where output is higher, interest rate is lower and the exchange rate is weaker relative to the original equilibrium at point 1.

Overshooting Exchange Rate

The concept of overshooting exchange rate was introduced in the classic article "Expectations and Exchange rate Dynamics" by Dornbusch (1976). The previous section showed overshooting of the exchange rate but there was no explicit presentation of the price level and the real exchange rate. The following discussion is based on the summary of the Donbusch article in Monadjemi (2011). Essential components of the model are presented in equations 4.3 to 4.9.

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$$(e^e - e)/e = r - r^* \tag{4.3}$$

$$(e^e - e)/e = \theta\,(\bar{e} - e) \tag{4.4}$$

$$s = ep^* - p \tag{4.5}$$

$$\dot{p} = \pi\,(D / \bar{y}) \tag{4.6}$$

$$\bar{p} = m + (\lambda r^* - \theta y) \tag{4.7}$$

$$\ln D = \mu + \beta\,(e - p) + \delta y - \sigma r \tag{4.8}$$

$$m - p = \lambda y - \alpha r \tag{4.9}$$

In the above equations $\bar{y}, \bar{p}, y, D, \dot{p}, m, p, p^*, s, \bar{e}, e, r^*, r$ and e^e respectively are equilibrium output, equilibrium price level, output, aggregate demand, inflation, money supply, domestic price level, foreign price level, real exchange rate, equilibrium exchange rate, foreign interest rate, domestic interest rate, and expected exchange rate.

All of the variables in Dorbusch's model are logarithms. Equation 4.3 is the uncovered interest parity. 4.4 is the expectation formation where expected change in exchange rate depends on the spot exchange rate deviates from the equilibrium exchange rate. 4.5 is the real exchange rate expressed as the ratio of logarithms of foreign price to domestic price level both expressed in domestic currency. In 4.6 inflation is a function of the difference between aggregate demand and equilibrium output. Equation 4.7 expresses the equilibrium price level as a function of money supply, foreign interest rate and domestic output. In 4.8 aggregate demand depends on real exchange rate (assuming $p^* = 1$), output and domestic interest rate. Equation 4.9 is the monetary equilibrium where real value of money supply is equal to the determinants of money demand.

Donbusch's model examines the responses of the exchange rate and price level in the short run and in the long run to changes in monetary policy. An important assumption of the model is that prices of goods and services are relatively stable in the short-run but fully flexible in the long run. Interest rates and exchange rate are fully flexible. The following paragraph explains the short run and the long run effects of an increase in money supply in Donbusch's model.

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In Figure 4.9 the line $\dot{p} = 0$ shows the goods market equilibrium where inflation is zero. The line is upward sloping because a depreciation of the currency causes an excess demand, a rise in price level is needed to chock-off excess demand. The negatively sloping arrowed line represents the path of movement towards the long run equilibrium whenever e and p are not at the equilibrium. The stability of the model requires e and p move along the arrowed path. Otherwise they will move away from the equilibrium . The 45 degree line show the long run equilibrium of e and p where e = p and the real exchange rate is constant. The initial equilibrium is at point E on the 45 degree line. An expansionary monetary policy shifts the line $\dot{p} = 0$ upward (equation 4.7) reducing domestic interest rates causing the exchange rate to depreciate in the short run. Since the price level is constant at p', the exchange rate "overshoots" to e_2 at point B. At B there is excess demand for goods (located below the line $\dot{p} = 0$) which pushes up prices. The rise in price level reduces the real value of money supply causing a rise in interest rates. A rise in interest rates coupled with expected appreciation (equations 4.3 and 4.4) leads to capital inflow and appreciation of the local currency. The economy moves along the arrowed path towards point E'. At E' prices, exchange rate and the supply of money have changed proportionally causing the real exchange rate and the real value of money to remain constant. In this model, the exchange rate changes significantly in the short run when the price level is stable.

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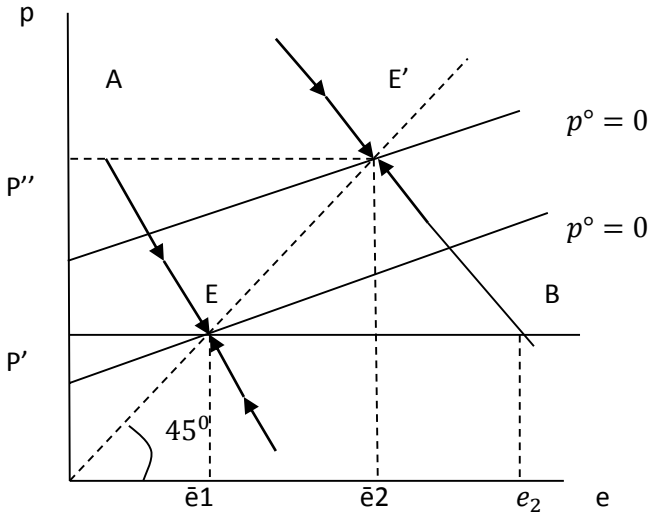

Figure 4.9 Overshooting Exchange Rate

In Figure 4.9 the path of movements toward the long run equilibrium, the arrowed line, must be negatively sloped. Suppose the economy is at point A where excess supply of goods is. The price level will fall, the real value of money supply will rise and domestic interest rate falls. As a result, $r^* > r$, $E\Delta e > 0$ (expected depreciation, equations 4.3 and 4.4). An expected depreciation coupled with falling interest rates leads to capital outflow and actual depreciation of the local currency. Falling price level is accompanied by rising exchange rate (depreciation) along the arrowed path. There is no other path which moves the economy towards the long run equilibrium,

The Current Account Balance

The intersection of IS – LM curves shows the internal equilibrium when goods and money markets are simultaneously in equilibrium. The current account balance (CAB) shows all pairs of interest rates and output for a given level of current account. On the CAB curve the balance of current account is constant. CAB slops downward because as income rise imports rise, current account worsens. To keep the current account constant, interest rate must fall causing depreciation of the currency and an increase in exports to compensate for the rise in imports. The CAB is flatter than the IS curve because for a given level of income the interest rate must be lower on the IS curve than the CAB curve in order to generate weaker exchange rate. A weaker exchange rate is needed to increase exports to compensate for leakages and leave aggregate demand equal to output on the IS curve. The IS – LM BCA curves are presented in Figure 4.10.

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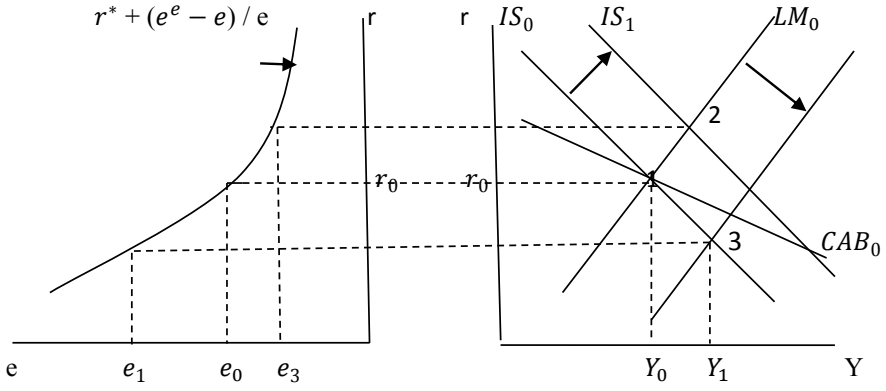

Figure 4.10 IS – LM Model and the Current Account Balance

In Figure 4.10 CAB_0 is a particular level of current account balance. Given the foreign currency return curve on the left, IS_0, LM_0 and the CAB_0, the initial equilibrium is at point 1. A temporary increase in money supply shifts the LM curve to the right and moves the equilibrium to point 3 where current account improves (relative to point 1 the exchange rate depreciates and net export rises).

A temporary fiscal expansion shifts the IS curve to the right and the equilibrium moves to point 2 where interest rate rises, exchange rate appreciates and the current account relative to CAB_0 deteriorates. These predictions are expected in an open economy where monetary and fiscal policies affect the exchange rate and Marshll – Lener condition holds.

International Capital Mobility (ICM)

ICM has become an important topic of research since deregulation of financial market and larger and faster movements of capital across international borders. Many economists believe that greater linkage of international capital market contributed significantly to the magnitude of the global financial crises in 2007–2009. Testing of greater ICM is important since it is argued that increased ICM has contributed to the global financial crises.

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There are several methods for testing ICM. Pioneer in this area are Feldstien and Horioka (FH) (1980) and Feldstein (1983) which argued that in a closed economy saving and investment are perfectly correlated. It follows that as the economy becomes more open the correlation between saving and investment declines. FHs proposal is an indirect rather than direct method for testing ICM. It has been argued that the correlation between saving and investment can be influenced by other factors beside ICM. For example, the correlation of saving and investment may rise as a result of faster economic growth. This higher correlation is not related to the higher degree of ICM. In addition, the coefficient of saving as the independent variable in the regression of investment is biased because investment influences saving through changes in the aggregate income. FH found high correlation between S and I during 1960–1974 for a group of 17 OECD countries and concluded that ICM is far from being perfect. This should not be surprising as the period under consideration falls mostly in the period of fixed exchange rate and capital control under Bretton Woods arrangement.

In perfect capital mobility domestic and foreign interest rates are equal. In this case, given IPC equation 4.2, expected change in exchange rate is equal to zero. Several studies have attempted to test the degree of international capital mobility directly by examining the relationship between domestic and foreign interest rates. Generally most of the studies showed significant differences between US interest rates and foreign rates depending on the differences between risk of bankruptcy, inflation and liquidity, Interest rates of developed economies such as US and Western Europe move closely together in the same direction.

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The following equation is more suitable for testing the degree of ICM;

$r - r^* = (e^e - e)/e + \rho$ where ρ is all of the risk associated with the domestic currency assets. In this form domestic interest rates have to compensate for expected depreciation of domestic currency as well as other risk associated with holding home county assets.

It is often argued that international investors consider real interest rates rather than nominal rates. The theoretical discussion on real interest parity condition was developed at the end of chapter 3.

Afterword

This chapter introduced macroeconomics in an open economy. This has been one of the hottest topics in the discipline. Economies have been subjected to all sorts of international shocks, both positive and negative. The open economy involves trade in goods and services (exports and imports) – the current account – and the net flows of capital – capital and financial account – across the globe. Volatile capital flows have created all sorts of problems for economic management and in some countries has generated financial crisis with painful repercussions for the real economy. Financial crises have a long and entertaining history as illustrated in Kindleberger's classic *Manias, Panics and Crashes* (1996) and his description of the sequence of events is useful:

What happens, basically, is that some event changes the economic outlook. New opportunities for profit are seized, and overdone, in ways so closely resembling irrationality as to constitute a mania. Once the excessive character of the upswing is realized, the financial system experiences a sort of "distress," in the course of which the rush to reverse the expansion process may become so precipitous as to resemble a panic. In the manic phase, people of wealth or credit switch out of money or borrow to buy real or illiquid financial assets. In panic, the reverse movement takes place, from real or financial assets to money, or repayment of debt, with a crash in the price of commodities, houses, buildings, land, stocks, bonds – in short, in whatever has been the subject of the mania (p. 3).

While financial crises are not new, they seem to occur more frequently and the severity of their impact has increased. The proliferation of financial crises is often viewed as one of the defining aspects of the intensification of financial globalisation over the last few decades. Bordo & Eichengreen note that:

Under Bretton Woods, banking crises were essentially non-existent, and the effects of currency crises were mild. This is more evidence…that strict controls on domestic and international financial transactions can suppress the symptoms of financial instability. The speed of growth in this period provides no obvious support for those who would emphasise the negative side effects.

What are distinctive about the recent experiences are the coincidence of banking and currency crises and the severity of its real effects.

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The sometimes erratic foreign exchange market, associated with exchange rate instability and crises, is a key driver here. There is no consensus on the appropriate exchange rate system that should be used. Floating rates are very volatile and tend to overshoot equilibrium. Pegged rates come under speculative pressures and become unsustainable. Floating foreign exchange markets can display herd behaviour in which participants follow 'leaders' and this can result in overshooting of prices. So selling when the price is already low can be profitable if it induces others to do the same and thereby cause the price to fall further. Major players can engage in profitable, yet destabilising, speculation in a deliberate attempt to manipulate a currency. Volatility is driven by a small number of players who see advantages to themselves in engineering volatility. They do not just take advantage of expected price movements, they cause price movements.

An implication of the numerous attacks on currencies is that this suggests that floating currencies can be destabilised by the activities of hedge funds, even in markets that are deep and liquid. An exchange rate should reflect a country's international competitiveness and its capacity to produce tradeable goods, just as equity prices should reflect company earnings. But over short periods, macroeconomic fundamentals appear to explain little of the exchange rate movements. Indeed, floating rates often been excessively volatile and subject to prolonged misalignments and overshooting. Good fundamentals alone cannot insulate a country from the effects of financial contagion. A currency crisis may not be related to weak economic fundamentals or policy mistakes. Floating exchange rates are not immune to speculative attacks. Speculative attacks may succeed in the absence of underlying macroeconomic imbalances. 'Irrational exuberance' is another term that has been used to describe this situation.

Whatever one's view of the vulnerability of the global economy to future financial crisis, it is clear that emerging market economies seem especially susceptible to financial distress. This has led to a search for better 'financial architecture' for the world economy. One suggestion is the need for international regulation and Eatwell & Taylor have proposed a World Financial Authority. There is a need for international coordination to reduce destabilising effects of highly leveraged institutions. Improvements in the quality of domestic financial and regulatory institutions are also necessary.

Reference

Dornbusch, R., (1976), "Exchange Rate Expectations and Monetary Policy", Journal of International Economics, 6, pp. 231–244.

Eatwell, J. and Taylor, L., "Global Finance at Risk: The Case for International Regulation", New Press, New York (2001).

