1. Introduction

MONEY AND CENTRAL BANKING

Money is the lifeblood of a modern economy. A monetised economy is significantly more efficient than a barter economy with respect to transactions, saving and investment. The main reason is that transaction costs in a monetised economy are lower than those in a barter economy. A barter economy in fact relies on the ‘double-coincidence of wants’ that is rarely achieved. Higher efficiency in production, distribution and trade in a monetised economy therefore leads to society’s welfare gains (Clower, 1969; Dillard, 1954; Lewis and Mizen, 2000).

Yet the relationship between money and real economic variables is not precise. Any relationship between them depends on the time of adjustment of economic variables to changes in the money supply. The classical dichotomy, which is postulated in the writings of David Hume (1752 [1970]), suggests that money does not affect real variables in the long run. The idea is that real output is determined by real factors of production such as labour, capital and technology. Money can, however, affect output and employment in the short run (Blanchard, 1990; Fischer, 1979a; Friedman, 1994; Patinkin, 1972). The nominal variables such as inflation and nominal interest and exchange rates adjust fully to excess money supply growth over the long run. Therefore, the real interest and exchange rates remain unchanged to changes in the money supply (Fisher, 1923; Friedman, 1968a, 1977; Lucas, 1996).

The primary role of money is to facilitate the transactions of goods, services and assets. When the value of money remains stable, it is also used as a store of value (Friedman, 1969a; Lewis and Mizen, 2000). Monetary economists emphasise that real balances smooth the production process to such an extent that they can be considered a complementary factor of production. Monetary management in a modern economy, however, is not a routine affair. One problem is that there is limited control over the money supply and therefore it can go ‘out of order’. Experiences of high inflationary countries suggest that when the monetary authorities lose control over the money supply, it adversely affects economic growth and the welfare of the society (Easterly and Fischer, 2001; Sachs, 1987).

Monetary economists hold the view that there exists an optimal level of the money stock that allows the economy to function smoothly without causing inflation or deflation or business cycles. An important policy issue is therefore setting the rate at which the money supply should increase in a growing economy so that it does not cause inflation or deflation (Friedman, 1959a). Indeed, for the practitioners of monetary policy, a policy rule can be derived from the equilibrium condition in the real money market, which states that $M/P = m^r(y)$ where $M$ is the money stock, $P$ is the price level and $m^r(.,.,.)$ is the demand for real money balances, dependent on real income ($y$). If the goal of monetary policy is price stability, then, according to classical monetary theory, the growth
rate of the money supply should be equivalent to the growth rate of the economy times the income elasticity of demand for money (Burda and Wyplosz, 2005).

For a better understanding of the movements of nominal variables such as inflation and the nominal interest and exchange rates, monetary economists emphasise that the money demand relationship should be viewed independently of the way money is created. The demand for real balances is determined by economic agents, contingent on their wealth and the returns on alternative assets (real and financial) (Friedman, 1956). The nominal money stock is a supply variable, which is set by the monetary authorities (Brunner, 1992; Friedman, 1992). As Friedman (1992) emphasised, there are important factors affecting the money supply that do not affect the demand for money. The price level is adjusted to the money supply to bring equilibrium in the real money market.

Usually the central bank is the monopoly supplier of money; therefore, it bears the responsibility of determining and controlling the level of money in circulation. There is, however, no consensus on how a central bank should perform this responsibility. The increasing role of a central bank in monetary management arises from the classical view that money can get ‘out of order’ in the sense suggested by J.S. Mill (1848). Hence a central bank has the responsibility of maintaining monetary (or price) stability by supplying money to the level that is demanded.

Price stability – defined as low and steady inflation – has the characteristic of a public good.\(^{12}\) Monetary management is important for another reason. As indicated above, although money does not affect real variables in the long run, most economists agree that money has short-run effects on the economy. These effects are unpredictable and arguably should not be exploited by the monetary authorities (Friedman, 1961). In fact, whether monetary policy should be used to promote economic growth or stabilisation or both remain an area of policy debate. Modern monetary theory and policy revolves around this theme, especially in developing countries.\(^{13}\) Central banks, as the authorities to issue and control the money stock, have therefore become the main (if not the sole) agent of monetary management for price stability. However, until recently, central banks, instead of being stabilising institutions, operated as a branch of the Ministry of Finance (or Treasury) (Fry, 1992; 1998; Fry et al., 1996). Some observers (for example, De Long, 2000) have even accused some central banks of causing monetary mischief in many countries.\(^{14}\)

**THE BOOK**

As indicated in the preface, this book is about central banking and monetary policy. It surveys the major theories, models and approaches to inflation and monetary policy, with a focus on developing countries. Some features of the book are highlighted here to develop its broad theme in the context of Asia-Pacific.

