

# **PAPERS ON *MONETARY ECONOMICS***



**Monetary Authority of Singapore  
10th Anniversary Publication**



SINGAPORE UNIVERSITY PRESS

234567890123456712345634567  
0456789023456789056789



**Papers on**  
**Monetary Economics**

Edited by the Economics Department,  
Monetary Authority of Singapore

**Published by Singapore University Press  
for the Monetary Authority of Singapore**

© 1981 Monetary Authority of Singapore

ISBN 9971-69-044-6

Typeset and Printed by:  
Fong & Sons Printers Pte. Ltd.

**Papers on**  
**Monetary Economics**



## *Introduction*

Singapore has traditionally been a banking and financial centre of regional significance. In part this reflects its geographical location and its role as an entrepot trading centre. During the 1960s and particularly after Singapore gained independence in 1965, the demands on the financial sector increased considerably as Singapore pursued a policy of accelerated industrialization of the economy. Until the late 1960s, the structure of the financial system adequately served the economy. There were sufficient institutions for financial surpluses to be pooled and transferred to those economic units in deficit. The range of financial assets available mainly covered those issued by commercial banks, finance companies, insurers, public corporations, and to a smaller extent those of the Post Office Savings Bank and the Central Provident Fund. The existing markets centred around secondary trading of corporate securities and trading in short-term interbank funds. Activity in the foreign exchange market was limited to the squaring of positions by banks. Official surveillance of the financial system was concerned mainly with the prudential aspects of the institutions, particularly those collecting deposits from the non-bank sector. There was no specialized organization with the primary responsibility of overseeing the functioning of the financial system. Instead, this responsibility was shared by several government departments. They were given the authority to supervise the banks and other financial

institutions, act as banker and financial agent of the Government, and as a banker to banks.

In the late 1960s, the potential for the development of the financial sector beyond its basically domestic role was recognized and a development strategy was mapped out. The financial sector was to be developed as a major growth industry in its own right, rather than fulfil a subsidiary role to meet the needs of the other sectors of the economy. The policy was to expand the role of the financial sector beyond its traditional functions. The aim was to develop it into a modern sophisticated financial centre to serve the financial needs not only of Singapore and the surrounding region but also beyond. The main potential benefits of this policy were perceived to be the increase in the flow of trade and investment and the economic growth and development of Singapore and the region.

To meet the objective, a conscious and active policy to create an environment for financial activities to flourish was pursued. The first step was taken in 1968 when the withholding tax on interest payable to non-resident depositors was abolished. This led to the establishment of the Singapore-based Asian Dollar Market, an event which marked the beginning of the internationalization of the financial sector. Another significant move, and one which demonstrated the tangible shift in policy regarding the entry of foreign banks and financial institutions, was the admission of a foreign bank into Singapore in 1970, the first in six years.

In January 1971, the Monetary Authority of Singapore (MAS) was established. The new organization was to perform the functions of a central bank other than note issue and to play an essential role in the financial development programme. Under the aegis of the MAS, the effort to develop Singapore as a financial centre continued into the 1970s, during which the following policy measures were implemented:

- (1) the progressive relaxation of exchange control, culminating in its complete liberalization in June 1978;
- (2) the provision of fiscal incentives to promote the growth of financial activities and the development of money instruments;

- (3) the relaxation or removal of restrictive practices to encourage healthy competition and growth in the banking and financial system;
- (4) the admission of more foreign banks and financial institutions; and
- (5) the expansion of the pool of expertise in finance and banking through the development of training facilities and the adoption of liberal entry requirements for skilled personnel from abroad.

The entry of new financial institutions generated new types of financial activities. New financial markets were developed while existing ones were improved in terms of size and structure. The local money market, previously a market for short-term interbank funds, was enlarged with the creation of the discount market. A wider range of short-term financial assets for trading in the secondary markets became available. From its modest beginning in 1968, the Asian Dollar Market expanded while activity in the capital markets was reinforced by the growth of the government securities market. The foreign exchange market also experienced significant changes in terms of growth and turnover and in the improvement of market practices. The gold market was given a boost by the liberalization of dealings in gold and was further enhanced by the establishment of a gold futures market.

With the transformation of the financial system, institutions and individuals, the suppliers of funds, now have a wider choice of financial assets to invest in. Correspondingly, borrowers including banks, other financial institutions, and individuals are able to tap funds from a broader range of sources, both domestic and offshore. The intermediary role of the financial institutions, while servicing the needs of the Singapore economy, has become increasingly more important in financing economic activity outside the boundaries of Singapore. The role of government institutions in financial intermediation has also increased in importance.

