

Financial Innovation and Monetary Policy: Italy *versus* the United States *

1. Introduction

The main purpose of this paper is to summarize and compare the recent process of financial innovation, and its implications for monetary policy, in Italy and in the United States. Financial innovation and deregulation has become a widely discussed topic in many countries in recent years, and especially in the United States a substantial body of literature has already emerged. So far the consensus has been reached only on very broad first principles: financial innovation is a dynamic process (not a once-for-all change) occurring in most countries but with pronounced differences across countries and times. At any time and in any country these developments reflect different *causes* and give rise to different *effects*. In the United States recent discussions have focussed on the extent to which financial innovation has presented problems for the monetary authorities. It is commonly maintained that high and volatile interest rates have led to financial innovation — and deregulation — that has reduced the effectiveness of monetary policy (at least by increasing the uncertainty which constrains policymakers). But a few economists would maintain the opposite: in recent years it was not financial innovation but a destabilizing monetary policy which caused volatile money growth and interest rates (Pierce 1984). While the debate has focussed on monetary policy, new theoretical models have also been developed,¹ in line with Tobin's (1983a, p. 162) suggestion that "monetary theory will have to be rewritten".

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¹ See SANTOMERO-SIEGEL (1981), WITTE (1982), HADJIMICHALAKIS (1982, 1984), BENAVENTE-FROYEN (1982). SMITHIN (1984) discusses some areas of monetary theory which require significant modifications due to the payment of interest on "money".

Unfortunately, all U.S. literature — with the notable exception of Howard-Johnson (1982) — ignores the lessons that can be learned from foreign experience. This limitation is particularly damaging if one were to accept the view — which is proposed in this paper — that the substantial differences observed in the course of financial innovation in many countries are largely due to a process in which very different financial systems converge towards a broadly similar structure. While this argument can be applied to several countries, it is here limited to a comparison of Italy and the United States. Up to few years ago, these two countries had very different financial systems, regulations, and monetary policy *modus operandi*. But recent financial changes have already substantially narrowed those differences and this trend is expected to continue. In the last few years, the United States has been adopting some of the traditional Italian features while Italy has “imitated” what used to be typical U.S. characteristics. Therefore, while the *changes* are quite different, the *result* will be very similar; and a comparative analysis is thus instructive for both countries.

2. A Trend Towards Convergence

2.1. Recent Changes in the United States

Three major changes that have occurred in recent years are drastically altering the U.S. financial system.

1) Market-determined interest rates, for both the assets and the liabilities of financial institutions, originated first with financial innovation — when new market-rate-yielding close substitutes to bank deposits were introduced — and later by interest rate deregulation. Even the components of narrow monetary aggregates have started to bear explicit interest rates and their demand could thus be influenced by saving and portfolio decisions.

2) Competition within the financial industry has been increased by the blurring of the traditional distinctions between financial institutions — banks and thrifts — first on the liability side and later also on the asset side of the balance sheet.

3) Finally, a closer integration of all financial markets is being spurred by the trend towards national (interstate) banking, which has accelerated in recent years² and is expected to continue, possibly through an intermediate phase of regional compacts. This trend also implies a substantial consolidation of many small local banks. And, in fact, concentration (of both deposits and assets) has already started to increase in recent years, reversing the trend towards lower concentration that prevailed in the postwar period.

The end-result of these major changes should be a financial environment characterized by the absence of interest rate ceilings, and by a more concentrated nationwide banking system composed of more homogeneous financial institutions. It is widely held that it will be a more efficient financial system,³ but possibly less stable and/or less amenable to monetary policy's effectiveness.

2.2. Italy's Banking System in the 1970s

The absence of interest rate ceilings on bank deposits, a relatively concentrated nationwide banking system, and a declining degree of specialization between banks and thrifts are precisely the three main characteristics of the Italian financial system which were already well established by the end of the 1960s. And in the following decade Italy did experience persistent two-digit inflation and a weakening in the effectiveness of monetary policy. Therefore, it is interesting to consider the Italian experience during the 1970s from the following point of view: to what extent can one attribute to those characteristics of the financial system the difficulties that confronted the authorities in controlling the growth of monetary aggregates?⁴ And more specifically, was it the absence of interest rate ceilings that caused the difficulties in controlling the monetary aggregates?