The Asia-Pacific is a large geographic region.\(^{15}\) It comprises a relatively large number of developing countries and a small number of developed countries. The developing countries are at different stages of development. Their economic, social and political institutions have considerable differences because of varied sociocultural and political developments over the centuries. This book does not intend to survey the economic or monetary histories of these nations. The institutional and organisational developments
of their monetary systems are reviewed only on a selective basis with the aim of making readers familiar with the structure and governance of major central banks of the region. Moreover, although most Asian countries recognise that the primary role of monetary policy is to achieve and maintain price stability, the strategy of monetary policy varies across countries. This is reflected in varied exchange rate arrangements in these countries. In order to highlight this phenomenon, the book provides an overview of the principles in the conduct of monetary policy under different exchange rate arrangements with varied restrictions on capital mobility. Country-specific examples are then drawn to highlight key issues in monetary policy. This is accomplished using information on macroeconomic developments in selected countries of the region since the 1950s. Such information remains useful for establishing linkages between monetary, fiscal and exchange rate policies.

The centrality of central banking is highlighted throughout the book. All countries in the Asia-Pacific have a central bank (or monetary authority) and also their national currencies. Depending on capital controls and exchange rate arrangements, most of them conduct independent monetary policy to achieve a single or multiple objectives. As a precursor to the review of central banking and monetary policy issues, Chapter 3 surveys the evolution of central banking and introduces the structure, function and governance of central banks in selected countries of the Asia-Pacific. Chapter 4 provides an overview of the concepts and contemporary issues in monetary policy. Thereafter, there is a brief discussion of monetary policy frameworks in different countries of the Asia-Pacific. The later chapters elaborate on themes developed in Chapters 3 and 4. This book also has several analytical features of note.

Monetary theory and policy deals with analytical and policy issues. In the literature, monetary issues are examined within competing analytical frameworks that show inter-relationships between monetary and non-monetary variables (Barro and Fischer, 1976; Sargent, 1986). Monetary theory and policy issues are also subjected to empirical testing and validation (Friedman and Hahn, 1990). In general, policy lessons are drawn from real-world events. The book maintains this analytical approach. It refers to empirical evidence on monetary relationships and highlights real-world events that have monetary or macroeconomic implications. No attempt is, however, made to survey the body of empirical literature on contemporary issues in monetary theory and policy. The monetary literature is voluminous and expanding rapidly (Friedman and Hahn, 1990; Lewis and Mizen, 2000; Lucas and Sargent, 1981; Walsh, 1998; Woodford, 2003). The empirical literature also involves advanced econometric issues that are beyond the scope of this book.

Given the survey nature of the book, there is a comprehensive treatment of models and approaches to inflation, and the design and conduct of monetary policy. This is because monetary economics deals with a range of issues that can be analysed from different perspectives. Although economists agree on core insights in monetary economics, there remain disagreements on the short-term policy issues such as the relative costs of inflation and unemployment, the approaches to inflation control and their associated costs, and the role of monetary and financial policies for growth and stabilisation (Lewis and Mizen, 2000; Mishkin, 1997; Orphanides and Solow, 1990). Although this book does not examine these issues in detail within an integrated framework, the core ideas and contrasting views are synthesised and presented in a simplified form. The strength of this book is to highlight disagreements among prominent economists on issues in monetary economics.
theory and policy. At the same time it articulates a theme that Friedman (1969b: v) captured beautifully in the preface to his book *The Optimum Quantity of Money and Other Essays*:

> Monetary theory is like a Japanese garden. It has esthetic unity born of variety; an apparent simplicity that conceals a sophisticated reality; a surface view that dissolves in ever-deeper perspectives. Both can be fully appreciated only if examined from many different angles, only if studied leisurely but in depth. Both have elements that can be enjoyed independently of the whole, yet attain their full realization only as part of the whole.