Eichengreen, B. And Bordo, M. D., (2002), "Crises Now and Then: What Lessons from the Last Era of Financial Globalization", *NBER Working Paper* No. 8716, January.

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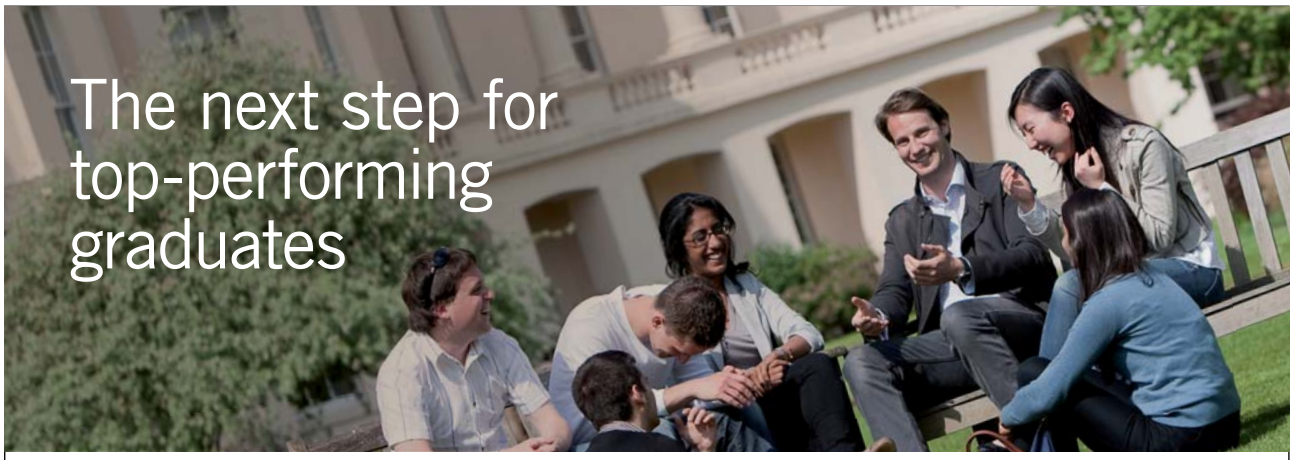
Fleming, M.J., (1962), "Domestic Financial Policies Under Fixed and Flexible Exchange Rates", *IMF Staff Papers*, November, pp. 369–379.

Kindleberger, C. *Manias, panics, and crashes : a history of financial crises*, Wiley, New York 3rd ed. (1996), p. 3.

Krugman, P. and Obstfeld, M. *International Economics Theory and Policy*, Addison Wesley, 2009.

Mundell, R.A. (1961), "Theory of Optimum Currency Area", *American Economic Review*, 51, pp. 657–655.

Mondell, R.A., (1963), "Capital Mobility and Stabilization Policy under Fixed and Flexible Exchange Rates", *Canadian Journal Of Economics and Political Science*, November, pp. 475–485.



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5 Fixed Exchange Rates, Central Bank Intervention and regional Currency Arrangements

An introduction to the topic of fixed exchange rates was discussed in Chapter 3. This chapter attempts to examine details of fixed exchange rates and how the central bank may influence the exchange rate temporarily or permanently. In addition, regional currency arrangements which are an extension of the fixed exchange rate regime will be discussed.

In reality a pure floating exchange rate doesn't exist. All of the exchange rate regimes are either fixed or managed float. In a fixed exchange rate the central bank continuously intervenes to keep the exchange rate fixed. In a managed float system the central bank occasionally intervenes in order to prevent excessive fluctuations of the exchange rate.

It was mentioned earlier that under a fixed exchange rate regime the expected change in the exchange rate, EΔe, is zero. In this case r = r^*. Figure 5.1 shows how the central bank may intervene to keep the exchange rate fixed.

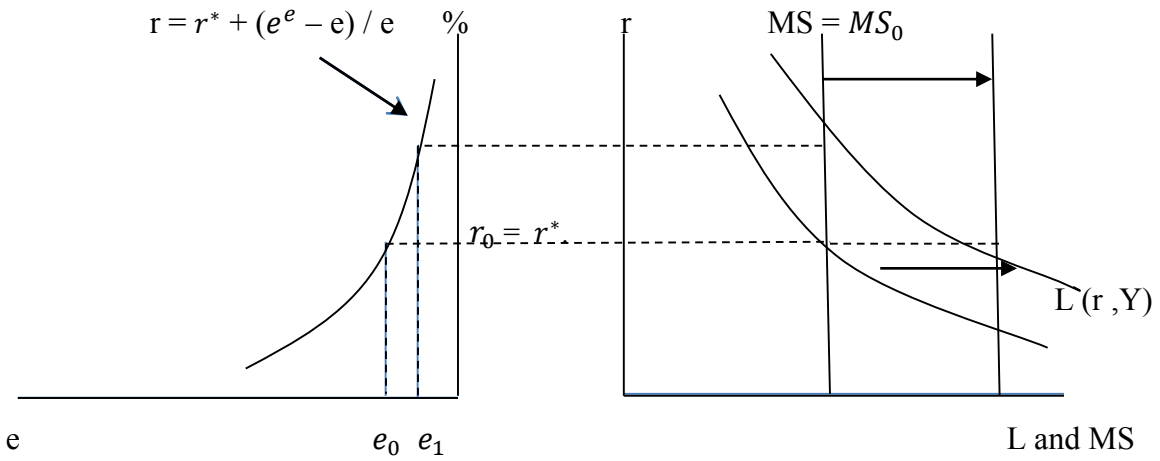

Figure 5.1 a Fixed Exchange Rate Regime

Initially, e_0 and r_0 are the equilibrium exchange rate and interest rate respectively. A money market shock such as an increase in demand for money shifts the L curve upward causing the interest rate to increase and the exchange rate to appreciate to e_1 To keep the exchange rate fixed the central bank has to intervene by purchasing foreign currency / selling domestic currency. This intervention leads to an increase in supply of money, interest rate falls to r_0 and the exchange rate is maintained at e_0.

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The following discussion shows the effects of central bank purchase of foreign currency on the monetary base. As it was shown earlier, any change in monetary base changes the supply of money by a multiple amount.

Suppose the central bank purchases 100 million dollar worth of foreign currency from the private sector. The seller of the foreign currency deposits the cheque received from the central bank in his account at bank A. The following T accounts show the effects of this intervention on the balance sheet of the central bank and bank A.

Central Bank

Foreign currency	Bank Reserves
Reserves +100	+100

Bank A

Reserves + 100	Deposits + 100

As a result of these transactions monetary base (bank reserves) has increased by 100 million dollars which eventually increases the supply of money by a multiple amount.

Fixed Exchange Rates and Devaluation

Often under a fixed exchange rate regime the central bank wishes to devalue the currency. Devaluation is a one-off change in the exchange rate under by the central bank in a fixed exchange rate system. Depreciation occurs in a floating exchange rate system when the market moves the exchange rate to a weaker rate. The purpose of devaluation is generally for improving trade balance by making exports cheaper and imports more expensive. Devaluation may also take place if the foreign reserves of the central bank are insufficient to support the currency at the previous rate.

The effect of devaluation is shown in Figure 5.2. Initially the equilibrium is point 1 at r_0 and e_0. The central bank decides to devalue the currency and maintain the exchange rate at e_1. In this case the central bank buys foreign currency/sells domestic currency causing the supply of money to increase and the exchange rate to move to e_0 In this situation devaluation severs dual purposes; domestically produced goods become cheaper for foreign purchases and the foreign reserves of the central bank gradually increase.

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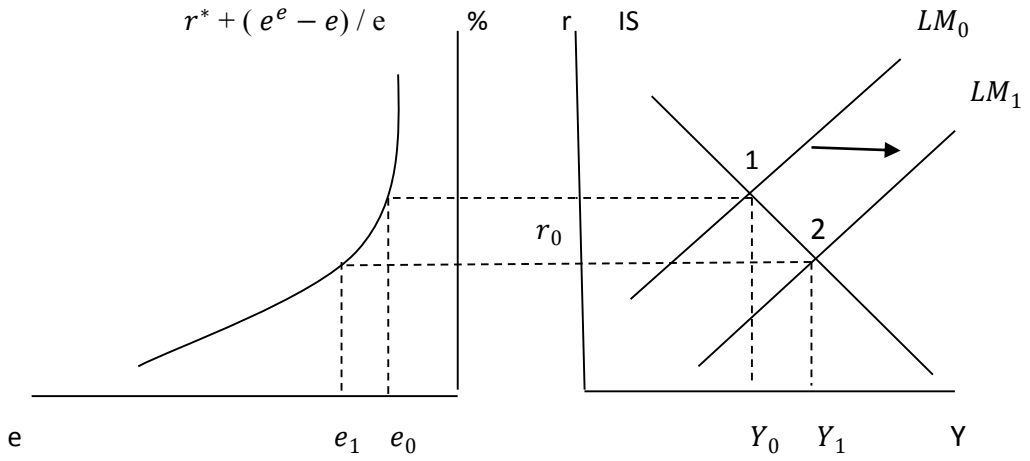

Figure 5.2 Devaluation

In figure 5.2 domestic aggregate output increases as a result of an increase in net exports.

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Speculative Attack and Capital Flight

Under a fixed exchange rate system, often speculators anticipate devaluation of a currency. Anticipation of devaluation may be based on a persistent current account deficit or low foreign reserves of the central bank. In this situation speculators buy foreign currency (capital flight) and when the currency is devalued they convert back to the home currency. Speculators gain at the expense of the central bank. To avoid recurrence of capital flight, central banks usually float the exchange rate and let the speculators speculate against themselves. Similar developments occurred in Australia in 1983 and in England in 1992. In both cases the Reserve Bank of Australia and the Bank of England decided to move away from a fixed exchange rate system.

The process of speculative attack and capital flight is shown in Figure 5.3. Speculators anticipate that home currency will be devalued to e_1. As a result of weaker expected exchange rate, the foreign currency return curve shifts to the left. If the central bank wishes to maintain the exchange rate at e_0 has to sell foreign currency/buy domestic currency. As a result the money supply is reduced, LM curve move to LM_1 and interest rate rises to r_1 Maintenance of a fixed exchange rate during the speculative attack depends on the availability of the foreign currency reserves of the central bank. Eventually most central banks are forced to devalue or move to a floating exchange rate regime.

During the Asian Financial Crisis of 1997. Many of the local Asian currencies came under attack for speculators, in the context of considerable capital flight from foreign investors, and currency values plummeted. Moreover, rescue packages formulated by the International Monetary Fund imposed all sorts of difficult conditions and unpopular policies on recipient countries. To avoid these problems in future Asian economies consciously decided to build up substantial foreign exchange reserves to defend their currencies in times of speculative attacks. For example, China has international reserves of $US2 trillion of which $US1.5 trillion is held in U.S dollars. Much of these foreign exchange reserves are sitting in low-yield dollar (or euro-denominated) government bonds. Note that if foreign governments no longer wish to hold U.S government debt it presents dire consequences for the American dollar and for the American economy.

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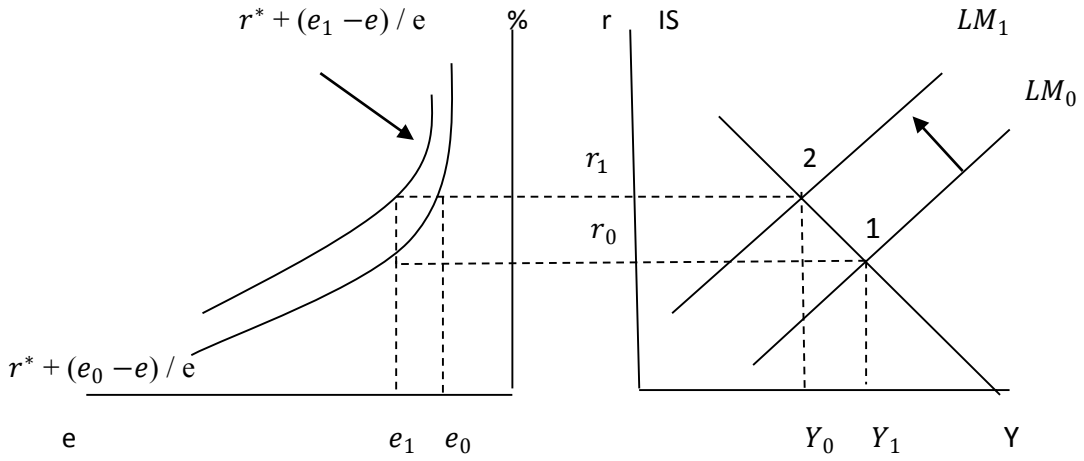

Figure 5.3 Speculative attack and Capital Flight

Regional Currency Arrangements (RCA)

RCA are arrangements between several countries in a region for keeping their exchange rate fixed. RCA are divided into currency unions and currency areas. The most famous currency union is European Monetary Union (EMU). The European Monetary System (EMS) and the Economic and Monetary of Central Africa are examples of currency area where members maintain a fixed rate between their currencies. In a currency union a single currency is used by all of the members. In this section EMS as an example of a currency area and EMU as an example of a currency union will be discussed.

In 1979, in the context of the European Monetary System (EMS), eight European countries decided to initiate a common strategy for keeping the inflation rates of the member countries in line with the rate of inflation in Germany, which was the lowest in Europe. In Figure 5.4 the inflation differential of 7 members of EMS with Germany from the high levels in the 1980s reached almost zero (except Italy) in the early 1990s.

EMS actively continued operation until 1992 when a significant depreciation of the British Pound and an increasing limit of fluctuations to ± 15 percent automatically caused the breakdown of the system. Eventually the European Monetary Union (EMU) and the single currency were introduced in 1999 and the European Central Bank (ECB) was assigned the task of managing euro's liquidity.

