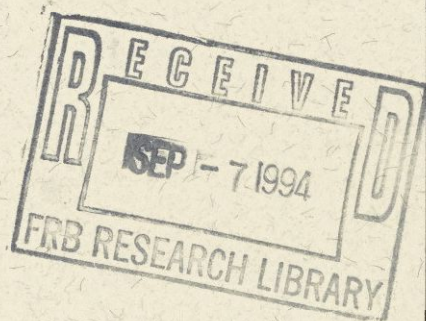


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Federal Reserve
Bank of Atlanta



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and the Welfare Cost of Inflation**

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Bank of Atlanta

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Federal Reserve Bank of Atlanta *Economic Review*
May/June 1994, Volume 79, Number 3

1 Changes in Payments Technology and the Welfare Cost of Inflation **William Roberds**

Two of the primary responsibilities of a central bank such as the Federal Reserve are to provide ready access to an accepted medium of exchange (central bank money) and simultaneously to maintain the value of that money—that is, control inflation—by regulating its supply. Bank reserves form the crucial link between these responsibilities. According to this article, developments in payments technology are causing fundamental changes in the market for bank reserves. Such changes, the author argues, could ultimately affect monetary policy decisions, particularly through their potential to alter the allocation of costs associated with inflation.

The article first discusses the ways in which technological advances and regulatory changes have reduced banks' demands for non-interest-bearing reserves. The discussion then considers the reduced incidence of the "reserve tax"—the cost of holding non-interest-bearing reserves—and its effects on the distortionary costs of inflation. The author proposes that some type of explicit interest paid on reserves would eliminate these distortionary effects but points out the need for further study on the best way to implement this practice in real-world monetary policy.

13 ***Intervention in Credit Markets and Development Lending***

Aruna Srinivasan

Government-run credit allocation programs are widespread in developing countries, but problems plaguing such programs raise the question of whether government intervention is effective. This article examines arguments for government credit market intervention that take into account information imperfections and enforcement problems in these markets.

The author analyzes the significant features and the regulation of credit markets in low-income countries and discusses the implications for U.S. markets. She finds that neither theory nor experience suggests that government interventions through conventional commercial bank systems have been very effective. The article also analyzes alternative or nontraditional lending programs in low-income countries as well as existing community development banks and loan funds in the United States. Although alternative schemes have been successful at overcoming conventional banks' problems of information imperfections and enforcement, the high costs that alternative programs typically incur may outweigh their benefits. These results imply that the government may have a role as organizer and catalyst in the formation of alternative lending institutions.

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Jerry J. Donovan

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Changes in Payments Technology and the Welfare Cost of Inflation

William Roberds

Central bank responsibilities include both maintaining the integrity of the payments system and implementing monetary policy. Traditionally these functions have been viewed as somewhat separate and distinct. Most college-level money and banking courses, for example, treat these areas of responsibility as unrelated topics. Scholarly or journalistic explorations of monetary policy-related issues typically either ignore or gloss over policy issues dealing with the payments system, and vice versa.

Of course, the connection between monetary policy and the payments system is no secret. Among market observers and academic specialists, it is widely known and appreciated that bank reserves form the crucial link between these two arenas of central bank responsibility.¹ The tendency of analysts to downplay this link can be partly explained by the essentially static nature of the laws and institutions governing the markets for reserves in the United States and most other developed countries.

As this article observes, however, developments in payments technology are currently forcing some fundamental changes on the markets for bank reserves, both in the United States and abroad. Because the markets for bank reserves form the key connection between the payments system and the implementation of monetary policy, it is reasonable to expect that changes in these markets will ultimately affect monetary policy decisions. In particular, this discussion argues that changes in the markets for reserves have the potential to fundamentally alter the allocation of costs associated with inflation.

The author is a research officer and senior economist in the macropolicy section of the Atlanta Fed's research department. He is grateful to his colleagues in the research department, as well as to Thomas Sargent and Bruce Smith for comments on earlier drafts.

Monetary Policy and the Payments System

Under a fiat money standard, money has no intrinsic value. Instead, its value is derived from the confidence that people have in money as a medium of exchange. Central banking institutions such as the Federal Reserve System traditionally have worked to maintain this confidence in two ways, among others: through their involvement in the payments system and their implementation of monetary policy.

In terms of the payments system, central banks help guarantee confidence in a fiat money standard, and the payments system more generally, by assisting in the conversion of bank or “inside” money to central bank or “outside” money (see the box below); a dollar in a transactions account at a commercial bank must under virtually all circumstances be exchangeable for a dollar in cash or bank reserves.² Although commercial banks’ account liabilities are backed by assets such as loans and bonds, it would be difficult for either banks or their customers to assign a day-to-day “market value” to nonsecuritized bank assets such as loans. In the absence of organized markets for these assets, ensuring the ready par, or face-value, convertibility of commercial bank debt (inside money) to central bank debt (outside money) is key to maintaining public confidence in money. In the United States, the Fed has traditionally helped maintain this convertibility through the discount window and through open market operations in the

overnight market for bank reserves—that is, the fed funds market.

