6 CONCLUSION: MONEY AND ASSET PRICES IN THE TRANSMISSION MECHANISM

Nowadays most accounts of the transmission mechanism of monetary policy give pride of place to the level of interest rates or even to only one interest rate (i.e. the central bank rediscount rate) as the economy's factotum. An alternative approach, building on the work of Irving Fisher, Patinkin and Friedman, sees expenditure decisions as motivated by individuals' attempts to bring actual money balances into line with the demand to hold them. Many introductory statements in this tradition focus on the effect that these attempts have initially on expenditure on goods and services, and eventually on the price level. They rely for their conclusions on two features of the adjustment process, the stability of the desired ratio of money balances to expenditure, and the distinction between the 'individual experiment' and the 'market experiment' in a closed circuit of payments where the quantity of money is kept constant. This paper has shown that the same sort of story can be told about asset markets, relying on the stability of financial institutions' desired ratio of money balances to asset totals and the invariance of the pool of institutional money balances as asset prices are changing. It follows that, when the quantity of money held by key players in asset markets rises or falls abruptly by a large amount, powerful forces are at work to increase or lower asset prices.

Of course, the notion of a closed circuit of payments – for

either goods and services or assets – is a simplification. In the real world, markets in goods and services are not separate from asset markets. If excess money leads to a rise in asset prices, almost certainly the rise in asset prices will influence expenditure on goods and services. As noted in Chapter 1, in his 1959 statement to the US Congress, Friedman compared the rounds of payments as agents seek to restore monetary equilibrium (i.e. the equivalence of the demand for and supply of money balances) to a game of musical chairs. In Chapter 3 of this monograph the venue for the game of musical chairs was the UK economy, including its asset markets. Moreover, because of the availability of sectoral money supply data in the UK since 1963, it has become possible to say more about the identity and behaviour of the main players in the game. Three types of player in the UK in the 40-year period under review were individuals as such, companies and financial institutions. Companies and financial institutions were particularly active in asset price determination. It has been shown that the corporate and financial sectors' money balances were consistently more volatile than personal-sector money, and the volatility in their money holdings was reflected in asset prices. The relevant quantity of money here has to be an all-inclusive or broad money measure, partly because, in modern circumstances, agents managing large portfolios do not have significant note holdings.

Very high growth rates of broad money were therefore responsible for the asset price exuberance in the upturn phase of both the Heath–Barber boom in the early 1970s and the Lawson boom in the late 1980s, and subsequent very sharp declines in broad money growth were responsible for the asset price busts that followed. It has been possible to give an account of events with only an occasional reference to interest rates. Changes to expenditure on goods

and services, and decisions to buy and sell assets, could be interpreted as responses to excess or deficient money holdings, not to the putative effect of an interest rate on investment or stockbuilding. In the same spirit as the 'monetary' view espoused by Friedman and Meiselman back in 1964, the adequacy of agents' money holdings impinged on a very broad 'range of assets' and affected a very wide range of 'associated expenditures'.

The phrase 'too much money chasing too few goods' has been used to characterise an economy suffering from inflationary pressures and it does indeed convey the essence of the transmission mechanism as seen by Fisher, Patinkin and Friedman. The phrase 'too much money chasing too few assets' was used during the Heath–Barber and Lawson booms in the UK, and again captures the spirit of the analytical sketch of asset price determination set out in this paper.[1] But in truth the right phrase is 'too much money chasing too few assets and too few goods', because asset markets are linked with markets in goods and services. One puzzle about the period discussed in the paper is that, while the Heath–Barber boom demonstrated the power of excess money growth to disturb asset markets and cause inflation, an essentially similar sequence of events was played out less than twenty years later with equally disastrous results. The puzzle is heightened by the apparent commitment of the Conservative government

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[1] The author used the phrase 'too much money chasing too few assets' in a newspaper article in *The Times* of 9 January 1986, in a reaction to the recent sharp upturn in money supply growth. But it was recognised that inflation was not imminent. Immediately after the mention of money and assets, the comment was, 'But it is nonsense, while unemployment remains above three million, industry has abundant spare capacity and there is scope to increase output, to say that "too much money is chasing too few goods".' (The article, 'Why Lawson must repent', was reprinted as 'A forecast of a Lawson mini-boom', in Congdon, *Reflections on Monetarism*, pp. 123–5.)

from 1979 to 'Thatcherite monetarism', including a medium-term financial strategy that was intended to outlaw excessive money supply growth. Just as 'monetarism' had developed in the 1970s by the import of largely American ideas, so the abandonment of the monetary element in that strategy reflected the influence of fashionable academic thinking on the other side of the Atlantic.[2] The decline in academic interest in 'the real-balance effect' (or whatever short phrase best denotes the genus of the transmission mechanism described in this paper) was basic to understanding official decisions and their often catastrophic consequences.