Since the early 1970s the literature on monetary theory and policy has expanded rapidly. The monetary literature has also become sophisticated in dealing with both analytical and policy issues (Friedman and Hahn, 1990; Taylor, 1999). The growing body of literature has been associated with recent inflationary trends and experiences of both developed and developing countries. Economists have learnt more about the sources, dynamics and control of inflation over the past few decades than at any time before (Corbo, 1974; IMF, 1996; 2001; 2006; Jongwanich and Park, 2008; Loungani and Swagel, 2001). As inflation came to the forefront of policy debate in the 1970s, the ‘art’ of monetary policy-making has been developed in tandem (Blinder, 1998; Mahadeva and Sinclair, 2002; 2005; Mahadeva and Sterne, 2000). Monetary policy practitioners now acknowledge that to make monetary policy credible and effective, the public need to comprehend monetary policy principles and issues (Cukierman, 1986; 1992; Walsh, 1998; Woodford, 2003). Understanding the working mechanisms of monetary policy has therefore become important for both professionals and the public alike (Dornbusch and Giovannini, 1990; Fischer, 1990; Mishkin, 1995).

However, satisfying the needs of diverse groups of readers is difficult, yet not impossible. In fact, the mysteries of monetary theory and policy can be removed to a large extent without compromising analytical rigour and sophistication that is part of monetary economics. In general, students and researchers benefit the most when economic principles, models and their implications are set out in a precise form so that they do not need to navigate through massive institutional and organisational distractions. Peripheral theoretical and empirical issues tend to clutter a text and can make core principles and issues confusing. Therefore, this book avoids a detailed discussion on institutional and organisational matters, except those needed for expositional purposes. Instead the basic monetary policy concepts and principles are defined and analysed in a relatively simple manner. Emphasis is also given to the applicability of basic principles of monetary theory and policy to developing countries in general.

Other than an expectation that readers have familiarity with macroeconomic principles and policy debates, advanced knowledge of monetary economics is not required. Except for some algebraic relationships and the use of calculus, no high-level mathematics is involved. The figures used for illustration are simple to follow, as they do not require advanced training in geometry. In addition, to make the book accessible to non-specialists, it is written in a matter-of-fact style. Those readers interested in an in-depth analysis of monetary issues are expected to consult journal articles and advanced texts, as listed in the bibliography. Statistical information is drawn from both international and country-specific publications. Most data are reported in a summary form. All other materials are presented in a clear, accessible style. Instead of standardising symbols for consistent
use throughout the book, the symbols are model- and/or chapter-specific. Therefore, at the risk of repetition, the symbols are defined or redefined as the text demands so that readers can remain afresh with their meanings while they navigate through the text.

The book is self-contained and remains suitable for one-semester undergraduate courses on monetary theory and policy. It can also be used as a complementary text for courses on money, banking and finance. As a bridge between academic literature and popular writings, this book is written to appeal to researchers who need a reference text that does not get weighed down with technicalities but develops monetary policy concepts and analyses issues with real-world examples. The book would also suit policymakers who have an interest in macroeconomics in general and monetary and financial policies in particular.17

PREVIEW

The remainder of this book is organised as follows. Chapter 2 provides an overview of the scope of macroeconomics, introduces key issues in monetary theory and policy, and highlights the roles of monetary and fiscal policies in macroeconomic stability.

Chapter 3 discusses the evolution of central banking and its functions in a historical context and then introduces the major central banks in the Asia-Pacific. Chapter 4 reviews the basic concepts and principles of monetary policy, discusses the extent of independence of monetary policy under different exchange rate arrangements and restrictions over capital mobility and, finally, assembles a set of guiding principles of central banking and monetary policy. These principles are returned to in later chapters.

The theories, models and approaches to inflation and monetary policy are the subject of Chapter 5. The discussion encompasses the relationship between money growth and inflation, the relationship between inflation and economic growth, the role of money and finance in economic growth, and the models and approaches to the conduct of monetary policy.

Chapter 6 analyses issues in the choice of strategy of monetary policy for price stability. It defines the concept of a nominal anchor and examines the rules-based strategies of monetary policy, namely, exchange rate targeting, monetary targeting and inflation targeting. The generalised framework for the conduct of monetary policy is outlined and the key features of monetary policy under specialised exchange rate arrangements are also reviewed.

Chapter 7 explains the money supply process. It also illustrates the applications of various instruments for monetary management.

Chapter 8 analyses the generalised transmission mechanisms of monetary policy. The discussion covers both the money and credit channels of the transmissions of monetary policy. The transmission mechanisms of monetary policy under inflation targeting are outlined. Given its importance in the design and conduct of monetary policy, a brief review is made of issues in the money demand behaviour in developing countries of the Asia-Pacific. Unresolved issues in the transmission mechanism of monetary policy are also critically discussed in the context of developing countries.

Chapter 9 discusses inflation and monetary policy developments in selected countries of the Asia-Pacific. Policy lessons are then drawn from monetary policy experiences of
countries of the Asia-Pacific region. Given the space constraint, although this chapter does not make critical assessment of the conduct of monetary policy in selected countries, it provides a brief overview of the ongoing global financial crisis and its implications for monetary and fiscal policies in developing countries of the Asia-Pacific.