A monetary union consists of a group of countries that circulate a common currency and choose a central bank to conduct a uniform monetary policy for the union. The initial thought for creation of a monetary union in Europe started after WWII. To prevent occurrence of another conflict in Europe, the Europeans, particularly French and British, proposed creation of a united Europe. The first step was taken by the European Community Committee in 1962 announcing the initial plan for establishment of a monetary union in Europe. However, because of the existence of the Breton Woods fixed exchange rate system, there was no immediate need for a stable exchange rate system.

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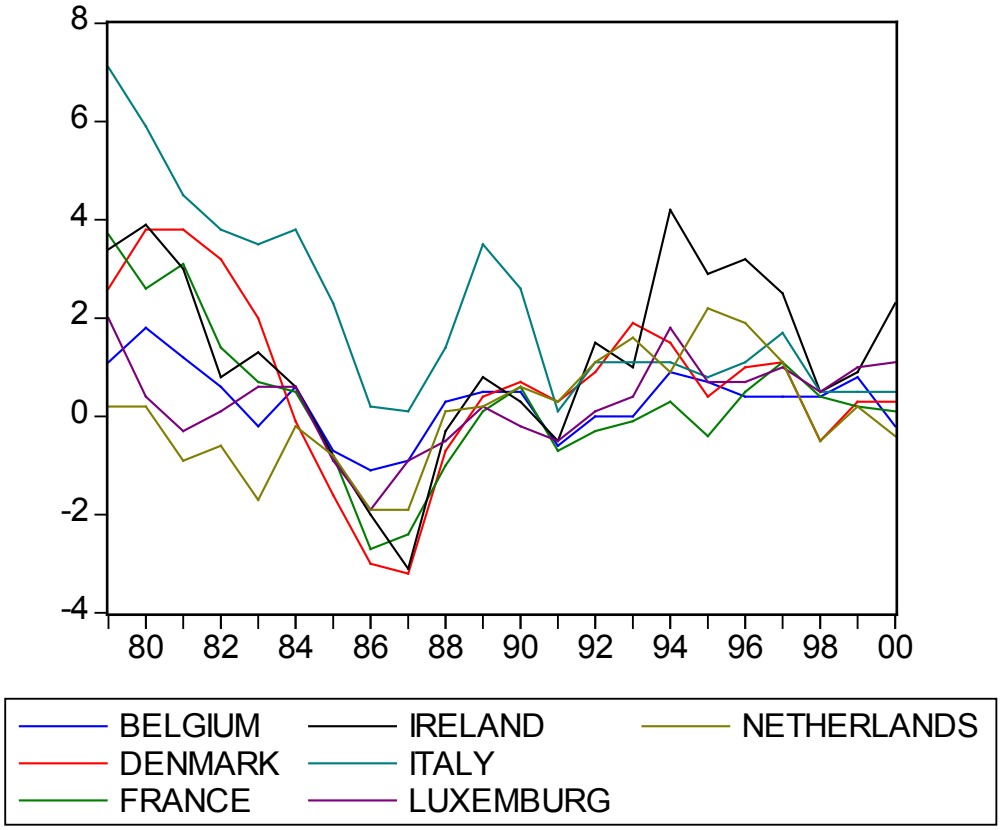

Figure 5.4 EMS Inflation Differentials
The inflation is measured by the percentage change in CPI in the same period of the previous year.
The data on CPI series were collected from the OECD Main Economic Indicators.

In 1991, the Maastricht Treaty set various stages for establishment of a monetary union. The treaty proposed the following economic requirements for entry of countries into the EMU:

1. Maximum budget deficit 3 percent of GDP
2. Maximum government debt 60 percent of GDP
3. Inflation not exceeding by more than 1.5 percent of the average of the three lowest inflation countries in the union.
4. Long term interest rate not exceeding more than 3 percent of the average interest rate of the three lowest inflation rates in the union.

These conditions permit countries to enter the union with financial stability and a harmonious economic condition.

The EMU has 19 members with a common currency, euro, and a common central bank. A member after entering the union can no longer conduct an independent monetary policy. The loss of an independent monetary policy may not be costly if business cycles of members are symmetrical.

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Optimum Currency Area (OCA)

Mundell (1960) proposed a theoretical framework for establishment of a monetary union. According to the OCA, creation of a monetary union for stability of the exchange rate is optimum if factors of production are mobile, business cycles of members are symmetric and trade between member states is high. If these conditions are met benefits of joining the union exceed costs. Mundell argued that suppose the western part of Canada aligned with the western part of United States and eastern parts of these two countries experience symmetric business cycles. In this situation, each of the eastern and western parts can form a monetary union with a single currency. The exchange rate between each east parts and each west parts is fixed and fluctuates between combined east and west. In the Mundell model labour mobility is an important condition. With a mobile labour force a uniform monetary policy can be conducted in all of the member countries. The labour moves from depressed regions to prosperous areas reducing unemployment in depressed areas. Benefit a monetary union are saving on exchange rate conversion and avoiding risk of exchange rate fluctuations. The costs are lack of having an independent monetary policy and not being able to use the exchange rate to fine tune the economy. Krugman Obstfeld (2009) argues that these costs and benefits depend on the level of integration of a potential member with the rest of the union. Level of integration includes capital mobility, labour mobility and symmetric business cycles. Benefits exceed costs of joining the union when factor mobility is high and business cycles of a potential member are symmetric with the rest of the union.

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The Role of the Central Bank

Under a fixed exchange rate system the coordination of the monetary policy of members is implicitly exercised by the central bank of the largest economy. For example, the Federal Reserve System under the Bretton Woods system and the central bank of Germany under the EMS, assumed the coordination of the monetary policy of the member countries. In the absence of coordination, maintaining a fixed exchange rate system becomes complicated and difficult because some members attempt to undermine the fixed exchange rate and devalue their currencies by conducting an expansionary monetary policy.

In a monetary union the role of the central bank (printing money) is explicitly assigned to one central bank. If not, those countries with a high inflation attempt to print large quantity of the common currency causing monetary disturbances for the whole union.

The European System of Central Bank (ESCB) includes a central bank and 19 national banks in each member states. The original Maastricht Treaty of 1991 attempted to design an independent central bank not being influenced by the inflationary policies of the governments of the member countries. To this end the ESCB has emphasised price stability as the prime goal of monetary policy. The function of money printing is left with the ESCB based on inflation targeting for the whole union. Each regional government finances budget deficit by borrowing from the other countries. In contrast to the Federal Reserve System, the function of lender of last resort is not performed by the ESCB.

EMU Asymmetric Business Cycles

The symmetry of business cycles is an essential requirement for successful operation of a monetary union. When business cycles of member countries are not symmetric, costs of not being able to conduct an independent monetary policy and fluctuating exchange rate exceed benefits of having a single currency. In an empirical study, Eichengreen (1991) showed that business cycles are more symmetric in the United States than in Europe. Monadjemi et al (2012) showed that correlations of growth and inflation between Germany and France and Germany and Italy are higher than correlation of growth and inflation between Germany and Spain and Germany and Greece. This may indicate that business cycles of Germany and France and Germany and Italy are more symmetric than Germany and Spain and Germany and Greece. In the same study the authors used cointegration[3] between 5 European countries and showed that business cycles of 3 of the 5 countries overtime diverge from each other. This suggests that these 3 countries business cycles are not symmetric. Not having symmetric business cycles means that it is difficult to conduct a uniform monetary policy for all of the member countries. For example, a low interest rate may be too low for Greece and too high or consistent for Germany. This monetary policy inconsistency may cause Greeks who are accustomed to high interest rates to borrow heavily and over-spend. This development was one of the primary reasons for causing debt crises in EMU peripheries such as Greece, Portugal, Spain and Italy. However, the primary reason for EMU debt crises was asymmetric business cycles causing implementation of a monetary policy which was inconsistent with economic conditions of member countries. This topic will be discussed further later.

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References

Eichengreen, B. (1991) "Is Europe an Optimum Currency Area?", *NBER Working Paper Series*, No. 3579.

Krugman, P. and Obstfeld, M. International Economics Theory and Policy, Addison Wesley, 2009.

Monadjemi, M., Yoon, KH., Lodewijcks, J. (2012) "Success and Failure of Monetary Unions", *Online Journal of Social Science Research*, vol 1, no. 7, pp. 213–220.

Mundell, R.A., (1961), "Theory of Optimum Currency Area", American Economic Review, 51, pp. 657–665.

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6 Global Financial Instability

Introduction

In a well-functioning market economy, markets are supposed to provide the incentives that lead individuals to do what is in society's interest. Financial markets have the responsibility of performing the essential societal functions of managing risk, allocating capital and mobilizing saving while keeping transaction costs low. Financial markets should allocate capital to its most productive use where the returns to society were highest. Unfortunately there have been episodes where financial markets have misallocated capital, engaged in excessive risk-taking and lending to those that could not repay, leading to a situation where private rewards were unrelated to social returns. Indeed, banks can perform so poorly at credit assessment and mortgage design that they put the entire economy at risk. This chapter outlines some of the more recent episodes.

The Asian Financial Crisis

The Asian financial crisis arrived unanticipated, was surprisingly severe in its impact and spread through the region remarkably quickly. It provoked considerable debate about the stability of the world financial system and the appropriate policy responses. The Asian crisis began in Thailand in July 1997 when the value of the Thai baht plummeted and quickly spread to Indonesia, South Korea, Malaysia and the Philippines. The spread of the crisis – the contagion effect – took everyone by surprise. By the end of 1997 the nominal exchange rates of the most affected countries had depreciated significantly – the Indonesia rupiah by about 80 percent and the others by 40 to 50 percent.

Since the late 1980s many Asian developing economies had experienced surges in capital inflows and the surges were largest in the countries that later experienced the strongest effects of the crisis. Only a small fraction of this inflow came in the form of direct foreign investment, the remainder was portfolio investment or investment mediated through the banking sector. This private capital inflow was driven by the speculative tendencies of investors, particularly in commercial real estate, and resulted in a rampant increase in domestic asset prices. The rise in asset prices induced further capital inflows. Much of the collateral the banks accepted for foreign loans was real estate and equities, assets whose prices contained a large "bubble" element. As much of the capital inflow was short term, the banks were borrowing short and lending long.

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The Asian financial institutions of affected countries were ill equipped to deal with globalisation's sudden surges of capital inflows. The banks were poorly regulated and standards of loan appraisal were generally inadequate. When the bubble burst, the foreign capital departed as quickly as it had come in, leaving plunging currencies and unsustainable debt to equity ratios as asset prices collapsed. By the end of 1998, GDP had fallen by 13.2 percent in Indonesia, 6.7 per cent in Korea, 7.5 percent in Malaysia and 10.4 percent in Thailand.

Morris Goldstein (1998) says that the principal cause of the crisis was domestic financial sector weakness which permitted overinvestment in the property sector of these Asian economies through excessive foreign borrowing at short maturities. The international rescue packages put together under the auspices of the International Monetary Fund were the subject of considerable controversy. The use of high interest rates on a temporary basis was essential to correct the excessive competitive devaluations in the crisis countries. Insolvent financial institutions had to be closed down and belt-tightening was essential. Others point to internationally mobile capital and the need to control it in some way to prevent future crises. Their concerns relate to the development of derivatives and other highly levered financial intermediaries, such as hedge funds and bank proprietary trading departments, which are programmed to move large pools of capital quickly between different financial markets.

It is interesting to note that the countries that escaped the crisis either had enormous international reserves like Singapore and Hong Kong or capital controls. Singapore had both, with a set of rules on capital transactions, for example, non-residents cannot borrow in Singapore dollars. The experience of China shows that controls are strictly applied over capital flows and this has insulated the economy from financial shocks. In India capital accounts have not been liberalized with limits on large-scale capital transfers within short periods of time. Vietnam has stringent controls over both the capital and the current accounts. In Chile 30% of all non-equity capital flowing into the country must be deposited interest-free at the central bank for one year. Any foreign money entering into Chile must stay in the country for at least one year and Chilean banks and firms can only borrow from the international capital markets if the borrowing quality is rated as high as Chile's government bonds. These control mechanisms reflect the feeling that the net benefit of short-term capital is small or even negative but run against the IMF's position in support of capital account convertibility.

The Asian Financial Crisis brought into question the suitability and practicality of the basic financial liberalization-globalization model that has been promoted widely in both developed and developing countries over the previous 20 years. A number of commentators argue that the financial crisis in Asia was caused by the unpredictability and instability of large flows of loan, portfolio and other non-equity capital.

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A related concern is the fragility of domestic financial markets and the need for stronger prudential supervision. Observers have noted that banks generally appear to take risks in excess of those taken by other firms, for example, US banks are ten times as highly geared as manufacturing companies. This then suggests the need to raise bank capital to asset ratios. A more general concern relates to the sequencing of economic liberalization in many of these countries. In general, trade liberalization should precede financial liberalization, domestic financial liberalization should precede external financial liberalization, and direct investment liberalization should precede portfolio and bank loan liberalization (capital account liberalization).

Kaminsky and Reinhart (1998) observed behaviour of 15 real and financial variables that tend to show excessive volatility prior to banking and currency crises during 1970–1995. Volatility was measured by mean absolute deviation from tranquil periods 18 months prior to the crises. Most of the 15 variables showed significant volatility for Asian countries but not for Latin American countries. They examined fragility, severity during currency and banking crises in Latin American countries, Asian countries and Middle Eastern counties during 1970–1994 and 1995–1997. They found that banking and currency crises were more severe and more fragile in Asian countries in the latter period.