Admittedly, much of the account here has taken narrative form and suffers from the possible risk of being too selective with facts and figures. Two econometric exercises have been undertaken to address this weakness. In the first, changes in a composite asset price index are regressed on changes in non-personal broad money (i.e. the M4 balances held by the financial and company sectors combined), and in the second, changes in real private domestic demand are regressed on changes in real non-personal broad money. (Note that private domestic demand is the correct measure of demand for the purpose. Government spending must be excluded, because government spending is not sensitive to money holdings; exports must be excluded, because they reflect demand conditions elsewhere in the world.) The results – which are reported in the annex to this chapter – suggest that non-personal money holdings did have a significant effect on both

2   Minford attributes his own thinking on money – particularly his view that bank credit, bank deposits and the banking system are irrelevant to macroeconomic outcomes – to an American economist, Eugene Fama, and especially to two papers written by Fama in 1980 and 1983. See Minford, *Supply Side Revolution*, p. 73, and Minford, *Markets not Stakes*, p. 103.

asset prices and expenditure.[3] In short, the UK's boom–bust cycles in the closing four decades of the twentieth century reflected extreme fluctuations in money supply growth. Excess money was accompanied by asset price buoyancy, and provoked both above-trend growth in demand and exchange rate weakness. The eventual result was higher inflation. Similarly, deficient money was associated with asset price declines and slowdowns (or even contractions) in demand.

As shown by the review of US and Japanese experience at very different stages of the twentieth century in Chapter 4, the same sort of analytical framework can be readily applied to other nations at other times. In our discussion of the asset price oscillations that accompanied the Great Depression in the USA and preceded the Japanese malaise in the late 1990s, it has been essential to refer to an all-inclusive (or 'broad') measure of money. Several leading economists believe that narrow money measures are more useful and reliable in interpreting the behaviour of demand than broad money measures, with some even seeing a connection between the monetary base alone and macroeconomic conditions.[4] But in advanced industrial nations significant wealth-holders do not even consider notes and coin when reviewing

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3   According to one analyst highly critical of the role of the money supply as policy guides, the results of his work showed that 'money holdings of OFIs might be the best leading indicator of money income of all the monetary variables', although qualifying this by noting that in Q2 1990 his equation over-predicted the OFIs' money holdings. He appeared not to entertain the possibility that the under-prediction relative to the equation indicated that the OFIs were short of money balances, and that this might affect future asset values and the economy (Garry Young, *The influence of financial intermediaries on the behaviour of the UK economy* [London: National Institute of Economic and Social Research, Occasional Papers no. 50, 1996], p. 97).

4   To be specific, Minford and McCallum favour the monetary base as a measure of monetary conditions, and Meltzer favours M1.

portfolios and taking major investment decisions. Nowadays all meaningful transactions in assets are conducted, and have long been conducted, by means of payment instructions against bank deposits. In practice, even time deposits can be easily mobilised by a phone call to one's bank manager. The claim that companies, financial institutions and wealthy individuals balance monetary base assets against non-monetary assets, and that they ignore bank deposits, is preposterous. The truth is instead that agents in control of large asset pools are hardly aware of their note and coin holdings, if indeed they have any at all. What matters to them in their portfolio decisions is their overall liquidity (i.e. the assets that can be moved quickly and at little cost, to effect purchases of less liquid higher-return assets). Moreover, bank deposits – and usually time deposits – are much the largest component of such liquidity totals. Keynes, in both his two classics, *The Treatise on Money* and *The General Theory of Employment, Interest and Money*, and Friedman and Schwartz, in their *Monetary History of the United States*, favoured money measures that included *all* bank deposits (meaning demand *and* time deposits), although in some circumstances they saw the virtues of a yet wider measure embracing other liquid assets. This support for broad money measures can be interpreted as part and parcel of a wider vision of how a modern economy works. In that vision money affects business activity largely through its effects on wealth portfolios and asset values.

The behaviour of the quantity of money, on the broad definitions, was fundamental to understanding the UK economy's changing cyclical fortunes over the 40-year period examined in this study, the stock market crash and the associated macroeconomic trauma in the USA between 1929 and 1933, and the stock

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market boom and bust in Japan in the late 1980s and early 1990s.[5]
The behaviour of the quantity of money, on the broad defini-
tions, will remain fundamental to understanding the behaviour of
market economies in future.