² That the trend towards national banking is favored by the Federal Reserve can be gauged from SOLOMON (1984), PARTEE (1984), and WALLICH (1984). However, SEGER (1984) also suggests that Congress should prevent a continuous increase in aggregate concentration (share of the largest banking organizations).

³ This case has not been directly proved but there is an extensive literature that indicates that the previous system was very inefficient. See BOYD-KWAST (1981) who conclude, however, that a piecemeal approach to regulatory reform could be counterproductive.

⁴ We are not considering here the many advantages that a nationwide and homogeneous banking system can provide on other grounds, for instance, in terms of a simpler and uniform regulatory and supervisory structure. It has also been noted that a concentrated banking system should improve controllability of the money stock, see LADENSON (1984).

Earlier research on money demand functions⁵ seemed to indicate that even in the case of broad (M2) monetary aggregates, unexpected shifts in the demand for money would occur over time. In fact, even perverse results could obtain, with the demand for money *rising* in line with market rates! It was against this background that the Italian monetary authorities decided to target credit aggregates and made recourse to a progressively more sophisticated system of direct credit controls. They made the basic assumption that the demand for money was too unreliable a basis for quantitative monetary targets and that some restraint on monetary growth could be enforced indirectly through controls on the asset side of the banks' balance sheet.

However, this account of the experience during the 1970s is incomplete if two other specific factors are not considered. During most of the 1960s, monetary policy in Italy had largely consisted of a policy of stabilizing ("pegging") long-term interest rates. This policy was suspended in 1969 and finally abandoned after 1973. As a consequence of that policy, the private sector had accumulated a substantial portfolio of long-term securities, whose liquidity was effectively guaranteed by the authorities' pegging policy. On the other hand, no money market had developed: bank deposits were held for both transaction and precautionary motives and there was no need for other close substitutes to bank deposits. When the pegging of long-term rates was abandoned, the private sector was, therefore, caught in a situation in which only two financial assets were available: bank deposits and bonds the latter returning to a more normal situation in which changes in interest rates could lead to portfolio risks. It is therefore not surprising that a rise in long-term interest rates could lead to money demand instability. In fact if a change in interest rates were to raise expectations of further similar changes, the speculative motive would prevail and the private sector would increase its demand for money in line with the rise in market rates. To the extent that the increase in the general level of interest rates would eventually reduce nominal income, the monetary aggregates would then resume their normal behavior and therefore maintain a negative long-term relationship to market rates. But in the short run, velocity could be very unstable and control of money correspondingly difficult. In sum, most of the problems that limited monetary policy's effectiveness in Italy in the 1970s and that prevented close control of

monetary aggregates were due to the change in policy regime, in which pegging of long-term rates was abandoned, together with the absence of a broad range of financial assets. The lack of alternatives to either bank deposits or long-term bonds meant that portfolio choices could abruptly shift into or out of money depending not only on the current interest rate differential (between the own yield on money and the long-term interest rate) but also on its expected development. The typical Keynesian interpretation could therefore be advanced:⁶ instability in the demand for money can originate when speculative effects overcome the effects due to changes in the opportunity cost of holding money. On the other hand, the break in the spectrum of financial instruments — *i.e.* the absence of alternative short-term financial assets for either bank deposits and long-term bonds — was due to the previous policy of pegging long-term rates, as well as to the absence of deposit rate ceilings.