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In a separate study Monadjemi and Lodewijks examined standard diviation of 4 macroeconomic variable in 4 Asian countries in the1990s during finacial ceises and during tranquil periods. Priods of financial crises for Asian countries were 1997, 1998, 1999 and 2001(only for Indonasia). The four macroseconomic vriables were current account, percentage change in exchange rate, interest rates and percentage chanes in foreign exchange reserves of the central bank. The authors found that all of the 4 maroeconomic variables became more volatile during the financial crises than tranquil periods. They also examined index of financial instability in terms of volatility of foregn reseves and echage rate. They showed that financial instability was most persistent in Indonasia and shotest in south Korea

In this section we have only mentioned a small subset of the issues thrown up by the events that caused so much havoc in the Asian region in the last few years of the twentieth century. However, what stands out are the unexpectedly large adverse effects on real variables (output, employment and firm insolvency) that can occur when a fragile under-regulated financial sector with inadequate prudential supervision is exposed to volatile and large capital injections. Asset prices can exhibit bubble behaviour and crash quite precipitously and the contagion impacts on countries far from the source of the initial financial instability.

Global Financial Crisis and the Policy Response

In October 2009 the IMF estimated global losses in the banking sector of $3.6 trillion as a result of the Global Financial Crisis. How did this happen? Speculative booms, often in real estate and stock markets, and the excessive accumulation of debt, are basic features of most crises. In this case housing was the source of the crisis combined with a new innovative financial product – subprime mortgage-backed securities. In the old days the bank that initiated the mortgage held the mortgage. Mortgage-backed securities pooled illiquid assets like mortgages into liquid assets that were tradeable on the open market. With securitization investors could buy shares in bundles of mortgages from different geographic regions. Securitization transferred risk from bankers to investment banks and investors around the world. Since the bank no longer bears the consequences of making bad loans it has less incentive to monitor loan quality and undertake appropriate risk management practices. Predator lending could flourish and was associated with products such as liar loans, NINJA (no income, job or assets) loans and teaser-rate loans.

The housing market became a focus of intense speculative interest. The price of housing assets exceeded its underlying fundamental value and led to excessive accumulation of debt as investors borrowed money to buy into the boom. The asset that is the heart of the bubble serves as collateral so house-owners and investors can borrow more and more and become more leveraged. The excessive accumulation of debt, by households, the financial sector and corporations was an essential element of the story. The housing bubble – From 1999 to 2005 home prices increased by 62 percent in the U.S. – supported a real estate and consumption boom. Like all speculative manias it had to end eventually. The mortgages had high transaction costs, honeymoon interest rates and no safeguards in the event of default and as more and more low-income borrowers defaulted, houses were repossessed and sold at fire-sale prices. The value of the subprime mortgage-backed securities plummeted as some 500 hedge funds perished, the shadow banking system collapsed and the conventional banking system came under assault.

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Financial institutions had undervalued the long-term risk of holding these securitized mortgages. They took unbounded risks that they thought had low probability of occurring – tail risk – by slicing and dicing credit risk but did not take due diligence in appraising the underlying financial products. The official rating agencies were no help at all. Sixty percent of all asset-backed securities were rated AAA during the lending boom, whereas less than 1 percent of all corporate bonds were rated AAA. Exotic financial engineering instruments like Collateralized debt obligations (sometimes referred to as 'Chernobyl Death Obligations'), Derivatives ('Financial weapons of mass destruction'), Credit default swaps – insurance against the collapse of some asset/bank – were so complex that those that held them did not understand them or the risks involved or even the extent of their own exposure, let alone that of other financial institutions, and so trust and confidence evaporated among banks and non-banks.

Earlier work by Robert J. Shiller had argued that stocks show excessive volatility relative to what can be predicted by the efficient market model. Stock market prices are far more volatile and deviations from fundamentals too large to be rational or consistent with 'efficient' market outcomes. He, and others, focus on irrational exuberance, bubbles and panics, and impulsive herding behaviour and champion the need to understand human psychology and behavioural economics. More conventional economists explain financial market behaviour using standard economic concepts such as incentive structures and compensation packages. In 2006 annual bonuses accounted for 60 percent of total compensation in the five biggest American investment banks and this led to a focus on short term profits and encouraged excessive risk-taking. The solution is to make compensation structures incentive compatible. All of this can be easily understood using simple applications of moral hazard, asymmetric information and principal-agent concepts.

In response to the developing global financial crisis there were fiscal stimulus packages world-wide and very substantial cuts in official interest rates. The actions of the U.S Federal Reserve were unprecedented. In 2009 with interest rates close to zero, the Federal Reserve engaged in very unorthodox monetary measures involving quantitative easing, capital injections, and central bank swap lines that Roubini & Mihm describe as having "revolutionized monetary policy". A stunning series of unprecedented interventions into the financial system rescued both illiquid and insolvent financial institutions and even involved swapping safe government bonds for toxic assets.

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In the U.S. 40 percent of conventional deposits were uninsured and the government was forced to provide a blanket guarantee – the equivalent of deposit insurance – to all existing money market funds. They guaranteed bank debt irrespective of how prudent or otherwise these institutions had been. The Federal Reserve made loans directly to ailing financial institutions, including non-depository institutions, and bought up long terms government debt and mortgage-backed securities, credit card debt and auto loans. The central bank became lender of first, last and only resort marshalling a massive expansion of government support for the financial system. The Government became effective owners of a large part of the financial system as it bought shares and injected capital to prevent foreclosures. The nature of the intervention was so extensive that the distinction between monetary and fiscal policy is now not at all clear as the monetary interventions have clear spending and tax implications. The subsidization of the financial system – subsidizing the 'bad' investment decisions of the banks and non-banks with taxpayer money – and the purchase of risky asset-backed securities, will all leave a burden that will fall on taxpayers.

In Europe the fiscal interventions have raised the spectre of sovereign debt defaults and even the collapse of the Euro. The Global Financial Crisis has questioned a number of our prior beliefs. Whereas Greenspan in 2005 praised financial innovations like subprime mortgage lending, and in 2000 the derivatives markets, including credit default swaps, was made off-limits to regulation, while economists lauded the "great moderation" of less volatile business cycles – all these developments have now come under question. The very nature of monetary policy has changed with credit growth, debt and price bubbles now very much on the agenda.

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The Euro-Crisis

Sovereign debt defaults in Europe are now a distinct possibility. Unsustainable levels of sovereign debt – the so-called 'Eurozone crisis' – is a threat to the existence of the European Monetary Union as it is not clear how many countries can be bailed out. This is particularly an issue for countries such as Greece, Ireland, Italy, Portugal and Spain. Unless rescue packages are sizeable enough and credible, some of these countries may have to exit the monetary union and adopt a new devalued currency. Moreover, if a nation exits the monetary union and defaults on debts held by other member nations, they may also be expelled from the European Union.

Public sector bailouts of troubled financial institutions (and countries) has led to rising government indebtedness where in a worse-case scenario budgets are consumed entirely by interest payments on debt. The causes of this situation are manyfold. The immediate problem relates to the contagion effects of the collapse of the U.S. sub-prime mortgage market and the resulting crisis in the most sophisticated financial system in the world. European banks were also highly leveraged, and made high-risk loans in particular to emerging Europe, and so shared some of the same vulnerabilities as the US economy.

A focus on current dilemmas, however, obscures more deep-seated structural problems associated with a monetary union. In 2001 when Greece entered the European Monetary Union it could now borrow long term funds at roughly the same rate as the Germans. The adoption of Euro allowed some countries to borrow and consume more than they otherwise would and they became heavily indebted to banks elsewhere in Europe. The end result was that their exports were dearer, wages higher, and budget and current account deficits larger, than that consistent with responsible economic management.

Given these difficulties the remedies are not clear. Current contractionary policies in Europe are threatening to lower global aggregate demand. Some observers note that countries like Greece need to be excluded from the European Monetary Union to keep the Union viable. Others note that there are now two Europes and we might have to divide the Eurozone into two subregions (those that have efficient economies and sensible, prudent economic management and those that do not). Or it may be that Germany is such a productive economy that it should go it alone, as its standards of monetary and fiscal discipline cannot be matched elsewhere in Europe. Another alternative is a fiscal union – a central body that set taxes and government spending – to complement the monetary union. With a monetary union, a country losses its exchange rate policy and its independent monetary policy. A fiscal union would deprive it of its fiscal policy. Few countries could agree to that loss of sovereignty. Another approach is to argue that central bankers have aimed for too *low* a level of inflation. The inflation target can be increased. It might be better to aim for 4% rather than 2%. Higher expected inflation encourages borrowing and reduces the real value of debt.

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Was it a fateful error for these European countries to move to a common currency? In terms of debt, it matters if you borrow in your own currency or someone else's. Spain, Greece and Ireland's debt is in euros. If you borrow in your own currency, the central bank can always buy federal debt, and you can devalue your currency. But if you can't control your currency and devalue, then you have to reduce costs internally and wage cuts will be resisted. Individual countries have their own budgets and labour markets but not their own currencies and so may be condemned to stagnation and civil unrest when asked to use austerity programs to deal with their problems.

Should these countries in deepest problems then return to independent currencies? In other words, leave the euro. There are efficiency gains from sharing a currency but there is also the loss of flexibility if there are asymmetric shocks. Originally interest rates in southern Europe were higher due to concerns about devaluations and defaults but when they adopted the Euro interest rates fell and this led to massive borrowing and housing bubbles, unit labour costs rose and manufacturing became uncompetitive and trade deficits increased. The eventual collapse of the bubble led to high budget deficits, with the bank bailouts, and sovereign debt problems. While Europe does about 60 percent of their trade with one another they have limited labour mobility or fiscal integration – so these mechanisms were not available to deal with the crisis. However, any attempt to ditch the Euro at this stage might well run into legal problems, runs on departing country's banks, and wider political ramifications.

When Euro was introduced in 1999, some argued that a monetary union without a political union is bound to breakdown. Recently EMU is experiencing the validity of this argument. The problem of debt crises in the weaker members of EMU mainly originates from the lack of political union. Unlike United States, deficits of those members who borrowed heavily is not subsidized by other members' surpluses. Feldstien (2011) the problem of debt crises in the EMU was mainly created by forcing a strait jacket on a group of heterogeneous countries. Feldstein government and private sectors in these countries believes that the European Central Bank (ECB) emphasised the goal of price stability as the as the prime objective of the monetary policy. ECB was successful in maintaining a low rate of inflation in Euro zone. However, having achieved a low rate of inflation, a common low rate of interest prevailed in all of the member countries. This low rate was too low for some countries such as Greece, Portugal, Ireland and Italy that were accustomed to high rate of inflation. As a result, governments and private sectors in these countries borrowed heavily from European banks.

References

Akerlof, George A. & Robert J. Shiller. (2009). *Animal Spirits*. Princeton: Princeton University Press.

Arndt, H.W. & Hal Hill (eds.) (1999). *Southeast Asia's Economic Crisis: Origins, Lessons and the Way Forward*, St. Leonards: Allen and Unwin.

Feldstein, M. (2011), "The Euro and European Economic Condition", *NBER Working Paper*, No. 17617.

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Kaminsky, L. And Reinhart, C. (1998) "Financial Crises in Asia and Latin America Then and Now", *American Economic Reveiw Papers and Proceedings,* May, pp. 444–448.

McLeod, Ross & Ross Garnaut (eds.) (1998). *East Asia in Crisis: from being a miracle to needing one?* Routledge, London.

Monadjemi, M. And Lodewijks, J. (2006), "Indicators of Financial Instability", *The Journal of Money and Macroeconomy*, Fall, pp. 19–32.

Rajan, Raghuram G. (2011). *Fault Lines*. Princeton: Princeton University Press.

Roubini, Nouriel and Stephen Mihm. (2011). *Crisis Economics*. New York: Penguin.

Shiller, Robert J. (2003). From Efficient Markets Theory to Behavioural Finance *Journal of Economic Perspectives* 17:1 Winter pp. 83–104.

Stiglitz, Joseph E. & Shahid Yusef (eds.) (2001). *Rethinking the East Asian Miracle*. World Bank and Oxford University Press.

Stiglitz, Joseph. (2010). *Freefall*. London: Penguin.

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7 Global Capital Flows and Financial Instability

Foreign Exchange Markets

Over the last decade or so there have been significant financial crises, often associated with severe economic, social and political distress. Some of the more notable crises occurred in 1992–3 in Europe, in 1994–5 in Mexico, in 1997–1998 in East and South-East Asia, in 1998 in Russia, in 1999 in Brazil, in 2002 in Argentina and in 2008 the Global Financial Crisis. The crises involve various combinations of banking and currency problems. Of 181 countries surveyed in 1996, 133 had experienced significant banking sector problems at some stage during the past fifteen years. The cumulative output losses have been considerable. Covering the four years after the start of the Asian crisis, these amounted to 24% of the annual GDP of Korea, 26% for Malaysia, 54% for Thailand and 83% for Indonesia (Gruen and Gower 1999; Stiglitz 2002). Losses of this magnitude are enormous and in some cases exceed those experienced during the Great Depression. The frequency – one major international financial crisis every two years – and intensity of financial crises has led many observers to question how efficiently global financial markets function in an environment of volatile short-term capital flows and exchange rate instability.

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The foreign exchange market is the largest financial market in the world with average daily turnover in excess of US $1 trillion. Foreign exchange markets may suffer from asymmetric information, destabilising speculation and herd behaviour that give rise to sudden surges in capital inflows followed by dramatic capital outflows as euphoria turns to panic. The consequences include persistent misalignments and unstable exchange rates that can result in banking and financial crisis with painful consequences for the real economy. This raises the issue of how can we then reconstruct the global financial architecture so as to reduce the likelihood of financial crises occurring and reduce their severity when they do occur?

The most obvious way to stop speculation in foreign exchange markets is to abolish separate currencies, as with the European Union. Introduction of the euro has already reduced the volume of foreign exchange trading. The abolition of national currencies and dollarisation (Salvatore, Dean and Willett 2003) is a fairly drastic step to take but a number of countries are considering just that alternative, particularly in Latin America. There has also been discussion of an Asian currency union. In the meantime, monetary authorities in East Asia are building up their stockpiles of foreign exchange reserves in case of another assault on their currencies. Short of regional or even a world currency, various 'second best' alternatives exist: direct controls on the movement of foreign capital and currency conversion, special deposit requirements on overseas borrowing, and transaction taxes.