Another payments system function traditionally carried out by central banks is the guarantee of payment finality. For many types of transactions, payments are not considered final unless a specified amount of outside money has changed hands. By allowing commercial banks to settle certain transactions over the books of the central bank, the central bank guarantees to a certain degree the finality of these transactions.³

However, the extent to which central banks’ provision of outside money represents a social good is limited by the need to preserve the function of this money as a store of value. Just as with any other commodity, the value of outside money will be inversely proportional to its scarcity. Effective central banking therefore requires some degree of control over this value—that is, some degree of control over the rate of inflation. Operationally, control over the stock of outside money requires the existence of some means for limiting commercial banks’ ability to indebt themselves to the central bank.⁴

The recognition of this principle dates back at least to Walter Bagehot’s 1873 classic treatise on central banking, which argued that relatively high rates of interest should be charged by the central bank (for loans of reserves), particularly during times of stringency. Bagehot’s concern was that banks should not borrow from the central bank “out of idle precaution without paying well for it” ([1873] 1991, 97). In the present-day United States, as in most developed countries, this constraint is accomplished by the Fed’s regulation of the overnight

Inside and Outside Money

In most developed economies, there is a fundamental distinction between the money created by the financial system (“inside money”) and the money created by the central bank (“outside money”).

Banks and other financial system intermediaries generate liabilities that are held by the public as monetary assets. On the financial system’s balance sheet, this money must be “backed,” or offset, by the intermediaries’ assets, most of which are claims against other private sector agents. For example, the majority of the banking system’s deposits correspond to assets such as commercial loans and mortgages. The limit of this argument is that the money engendered “inside” the financial system, backed by private sector assets, represents the claims of private sector parties on only each other, the net of which should equal zero in a closed economy.

In contrast, the money balances supplied by the central bank in the form of reserves or currency appear as an asset to the private sector but as a debt of the central bank. When the monetary authority purchases government securities from the private sector, it adds to private sector monetary assets with no corresponding private sector liability. “Outside” money may be formally defined as the net of monetary claims by agents of the private sector against parties outside the private sector. A practical definition (subject to some theoretical argument) of outside money in the United States (assuming a closed economy) would be the quantity of currency held by the public, plus that part of banking system deposits backed by the reserve holdings of depository institutions. For practical purposes, this quantity may be taken to be the same as the monetary base.

cost of bank reserves—by the fed funds rate. Such central bank intervention in the market for bank reserves constitutes a large part of what is traditionally referred to as “monetary policy.”

The practice of central banking thus involves a balance between the two essentially conflicting roles of providing ready access to an accepted medium of exchange—outside or central bank money—and simultaneously maintaining the value of that money by regulating its supply. Bank reserves have often been seen as the fulcrum on which this balancing act occurs.

The Role of Reserve Requirements

There are two potential sources of demand for bank reserves. The first originates in the needs of banks and their customers to finalize payments by use of outside money. The second source derives from the existence of legal reserve requirements, which require banks to hold a certain fraction of their deposits in either vault cash or reserve accounts with the central bank (see the box on page 4).

With a few exceptions, the central banks of most countries, including the United States, have traditionally regarded the first source of demand as too unpredictable to allow for control over the quantity of reserves outstanding.⁵ Consequently, banks in virtually all countries are subject to some kind of statutory reserve requirement, which is seen as helping to ensure a predictable source of reserve demand.⁶

In the United States and most other countries, bank funds in reserve accounts do not pay interest. The policy of not paying interest on bank reserves (either vault cash or funds in reserve accounts) imposes an opportunity cost on the holding of reserves, which is the overnight interbank interest rate, or the Fed funds rate. This rate represents the interest forgone by holding non-interest-bearing reserves. Because only the Fed can create reserves (in the aggregate), the existence of this opportunity cost allows the Fed to allocate reserves by regulating their price.

Changes in the Market for Reserves

The opportunity cost borne by holders of reserves effectively represents a tax on holding reserves, a tax whose marginal rate varies with the overnight fed funds rate. As with all taxes, it is reasonable to expect that par-

ties bearing this tax (banks and their customers) will take reasonable measures to avoid paying it. It is also to be expected that the pace of the tax-avoidance activity will increase as the rate of taxation increases and as the technological feasibility of tax avoidance increases.