The typical demand for money function for that period would have had the form of:

$$(1) \quad m^d = a_0 + a_1 y - a_2 (i_B - i_D) + a_3 \Delta i_B^e + a_4 m_{t-1}$$

where m are real money balances, y is real (permanent) income, i_B is the yield on long-term bonds and i_D is the yield of money. An expected increase in i_B could raise m^d (through a_3) more than the actual increase in i_B would lower m^d (through a_2). On the other hand, the demand for money will not change with any change in i_D in line with a change in i_B (with an unchanged interest rate differential).

This situation was gradually remedied after the mid-1970s. Financial innovation then largely consisted in the development of a sizable money market, because a large part of the Government deficit was financed through the issue of short-term (3 to 12 months) Treasury Bills, which by the late 1970s had come to represent a significant share of the private sector portfolio. And in line with these changes the behavior of money demand functions became more stable.⁷ The demand for bank deposits became more related to the transaction motive for holding money, given the fact that Treasury Bills could provide the liquidity services required for precautionary and speculative

⁵ See VACIAGO (1973).

⁶ See VACIAGO (1977). A case in which the stock of bank deposits increases when the central bank reduces the supply of reserves was already examined in KAREKEN (1967).

⁷ See VACIAGO-VERGA (1982).

motives. At the same time, the shift of Treasury Bills out of bank portfolios added to the controllability of the money supply. In fact, the reduced stock of liquid assets in bank portfolios made the expansion of bank loans more directly dependent on the growth of the monetary base. By the end of the 1970s, therefore, both the monetary base multiplier and money velocity had become much more stable, and predictable, than they had been in the previous decade. In comparison with eq. (1) above, the typical demand for money function by the end of the 1970s would have changed into:

$$(2) \quad m^d = a_0 + a_1 y - a_2 (i_B - i_D) + a_3 \Delta i_B - a_4 (i_S - i_D) + a_5 m_{t-1}$$

where i_S is the yield on Treasury Bills. There is evidence for a smaller influence of a_2 and a_3 , in line with the growing role of short-term assets (Treasury Bills) in private sector portfolios; and of a smaller a_5 (in line with more rapid portfolio adjustments).

One could summarize these developments by noting that while in the United States the deposit rate ceilings still prevailing in the 1970s led to the introduction of market-rate-yielding close substitutes to bank deposits that reduced the previous stability of money demand, the opposite occurred in Italy. It was the development of the money market that led to more stable demand for money functions. And in Italy explicit monetary targets were only adopted in 1984, given that further changes in the financial system (which will be discussed presently) were further stabilizing money velocity. While the opposite had occurred in the United States, with a more rigorous monetary targeting since October 1979 being followed by a wave of deregulation that affected M1 velocity.

2.3 Recent Changes in Italy

We have already noted how the development of a money market in Italy acted to stabilize the demand for money function in the late 1970s. One further aspect that should be noted has to do with the opportunity cost of holding money. It is held⁸ that in the absence of deposit rate ceilings, the equilibrium own rate of money will be jointly determined

⁸ See TOBIN (1983a).

by the demand for money, dependent on the interest rate differentials as in eq. (2), and by the supply of deposits which a competitive banking system will make perfectly elastic at the interest rate differential that meets the costs of intermediation. It is because of this assumption that the conclusion has been reached that monetary policy cannot alter the opportunity cost of holding money (the interest rate differential will not change since the own rate on money will change in line with market rates) and thus cannot affect monetary aggregates and, through them, nominal income. What can be learned on this point from the Italian experience? Was the absence of deposit rate ceilings enough to lead to this result? A negative answer can be derived for two basic reasons.