The Tobin Tax

More than thirty years ago Nobel laureate James Tobin (1918–2002) proposed a uniform international tax payable on foreign exchange transactions to discourage speculation by making currency trading more costly. A tax of a tenth to a quarter of one percent on foreign currency transactions might be too low to upset long-term investors, while discouraging destabilizing short-term capital flows, leading to greater exchange rate stability. The Tobin Tax is aimed at reducing very short-term speculative foreign exchange transactions. The burden of the tax varies inversely to the maturity of the foreign exchange transaction so that it particularly penalizes short-term transactions. A 0.2 per cent tax on each round trip currency transaction ends up costing 48 per cent annually if transactions are conducted every day, 10 per cent if weekly and 2.4 per cent if monthly.

Given the relatively small size of the non-financial market for foreign exchange (no more than 20 per cent) in support of real trade and direct foreign investment activity, and that 80 per cent of foreign exchange transactions involve round trips of a week or less, a transaction tax would hurt the speculators disproportionately more because they tend to trade much more frequently. The implicit assumptions are that speculative trading is on average destabilizing, which causes prices to be more volatile, and that short-term capital flows ("hot" money) are motivated by speculative gains while longer-term direct investment is based on underlying economic fundamentals.

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How feasible would a Tobin Tax be? Ideally the geographical coverage of the tax should be universal and so requires international agreement. Otherwise the tax could be avoided via moving to untaxed jurisdictions. Another concern is that new financial instruments might be invented to circumvent the tax. Hopefully a low tax rate would minimize incentives to evade the tax. The Tax could be administered by the International Monetary Fund or the Bank of International Settlements or simply collected by individual countries. Perhaps certain trades could be exempted from the tax, such as central bank intervention in foreign exchange markets, and higher rates could be imposed during currency crises or periods of speculative attacks.

What is clear is that with foreign exchange trading amounting to a 100 times total world trade in goods and services, even a small tax rate imposed on such a large tax base would yield sizeable revenues. Even a low tax rate of 0.1 per cent may raise a minimum of US $50 billion annually which dwarfs the budget of the United Nations and the total official development aid contributions provided by the world's 20 richest countries. The funds could be used to finance global public goods like the environment, poverty reductions, international diseases and public health programs, disaster relief and humanitarian aid, peace-keeping operations and removing land-mines. There is no shortage of worthy causes to fund and any inefficiencies associated with the tax (for example, it may penalize legitimate trade credit transactions) would need to be offset against the benefits to humanity involved with these spending programs.

Turbulence in world financial markets has solicited greater interest in Tobin Taxes to discourage speculative currency trading and to make exchange rates reflect long-run fundamentals relative to short-term expectations and bubbles (see Haq, Kaul and Grunberg 1996). Whether the Tobin Tax is the perfect solution is unclear. Paul Davidson (1997) argues that a Tobin tax would not avert very large speculative attacks and there is a need for outright prohibition of such capital flows via an International Money Clearing Unit. Nevertheless, it would lead to a decline in the volume of foreign exchange transactions by throwing some sand in the wheels of international currency speculators.

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Capital Account Liberalization

Countries can try to directly control or tax capital movements but emerging market economies in recent decades have been strongly encouraged by international institutions like the International Monetary Fund to open their markets to international capital flows (this is often called capital account liberalization). Proponents of liberalization suggest that it will lead to a more efficient global allocation of investment, improve opportunities for risk diversification and impose greater discipline on domestic policymakers. However, empirically, there is little evidence that growth or investment is higher in more financially open economies. Bhagwati (2002) believes that many of the perceived benefits of liberalized international capital flows are derived from influential free market ideology, in an environment where financial sector institutions and prudential supervision are inadequate. It may be the case that a more open capital account positively effects growth only after a country has achieved a certain degree of economic development. There is some evidence of a 'threshold effect' in the relationship between financial globalization and economic growth (Edwards 1999). Sound macroeconomic policies and improved institutions and governance, including robust legal and supervisory frameworks, is important in attracting less volatile capital flows and in reducing a country's vulnerability to crisis.

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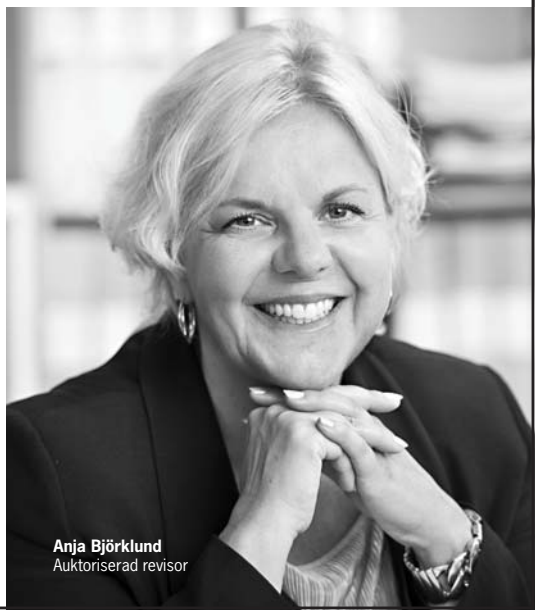

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Since the late 1980s many Asian developing economies had experienced surges in capital inflows. The composition of capital inflows does appear to have a significant effect on a country's vulnerability to financial crises. Capital flows take the form of commercial bank lending, foreign direct investment, or equity portfolio investment. Foreign direct investment is the most stable source of capital inflow while bank loans are the most volatile. During the Asian crisis, the most significant fall in foreign borrowing was in foreign bank lending to domestic banks and the majority of the short-term bank funds were linked to derivative contracts. As the Asian economies approached the period of crisis, the ratio of foreign direct investment to short term and portfolio investment declined. Financial liberalization in Asia promoted dramatic shifts toward speculative financing as local banks became heavily involved in risky domestic lending and as local firms were free to borrow abroad. The ensuing credit boom was directed towards the property sector and the rise in asset prices induced further capital inflows. When the bubble burst, the foreign capital departed as quickly as it had come in, leaving plunging currencies and unsustainable debt to equity ratios as asset prices collapsed.

The response of international institutions like the International Monetary Fund has been to argue that the principal cause of the crisis was domestic financial sector weakness which permitted overinvestment in the property sector of these Asian economies through excessive foreign borrowing at short maturities. They strongly resisted dealing with the problem via capital controls. Instead they argue that because it was neglect of financial sector reform that got these countries into trouble, such reform has to be the centre-piece of the recovery package. It is then argued that banks and finance companies either need to be closed down or recapitalized to meet international capital standards. Foreign-ownership limits, they suggest, should be liberalized in the financial sector and supervision and regulation strengthened.

Others, however, point to internationally mobile capital and the development of derivatives and other highly levered financial intermediaries, such as hedge funds and bank proprietary trading departments, which are programmed to move large pools of capital quickly between different financial markets. It is interesting to note that the countries that escaped the crisis either had enormous international reserves like Singapore and Hong Kong or capital controls. Singapore had both, with a set of rules on capital transactions, for example, so that non-residents cannot borrow in Singapore dollars. Vietnam has stringent controls over both the capital and the current accounts. These control mechanisms reflect the feeling that the net benefit of short-term capital is small or even negative. What is clearly apparent is the extraordinary surge in capital inflows following financial liberalization of crisis countries. Stiglitz (2002, p. 99) has stated that: "I believe that capital account liberalization was *the single most important factor leading to the* [Asian] *crisis*".

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Hedge Funds

The activities of the large macro hedge funds are being increasingly scrutinized as they often appear the strategic players in international currency speculation and hence a major reason for countries to contemplate capital controls. Paul Krugman (2000) provides a detailed account of the Quantum Hedge Fund in Britain in 1990–92 and similar episodes are recorded for Hong Kong, South Africa and Russia in 1998. Edwards (1999) provides an illuminating account of one of these funds, Long Term Capital Management. He states with alarm that the 'misadventure of a single wayward hedge fund with only $US4.8 billion in equity at the start of 1998 could take the United States or even the world economy so close to the precipice of financial disaster' (p. 189). Hedge funds are left mostly unregulated as speculative vehicles for high net-worth individuals and institutional investors. Hedge funds typically have high minimum investment requirements (the Tiger Fund has a $US5 million minimum, LTCM $US10 million). LTCM had a more than 20 to 1 leverage ratio so that in 1998 it borrowed $US125 billion on an asset base of $US5 billion. The returns can be impressive; LTCM earned in excess of 40% returns in 1995 and 1996, as are the risks taken in speculating in foreign currencies. The examples of George Soros and LTCM show that in this high-risk gambling casino of foreign exchange markets the major speculators can come undone but the effects on small developing countries can be catastrophic.

Paul Volcker (in Gruen and Gower 1999) is particularly concerned about the vulnerability of small banking and financial systems to such speculative behavior. The aggregate size of banks in Argentina or Thailand or Indonesia falls in the range of a small regional U.S. bank so only marginal shifts of funds in massive international financial markets can overwhelm the absorptive capacities of these countries banks. However, even in the U.S. financial supervision did not prevent the Savings and Loan debacle in the 1980s and the collective failure of some of the largest commercial banks. Respectable major U.S. banks were lending to small, incredibly risky hedge funds in the LTCM saga. Improving financial supervision and regulation 'may be inadequate to deal with the truly systemic problems before us', says Volcker, and he suggests stronger regulations to control foreign exposures of banks and that taxes on short-term capital inflows by means of special reserve requirements might be an option.

Capital Controls: Comparative Analysis

Capital controls refer to measures that manage the volume, allocation, or composition of international private capital flows. They were integral to the operation of the old Bretton Woods system. The controls can be tax-based (like the proposed Tobin taxes) or quantitative restrictions. These controls are still used in many emerging market economies such as Brazil, Chile and Colombia in Latin America and Korea, China, India, Vietnam and Malaysia in Asia. These controls are another weapon to be used to stem massive temporary inflows or outflows of capital and they can be adjusted depending on circumstances and in response to detected evasion strategies. The purpose of these controls is to quarantine economies from excessive 'hot' money inflows and outflows that disrupt economic stability and lead to exchange rate misalignments. Below is the recent experiences with capital controls in a number of countries using the excellent information provided by Epstein, Grabel and Jomo (2003).

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The 'Chilean' model of capital controls is often presented as an exemplar for other developing countries. In Chile foreign loans were taxed. Capital inflows were subject to a one-year residence requirement and a non-interest bearing reserve requirement was placed on all types of external credits and all foreign financial investments in the country. The required reserves were held by the Central bank for one year. The reserve requirement was in effect a tax to discourage short-term flows by raising the costs of these investments. It may be interpreted as a sort of Tobin tax but one imposed unilaterally not multilaterally. Chilean-style controls on capital inflow have been successful in lengthening the maturity of foreign debt without reducing the quantity of capital inflow. The only costs of these controls appear to be some rising in the capital costs to small-sized enterprises. The benefits were that the controls reduced the risk of financial crisis, allowed policy makers some degree of autonomy in its macroeconomic management, and thereby avoided the intrusions of the International Monetary Fund.

Taiwan also uses an extensive set of capital controls. There is no convertibility of the New Taiwan dollar and authorities maintain restriction on the ability of banks to engage in speculative activities and on foreign borrowing. In 1995 the Taiwan foreign exchange market was closed for a year when it was discovered that foreign inflows that had been approved for equity investment was actually used to speculate against the currency. In Singapore there is long-standing policy of not encouraging the internationalization of the Singapore dollar. This has helped the Singapore authorities to maintain a managed exchange rate. In the academic literature it is often noted that one can not simultaneously achieve the three goals of exchange rate stability, monetary policy autonomy and free capital flows. By restricting capital flows the other objectives can be reconciled.

Malaysian-type controls on capital flows are alleged to have allowed that country to recover quickly from the Asian crisis. Compared to countries that did not impose controls, Malaysian policies produced faster economic growth, smaller declines in employment and real wages, and a more rapid turnaround in the stock market. The controls were implemented transparently and with remarkable efficiency and the authorities were careful to target short-term speculative capital flows, insulating long-term direct foreign investment. The Malaysian experience is interesting because they had a history of open capital accounts and during the Asian crisis they refused to accept International Monetary Fund 'rescue' packages. Instead they infuriated the IMF and the international financial community by imposing capital controls on outflows. This allowed the authorities to use expansionary macroeconomic policies while protecting its exchange rate and international reserves. A system of graduated exit levies based on the duration of stay was later introduced. The main cost of these capital controls was the political favouritism associated with their implementation.

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China and India have achieved high growth rates despite limited and selective capital account liberalization. India has had controls on inflows and outflows and strictly regulated the financial system to control foreign currency transactions. They have attempted to shift the composition of capital inflows from debt to equity. China has the most extensive foreign exchange and capital controls yet attracts very high levels of foreign direct investment. There are strict controls on foreign debt accumulation.

Edwards (1999) provides a detailed discussion of capital controls although he is a fierce opponent of such controls in most cases. Following the Asian Crisis of the late 1990s, there has been a renewed interest in the role of capital controls in developing countries. While numerous economists remain quite skeptical about the viability and desirability of controls, even strong proponents of capital account liberalization have acknowledged that many countries that avoided the worst effects of recent financial crises were also those that used capital controls. Indeed, a number of highly respected economists – such as Jagdish Bhagwati, Paul Krugman, Dani Rodrik and Joseph Stiglitz – have actively argued in favour of capital controls. Yet there remains much debate about whether the controls should be on inflows, outflows or both; the duration of the controls; the type of controls (the Chilean implicit taxes on foreign capital are often singled out for praise) and the relationship between the controls and the underlying macroeconomic fundamentals of a country. Recently even the International Monetary Fund appears to have softened their line on capital controls. They express cautious support for market-based capital inflow controls, Chilean style.