This book, published by the Monetary Authority of Singapore to commemorate its tenth anniversary, consists of nine articles, written by renowned academics, both local and



foreign, central bankers, and staff of the International Monetary Fund. They represent, together with the selected bibliography at the end, an authoritative survey of monetary and exchange rate policies in Singapore, the development of the Asian Dollar Market, and its effects on monetary control in Singapore.

Peter J. Drake surveys the evolution of money in Singapore since the establishment of the port in 1819. The interesting history of money in Singapore runs from the early silver dollars era, through the emergence of bank money in about 1850, the appearance of the first Straits Settlements Government's notes in 1899 which eventually replaced the bank notes by 1908, the "banana" note period during the Japanese occupation, the breaking down of the historic monetary union between Singapore and Malaysia in 1966, and the emergence of the MAS in 1971 to assume the responsibility for the regulation of banking, the general supervision of financial development, and the management of the monetary and exchange rate policies of the Republic.

C.A.E. Goodhart analyses the historical development of mandatory asset ratios as an instrument of monetary control. Emphasizing the new development in the structure of money markets and banking operations, he points out that required asset ratios have become more of a tax burden on banking intermediation, without actually being helpful to the monetary authorities for control purposes.

Mohsin S. Khan analyses the demand for money in Singapore in a systematic and comprehensive manner. Though his underlying theoretical model is that of the familiar type, his dynamic formulation also incorporates the empirical phenomenon that the stock of real money balances typically rises initially when there is an increase in the rate of growth of money. On the issue of stability over time, Khan concludes that the functional relationship for narrow money in Singapore was more stable during the seventies and recommends it as the relevant monetary aggregate that the authority should be concerned with.

Wong Kum Poh surveys the issues of lagged effects of monetary policy, their nature and length, and the transmission

mechanism itself. Wong presents the evidence of the effect of money supply and import prices on domestic prices in Singapore using a distributed lag model employing the Almon technique and cross-correlogram analysis.

Basant Kapur, in discussing exchange rate flexibility and monetary policy, emphasizes three issues with regard to Singapore: the effects of exchange rate changes on the domestic price level and the issues of the degree of capital mobility and currency substitution. With the observation that in a small open economy like Singapore, monetary and exchange rate policies are basically inextricably intertwined, he suggests that the monetary authorities should select that trend rate of exchange rate changes which insulates the economy as much as possible from foreign inflation without at the same time adversely affecting the trade balance. Noting that the MAS has in recent years progressively relaxed the restrictions on trading in the Asian Dollar Market by domestic residents, Kapur warns that it might encroach upon the domain of the domestic monetary system, especially if the U.S. dollar were to "stabilize" itself in real terms.

W.H. Branson, in his paper, focuses on the conflict between monetary stability and exchange rate objectives in a small open economy like Singapore. A simple monetary model of exchange rate is used. Branson's proposal is for the authority to peg the real exchange rate to a currency basket using trade weights, and to adjust the rate relative to the basket using current account and reserve indicators while allowing the money supply to vary to keep the real exchange rate near the target.

Lee Soo Ann points out that the traditional notion of a dichotomy between monetary and fiscal policies (i.e., policy-wise, money is neutral and fiscal policy is all effective) is no longer valid. The stabilization of modern economies requires close cooperation between these two types of policies. Lee argues that it is not new instruments but new combinations of conventional monetary and fiscal tools that are needed.

R.I. McKinnon's paper deals with the effect of offshore markets in foreign currencies on national monetary control, using Singapore, the United Kingdom, and the United States

as examples. For the case of Singapore, McKinnon points out that with the final abolition of exchange controls on non-bank residents of Singapore in June 1978, residents might be encouraged to switch out of Singapore dollars into foreign currencies if expected price inflation and expected exchange rate depreciation in Singapore became greater than in the outside world. That such currency substitution has not happened in Singapore is due to the fact that price inflation in Singapore has been less than in the United States and the Singapore dollar has appreciated relative to the U.S. dollar over the last ten years. Thus, while the existence of an unregulated offshore market tends to undermine whatever control the monetary authorities may have had over flows of credit, the MAS has been able to preserve the effective domain of domestic money as a means of payment among residents by maintaining the real purchasing power of the Singapore dollar better than that of the U.S. dollar.