First, notwithstanding the two features that were already noted at the beginning of this paper, *i.e.* nationwide banking and very little distinction between banks and thrifts, competition for deposits in Italy was actually restrained during most of the 1970s by the authorities' policy of credit ceilings. Since the most dynamic banking organizations were not allowed to grow in relative terms, they had little incentive to compete aggressively for funds. In fact, interest margins were trending upwards for most of the period. Second, the absence of interest ceilings on demand deposits effectively prevented the issue of negotiable CDs. In the Italian experience, the banks would typically price their deposits according to the size of average balances. The market was therefore nicely segmented: only the large (mostly corporate) customers would get yields on bank deposits competitive to market rate;⁹ households and small-size firms (especially outside the main metropolitan areas) would get much lower rates. These characteristics were accentuated after 1979 when monetary policy became progressively tighter. In fact, the interest rate differentials which are relevant in the demand for money function (see eq. (2)) widened substantially, and even more so if the largest deposits are excluded. In sum, two aspects should be noted. First, the practice of pricing by the size of money balances reduced the incentive for the largest corporations to adopt cash management techniques to minimize their balances. Second, the limited competition for bank deposits meant that deposit rates were somehow "administered prices" and therefore average rates were sticky, at least in the short run. But

⁹ Most large Italian firms will have relationships with several banks and therefore be in a favorable position against each of them. These aspects are examined in detail in VACIAGO (1985).

rising interest margins¹⁰ have in recent years given a strong incentive to the corporate sector to more effectively manage both its money balances and short-term credit. In fact, there is evidence¹¹ that, in recent years, even the interest differential between the yield on money and the rate on bank loans has had a significant impact on the demand for money.

Against this background we can consider what are the causes, and the likely effects, of financial changes now underway in Italy. Financial instruments and techniques which were already standard in the United States in the 1960s are now being adopted. It is ironic that some are being promoted by the monetary authorities, whereas in the United States they used to be considered as ingenious ways developed by the marketplace to overcome previous regulations. It is also to be noted that in the United States the opposite is occurring now. A typical example is the declining share of negotiable CDs that has recently occurred in the United States, given the expansion — at the large banks — of the new interest-bearing deposit instruments (MMDAs).¹² One of the most noticeable changes in Italy has in fact been the introduction of bank CDs in 1983. And in the previous two years a sizeable market for repurchase agreements (Treasury paper sold spot and bought forward by the banks from their customers, mostly corporate but in some cases also wealthy households) and for bankers acceptances had developed. The development of bank CDs has been explicitly favored by the Bank of Italy,¹³ in order to increase the flexibility of short-term interest rates and to differentiate transaction balances from time deposits. This policy is in line with the abolition of credit ceilings in 1983; with the explicit M2 target adopted from 1984 onwards; and with an increasing reliance on open market operations as the normal instrument to implement monetary policy. At the same time, computer technology and other techniques are developing fast to make feasible cash management — and in fact a broader portfolio management — by the corporate sector. Along with these new financial instruments and techniques, the depth of the financial markets, both at the short- and at the long-term end, is being enhanced by the introduction of new intermediaries: in 1984,

¹⁰ Which are also determined by the burden of reserve requirements, which have been gradually increased in Italy from 15% to 25% (marginal rate) on all (demand and saving) deposits of banks and thrifts. An interest rate of 5.5% is paid on required reserves.

¹¹ See VACIAGO-VERGA (1982).

¹² One could argue that rates on the new MMDAs will be more sticky — *i.e.* less market-determined — than rates on CDs which are marketable short-term financial assets.

¹³ The expansion of the CDs has so far remained modest given that the only incentive is a higher (9.5%) yield on their required reserves.

investment funds and money market mutual funds began to operate, and in 1986 merchant banks and investment banks (which Italian banks will be authorized to operate through affiliates) should start their activity. Again, these changes¹⁴ have been favored by the monetary authorities both to reduce the firms' reliance on bank credit and to diversify the private sector portfolio of financial assets away from bank deposits.

In conclusion, the pace of financial innovation has accelerated in Italy in recent years, spurred by both a restrictive monetary policy and by changes favored by the monetary authorities to make monetary policy, and targeting, more effective. In the following section we discuss the main implications for monetary analysis and policy of these changes, compared with the ones that have been occurring in the United States during the same period.