The high short-term interest rates of the late 1970s and early 1980s brought about a sharp increase in the marginal reserve tax and thereby an increase in the incentives to avoid this tax.⁷ Before 1980, the Fed could not set reserve requirements for depository institutions that were not members of the Federal Reserve System, so the most convenient method for many institutions to avoid the reserve tax was simply not to belong to the System. Passage of the Monetary Control Act of 1980 (MCA), which empowered the Fed to set universal reserve requirements for all depository institutions, rendered this method of avoiding the reserve tax ineffective. The “bite” of the MCA was lessened significantly in 1991 by the elimination of the 3 percent reserve requirement for nontransaction deposits and again in 1992 by the reduction of the reserve requirement for transaction deposits from 12 percent to 10 percent.⁸

The widespread use of computer technology has enhanced banks’ ability to minimize the burdens associated with the reserve tax. Computer technology allows banks and their customers to more accurately project their reserve needs and to minimize the amount of funds subject to reserve requirements, to the extent permitted by current laws and regulations.⁹ Another technological development that has facilitated avoidance of the reserve tax is the increased use of electronic funds transfer systems (EFT). Using EFT allows banks and their customers to substitute, to some extent, the use of intraday funds (in the sense of net credit positions over EFT networks) for overnight money, both inside and outside.¹⁰ Intraday funds carry no legal reserve requirements.¹¹

The current volume of intraday fund use is large. In the United States the two largest EFT systems are Fedwire, the Fed’s large-value payments system, and CHIPS, the New York Clearing House Association’s payments system. In 1992 the average daily volume of transactions over the two systems amounted to roughly \$800 billion and \$950 billion, respectively (Bank for International Settlements 1993, 470). The daily maximum amount of net credit granted over these two large-value networks, plus the maximum net position on the Fed’s book-entry settlement system for U.S. Treasury securities, has been estimated to average more than \$100 billion.¹² Any of these figures dwarfs the amount of funds held as electronic overnight required reserve balances (roughly \$30 billion at the end of 1993). At an average daily volume of roughly \$2 trillion, the total

amount of large-value intraday payments has even surpassed the traditional M1 measure of overnight money (\$1.1 trillion at the end of 1993) and begins to rival even the broader M2 measure (\$3.5 trillion).

A combination of private incentives to avoid the reserve tax, policy actions that have reduced the scope of this tax, and technological innovation has had a profound impact on the long-run trend of required reserve

Reserve Requirements

Since the passage of the National Banking Act in 1863, reserves against bank deposits have been legally mandated at the national level. Both the rationale for requiring reserves and the method of calculation have changed, however, with the evolution of the central bank and the financial system.

The term *reserve* is often defined as “the proportion of deposit liabilities at a financial institution held in the form of a readily acceptable means of payment” (Marie E. Sushka 1992, 342). Indeed, liquidity provision was one of the arguments behind reserve requirements in the nineteenth century. Depositories need to hold some quantity of reserves in the form of specie or fiat money in order to convert their deposits, which are redeemable upon demand at par, into currency. Reserve requirements would, it was argued, legislatively ensure bank liquidity by forcing banks to hold some minimum level of reserves for conversion purposes.

In the years following the creation of the Federal Reserve System, the rationale for reserve requirements shifted from liquidity provision to an attempt to limit credit expansion.¹ Subsequent developments in economic theory also implied that reserve requirements would be a useful tool for monetary control. Currently, Regulation D (Reserve Requirements of Depository Institutions) of the Federal Reserve Board of Governors states that the expressed purpose for the existence of reserve requirements is to “facilitate the implementation of monetary policy by the Federal Reserve System” (Section 204.1 [b]).

The Monetary Control Act extended reserve requirements to include depository institutions besides banks (the targets of the 1863 legislation), in part to improve monetary control. Under Regulation D as amended by MCA, reserve requirements apply to the transactions deposits, nonpersonal time deposits, and Eurocurrency liabilities of the following institutions: commercial banks, mutual savings banks, savings and loan associations, credit unions, agencies and branches of foreign banks, and Edge Act corporations.² The reserves against these deposits must be held in the form of balances at a Federal Reserve Bank, vault cash, or a pass-through account at a Federal Reserve-approved institution.

The actual computation of an institution’s reserve liability depends upon its size, as measured by its depository liabilities. Currently, institutions with more than \$44.8 million in deposits are required to report weekly (“weekly reporters”) while institutions with less than \$44.8 million in

deposits are permitted to report on a quarterly basis (“quarterly reporters”). The threshold between the two categories is adjusted by the Federal Reserve Board of Governors each year using a formula.

For weekly reporters, reserve requirements are computed in a largely contemporaneous manner, meaning that an institution’s deposits are tabulated, and reserves must be held against these deposits, during roughly the same time period. *Deposits* in this case refers to the daily average balance of transactions deposits, nonpersonal time deposits, and Eurocurrency liabilities held during a fourteen-day period (“computation period”) ending every second Monday. Required reserves are then calculated by multiplying each deposit classification by the appropriate ratio in Table A.

The amount of reserves established by the application of the above ratios must be maintained during a fourteen-day period (“maintenance period”) that begins on a Thursday and ends on the second Wednesday hence. Under the current system of contemporaneous reserve accounting, the maintenance period begins only three days after the start of the computation period. An institution’s daily average vault cash held during the computation period previous to the period used for deposit calculation is subtracted from its required reserve liability.