Annexe

This paper has argued that the behaviour of the quantity of

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5   An anonymous referee has wondered whether the asset price excesses seen in
     economic history (the tulip mania, the South Sea bubble, etc.) are also to be ex-
     plained in money supply terms. Of course, this is an enormous question, related
     to the much debated topic of the relative importance of real and monetary forces
     in business cycle fluctuations. The difficulty with identifying a link between the
     money supply (understood as a concept with a significant component in the form
     of bank deposits) and asset prices before the thirteenth and fourteenth centuries
     is that the banking system was embryonic. Of course, in the absence of banks,
     the money stock was dominated by the precious metals, not by bank deposits.
     Later the problem changed. Even when banks started to become common, mean-
     ingful data from which estimates of the money supply could be prepared were
     rare. Such data were first published in most countries only in the late nineteenth
     century. Even in the late medieval period, however, it is possible to find several
     historical episodes in which the collapse of proto-banks was associated with asset
     price weakness and depressed output. See, for example, ch. I, 'The Great Crash of
     1343–46', in Carlo M. Cipolla, *The Monetary Policy of Fourteenth-Century Florence*
     (Berkeley: University of California Press, 1982), pp. 1–29. After describing the loss
     of bank deposits between 1343 and 1346, Cipolla noted (on pp. 13–14) that not
     only had the market in public debt plummeted, but '[m]ore telling was the col-
     lapse of real estate values ... [P]rices of real estate in the city fell by about 50 per
     cent, and in the country property fell by about a third, and still "no buyer was to
     be found"'. One of the great achievements of Irving Fisher's *The Purchasing Power
     of Money* (1911), as discussed in Chapter 1, was to assemble data on the quantity of
     money and the price level of goods and services in many countries and over sev-
     eral long periods. Its ambition was remarkable, including a Figure 10 in Chapter
     XI (on 'Statistical verification: general historical review') on prices going back to
     AD 800! 'According to the diagram prices are now about five times as high as in
     the period between 1200 and 1500 AD' (p. 234). But Fisher could not put together
     data on asset price movements as well, not least because organised asset markets
   are a relatively recent innovation.

money, broadly defined, was fundamental in explaining cyclical fluctuations in the UK economy in the closing four decades of the twentieth century. It has focused, in particular, on the money balances of financial institutions and companies, because of their special relevance to asset price determination.

Figure 4 (see p. 60) showed the relationship between annual changes in the sum of non-household M4 balances, and annual changes in a composite price index, using quarterly data. The composite price index was estimated with three components, the FT Industrial Ordinary Index (for share prices), the Nationwide house price index (for house prices) and the Hillier-Parker index of commercial property values (for commercial property). The weights were 40 per cent for both share prices and house prices, and 20 per cent for commercial property prices. The FT Industrial Ordinary Index is available back to 1935 and the Nationwide house price index to 1954. The commercial property component in the 1960s was less satisfactory as the Hillier-Parker index started in 1972. For the early years it was constructed by assuming that it behaved in the same way as an equally weighted combination of share and house prices.[6] An equation regressing the asset price index on non-household money was estimated and is reported below.

$$\text{Change in composite price index } \% = 2.97 + 0.42$$
$$(\text{Change in non-household money}) \%$$

6   Mr Richard Wild of the Office for National Statistics helped in the preparation of the composite asset price index.

Figure 15 **Money and demand in the UK, 1964–2002**
Annual % changes in real private domestic demand and sum of real financial and corporate money balances, quarterly data
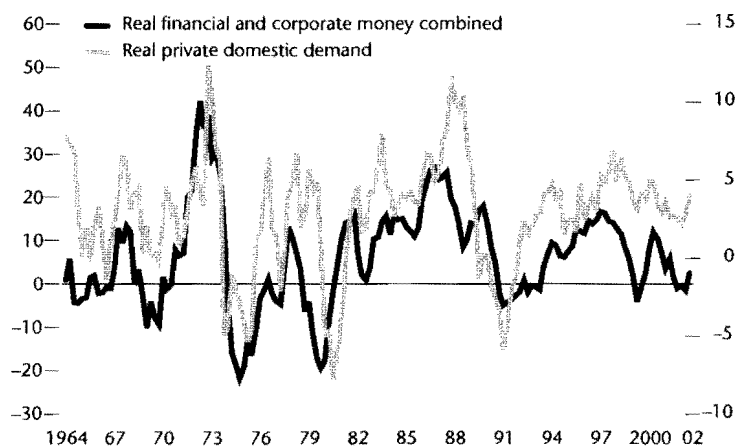
Source: National Statistics website and author's calculations

r squared	0.25
Standard error of equation	8.09
Standard error for intercept term	1.02
Standard error of regression coefficient	0.06
t statistic for intercept term	2.92
t statistic for regression coefficient	7.24

Figure 15 shows the relationship between annual changes in the sum of M4 balances held by financial institutions and companies in real terms (where the GDP deflator was used to make the adjustment from nominal to real terms), and annual changes in private

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domestic demand, also in real terms, and (as with Figure 4) using quarterly data. An equation relating the change in real demand to the change in real non-household money was estimated and is reported below.

Change in real private domestic demand (%) = 1.74 + 0.174
(Change in non-household money, in real terms) %

r squared	0.32
Standard error of equation	2.99
Standard error for intercept term	0.27
Standard error of regression coefficient	0.02
t statistic for intercept term	6.39
t statistic for regression coefficient	8.43

Note, from the regression coefficients in the two equations, that fluctuations in non-household M4 had greater amplitude than those in asset prices, and that asset prices were more volatile than real private domestic demand. It has been necessary – in Figure 15 – to have two axes on different scales to capture this difference in volatility.