3. Implications for Monetary Analysis and Policy

The recent financial changes experienced in the United States and in Italy have one factor in common: both have occurred in a period (post-Autumn 1979) in which there has been a change in policy regime. The persistence of a non-accommodative stance by the monetary authorities has in recent years replaced the previous policy regime characterized by a more permissive stance interrupted by occasional "crunches". To the extent that this change in policy regime has altered the behavior of the private (financial and non-financial) sector¹⁵ — as one would expect according to the "Lucas critique" — it is more difficult to independently assess the actual implications of changes in the financial system. Apart from this common factor, recent financial changes in the two countries have taken opposite directions. In the United States, the reduction (and eventual elimination) of interest rate ceilings should prevent the occurrence of bank and thrift disintermediation. In fact, recent changes have enhanced the role of these institutions.

¹⁴ Even deposit insurance has now been proposed in Italy, and should be adopted in 1986.

¹⁵ For the argument that this change in policy regime has greatly increased the "credibility" of the monetary authorities, and thus persistently lowered inflationary expectations, see AXILROD (1985). A similar account could be written for the Italian case.

And this trend is expected to continue, along with the tendency towards nationwide banking and increased despecialization of banks and thrifts. The main problems which remain for discussion are the implications of these changes for monetary policy. The problems in the past associated with deposit rate ceilings have to be compared with the new problems posed by the elimination of those ceilings. *Mutatis mutandi* similar questions can be advanced for the Italian experience which has been quite different from that of the United States in recent years. In fact, recent financial changes have led to bank disintermediation, with the emergence of close substitutes to bank deposits and the birth of new and more specialized financial intermediaries.

It is customary to examine the implications of these changes in terms of the stability and slope of the demand for money function, given a monetary policy which is oriented to targeting the growth of monetary aggregates. The main problems to be considered are therefore the following:

1) For a financial environment characterized by the absence of interest rate ceilings and by greater competition among depository institutions, will the demand for money be more or less stable?

2) Will the slope of the demand for money function (its interest- and income-elasticities) be steeper or flatter? And, above all, with what degree of certainty can these changes be predicted?

One conclusion can already be anticipated: the answer to the first problem is probably easier (and more favorable to monetary policy's effectiveness) than the answer to the second problem. In the latter case, any conclusion that can be reached depends on a longer list of assumptions about the behavior of the banks (the supply side) and the likelihood that major changes in the transmission mechanism of monetary policy could develop.

Let us consider first what could be the easier problem, *i.e.* the question of money demand stability.

In the United States, major shifts in M1 demand in the past were associated with financial innovation linked to interest rate ceilings, *i.e.* to the emergence of market-rate-yielding close substitutes for bank deposits. And in the Italian case, during the 1970s shifts in money demand were due to the absence of short-term financial assets. Both problems having already been remedied, we should not expect any major instability originating in the future from these factors. What other

sources of money demand instability could emerge in the new financial environment? One possibility that has been advanced for the United States by Tobin (1983b) is to assume that the demand for money will be less dependent on the transaction motive and more affected by portfolio choices, the latter being less stable and/or less predictable. However, it is doubtful that such changes in the demand for money — due to shifting portfolio preferences between an *existing* array of financial assets — could in the future resemble the drastic shifts in money demand which originated in the past from the emergence of *new* financial assets. On the other hand, even the assumption that M1 demand will become more closely related to private sector wealth,¹⁶ does not necessarily lead to the conclusion that the demand for money will therefore become more volatile¹⁷ — even if it does pose new problems for monetary policy. Changes in wealth will affect money demand independently from income, and therefore alter velocity, but there are no *a priori* reasons for viewing these changes as entirely unpredictable. What is to be noted — and these are in fact the additional problems that would arise — is that any change in wealth originating from either monetary or fiscal policy will have to be taken into account in defining the necessary expansion of monetary aggregates. In a sense, this factor may further reduce the “independence” of monetary policy given that, for instance, the effects of an expansionary debt-financed fiscal policy on private wealth should be considered in estimating the quantity of money demanded at a certain level of nominal income. The same will apply to changes in private wealth directly or indirectly caused by monetary policy as in the case of changes in the market value of bonds and securities. To the extent that these effects are difficult to predict, the changes in M1 velocity will prevent a useful targeting of monetary aggregates.