The required reserves for institutions reporting quarterly are based on their daily average balance of reservable deposits during a seven-day computation period that begins the third Tuesday of the last month of each calendar quarter. Required reserves are then determined by applying the ratios in Table A in the same manner as above. For quarterly reporters, the daily average vault cash held during the computation period (as opposed to the previous period for weekly reporters) is deducted from the depository’s reserve liability. Required reserves must then be maintained from the fourth Thursday following the computation period until the fourth Wednesday after the end of the depository’s next computation period.

Notes

1. For a thorough examination of the bases for reserve requirements, see Marvin Goodfriend and Monica Hargraves (1983).
2. For a detailed, legal explanation of the accounts and institutions covered under MCA, see Regulation D, sections 204.1 and 204.2.

Table A
Reserve Requirements of Depository Institutions¹

| Type of Deposit ² | Requirement | |
|--|------------------------|----------------|
| | Percentage of Deposits | Effective Date |
| Net transaction accounts ³ | | |
| \$0 million-\$4 million ² | 0 | 12/21/93 |
| More than \$4 million-\$51.9 million | 3 | 12/21/93 |
| More than \$51.9 million ⁴ | 10 | 12/21/93 |
| Nonpersonal time deposits ⁵ | 0 | 12/27/90 |
| Eurocurrency liabilities ⁶ | 0 | 12/27/90 |

¹ Required reserves must be held in the form of deposits with Federal Reserve Banks or vault cash. Nonmember institutions may maintain reserve balances with a Federal Reserve Bank indirectly on a pass-through basis with certain approved institutions. For previous reserve requirements, see earlier editions of the *Annual Report* or the *Federal Reserve Bulletin*. Under provisions of the Monetary Control Act, depository institutions include commercial banks, mutual savings banks, savings and loan associations, credit unions, agencies and branches of foreign banks, and Edge Act corporations.

² The Garn-St Germain Depository Institutions Act of 1982 (Public Law 97-320) requires that \$2 million of reservable liabilities of each depository institution be subject to a zero percent reserve requirement. The Board is to adjust the amount of reservable liabilities subject to this zero percent reserve requirement each year for the succeeding calendar year by 80 percent of the percentage increase in the total reservable liabilities of all depository institutions, measured on an annual basis as of June 30. No corresponding adjustment is to be made in the event of a decrease. On December 21, 1993, the exemption was raised from \$3.8 million to \$4.0 million. The exemption applies in the following order: (1) net negotiable order of withdrawal (NOW) accounts (NOW accounts less allowable deductions); and (2) net other transaction accounts. The exemption applies only to accounts that would be subject to a 3 percent reserve requirement.

³ Includes all deposits against which the account holder is permitted to make withdrawals by negotiable or transferable instruments, payment orders of withdrawal, and telephone and preauthorized transfers for the purpose of making payments to third persons or others, other than money market deposit accounts (MMDAs) and similar accounts that permit no more than six preauthorized, automatic, or other transfers per month, of which no more than three may be checks. Accounts subject to such limits are savings deposits.

The Monetary Control Act of 1980 requires that the amount of transaction accounts against which the 3 percent reserve requirement applies be modified annually by 80 percent of the percentage change in transactions accounts held by all depository institutions, determined as of June 30 each year. Effective December 21, 1993, for institutions reporting quarterly and weekly, the amount was increased from \$46.8 million to \$51.9 million.

⁴ The reserve requirement was reduced from 12 percent to 10 percent on April 2, 1992, for institutions that report weekly, and on April 16, 1992, for institutions that report quarterly.

⁵ For institutions that report weekly, the reserve requirement on nonpersonal time deposits with an original maturity of less than one-and-a-half years was reduced from 3 percent to 1.5 percent for the maintenance period that began December 13, 1990, and to zero for the maintenance period that began December 27, 1990. The reserve requirement on nonpersonal time deposits with an original maturity of one-and-a-half years or more has been zero since October 6, 1983.

For institutions that report quarterly, the reserve requirement on nonpersonal time deposits with an original maturity of less than one-and-a-half years was reduced from 3 percent to zero on January 17, 1991.

⁶ The reserve requirement on Eurocurrency liabilities was reduced from 3 percent to zero in the same manner and on the same dates as was the reserve requirement on nonpersonal time deposits with an original maturity of less than one-and-a-half years (see note 5).

Source: Board of Governors of the Federal Reserve System.

balances. As a percentage of total Federal Reserve liabilities, required reserve balances have fallen from a level of around 30 percent in the 1960s to a level of around 7 percent in 1993.¹³ In the last few years, banks' demand for reserve balances based on reserve requirements has declined sharply, and on at least one occasion this component of demand has fallen below levels

of reserves needed for clearing purposes (Peter Sternlight and others 1992, 80-84).

Further, it is unlikely that the need to hold reserves for clearing purposes will place an effective lower bound on banks' demands for traditional, non-interest-bearing reserves. Since 1980, reserves held for clearing purposes only (as opposed to those held to satisfy legal reserve

requirements) can be held in the form of “required” clearing balances.¹⁴ Interest earnings from these balances (which accrue at roughly the fed funds rate) cannot be paid directly to banks but may be applied by banks to charges for the use of Federal Reserve services. Clearing balances can thus be viewed as essentially non-required reserve balances that pay interest. The amount of clearing balances has grown markedly since the recent reductions in reserve requirements. At the end of 1993, clearing balances amounted to more than \$6 billion, or more than 20 percent of required reserve balances.