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Conclusions

The proliferation of financial crises is often viewed as one of the defining aspects of the intensification of financial globalization over the last few decades. Good fundamentals alone do not appear to insulate a country from the effects of financial contagion. The October 1997 crash on the Hong Kong Exchange demonstrated that. Similarly, floating exchange rates are not immune to speculative attacks. This demonstrates that speculative attacks may succeed in the absence of underlying macroeconomic imbalances. In the light of these experiences, a fundamental reappraisal of theoretical models of international capital flows is now proceeding. New approaches to private speculative behaviour are being developed that are significant departures from rational expectations or efficient market models. One such model is the theory of rational speculative bubbles where prices continue to rise and depart more and more from economic fundamentals. Investors base their actions on what they see others doing – herd behaviour and informational cascades – and mimic the action of others. 'Irrational exuberance' is another term that has been used to describe this situation (Shiller 2000).

These developments have led to a search for better 'financial architecture' for the world economy. Rogoff (1999) present an excellent survey of the options available for dealing with financial crises. One suggestion is the need for international regulation. Eatwell and Taylor (2001) have proposed a World Financial Authority. There is clearly a need for international coordination to reduce destabilising effects of highly leveraged institutions. Improvements in the quality of domestic financial and regulatory institutions are also necessary.

Turbulence in world financial markets has solicited greater interest in Tobin Taxes to discourage speculative currency trading and to make exchange rates reflect long-run fundamentals relative to short-term expectations and bubbles. Whether the Tobin Tax is the solution or even feasible to implement multilaterally is unclear. Several countries are taxing selective foreign exchange transactions themselves without waiting for a global solution.

Certainly many countries are closely monitoring a number of vulnerability indicators. Vulnerability indicators include at the macroeconomic level the ratio of short-term foreign-currency-denominated debt to foreign exchange reserves, the extent of real exchange rate appreciation and the current account deficit. At more disaggregated levels, there is a need to monitor the balance sheets of individual sectors of the financial and corporate sectors. In particular, maturity mismatches between short-term liabilities and longer-term liquid assets, borrower foreign currency denominated liabilities compared to domestic currency assets, and debt-equity financing ratios, need to be watched. Generally, there is a necessity to monitor foreign currency exposure of corporate and financial sectors and to implement an enhanced regulatory oversight of highly leveraged institutions. The inherent instability and volatility which characterizes real world international capital markets can not be dismissed. Capital controls, in various forms, can contribute to economic welfare by dampening such instability. This is particularly pertinent to developing countries that are more vulnerable to capital flight.

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Selected References

Bhagwati, Jagdish (2002) *The Wind of the Hundred Days: How Washington Mismanaged Globalization*. MIT Press: Massachusetts.

Davidson, Paul (1997) 'Are grains of sand in the wheels of international finance sufficient to do the job when boulders are often required?' *Economic Journal*, 107 May pp. 671–686.

Eatwell, John and Lance Taylor (2001) *Global Finance at Risk: The Case for International Regulation.* New Press, New York.

Epstein, Gerald; Ilene Grabel and K.S. Jomo (2003) *Capital Management Techniques in Developing Countries*, Political Economy Research Institute, Working Paper No. 56, University of Massachusetts, Amherst.

Edwards, Franklin. R. (1999) 'Hedge Funds and the Collapse of Long-Term Capital Management' *Journal of Economic Perspectives* Vol.13 No.2 Spring pp. 189–210.

Edwards, Sebastian (1999) 'How Effective are Capital Controls?' *Journal of Economic Perspectives* Vol. 13 No. 4 Fall pp. 65–84.

Gruen, David and Luke Gower (eds) (1999) *Capital Flows and the International Financial System*, Reserve Bank of Australia, Sydney.

Haq, Mahbub ul; Inge Kaul and Isabelle Grunberg (eds) (1996) *The Tobin Tax: Coping with Financial Volatility*. Oxford University Press, Oxford.

Krugman, Paul (2000) *The Return of Depression Economics*. Norton, New York.

Mishkin, Frederic S. (1999) 'Global Financial Instability: Framework, Events, Issues' *Journal of Economic Perspectives* Vol. 13 No. 4 Fall pp. 3–20.

Rogoff, Kenneth (1999) 'International Institutions for Reducing Global Financial Instability' *Journal of Economic Perspectives* Vol. 13 No. 4 Fall pp. 21-42.

Salvatore, Dominick; James W. Dean and Thomas D. Willett (2003) *The Dollarization Debate,* Oxford, Oxford University Press.

Shiller, Robert J. (2000) *Irrational Exuberance*. Scribe, Melbourne.

Stiglitz, Joseph (2002) *Globalization and its Discontents*. Allen Lane, London.

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8 International Monetary System

The International monetary system (IMS) has significantly changed since the introduction of the gold standard. The system is designed to facilitate trade of goods and services and movements of capital across international markets. The IMS consists of a set of regulations, institutions and customs facilitating international payments. The first organized IMS was the gold standard (1880 – 1914). The gold standard is a fixed exchanges rate system because each currency is valued in terms of gold. For example, 1 unit of British pound is equivalent of 2 grams of gold. One US dollar is 1 gram of gold. In this case, 1 pound = 2 US dollar. In this system all of the international trade payments were settled by the exchange of gold. If US had trade deficit with Britain, US had to transfer an equivalent of amount of gold to Britain.

Under the gold standard, international movements of gold affect the supply of money in surplus and deficit countries. Since the money supply is fully backed by gold, any change in the country's gold reserves causes changes in the supply of money in circulation. In case of US and Britain, US would have to pay for her deficit by transferring gold to Britain. As a result the money supply in Britain rises and falls in the United States. Classical economists and supporters of the gold standard argue that transfer of gold from a deficit country to a surplus country causes certain adjustments so that eventually the trade balance between deficit and surplus countries disappears. An increase in money supply in the surplus country increase prices in that country causing deterioration of that country's trade balance. In the deficit country the money supply falls, prices fall and international competitiveness improves thereby allowing the trade balance to improve.

The gold standard ended in 1914 with the occurrence of the WWI. The international monetary system suffered from instability and volatile exchange rates with the termination of the gold standard until the introduction of the Bretton Woods fixed exchange rate system in 1944.

Bretton Woods System 1944–1973

In response to instability and difficulties in international trade during the war periods, in 1944, representatives of 44 countries gathered together in Bretton Woods, New Hampshire for designing a reliable IMS. The Bretton Woods system was a fixed exchange rate system based on the US dollar and gold. The price of gold was fixed at US$ 35 per ounce and US government agreed to keep the price of gold fixed. Other countries were responsible to keep their exchange rate fixed in terms of US dollars and implicitly in terms of gold. For example if the price of an ounce of gold was 17.5 pounds in Britain, then the exchange rate was 1 pound equal to 2 US dollar. All of the countries held dollar and gold reserves and were obligated to keep their exchange rates fixed at the par value. The central banks of respective countries had to intervene by means of US dollar reserves if their exchange rate fluctuated more than 1 percent above or below the par value. In effect as Krugman and Obstfeld (2009) suggested, there were N currencies and N – 1 of them were priced in terms of the Nth.

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In the Bretton Woods system, nations also agreed on the establishment of International Monetary Fund (IMF) for the purpose of supervising the fixed exchange rate system and providing credit facilities for those countries that experienced temporary balance of payments problem. Those countries that had a temporary balance of payments deficit were allowed to borrow from the IMF without changing their exchange rates. Nations were allowed to devalue up to 10 percent without consultation with IMF if they experienced persistent balance of payments deficits – a "fundamental disequilibrium". Similar to any fixed exchange rate system, speculative attacks caused problem for the smooth operation of the Bretton Woods system. Speculators anticipated that a country with persistent "fundamental disequilibrium", current account deficits, soon will be allowed to devalue. Influenced by their anticipation, speculators moved away from the currency of that country. To keep the exchange rate fixed, the central bank had to sell foreign reserves to protect the currency and, if foreign reserves were insufficient, eventually had to devalue. The opposite occurs when a country experienced persistent current account surpluses. Krugman and Obstfeld (2009) argued that Britain and France were forced to devalue their currencies in 1967, and the deutschmark was re-valued in 1969, as a result of speculative attacks. These attacks became so frequent that they eventually led to the breakdown of the Bretton Woods fixed exchange rate system in 1973 (in addition to the improper financing of the Vietnam War through monetary expansion rather than tax increases that flooded international markets with US dollars).

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A series of speculative attacks on major European currencies and the US dollar in the late 1960s and early 1970s brought the breakdown of the fixed exchange rate closer to the reality. In early 1970s US was suffering from current account deficits and high unemployment. A real depreciation of US dollar was needed to improve these problems. However, nominal depreciation of US dollar means a nominal appreciation of all of the other currencies. This required tedious negotiations with other countries and may not be successful if other countries were unwilling to appreciate their currencies. At the same time foreign governments' holdings of US dollars were higher than US gold reserves, if foreign central banks decided to convert their dollar reserves to gold. The pressure on the US government mounted as most counties demanded to convert their dollar reserves to gold. Eventually in August 1971 President Richard Nixon announced that US no longer was ready to exchange dollars for gold at the price of $35 per ounce. This announcement broke the link between dollar and gold and was considered the end of Bretton Woods fixed exchange rate system. In March 1973 several countries including Britain, France, Germany, Japan, Italy, Switzerland and Canada floated their currencies. The collapse of the Bretton Woods system was the beginning of a new volatile international monetary system. Krugman and Obstfeld (2003) maintain that high US inflation in the late 1960s contributed to the collapse of the fixed exchange rate system. They argue that high growth of money supply in the late 1960s caused high inflation in the United States and also expansionary monetary policy and high inflation in foreign countries. To keep the exchange rate fixed foreign central banks had to conduct an expansionary monetary policy to prevent appreciation of their currencies against the US dollar.

One of the innovations during the Bretton Woods period was the introduction of Special Drawing Rights (SDR) in 1967. The SDR was allocated to the member countries according to their quotas with the IMF. The SDR is an accounting entry created by IMF for the purpose of dealing among the central banks to settle balance of payments deficits and surpluses. The SDR balances are in addition to the gold and foreign currency of nations held at IMF. Initially the value of 1 SDR was 1 US dollar. As dollar depreciated, the value of SDR in terms of US dollar increased. Salvador (2010) maintains that in 2001 the value of SDR was based on weighted average of basket of 4 currencies. In this basket US dollar was weighted 45 percent, Euro 29 percent, Japanese yen 15 percent and British pound 11 percent. At the end of 2008 1 SDR was equal to 1 US dollar.

After Bretton Woods

Most of the advanced countries chose a managed floating system after breakdown of the Bretton Woods system. Australia had a crawling peg fixed exchange rate system until 1983 when it was forced to change to float the Australian dollar as a result of speculative attack. Salvatore (2010) maintains that in 2009 almost half of the 185 countries adapted to the floating exchange rate system. Other countries pegged to the currency of another country or a basket of currencies.

The floating exchange rate system has several advantaged and disadvantages.

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The advantages are: monetary policy autonomy; the monetary policy is not geared to maintenance of the fixed exchange rate. The exchange rate fluctuations can help fine tune economic disturbances. Symmetric monetary policy; unlike Bretton Woods system and EMS, smaller countries do not have to follow monetary policy of the dominant country.

Disadvantages of the floating system are: significant volatility of the exchange rate, financial crises caused by uncontrolled inflow and outflow of capital. During periods of excessive and prolonged fluctuations of the exchange rate, the central bank has to intervene heavily and extensively. This may not be possible in case of depreciation when foreign exchange reserves of the central bank are limited.

The activity of the IMF has changed significantly since 1973 mainly in response to the OPEC oil price crises in 1973, Asian crises 1997–1999 and the global financial crises 2007–2009. Salvatore (2010) lists most of the changes in IMF credit facilities since 1973. Briefly these changes are: introduction of extended fund facility in 1974 to provide member countries with support for balance of payment problems and structural reforms, the supplement reserve facility introduced during the Asian crises in 1997 to provide short term credit to cope with balance of payments problems. A short term lending facility was established in 2008 to provide an immediate $100 million line of credit for nations that needed a quick access to credit.

What has been happening to exchange rates in a floating world?

The frequency and intensity of financial crises has led many observers to question how efficiently global financial markets function in an environment of volatile short-term capital flows and exchange rate instability. It appears that financial liberalization increases the probability of a financial crisis. Perhaps one lesson of the crisis is the need to reassess the drive for financial liberalization and certainly its sequencing. Domestic financial reform and adequate prudential supervision has to be in place before short-term international borrowing is permitted.

Similarly, foreign exchange markets do not appear to behave as predicted by simple models of efficient markets. An exchange rate should reflect a country's international competitiveness and its capacity to produce tradeable goods. But over short periods, macroeconomic fundamentals appear to explain little of the exchange rate movements. Indeed, floating rates have often been excessively volatile and subject to prolonged misalignments and overshooting. Flexible exchange rates have not helped Latin America in avoiding crises.

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Foreign exchange markets may suffer from asymmetric information and herd behaviour that give rise to sudden surges in capital inflows followed by dramatic capital outflows as euphoria turns to panic. The consequences include persistent misalignments and unstable exchange rates that can result in banking and financial crisis with painful consequences for the real economy. Speculative bubbles may generate exchange rates far removed from fundamental economic variables. This raises the issue of how can we then reconstruct the global financial architecture so as to reduce the likelihood of financial crises occurring and reduce their severity when they do occur.