Chapter 10 provides a summary of concepts and principles of central banking and monetary policy covered in the book, and makes some concluding remarks.

NOTES

1. For a historical review of the evolution of money and its importance in a modern society, see Tobin (1992). He described money as a social institution that ‘is similar to language, standard time, or the convention designating the side of the road for passing’ (ibid.: 770).

2. This idea was postulated in the early statements on the Quantity Theory of Money, such as the classic one by David Hume in his essays ‘Of Money’, ‘Of Interest’ and ‘Of the Balance of Trade’ (Hume, 1752 [1970]). In the modern context, the quantity theory of money represents a body of thinking about the relationship between money, output and prices in the short and long runs. The main proposition is that an increase in the money supply raises only the price level and not output. This is expressed in terms of the neutrality of money in the long run but not in the short run. For detailed discussion on this and related propositions, see Fisher (1926), Friedman (1992), Johnson (1967; 1972), Patinkin (1956; 1972; 1992), Tobin (1992), and Thornton (1802).

3. Friedman (1994: 48) stated the short run and long run effects of changes in the money supply as follows:

   In the short run, which may be as long as three to ten years, monetary changes affect primarily output. Over decades, on the other hand, the rate of monetary growth affects primarily prices. What happens to output depends on real factors: the enterprise, ingenuity, and industry of the people; the extent of thrift; the structure of industry and government; the relations among nations; and so on.

4. Tobin (1992) pointed out an analytical issue in money’s role as a store of value. He suggested that the institution of money has value to the society as a public good does not automatically give it value to individuals in market exchanges. Therefore some value is assigned to money in an overlapping inter-generational model in which money has the function of being the sole or the principal store of value that links one generation to the next. This works well when the world is infinite and its end is not in sight. However, money may become worthless as a store of value vis-à-vis real resources if the end of the world is certain and is in sight.

5. The demand for money represents a demand for real balances. Real balances can be defined as the ratio of the nominal stock of money to the general price level. The demand for real balances depends primarily on a real variable such as a measure of real permanent (or expected) income, which is considered a proxy for wealth (Friedman, 1956). Whether or to what extent the nominal interest rate affects the demand for money remains an empirical issue (Mishkin, 2007a).

6. Traditionally, money is viewed as a lubricant that greases the wheels of the economy. In a modern economy, money is more than a lubricant. This is evident from the linkage between money growth and the returns on various assets, which are linked to inflation and the interest and exchange rates. The monetary growth literature treats the stock of real balances as a ‘complementary’ factor of production, especially in developing economies (Ghatak, 1983; Stein, 1970; 1971). The use of money as a factor of production gives rise to an inverse relationship between the real rate of interest and the rate of inflation. For example, a rapid rise in inflation induces firms to switch from money to real capital, which lowers financial capital and therefore the marginal product of capital. At equilibrium, the real interest rate equals the marginal product of capital. The resulting decline in the real interest rate could be substantial in developing economies having capital market imperfections. This creates a repressed financial system that retards economic growth (Fry, 1998; Gylfason, 1999; McKinnon, 1973).

7. John Stuart Mill developed the idea in the mid-nineteenth century that money hurts the economy when it goes ‘out of order’: otherwise, it does not have any impact on the real economy:

There cannot, in short, be inextricably a more significant thing, in the economy of society, than money; except in the character of a contrivance of sparing time and labour: It is a machine for doing quickly and commodiously, what would be done, though less quickly and commodiously, without it; and like many other types of machinery, it only exerts a distinct and independent influence of its own...
when it goes out of order. The introduction of money does not interfere with the operation of any Laws of Value . . . (Quoted in Goldfeld and Chandler, 1986: 16–17).

8. There is lack of consensus on this viewpoint. The optimal level of the money supply ultimately depends on its relationships with such variables as inflation (deflation) and business cycles. For discussion on the role of money in business cycles, see Friedman and Schwartz (1963a; 1963b), Barro (1976), and Lucas (1973; 1975; 1977; 1981). For general discussion on monetary models of business cycles and other topics on new classical macroeconomics, see Barro (2008), Hoover (1988) and Pesaran (1987). One controversial idea in monetary economics is Friedman's rule that states that the target inflation rate should be negative and numerically equal to the equilibrium real interest rate so that the nominal interest rate becomes zero (Friedman, 1969a). This indicates that the optimal monetary policy could be a steady contraction of the money supply at a rate that brings the nominal interest rate to zero (Woodford, 1990).