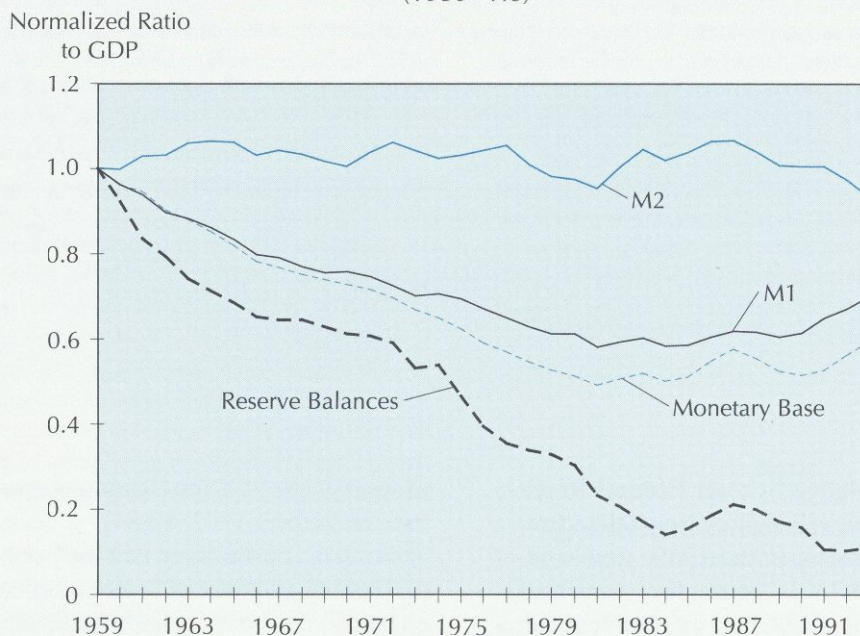
In summary, technological advances in combination with regulatory changes have reduced banks’ demands for non-interest-bearing reserves. Intraday funds, which are not subject to a reserve requirement, and interest-bearing clearing balances have proven to be effective substitutes for traditional, non-interest-bearing reserves. The overall effect of these innovations on reserve balances is evident in Chart 1. The chart depicts overall trends in reserve balances (not including vault cash or required clearing balances), the monetary base (the total amount of outside money), and the standard M1 and M2 monetary aggregates, relative to aggregate output (gross domestic product, or GDP). All of the data series

have been normalized so that their value in 1959 (the first year of the data) equals one. The chart shows that while the size of M2 has remained fairly constant relative to the size of the economy, the relative size of M1 (most of which bears a reserve requirement), the monetary base, and reserve balances have dropped sharply. The most pronounced and sustained drop has been for reserve balances.

Impact on the Costs of Inflation

There are many kinds of social costs associated with inflation. This article will consider only the “distortional” cost of inflation first analyzed by Martin J. Bailey (1956).¹⁵ The essential idea behind the distortional cost of inflation is simple: as long as interest is charged for loans of money, then the existence of non-interest-bearing outside money represents an opportunity cost to someone. At least in the short run, the private sector can do little to avoid the aggregate burden of this tax. As Robert E. Lucas, Jr. (1994, 21) notes, “It is in everyone’s private interest to try to get someone else to

Chart 1
Ratios of Aggregates to GDP, 1959-93
 (1959=1.0)



hold cash and reserves. But someone has to hold it all, so all of these efforts must simply cancel out.”

Milton Friedman (1969) argues that such a situation need not hold, at least in theory. Intuitively, Friedman’s argument derives from the observation that under a fiat standard, the cost to society of producing an additional dollar of outside money is essentially zero. According to this argument, economic efficiency would therefore dictate that the opportunity cost to the private sector of holding an additional dollar of outside money should also be zero, which would be true if interest rates were zero. Interest rates could be zero, Friedman argues, in a world in which prices were constantly falling at a rate equal to society’s rate of time preference. “Time preference” refers to the rate at which people, on average, are willing to sacrifice future consumption of goods and services for current consumption.

This policy recommendation has become known in the literature as a “Friedman deflation.” In the real world of monetary policy, there would be serious practical difficulties associated with running such a deflationary policy. Friedman states, however, that essentially the same outcome could be obtained by paying interest on outside money and particularly on reserves.¹⁶ The effect would again be to remove the opportunity cost borne by private holders of outside money.

Are the Costs of Inflation Declining?

Friedman’s proposal remains controversial today. Since its presentation in 1969, however, as the discussion above indicates, regulatory and especially technological changes seem to have moved the banking and payments system much closer to the situation this policy recommendation describes. These developments warrant a closer examination of the Friedman proposal, its claims to increased efficiency, and the manner in which this recommendation is being approximated in the real world.