Some of these issues were explored in previous chapters. The most obvious way to stop speculation in foreign exchange markets is to abolish separate currencies, as with the European Union. Introduction of the euro has already reduced the volume of foreign exchange trading. The abolition of national currencies and dollarisation is a fairly drastic step to take but a number of countries are considering just that alternative. Short of regional or even a world currency, various 'second best' alternatives exist: direct controls on the movement of foreign capital and currency conversion, special deposit requirements on overseas borrowing, and transaction taxes. It has been argued that capital controls cannot substitute for sound macroeconomic policies and that no single capital control measure is effective across all countries at all times. There is also the issue of evasion. To avoid non-compliance the controls need to be comprehensive but as a consequence the controls will become distortionary and costly to implement. Economists generally support price incentives rather than direct controls and so taxes are seen as preferable to controls on capital movements.

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Turbulence in world financial markets has solicited greater interest in Tobin Taxes to discourage speculative currency trading and to make exchange rates reflect long-run fundamentals relative to short-term expectations and bubbles. Whether the Tobin Tax is the solution is unclear but it would lead to a decline in the volume of foreign exchange transactions by throwing some sand in the wheels of international currency speculators. How feasible would a Tobin Tax be? Ideally the geographical coverage of the tax should be universal and so requires international agreement. This may be hard to achieve. Paul Davidson (2002) argues that a Tobin Tax would not avert very large speculative attacks and there is a need for outright prohibition of such capital flows via an International Money Clearing Unit.

Developing and transitional economies may need to consider the trade-offs between higher rates of growth, financed by rapid expansion of foreign and domestic debt that may lead to financial crisis, versus somewhat slower growth, with less reliance on foreign finance and less pressure for rapid expansion of domestic financial systems, that may prove more sustainable over the longer term. The composition of capital inflows does appear to have a significant effect on a country's vulnerability to financial crises.

This conclusion is reinforced by the mixed results of empirical studies on growth and capital account liberalization reported in Edison et al. (2002). A few papers find a positive effect of financial integration on growth. However, the majority find no effect, or at best a mixed effect. The paper by Prasad et al. (2003) finds no clear and robust empirical relationship between financial integration and growth. They do find that the volatility of consumption growth relative to that of income growth has on average increased for emerging market economies. They conclude that the availability of foreign borrowing and lending has not provided better consumption smoothing opportunities.

One approach is the suggestion that financial crises are reflections of growing pains and to some extent inevitable. Foreign exchange markets may be particularly susceptible to over-reaction when traders have only limited experience in a floating regime and there are transitional problems as we move from a protected banking system to a more competitive and open system. We may 'need' a crisis to educate the prudential supervisors and to change bank attitudes to the acquisition and management of risk. Learning and institutional development necessary to make a deregulated system work effectively.

A related research finding is that a more open capital account positively effects growth only after a country has achieved a certain degree of economic development (Edwards 2001). Prasad et al. (2003) also find some evidence of a 'threshold effect' in the relationship between financial globalization and economic growth. Sound macroeconomic policies and improved institutions and governance, including robust legal and supervisory frameworks, is important in attracting less volatile capital flows and in reducing a country's vulnerability to crisis.

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Bordo & Murshid (2000, p. 3) argue that good fundamentals alone cannot insulate a country from the effects of financial contagion. The October 1997 crash on the Hong Kong Exchange demonstrated that. A currency crisis may not be related to weak economic fundamentals or policy mistakes. In the light of these experiences, a fundamental reappraisal of theoretical models of international capital flows is now proceeding. New approaches to private speculative behaviour are being developed that are significant departures from rational expectations or efficient market models. One such model is the theory of rational speculative bubbles where prices continue to rise and depart more and more from economic fundamentals. Investors base their actions on what they see others doing – herd behaviour and informational cascades – and mimic the action of others.

There is a need for international coordination to reduce destabilising effects of highly leveraged institutions. Improvements in the quality of domestic financial and regulatory institutions are also necessary. There are a number of vulnerability indicators that should be closely monitored by countries. Vulnerability indicators include at the macroeconomic level the ratio of short-term foreign-currency-denominated debt to foreign exchange reserves, the extent of real exchange rate appreciation and the current account deficit. At more disaggregated levels, we need to monitor the balance sheets of individual sectors of the financial and corporate sectors. In particular, maturity mismatches between short-term liabilities and longer-term liquid assets, borrower foreign currency denominated liabilities compared to domestic currency assets, and debt-equity financing ratios need to be watched. Generally, we need to monitor foreign currency exposure of corporate and financial sectors and have an enhanced regulatory oversight of highly leveraged institutions.

The future of the American dollar

For most of the post-war period the U.S dollar has served as the world's reserve currency. Those countries that persistently run a current account surplus, or in other words save more than they invest domestically, often hold their foreign reserves in U.S. dollars. Much of these foreign exchange reserves are sitting in low-yield dollar (or euro-denominated) government bonds. Countries may hold substantial reserves in foreign currencies to keep the value of their currency low (and hence competitive in export markets). Export success pushes up the value of the currency as foreign exchange is converted into domestic currency raising the demand for the local currency. The government can offset the rise in demand for domestic currency by increasing the supply – to buy up the foreign exchange and hold it. These foreign exchange reserves are often held in dollar-denominated US Treasury securities. In this way they can keep the value of the currency low and keep an undervalued exchange rate that supports export competitiveness. This has been a continual complaint made against the Chinese by the Americans. China's central bank buys dollars from Chinese exporters and uses them to buy interest-earning US assets. They sterilize the local liquidity increase via issuing debt and so prevent inflation at home and appreciation of its currency abroad.

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The U.S now finds itself with considerable government debt obligations. What if US inflation rates were consciously increased to reduce the real value of these debts? Foreign central banks and sovereign wealth funds who bought US Treasury bills and bonds would dump dollars and the US dollar would fall precipitously. If the dollar falls then Chinese dollar-denominated securities are worth less in terms of their own currency. On the other hand, American assets are cheaper to purchase but the U.S has so far resisted foreign ownership of its most important corporations. China also restricts citizens and firms from holding foreign assets. The U.S may respond by raising interest rates to defend the dollar but that would benefit those that hold US government debt.

If the US dollar did crash there would be a need for a new global reserve currency that exhibits strength and stability. Would the $US be replaced by the Chinese Renminbi or by Special Drawing Rights? On a positive note, would the fall in the $US significantly increase US exports to rectify their current account imbalance and would the now more expensive imports reduce the ability of the Chinese to export to America? Might this fix the imbalance between the US current account deficits and the Chinese current account surpluses? Or will this require the American household to fundamentally change their attitude to debt and consumption while the Chinese learn to save less? The latter is unlikely as most Chinese continue to purchase their homes in cash and so need to save and there are no or limited safety nets available in old age with the one child policy. China would have to substantially improve its pension and social security system, and wages would need to rise significantly, to raise Chinese household consumption.

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The Role of International Organizations

In earlier chapters we discussed the specific policies adopted by the major international organizations such as the World Bank, IMF and WTO. Many of these policies were precipitated by the Asian Financial Crisis and the Global Financial Crisis. We also cover the approaches that these institutions have taken to developing countries.

Despite the efforts of these institutions, the sobering fact is that only 13 of 101 countries across the world have been able to make the transition from lower or middle income levels to high income levels since 1960, and catch up to the technological frontier. Most developing countries have not caught up to the income and productivity levels achieved in advanced industrial economies.

Peter Drysdale, in a perceptive editorial on the 1st June 2015 of The East Asia Forum (https://plus.google.com/+eastasiaforum/posts), notes that while a large part of the industrial world is facing stagnation or very modest rates of growth in the decade ahead, the emerging economies, as they are called, are the great hope for global growth. But these emerging economies tend to get stuck in the middle income trap. A number of countries have enjoyed strong rates of economic growth temporarily but, after a time, their growth has fizzled out. A classic case is that of Latin America. Thirty or forty years ago, Latin American growth rates suggested that the continent was on the way to developed economy status; but in intervening years the growth rate of Latin American countries has averaged little more than 1 per cent, and left it trailing behind.

Some Asian economies, of course, are among the thirteen success stories in the transition from poverty to prosperity and high income and productivity. Japan was at the leading edge, but Korea, Hong Kong, Singapore, and Taiwan are other examples that stand out. China and other countries in Southeast Asia have succeeded in emulating the rapid catch-up growth of Japan and the newly industrialised economies (NIEs) but have yet to make the transition to high income. They are still in catch-up mode: some are on the way into middle income, reckoned at this stage as a per capita income somewhere between US$8,000 and US$16,000 (such as Malaysia, Thailand and China); some are further back (like Indonesia, India, Sri Lanka and Bangladesh). For most of Asia, the potential for economic catch up is still huge and the prospects of maintaining higher than average global economic growth over the coming decades are good.

Drysdale warns that Latin America is a salutary warning: things could go wrong. Certainly the leaders of some of the region's biggest emerging countries like China, Indonesia or India are confronted daily with questions about what might knock their ambitions to becoming rich off course. China has experienced a slow-down in growth as it rapidly approached higher levels of middle income and now a major policy preoccupation is with maintaining growth momentum and avoiding getting stuck in a middle income trap. Chinese authorities are also seriously stamping down on corrupt activities.

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Corruption and the Global Economy

Corruption distorts international trade and investment flows, and facilitates the activities of international organized crime, including drug trafficking and money laundering. Indeed it is reported that the global earnings from organized crime, mostly from drug trafficking, reached $US1 trillion in 1996 – twenty years ago. Furthermore, corruption may have its most deleterious effects in countries in transition and emerging market economies.

Transparency International is a Berlin-based nongovernmental organization established in 1993 to combat international corruption. A group of former World Bank executives established this NGO and loosely modelled it on the concept of Amnesty International and it has already had considerable success. Transparency International aims to expose corruption and raise awareness of its costs.

The OECD has developed several initiatives against corruption. The OECD has negotiated a convention criminalizing bribery of foreign public officials and in 1996 agreed that tax deductibility of bribes to foreign public officials should be banned. Bribery was the most common form of corruption and tax evasion is the most common motive for bribery. Along the same lines, it has been argued that World Bank and IMF lending be conditional on anticorruption reforms. The World Bank has increasingly emphasized good governance issues, including corruption, in its lending policies.

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More recently there have been widespread concerns about financial manipulation of both interest rates and exchange rates that have undermined trust in the global financial system. Beginning in 2012, an international investigation into the London Interbank Offered Rate, or Libor[4], revealed a widespread plot by multiple banks-most notably Deutsche Bank, Barclays, UBS, Rabobank, and the Royal Bank of Scotland-to manipulate these interest rates for profit starting as far back as 2003. Regulators in the United States, the UK, and the European Union have fined banks more than $9 billion for rigging Libor, which underpins over $300 trillion worth of loans worldwide.

In May 2015 four major banks agreed to plead guilty to trying to manipulate foreign exchange rates and six were fined in a global probe into the $US5-trillion-a-day foreign exchange market. The banks involved included Citigroup, JP Morgan, Barclays, UBS and Royal Bank of Scotland. In total, authorities in the United States and Europe have fined seven banks over $US10 billion for failing to stop their dealers from trying to manipulate foreign exchange rates.

Another ongoing investigation relates to what is alternatively called intra-firm or transfer pricing or simply 'profit-shifting'. For example the OECD has a 'Base erosion and profit shifting' (BEPS) project. BEPS refers to tax planning strategies that exploit gaps and mismatches in tax rules to artificially shift profits to low or no-tax locations where there is little or no economic activity, resulting in little or no overall corporate tax being paid. BEPS is of major significance for developing countries due to their heavy reliance on corporate income tax, particularly from multinational enterprises. The OECD notes that in an increasingly interconnected world, national tax laws have not always kept pace with global corporations, fluid movement of capital, and the rise of the digital economy, leaving gaps that can be exploited to generate double non-taxation.

Global Governance

Perhaps it is time to think about the future of the IMS. To that end we draw upon a very interesting article by Kishore Mahbubani titled the 'World needs new hands on the global finance tiller'. The article was published on the 23rd June, 2015 in the East Asia Forum (http://www.eastasiaforum.org). He presents an interesting analogy: In the past, when seven billion people lived in 193 separate countries, it was as though they were travelling in 193 separate boats, with different captains and crews taking care of each boat, and rules to make sure that they did not collide. But today seven billion people no longer live in separate boats. Instead they live in nearly two hundred separate cabins on the same boat. The problem now is that while there are captains and crews taking care of each cabin, there are no captains or crews taking care of our global boat as a whole. This is why the world is struggling to deal with new global crises, like financial crises, pandemics, global warming and terrorism.

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One simple and logical solution to this global problem is to strengthen institutions of global governance, like the UN Security Council, the International Monetary Fund (IMF), the World Bank and the World Trade Organisation (WTO). Similarly, we should be strengthening regional institutions, like the Asian Development Bank (ADB). However, there are concerns that these institutions do not always serve global interests. During the Asian financial crisis of the late 1990s, the IMF's conditional bailout packages did not afford Asian banks any bailouts. But in 2009, when American banks failed, the US government did not hesitate to implement a program of fiscal stimulus. The result has been that non-western nations have been left with no choice but to create alternative and inclusive global institutions. The single most dramatic recent example of this was the Chinese initiative for an Asian Infrastructure Investment Bank (AIIB). Another new institution is the BRICS bank (now called The New Development Bank) comprising contributions from Brazil, Russia, India, China and South Africa. We may be on the cusp of creating new global institutions for a new international monetary system.

References:

Bordo, M.D. & Murshid, A.P. 2000, 'Are Financial Crises Becoming Increasingly More Contagious? What is the Historical Evidence on Contagion?', *National Bureau of Economic Research Working Paper* 7900, pp. 1–70.

Davidson, P. 2002, 'Policies for fighting speculation in foreign exchange markets: the Tobin tax versus Keynes's views' in *Keynes, Uncertainty and the Global Economy*, (eds), S.C. Dow & J. Hillard, Elgar, Cheltenham, pp. 201–222.