John Hewson analyses the implications of the Asian Dollar Market on the conduct of monetary policy in Singapore. He notes that in the case of Singapore, fiscal policy tends to be highly contractionary in its monetary effect as a result of the required contributions to the Central Provident Fund. Consequently, the task facing the monetary authority is basically that of deciding on the appropriate level of liquidity to inject back into the economy to meet nominal growth objectives. Though this CPF- type arrangement has a lot of advantages, Hewson points out that this channelling of most private savings through a central government institution, which then invests in government securities, tends to severely restrict the development of financial institutions and instruments, thereby limiting the diversification and development of the domestic money and capital markets which would be essential for an efficient and flexible conduct of monetary policy in the longer run. Consequently, Hewson points out, the MAS has been forced to rely heavily on bill discounting activities, direct lending to the banking system, and limited exchange market intervention rather than conventional open market operations as the main instruments for domestic liquidity management.

# *Contents*

Introduction   vii

1. The Evolution of Money in Singapore since 1819

*P.J. Drake*   1

2. The Development of Asset Ratios as a Monetary Policy Instrument: A Confusion between Prudential and Control Functions?

*C.A.E. Goodhart*   26

3. The Dynamics of Money Demand and Monetary Policy in Singapore

*Mohsin S. Khan*   46

4. Monetary Policy and Lagged Responses

*Wong Kum Poh*   77

5. Exchange Rate Flexibility and Monetary Policy

*Basant K. Kapur*   102

6. Monetary Stability and Exchange Rate Objectives in Singapore

*William H. Branson*   112

7. Monetary versus Fiscal Policy

*Lee Soo Ann*   130

8. Offshore Markets in Foreign Currencies and Monetary Control: Britain, Singapore, and the United States

*Ronald I. McKinnon*   136

9. Monetary Policy and the Asian Dollar Market

*John R. Hewson*   165

Bibliography   197

# *1. The Evolution of Money in Singapore since 1819*

*P.J. Drake*

In its short history Singapore has experienced diverse and sometimes turbulent monetary conditions, marked by many changes in the form of its money. Nowadays the Singapore public uses government currency and commercial bank deposits as money without question. But it was not always so. In evolving to the present stage of monetary development, both banks and government had to win public faith in the reliability of their obligations: this was earned by satisfactory performance, backed up at times by legal sanction. It is therefore useful, as well as interesting, to trace the evolution of money in Singapore from the infancy of the port to the current monetary system over which the Monetary Authority of Singapore has presided for a decade.<sup>1</sup> But before addressing the facts, it is useful to clarify some relevant and important analytical concepts.

## I

Singapore money, like any other, consists of those items which its residents find thoroughly acceptable in payment — in gifts, tributes, settlements, as well as in exchanges for goods and services rendered. It is this indiscriminating acceptability which confers “moneyness” on some things, regardless of the fact that others may also serve such subsidiary money functions as being a store of value or unit of account.

Acceptability turns crucially on the belief that what is received as money will subsequently have purchasing power. In other words, the store of value characteristic is a necessary, though not sufficient, condition for moneyness.<sup>2</sup> One implication of the fact that money is a store of value is that holders of money elect not to hold or consume presently the goods and services on which their money holdings could be spent. These real resources instead pass essentially into the control of those who supply money, who may use or direct the resources in various ways. The suppliers of money, however, are required to return real value in redemption of money, if that should be demanded: money is simultaneously an asset to its holders and a liability or obligation to its suppliers/issuers. Fundamentally, the creation of money thus represents real resource loans of unspecified duration from the community in general to the issuers of money.

Individual holders of money may at any time exchange money for consumable goods and services or for other assets. However, the money tendered in exchange usually passes to other members of the community and is only rarely returned to the money issuers in demand for real resources. In the aggregate, therefore, there is seldom any absolute drop in the level of money held by a community and so there is seldom any reduction of the communal loan to the issuers of money. On the contrary, total money holdings generally increase constantly in absolute amount, though at varying rates of increase. (These statements abstract from the issue of inflation in the prices of goods and services, which may reduce the real value of a nominally growing money amount.) In sum, the holding of money by members of a community represents collective loans to the issuers of money, which are virtually perpetual and are normally substantial. These loans, moreover, are free of interest in so far as (in the usual case) the issuers of money are not obliged to reward the holders of money balances.

In modern Singapore, as in most other countries, the acceptable money consists of government currency notes and bank current account deposits. Specifically, these items represent



decisions by the holders of currency and bank deposits to allow claims on real resources to pass, without recompense, into the control of the currency board (representing the government) and the banks. A distinction needs now to be drawn between money issued by the currency board and money issued by the banks. In holding currency, the community as a whole (private residents and government) forgoes the local use of resources; this occurs because the currency board, by virtue of the requirement that its assets consist of foreign, or "external" assets, may not redeploy the resources locally but must, in effect, send them abroad. By contrast, when the community holds bank deposits, the banks, to a very considerable extent, redeploy the counterpart resources within the community via local loans and advances (the banks need to maintain, or be able to obtain, only enough foreign assets or Singapore currency to meet any demands by depositors for the conversion of local deposits into foreign exchange or currency).