It is first of all worthwhile to consider the specific sources of the claimed efficiency gain from a Friedman deflation. The efficiency losses associated with the issue of non-interest-bearing outside money and therefore with inflation do not stem directly from the loss of interest on outside money. Central banks and ultimately governments recover exactly this loss in the form of “seigniorage” or forgone interest payments. In a social context these two effects exactly cancel out. However, as Bailey (1956) shows, the collection of seigniorage is unlikely to offset the welfare losses associated

with the allocative effects of the reserve tax. That is, the welfare effect of nonpayment of interest on outside money closely resembles the welfare effect of placing an excise tax on a less abstract commodity such as cars or groceries. By taxing the holding of outside money, the reserve tax causes people to hold less money than they would ideally require to complete their desired transactions.

If Friedman’s argument is accepted as valid, then the greater use of substitutes for reserves would appear to be a good thing. Developments such as the increased use of intraday funds and the use of clearing balances have the potential to reduce the welfare losses associated with inflation, to the extent that these devices allow people to avoid the distortionary effects of the tax on non-interest-paying reserves. While it is true that in the very short run these devices will not substantively change the amount of outside money, there is a fair amount of evidence (see above) to suggest that over the longer run these devices are allowing banks to substitute out of non-interest-bearing reserves. However, the conclusion that these devices represent an increase in social welfare is subject to some important caveats, even accepting Friedman’s argument.

The first such caveat follows from the observation that although the private sector’s demand for bank reserves may have been declining in recent years, its demand for outside money in the form of cash continues unabated. Consequently, at least some of the efficiency gains that have been obtained through avoidance of the tax on reserves may have simply been transferred to holders of cash, which does not pay interest.¹⁷ The net welfare effects of increased cash issuance are far from obvious. For example, in the United States, households’ relative usage of cash is known to be negatively correlated with income, so *ceteris paribus* one would expect larger cash holdings to be disproportionately concentrated among the poorest households (Robert B. Avery and others 1986, 88). On the other hand, there is also some evidence to suggest that a sizable proportion of cash is used in sectors outside the normal scope of U.S. domestic economic activity—that is, as a medium of exchange either in illegal markets or abroad (Avery and others 1986, 104). The collection of seigniorage on the latter components of outside money has been defended by at least one economist as a reasonable way of collecting revenue from activities normally outside the scope of domestic fiscal authority (Charles A.E. Goodhart 1993, 274).

A second caveat has been emphasized in recent papers that attempt to measure the welfare costs of inflation.¹⁸ That is, giving people ready access to a means of avoiding a tax is not the same as removing a tax.

Activities associated with tax avoidance will entail their own costs. The continued existence of the reserve tax, together with enhanced opportunities to avoid the reserve tax, means that these indirect costs of (avoiding) the reserve tax will be of increasing importance for the welfare costs of inflation.

What are the nature and magnitude of these indirect costs? Lucas (1994) attributes them to the cost of resources used to substitute out of non-interest-bearing outside money as compared with a situation that approximates a Friedman deflation, wherein outside money would or could be used. Another important source of these costs would be associated with the additional risks borne by payees receiving funds in forms other than outside money—the risk that a given payment might not be settled. Such costs are predictably difficult to quantify. The various estimates that have been attempted suggest that the overall sum of indirect and direct costs are small relative to the overall size of the U.S. economy, roughly 1 percent of GDP on an annual basis. Since even 1 percent amounts to about \$60 billion, however, these costs are far from negligible.¹⁹

A third caveat is treated in some detail in a recent volume of studies published by the Federal Reserve Bank of New York.²⁰ The issue is whether the Fed will be able to continue its traditional role as manager of the reserves market in the face of diminishing demand for reserves. In a few recent episodes in which the demand for reserves has been dictated by clearing requirements, it has sometimes proven more difficult for the Fed to regulate the availability of reserves on a day-to-day basis. Once again the potential indirect costs associated with reserve tax avoidance—the potential instability of the reserves market—would weigh heavily in any cost-benefit calculation.

According to Bruce Kasman (1993, 45-50), the experience of countries such as the United Kingdom and Switzerland suggests that it is possible for central banks to manage reserve markets with very low reserve requirements—that is, with a very low incidence of the reserve tax. In these countries, statutory reserve requirements are close to zero, even for transactions accounts. However, the day-to-day conduct of monetary policy in these countries differs from contemporary U.S. practice in a number of important respects. In the United Kingdom, intraday interest rate volatility is avoided by banks' liberal and frequent use of the discount window, a practice that carries with it certain disadvantages.²¹ In Switzerland, a fairly large demand for reserves exists despite the low reserve requirement. There are, however, two important policies in place in Switzerland that are major contributors to reserve demand, policies that

contrast sharply with current Fed policy. The first is the existence of a 200 basis point penalty for overnight (Lombard) loans from the Swiss National Bank (SNB), and the second is a complete prohibition of daylight overdrafts on the SNB's interbank funds transfer system.