However, a second and more damaging consideration has been suggested: with deposit rate deregulation — even if the volatility of money demand is lower — the risks, and the costs, of targeting monetary aggregates are greater.¹⁸ This conclusion depends on two

¹⁶ See SIMPSON (1984) and SIMPSON-PARKINSON (1984). The opposite view is maintained by JUDD (1983).

¹⁷ TOBIN (1983b, p. 514) bases the assumed greater volatility of money demand on the hypothesis that depositors will be less precise and prompt in moving funds between money and near-moneys. But one could maintain that in recent years depositors have in fact increased their responsiveness to market opportunities.

¹⁸ See HADJIMICHALAKIS (1982), (1984), and WENNINGER (1984).

further characteristics of the new financial environment. The first refers to the stability of the supply of bank deposits. With an exogenously given (and possibly zero) yield on bank deposits, it was assumed that banks would passively accept (supply) all deposits the private sector wanted to hold. It was therefore legitimate to estimate a demand function ignoring the supply curve, assumed infinitely elastic at the given rate on bank deposits. Once the yield on bank deposits is endogenously determined, not only the supply curve becomes relevant (both from an economic and econometric point-of-view), but another source of change in the monetary aggregates has to be taken into account. Changes in the conditions at which the banks supply deposits will alter both the money stock and interest rates and normally this will give conflicting information as compared with shifts in the demand for bank deposits.¹⁹ Changes in the degree of competition within the banking system, which are being experienced both in the United States and in Italy, could be reflected in these "supply shifts". The textbook assumption that a fully deregulated banking system would also be a perfectly competitive system could dispose of this argument. However, a more realistic assumption would be to consider that at least in the short run, many market imperfections prevent the system from being in a perfectly competitive situation. Therefore, we could experience a situation in which a long-run stable supply curve coexists with a short-run supply curve subject to shifts.

A similar story can be told for the slopes of the curves so far considered. Most of the literature examining deposit rate deregulation in the United States reaches the conclusion that the demand for money will be less interest elastic. And the income elasticity of money demand will rise compared with the preceding situation in which deposit rates were fixed (or zero).²⁰ The changes that have recently occurred in Italy should instead lead to the opposite results.²¹ In comparison with the previous situation, the rise of money substitutes should in that case increase the interest elasticity of the money demand function and lower its income elasticity. In fact, by removing deposit rate ceilings or by

¹⁹ HADJIMICHALAKIS (1984) explores in detail these cases. See also WITTE (1982).

²⁰ Of course, we are referring to the explicit rates paid on bank deposits. It has been maintained that significant "implicit" rates were always paid in the United States. See BARRO-SANTOMERO (1972), KLEIN (1974), RUSH (1980), and JUDD-SCADDING (1982). But in most cases "implicit" rates were at least sticky and usually zero at the margin. On the increased income elasticity see SIMPSON (1984) and WENNINGER (1984).

²¹ See COTULA (1984) and VACIAGO (1985).

introducing new money substitutes, we reach a situation in which money and the alternative short-term financial assets become *closer* substitutes than they were before. *Per se* this change should lead to a greater interest elasticity of the demand for money. On the other hand, to the extent that the own rate of money changes in line with the yield of alternative assets, the demand for money will become invariant (*i.e.* zero-elastic) to changes in market rates. It could be maintained that while the first effect is structural, and therefore permanent, the second effect (which again depends on the degree of competitiveness of the banking system) will prevail in the long run but could be weaker in the short run. Thus, the money demand function in both countries could exhibit a greater response to an interest rate differential between money and alternative assets that should be more invariant in the long run. In other words, the demand for money could be flatter in the short run and progressively steeper in the long run. Changes in market rates could therefore lead to temporary changes in money velocity which would gradually disappear over a longer time horizon.²²