9. There is scope for confusion about the terminology 'money market'. The money market is defined here as the market where the demand for money and the supply of money interact to determine the general price level, which is the inverse of ‘the price of money’ – measured by the quantity of goods and services that is sacrificed to acquire a unit of money (Friedman, 1992). However, in J.M. Keynes's liquidity preference model, the money market (defined above) is used to determine the nominal interest rate, although economists such as Friedman (1992) argued that the interest rate (the 'price' of credit) is determined not in the money market but in the credit market. Money and credit are two different concepts. Friedman (1983a: 244) explained this issue as follows:

Interest rates are the price of credit, not the price of money. The price of money is the quantity of goods and services that will 'buy' a piece of money (the reciprocal of the price level). Fluctuations in interest rates reflect instability in the demand for credit rather than for money properly defined, although interest rate changes may indirectly affect the quantity of money demanded. The so-called money market is really a credit market.

10. This specification ignores the nominal interest rate as a determinant of the demand for money. At a fundamental level, the linkage between money and prices is explained by invoking the classical Quantity Theory of Money, which has been developed and popularised by Fisher (1911) in the Equation of Exchange: \( MV = PT \) where \( M \) is the nominal quantity of money, \( V \) is the income velocity of money, \( P \) is the price level and \( T \) is the transactions of final goods and services. According to Friedman (1994: 39), Fisher’s Equation of Exchange plays the same foundation-stone role for monetary theory that Einstein's \( E = mc^2 \) does for physics.

11. In a strict sense, price stability means zero inflation (Fischer, 1996a; 1996b; Poole, 1999). In a general context, price stability refers to a very low rate of inflation; for example, in the range of 1 to 3 per cent per annum (Akerlof et al., 1996; Mishkin, 2007a; Phelps, 1973) or somewhat higher for developing countries (Khan and Senhadji, 2001).

12. Price stability (like national defence or street lights) is non-rivalrous. It provides benefits to the nation, irrespective of an individual's demand for it. For a discussion on the properties of a public good, see Varian (2006).

13. For early reviews of the literature on money and monetary policy in developing countries, see Coates and Khakhatke (1980), Khakhatke (1972) and Page (1993).

14. De Long (2000: 90) has summarised this view:

After all, a central bank not constrained by the constant nominal money growth rate rule can get itself into all kinds of mischief. It could use the inflation tax to gain command over goods and services. It could try to stimulate aggregate demand and manipulate the business cycle in order to create a favorable economic climate at election time.

15. The Asia-Pacific region represents the eastern part of Asia, some countries in Latin America, North America and Australasia that are located around the Pacific Ocean rim. This book does not cover all countries in the Asia-Pacific. For example, West Asia, Iran, Afghanistan and the newly independent central Asian states of the former Soviet Union are excluded. The focus is the countries of South, Southeast Asia and East Asia, and some developed countries such as Australia, Canada, New Zealand and the United States of America (USA). Along with Japan, these developed countries are used as a reference for comparison of developing countries of the Asia-Pacific. The above developed countries have close economic relations with developing Asia. As a special case, central banking and monetary policy issues in the United Kingdom (UK) are briefly reviewed. Some central banks in Asia are structured following the line of the Bank of England. The Bank of England is also one of the trendsetters for central banks across the globe.
16. Monetary and exchange rate policies are intertwined. They may represent the same policy depending on exchange rate arrangements and capital flows (Aghevli et al., 1991; Crockett and Nsouli, 1977; Saxena, 2008). Chapter 4 explains the relevant analytical issues.

17. As indicated in the preface, this book does not give an adequate coverage of the latest global financial crisis, which originated from the US subprime mortgage crisis, and its implication on the design and conduct of monetary policy in the Asia-Pacific. Just like the East Asian financial crisis of the late 1990s, the US subprime mortgage crisis has become an important global policy issue. Although the global financial crisis issue remains relevant, it is outside the scope of the present book. Chapter 9 makes only a general overview of this crisis and draws some policy implications. The critical issue is whether the global financial crisis would bring fundamental changes in the way monetary policy is designed and conducted. Most monetary economists do not think so. Some economists, however, believe that fiscal policy would gain more importance given the present crisis while monetary policy’s role in stabilisation would be diminished. Some time is needed before an objective assessment can be made on such views. I intend to publish a companion volume of case studies of monetary policy in selected countries of the Asia-Pacific. In this volume I examine the pros and cons of monetary policy in selected countries of the Asia-Pacific. The book examines in detail the US subprime financial crisis and its impact on monetary policy in the Asia-Pacific.