To summarize, changes in the reserve market have reduced the average incidence of the reserve tax, and these changes have in all probability reduced the direct costs associated with the distortionary effects of this tax. However, the average incidence of the reserve tax is likely to be a very poor measure of the welfare loss associated with inflation. The short-term marginal rate associated with this tax has not changed: the short-term opportunity cost of an additional dollar's worth of overnight reserves remains equal to the fed funds rate. Consequently, there still exists a strong incentive to avoid this tax. The activities associated with avoiding the reserve tax can incur substantial indirect costs. Even if advances in computer technology could drive the average incidence of the reserve tax to zero, there would still be a welfare loss associated with the avoidance activity necessary to lower the direct burden of the tax. The net effect of changes in the markets for reserves on the total distortionary costs of inflation is likely to be (at best) less than the observed reduction in the average incidence of the reserve tax.²²

Interest on Reserves

The above discussion has argued that regulatory and particularly technological developments have resulted in a decreased average incidence of the reserve tax. At the same time, potential welfare benefits of this reduced incidence have been at least diminished, if not reversed, by the continued existence of the marginal reserve tax. The marginal reserve tax, together with its distortionary effects, would vanish if explicit interest could be paid on reserves, as in the original Friedman proposal. In fact, the payment of interest on required reserve balances has been endorsed by the Federal Reserve System and by numerous academic economists.²³

This endorsement has been far from unanimous within the academic community, however. Perhaps the deepest reservations about the Friedman proposal and any real-world implementation thereof stem from concerns about what paying interest on reserves will mean in the long run for central banks' ability to manage reserves and ultimately about the consequences for the money stock and the price level. For example, Thomas J. Sargent and Neil Wallace (1985) and Sargent (1987) have

argued that in the long run, paying interest on reserves could lead to an “indeterminacy” of economic equilibrium, meaning that any determinate link would be broken between the stock of money outstanding on the one hand and the pace of inflation and real activity on the other.

While the literature in this area is somewhat technical, the essential idea of indeterminacy is a fairly straightforward one. Suppose that a reserve requirement is in effect and that all reserves pay interest. Suppose further that in the short run central bank policy is to peg the rate of interest on loans of reserves and to supply all reserves demanded at that rate of interest. If there is no interest penalty assigned to holding reserves, then an essentially arbitrary amount of reserves can be demanded by the private sector. The money created to meet this demand will have no real effects but will only bid up the level of prices, which in turn drives down the purchasing power of the money. Depending on the precise nature of the demand for money, this situation can lead to any amount of reserves being associated with essentially the same amount of real economic activity, as in Sargent (1987), or any amount of reserves being associated with many different levels of real activity, as in Sargent and Wallace (1985). In other words, studies such as these suggest that the reserve tax must be present to a degree in order for money to have determinate value.

It has sometimes been maintained that the indeterminacy problem can be resolved by paying interest only on required reserves. However, Sargent and Wallace (1985) show that restricting interest payments to required reserves may not resolve indeterminacy. This result is strengthened by Bruce Smith (1991), who shows that indeterminacy may hold in cases not considered by Sargent and Wallace.

Some caution is called for in translating these rather abstract indeterminacy results to the arena of real-world monetary policy. As pointed out by Michael Woodford (1990), it is fairly easy to construct theoretical monetary models that either confirm or contradict the Sargent-Wallace results. Since there is nothing approaching a professional consensus on monetary theory, it is unlikely that any of these models will be seen by economists as entirely convincing on this issue. Still, the indeterminacy results in the theoretical literature suggest that the efficiency gains associated with a diminution of the reserve tax could be offset by potential efficiency losses. These losses would result from a lessening of the central bank's ability to carry out macroeconomic stabilization policies.

An insightful, nontechnical discussion of this issue can be found in Goodhart (1993). The central question raised by payment of interest on reserves, Goodhart argues, is whether or not a monetary authority could still

manage the price (the interest rate) and/or quantity of bank reserves outstanding. Goodhart asserts that it is unlikely that inside money will be seen as a perfect substitute for outside money in even the best-designed banking system. And as long as the two types of money are not perfect substitutes, a central bank can limit the quantity of reserves outstanding by manipulating their price, and vice versa. Goodhart's argument is an important one in that it asserts that the obvious benefits of paying interest on reserves could be enjoyed without incurring the long-term problems of indeterminacy that some have predicted would accompany such a policy. However, to date no one has produced a compelling theoretical case in favor of this argument.

Conclusion

Since the publication of Bailey's (1956) classic article, economists have identified the welfare costs of inflation with the existence of a “tax” on outside money. The “reserve tax” results when no interest is paid on outside money and particularly reserves, even though interest rates on short-term debt are positive.

All taxes carry with them incentives for avoidance, the reserve tax being no exception. A combination of technological and regulatory changes have in recent years led to ever more effective avoidance and decreased incidence of this tax. The short-term marginal tax rate on reserves has not changed as a result of these innovations, however.²⁴

The reduced incidence of the reserve tax implies the potential for reduction in the welfare cost of inflation. However, to the extent that the reduced incidence of the tax has primarily been achieved through tax avoidance, as opposed to reductions in the tax rate, potential welfare gains have been at least partially obscured by the costs associated with avoidance activity.