The stability and the slope of the money demand, and supply, functions are the two major criteria by which students of financial innovation have defined the likely implications for monetary policy. One further consideration, which will presently be only sketched, would extend the analysis to other aspects of the transmission mechanism of monetary policy which are supposedly changing in line with recent financial changes. First, an explicit supply function for bank deposits cannot be independent from the bank supply of credit. And in fact, even the demand for money — if it is to be defined more in terms of portfolio choices — will reflect the equilibrium reached in the credit market. In the Italian case, in recent years, M2 demand has been found²³ to depend on the opportunity cost of holding money, broadly defined to take into account not only the yield on alternative assets but also the cost of alternative liabilities. In the United States the traditional neat separation between transaction and investment balances has led to the conclusion that there are two quite independent portfolio decisions. On the one hand, the choice was between money balances versus other

²² With a long-run steeper demand for money, monetary policy has a greater, direct, impact on income, but any instability in money demand (or supply) will also have a greater impact on income. This case has been strongly suggested by TOBIN (1983b) and HADJIMICHALAKIS (1984). However, both assume that the banking system is always on its long-run (perfectly competitive) supply curve.

²³ See VACIAGO-VERGA (1982).

investments in financial assets. On the other hand, corporations and households would borrow (either short or long-term) to finance their acquisition of short-term (inventories, consumer durables) or long-term (fixed capital) real assets. Recent changes that have occurred in both countries should tend to produce an intermediate situation by which more effective cash management should reduce the link between demand for money and bank loans in Italy, while the opposite could occur in the United States.²⁴ Only if a perfectly competitive banking system could always maintain a constant interest margin (the positive difference between loan and deposit rates), could this factor be ignored. But recent experience does not confirm this hypothesis. Therefore, one should conclude that the credit market would need to be more explicitly linked to the money market, and not so cavalierly treated as simply a part of the "helicopter" from which changes in the money supply drop down to the economy.

Finally, another aspect of the transmission mechanism of monetary policy has been changing in recent years. Credit rationing has become less important,²⁵ while variable interest rate loans and mortgages have increased substantially. These changes are associated with an increased importance of price consideration in the allocation of credit (nonprice credit rationing being the exception and not the rule) and with a greater flexibility in loan rates. The implications of these changes can be manifold. First, the reduced importance of credit availability should alter the sectoral impact of monetary policy.²⁶ Second, it could affect the demand for money. In fact, at least part of the precautionary demand for money can be related to the ability to borrow in case of an unexpected need for cash. If it is known that credit "crunches" (in the sense of effective credit constraints) will not occur, a portfolio of precautionary liquid assets could in part be replaced by credit lines. Third, the absence of credit rationing and the increased role of short-term (floating rate) credit should lengthen the lags through which

²⁴ This conclusion would be reinforced by the spreading in the United States of overdraft facilities which traditionally have represented in Italy the major part of bank loans.

²⁵ See SIMPSON-PARKINSON (1984).

²⁶ See SIMPSON-PARKINSON (1984). Credit availability would typically affect housing and consumer durables. These sectors will now be less directly affected. On the other hand, the Italian experience indicates that monetary tightening — which is made effective by the various interest rate differentials — is impacting more on small business than on large corporations. The latter pay the minimum rates on their bank loans and receive the highest rates on their balances. In recent years these different effects have been very pronounced: monetary tightness has altered the traditional comparative advantage of small business.

monetary policy effects are transmitted to the economy. In fact, in the past both credit rationing and the prevalence of fixed-rate loans and mortgages²⁷ meant that spending would have been postponed when credit was not available or when its cost was expected to decline thereafter. At the same time, an increase in interest rates would not have affected previous borrowers (that is, the stock of debt outstanding). In the new financial environment the effects are spread more rapidly on all borrowers but the disincentive to new borrowing is reduced. What we have already seen for the interest elasticity of the demand for money could therefore be repeated for the interest elasticity of expenditures. One can either say that the effects will be greater but with longer lags, or that the elasticity will be reduced in the short run and greater in the long run (the IS curve being steeper in the short run and flatter in the longer run).