In this sense, the banks may be said to intermediate between their depositors and their borrowers, transferring resources within the community and creating bank money in the process. When the Singapore community holds bank money, it therefore does not collectively give up the use of resources in the same sense as it does when holding currency. (Before 1908, when the banks in Singapore issued currency notes subject to high coin and bullion reserve backing, the resources sacrificed by bank note holders collectively were largely, but not wholly, lost to the local community.)

Neither currency nor bank current account deposits yield interest to the holders, but the issuers may use the resources gained in profitable ways. Banks, for instance, make private gains by deploying the resources counterpart of bank deposits in loans, advances, and investments which yield interest. There is, therefore, a distinction to be borne in mind between the actual resource transfers involved in the holding of money and the earnings of money issuers, or payments (if any and if adequate) to money-holders, associated with the loans. In some cases, the society sacrificing the resources may ultimately

receive some communal benefit from the earnings of the money issuers. In the specific case of Singapore currency, although the resources given up by the currency holders are not used locally, interest accrues to the community from the foreign reserve assets of the currency board. In other cases — the extreme but not unusual one being where a society uses the money of another country — there is no such direct benefit.

## II

Money first came to Singapore, after the establishment of the port in 1819, in the form of various coins casually useful to the traders who settled there. Silver dollars, especially the Mexican dollar, were popular because of their acceptability in the trade with and between China and India, which was so important to the infant port.

These silver dollars came to Singapore from various sources (London was prominent)<sup>3</sup> in payment for exports from the port or in order to provide Singapore merchants with working capital to purchase exportables, consumables, and services locally as well as from other parts of the region. In the latter event, the silver coins left Singapore again. The gradual accumulation of a stock of coins in Singapore, however, represented a cumulative balance-of-payments surplus in which the net physical import of coin had its counterpart in a net real export of goods, services, and property rights. In this sense, the early denizens of Singapore sent resources abroad, or incurred overseas liabilities, in order to obtain currency in exchange. They were willing to do so (provided the coins were not counterfeit or debased) because of the long-tested acceptability of such coins in Eastern exchange, and the bullion value of the precious metals from which the coins were wrought.

The willingness to hold silver dollars was unquestioned. It was strengthened by scarcity and attested, in the late nineteenth century, by the minting of a variety of silver dollars in several countries, all seeking to compete with the Mexican and Spanish dollars for use in Eastern trade.<sup>4</sup> The frequent

scarcity of silver coins in Singapore led to the use of supplementary forms of money including copper and tin coins originating from India, the Dutch East Indies, and the Malay peninsula and, notably, the merchant tokens which around 1830 were privately minted abroad and imported by some of the Singapore merchants for use as minor coins within Singapore.<sup>5</sup>

Beginning in 1837, Singapore (then being a part of the Straits Settlements which formed a fourth Presidency of British India) fell victim to an attempt, by the Government of India, to enforce the Indian silver rupee and subsidiary coins as sole legal tender in the Straits Settlements. Although the attempt was backed by various enactments over the ensuing two decades, it was steadfastly resisted by the local population. It is doubtful if the rupee actually circulated in Singapore or the other Straits Settlements. The provisions of the legal tender acts were "disregarded by all except the keepers of the government accounts".<sup>6</sup> The rupee was an inconvenient unit of account and the coin itself unsuitable for the China trade. In the words of the Singapore Chamber of Commerce, the attempt to enforce the rupee as legal tender was "highly injurious to the commerce of the said Settlements, besides entailing considerable expense to the Government".<sup>7</sup> One important aspect of the attempted use of Indian coin, apparently neglected in the contemporary debate, was that it would have provided an interest-free loan to the Government of British India, equivalent to the amount of any Indian coin held in the Straits Settlements.

In 1867, the Straits Settlements became a Crown Colony separate from the Indian government. The new administration, based in Singapore, moved swiftly to discontinue the legal privilege of the rupee and in its stead bestow legal tender status on the silver dollars "issued from Her Majesty's Mint at Hong Kong, the silver dollar of Spain, Mexico, Peru and Bolivia and any other silver dollar to be specified from time to time by the Governor in Council".<sup>8</sup>

The mere conferring of legal tender status on silver dollars, however, did little to alleviate the scarcity of money