Edison, H.J., Klein, M.W., Ricci, L. & Sloek, T. 2002, Capital Account Liberalization and Economic Performance: Survey and Synthesis, *IMF Working Paper*, July. Later circulated as *National Bureau of Economic Research Working Paper* 9100, pp. 1–52.

Edwards, S. 2001, 'Capital Mobility and Economic Performance: Are Emerging Economies Different?', *National Bureau of Economic Research Working Paper* 8076, pp. 1–32.

Kimberly Ann Elliott (ed.) 1997. *Corruption and the Global Economy*, Institute for International Economics, Washington D.C. June.

Krugman, P. and Obstfeld, M. *International Economics: Theory and Policy*, Addison Wesley, 6th Edition, 2003.

Prasad, E., Rogoff, K., Wei S.J. & Kose, M.A. 2003, 'Effects of Financial Globalization on Developing Countries: Some Empirical Evidence', *International Monetary Fund Report*, March 17.

Salvatore, D., *International Economics*, Wiley, 10th Edition, 2010.

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9 Developing Countries and International Institutions

Introduction

Developing or emerging market economies may be faced with economic instability in the form of either or both external and internal imbalance. The former is manifested in a balance of payments crisis, a falling currency and unsustainable foreign debt obligations. The latter may involve a stagnant or declining economy, high inflation and large government budget deficits. In these circumstances, member countries may look for financial support from the world's two main multilateral aid and financial institutions, the World Bank and the International Monetary Fund.

The World Bank lends money and provides expertise for a range of sectoral activities including agriculture, energy, transportation, education, health and nutrition, and urban development. It also pays a lot of attention to helping countries improve economic policies. A significant part of its lending is for structural adjustment, namely loans to support reforms rather than specific investments. The International Monetary Fund allows member countries to borrow, subject to agreed-upon conditions on their economic policies. Adherence to these conditions and reforms is in many cases a prerequisite to obtaining other larger public and private loans.

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A Structural Adjustment Program (SAP) provides loans to countries on the condition that they undertake a combination of economic policy reforms measures aimed to improve long term economic growth outcomes (Corbo et al 1987). These programs links disbursements of funds to the meeting of specified conditions (performance criteria) negotiated with the government of the member country. While these programs are often negotiated in the context of economic crisis, and attempt to restore balance of payments viability and macroeconomic stability, they are geared to increasing international competitiveness and improved economic efficiency in the use of domestic resources.

Often the country in crisis has waited too long before asking for assistance from the IMF and World Bank. By that stage, economic turmoil is quite widespread and unpalatable economic remedies are needed to rectify the situation. This may involve a menu of higher interest rates, government spending cuts and higher taxes, and the abolition of various subsidies on consumption items. Often the government of the country will not have the support to implement these policies alone and can use the conditionality requirements of these two institutions to deflect criticisms. Nonetheless, the policies are unlikely to be popular and so the programs are extremely controversial (Sheahan 1987).

The SAPs often include trade liberalization measures that require fewer restrictions on foreign trade. These include reducing or abolishing tariffs and quotas on imports, a less restrictive stance towards foreign investment, a more realistic exchange rate, and capital account liberalization that reduces controls on any form of capital flows across national boundaries. The internal market-oriented structural reforms promote deregulation of domestic markets and the privatization of government enterprises.

Trade liberalization

In 1960 less than one-sixth of the countries in the world had open trade policies. Most countries had various types of trade restrictions such as high tariff rates (taxes on imports) and extensive nontariff barriers (such as quotas that restricted the physical quantity of specific imports allowed into a country). In addition, the official exchange rate often exceeded the black-market exchange rate, and governments exercised monopoly controls on exports and other trade-related matters. Yet by 2000 three-quarters of the countries in the world had removed many of these impediments and were now open to international trade. This is a remarkable transformation and highlights the importance of trade liberalization in the global economy.

What precipitated the extensive trade liberalization that occurred? Much of the credit is usually given to the sixty years of multilateral trade negotiations that has resulted in ever-lower trade barriers under the auspices of the General Agreement on Tariffs and Trade (GATT). Since GATT's inception in 1947, manufacturing tariffs in industrialized countries have fallen from 40 percent to 4 percent, and world trade has increased eighteen fold. Initial GATT membership of 23 countries expanded to 148 countries and the trade rounds became the international forum in which member governments agreed on rules for the conduct of international trade. The multilateral trade agreements involved non-discriminatory tariff reductions so that all countries benefited – the "most favoured nation" clause – and the tariff cuts were "binding" and could not be restored at a later date.

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Countries would not have agreed to lower levels of import protection unless there were good arguments in their favour. Trade liberalization allows countries to specialize production and export in their areas of relative strength and to import products that other countries can make at lower cost. It enables access to a wider range of products, and access to foreign products helps diffuse innovations and new technologies. Openness to trade provides additional competition that can spur local firms to greater efficiency and keeps domestic prices low.

In the context of developing countries, a series of country studies sponsored by the World Bank, the Organization for Economic Cooperation and Development (OECD), and the National Bureau of Economic Research demonstrated that trade barriers imposed significant costs, whereas trade openness appeared to be associated with improved economic performance, although the underlying empirical research has not gone unquestioned (Rodrik 1999). For these countries, import substitution using high effective rates of protection had been the dominant vehicle by which industrialization has proceeded. Initially, local suppliers would have to be nurtured and protected from the competitive pressures applied by long established foreign producers. Over time, domestic inefficiencies would decline as these "infants" learned from experience and were able to reduce costs of production. The end result would be a far more diversified and self-reliant industrial structure less dependent on the vagaries of the international commodity prices. In the 1970s increasing disenchantment with this strategy emerged, and an alternative approach, identified as outward- (or export-) oriented and associated with East Asian development, became more popular and trade barriers fell (Edwards 1993).

While trade barriers in manufacturing have fallen extensively, the trade liberalization agenda has expanded its scope and consequently run into considerable difficulties. In 1995 GATT's successor, the World Trade Organization (WTO), became operational. Whereas GATT focused on trade in goods, the WTO concentrates on trade in services, intellectual property, and agricultural subsidies. According to the OECD, rich countries spend $280 billion a year on agricultural producer support; agricultural price support amounts to 20 percent in the United States, 50 percent in Europe, and 80 percent in Japan. These agricultural subsidies are trade-distorting, encouraging supported farmers to produce more, and this in turn lowers world prices and hurts farmers in poor countries that have a comparative advantage in the production of these subsidized commodities. Poor countries want agricultural liberalization in rich countries, yet there has been little progress in persuading richer countries to dispense with these subsidies. This leads credence to the claims about unfairness in trade negotiations made by Kevin Watkins and Penny Fowler (2003).

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Trade in services, especially related to issues of labour mobility across national boundaries, and TRIPs (trade-related aspects of intellectual property rights), which are of special interest to the pharmaceutical and software industries, are equally contentious issues. The latter is related to the manufacture of generic drugs and their sales to poor countries. Claims for "fair trade" rather than "free trade" cloud trade negotiations even further, because nongovernment organizations have been advocating "social clauses" in trade liberalization agreements relating to child labour, human rights, the environment, wages, and conditions. Their position is that trade sanctions should be imposed against countries that do not meet international standards in these areas.

Given these stumbling blocks and complications, it is not surprising that there has been a move away from multilateral forums to negotiated bilateral or regional trade agreements outside the WTO framework. More than 300 such preferential trade agreements now exist. Whether these agreements assist global trade liberalization or hinder the process is not clear (Bhagwati 2002).

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Trade liberalization is only part of a broader globalization movement and it needs to be carefully sequenced with other policy reforms. In general, trade liberalization should precede financial liberalization, domestic financial liberalization should precede external financial liberalization, and direct investment liberalization should precede portfolio and bank loan liberalization (capital account liberalization). Free inflows of foreign financial capital should only be allowed at the tail end of a liberalization program, and controls on suddenly increased inflows of short-term capital may be warranted. The purpose of these controls is to quarantine economies from excessive "hot" money inflows and outflows that disrupt economic stability and lead to exchange rate misalignments.

Overall, the welfare effects of trade liberalizations fall within the realm of second-best economics. There is still dispute about the direction of causation in the association between openness to trade and East Asia's rapid growth. What role have trade liberalization packages played in the performance of outward-oriented economies? A number of these countries, such as Japan, Korea, Singapore, and Taiwan, have promoted exports, but in an environment where imports had not been fully liberalized. The success of the East Asian countries with export-led growth suggests that some selectively determined degree of government intervention played a key role. Imports and lower tariffs may stimulate productivity, but import competition may have little impact on productivity growth if the domestic producers are technologically backward: Benefits accrue only to domestic producers that are roughly comparable to their foreign counterparts. This, then, suggests a role for trade-adjustment packages and safety nets for those disadvantaged by trade liberalization.

The effectiveness of Structural Adjustment Programs

The effectiveness of SAPs is a hotly debated issue. One issue relates to the speed of the structural adjustment required. Should all of these policies be implemented immediately or only gradually? Many economists argue that what is needed are gradual reforms to minimise short-term costs, such as business failure and unemployment, which could generate political opposition. Others argue that the most serious problem with a market liberalisation program is the political resistance that it generates. In particular, economic agents can generally recognise the short-run adjustment costs associated with structural reform but usually have difficulties perceiving its long-run benefits. Hence the longer the delay the greater the political opposition to further reform that will arise. This then is a case for advocating a rapid dismantling of controls. In addition, many of the structural reforms implemented may be reversed once the program is over. The inability of the government to make credible pre commitments on future policies will generally result in undesirable policy outcomes. If the liberalisation measures are expected to be reversed in time, then the government or the public may actually take steps that will undermine the effectiveness of the reform program.

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A second issue relates to the sequencing of structural reforms. Many commentators point to the crucial role of foreign capital inflow during the structural reform period to reduce the frictions that will emerge during the transition. However, it may be preferable that controls on foreign capital only be relaxed after trade and other industrial sector distortions have been dismantled. The reason for this is that capital inflow will result in a real exchange rate appreciation that disadvantages exporters. Meanwhile, the tariff reductions will disadvantage domestic producers facing lower-priced imports.

There is also considerable disagreement on the benefits of trade liberalization policies (Edwards 1989). Have trade liberalisation packages played an important role in the strong performance of outward-oriented economies? A number of countries, such as Japan, Korea, Singapore and Taiwan have promoted exports but in an environment where imports had not been fully liberalised. The success of the East Asian countries with export-led growth suggests that some selectively determined degree of government intervention played a key role.

Privatization strategies have also been questioned, particularly in the transitional economies of Eastern Europe. Public assets may be sold off below their real value in order to find a buyer and to generate quick cash-flow, with a loss of public accountability. Privatization might then mean that income generating assets are sold, leaving behind all the residual 'unproductive' activities, plus a new layer of watchdog agencies to regulate the newly privatized activities.

Conclusion

Many of these issues have been examined empirically but the results are mixed on the SAPs overall effectiveness. Often the results depend on the characteristics of the specific country concerned. Countries have generated a variety of responses to basically similar SAPs. This seems to reflect the importance of differences in institutional, social, and historical conditions between countries (Taylor 1988). In the context of the 1997 Asian Crisis further debate has escalated on the effectiveness of SAPs, particularly the financial deregulation requirements. The impacts of SAPs on social sectors and the poor have been particularly troublesome and the IMF and World Bank are attempting to incorporate social safety nets into their programs (Stewart 1995, Cornea et al 1987).

References

Corbo, V., Goldstein, M., and Khan, M. (eds.). *Growth-Oriented Adjustment Programs*. IMF and World Bank, Washington D.C., 1987.

Cornea, G., R. Jolly and F. Stewart (eds.) *Adjustment with a Human Face*, Oxford: Clarendon Press, 1987.

Edwards, S. "Structural Adjustment Policies in Highly Indebted Countries" in J.D. Sachs (ed.) *Developing Country Debt and Economic Performance*, Chicago, University of Chicago Press, Vol. I. 1989.

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Edwards, Sebastian. "Openness, Trade Liberalization, and Growth in Developing Countries". *Journal of Economic Literature* 31 (September): 1358–1393, 1993.

Rodrik, Dani. *The New Global Economy and Developing Countries: Making Openness Work*. Baltimore: Johns Hopkins University Press, 1999.

Sheahan, John. *Patterns of Development in Latin America: Poverty, Repression and Economic Strategy*. Princeton, Princeton University Press, 1987.

Standing, Guy and Victor Tokman (ed.) *Towards Social Adjustment*, Geneva: International Labour Office, 1991.

Stewart, Frances. *Adjustment and Poverty*, London: Routledge, 1995.

Tarp, Finn. *Stabilization and Structural Adjustment*, London: Routledge, 1993.

Taylor, Lance. *Varieties of Stabilization Experience: Towards Sensible Macroeconomics in the Third World*. Oxford. Clarendon Press, 1988.

Watkins, Kevin, and Penny Fowler. *Rigged Rules and Double Standards: Trade, Globalization, and the Fight Against Poverty*. Oxford, U.K.: Oxfam, 2003.

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Endnotes

1. This is based on the equation of exchange where MV = PQ, V = PQ/M in which PQ, V and M are nominal GDP, velocity of money and the supply of money.
2. In 1960 less than one-sixth of the countries in the world had open trade policies. Most countries had various types of trade restrictions such as high tariff rates (taxes on imports) and extensive nontariff barriers (such as quotas that restricted the physical quantity of specific imports allowed into a country). In addition, the official exchange rate often exceeded the black-market exchange rate, and governments exercised monopoly controls on exports and other trade-related matters. Yet by 2000 three-quarters of the countries in the world had removed many of these impediments were now open to international trade. This is a remarkable transformation and highlights the importance of trade liberalization in the global economy.
3. Cointegration examines the extent to which a group of non-stationary time series approach long run equilibrium. Statistical inferences are not reliable if series are non-stationary and not cointegrated.
4. Libor is a benchmark interest rate based on the rates at which banks lend unsecured funds to each other on the London interbank market.