In sum, if the analysis is limited to those aspects which are more directly relevant to monetary policy,²⁸ one major conclusion is that the likely shifts in the real as well as in the financial sector are making monetary policy (and targeting) less effective in the short run but more effective in the long run. In fact, in the short run, the flexibility of the deposit interest rate will absorb most of the impulses transmitted by the monetary policy instruments while the reduced interest elasticity of the IS curve will limit the impact on income. In the long run the opposite would obtain: a steeper LM curve will be confronted with a more elastic IS curve, these being the traditional conditions for a more effective monetary policy.

4. Conclusions

Students of financial innovation have come up with very bold — and sharply contrasting — forecasts on the final outcome of the financial changes under way. On the one hand, a moneyless economy is

²⁷ WOJNLOWER (1980, p. 295) refers to a "deterrent effect" that is associated with fixed-rate credit. This effect would be lost with floating rates. On the steeper IS curve due to the reduced role of credit rationing, see LOMBRA (1984).

²⁸ An aspect which has not been considered is the likelihood that in the new financial environment the intermediaries would accept (or be exposed to) greater risks, thus weakening the stability of the system. See GRAMLEY (1982). However, it should be noted that in recent years the banks have taken a more conservative approach towards risk, for instance, by extending the matching of maturities of assets and liabilities.

envisioned, due to the progress of financial technology in reducing transactions costs.²⁹ Therefore, monetary policy would become obsolete. On the other hand, because market-related interest rates are now paid on bank deposits, the reduction in the opportunity cost of holding money should prevent economic agents from employing real resources in order to economize on cash balances. Therefore, the economy should reach Milton Friedman's "Optimum" quantity of money. In this environment monetary policy would be more potent than ever. With the benefit of hindsight it can be concluded that up to now (and for the foreseeable future) the offsetting effects of reductions in transactions costs *and* in the opportunity cost of holding money have prevented a major breakdown in the relationships between monetary aggregates and economic activity.

From a comparative analysis of recent financial changes in Italy and in the United States, the following conclusions emerge. It will take time before the difference between M1 and M2 disappears in the United States. Reserve requirements and the costs of transaction deposits should maintain a close relationship between transaction balances and economic activity. However, to the extent that all bank deposits pay market-related interest rates, demand for money functions may require an additional set of explanatory variables: namely, wealth and other interest rates in addition to the short-term rates traditionally considered. On the other hand, short-run changes in the relevant interest rate differentials may lead to an interest rate elasticity which is declining in the long run. The "leading indicator" property of transaction balances may be limited to the short run, but at the same time monetary policy's effectiveness may be greater in the long run. Monetary targeting could remain feasible, and in fact relevant, but the appropriate short-run/long-run trade off would become more important. If these aspects are ignored, monetary aggregates could become "misleading" indicators.

In the Italian case it will take time before any significant difference emerges between M1 and M2. Given that the same reserve requirements apply to all bank (and thrifts) deposits, and that the banks have not traditionally differentiated markedly the pricing of the various kinds of deposits, monetary targeting remains significantly applicable only to M2. A target for M2 — an aggregate which basically corresponds to the

²⁹ See NIEHANS (1982). The basic assumption is that monetary policy is effective because financial markets are not perfect. In fact, the very existence of money depends on market imperfections (transactions costs and the like). See also DAVIS (1982).

entire balance sheet of the banking system, and not only to its most liquid liabilities — has further implications on the structure of the financial system. In the Italian case in recent years, it has meant that bank intermediation was constrained to grow in line with nominal income, any further expansion of the financial system being left to other intermediaries. This structural aspect reinforces one characteristic of targeting a broader (M2) aggregate that is also relevant from the point of view of stabilization policy: the approach is more significant in a medium-term framework, and the annual targets for M2 tend to be defined taking into account both the goal for nominal income and the projected values for the entire flow of funds.

Ancona

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