The explicit payment of interest on reserve balances would drive the reserve tax, and thereby the incentives to avoid this tax, to zero. Payment of interest on reserves would eliminate the direct welfare loss from inflation that derives from the reserve tax and would also eliminate the indirect welfare loss from inflation associated with avoidance of the reserve tax.

However, some economists have objected to proposals to pay interest on reserves, on the grounds that these proposals could, over the long run, lead to a weakening of Fed influence over the economy and especially the rate of inflation. In spite of a rather large number of academic studies on this issue, there has been no movement toward a consensus.

The opportunities for avoidance of the reserve tax will undoubtedly continue to increase as new computer technologies become available to participants in the banking and payments systems. This rapid pace of technological change in this area points to a strong need for more research and new policy approaches. It would evidently be desirable to develop a set of monetary and payments institutions that (1) exploit the technologi-

cal efficiency of electronic payment systems; (2) provide an appropriate degree of finality to electronic payments; (3) do not impose undue costs on parties not engaged in a given transaction; and (4) do not conflict with macroeconomic stabilization goals of monetary policy. The question that future research should address is, how?

Notes

1. For an effective description of how this connection works in the United States, see Stigum (1989).
2. Under some extraordinary circumstances the conversion of inside money to outside money might require intervention of other government agencies. Wall (1993) describes the circumstances under which such intervention would occur in the U.S. case.
3. The role of central banks in providing settlement finality is explored in Garber and Weisbrod (1990).
4. This statement is not meant to imply that central bank credit should necessarily be restricted according to a strict quantity-theoretic rule, only that some limit on central bank credit should be enforced.
5. Some exceptions are discussed below.
6. According to Goodfriend and Hargraves (1983), monetary control and the use of reserve requirements as an instrument of control has been an important part of Fed policy doctrine since the 1950s.
7. Until the mid-1970s incentives to avoid the reserve tax were muted by banks' ability to pass the tax cost along to their customers, via the prohibition of the payment of interest on transactions accounts. Subsequent financial innovation and the elimination of most interest rate ceilings have increased banks' incentives to avoid the reserve tax.
8. See Feinman (1993, 580-84) for a more detailed history of the recent cuts in reserve requirements.
9. For example, Anderson and Riela (1993, 240) describe the workings of a Fed-operated system that keeps banks informed of their real-time reserve positions throughout the day.
10. Stigum (1988, 192) offers the following example of how daylight net credit over EFT networks may be substituted for overnight reserves: "Daylight overdraft arises, for instance, in the following situations. Big Japanese banks that have accounts with N.Y.C. banks return early in the day billions of Fed funds that they purchased the preceding day; as a result, these foreign banks run daylight overdrafts at the N.Y.C. banks, which in turn run daylight overdrafts at the Fed. These overdrafts end when the Japanese banks buy, later in the day, new Fed funds to replace those that they had returned to previous-day sellers of funds. N.Y.C. banks end up running, each day, big daylight overdrafts [net debit positions] with CHIPS whereas the other N.Y.C. banks end up running big intraday credits."
11. As of April this year, banks are assessed charges for certain daylight overdrafts on their accounts at the Fed. These charges apply only to overdrafts above a deductible and will gradually increase to 60 basis points annualized by 1996.
12. See Garber and Weisbrod (1990, 39). The amount of aggregate net credit granted is of interest since this amount is equal to the quantity of outside money that would be required to effect settlement at a particular instant during the day. See Cohen and Roberds (1993) for a more detailed explanation.
13. See Feinman (1993, 586). The remainder of Federal Reserve System liabilities largely consist of cash and excess reserves.
14. See Stevens (1993) for a primer on required clearing balances.
15. Strictly speaking, Bailey's (1956) analysis applies to the case in which (a) inflation is perfectly anticipated, (b) inflation has no effect on real wealth or real interest rates, and (c) nondistortionary (lump-sum) taxes are available to offset any potential loss of seigniorage to the government if inflation vanishes. The present article follows Lucas (1994) in treating potential complications posed by relaxation of assumptions (a), (b), and (c) as second-order phenomena, at least for the low rates of inflation experienced in the United States during the last decade. Reviews of the literature that addresses such complications can be found in Driffill, Mizon, and Ulph (1990) and Woodford (1990).
16. The idea of paying interest on required reserves dates back at least to Tolley (1957). The publication of Friedman's (1969) proposal, however, popularized the idea within the economics profession.
17. Various proposals to pay interest on cash through the use of lotteries have been circulated, but these proposals have never been given serious policy consideration. See Goodhart (1993, 271-74) for a discussion and survey of the relevant literature.
18. See, for example, Imrohorglu and Prescott (1991), Wang and Yip (1993), Dotsey and Ireland (1994), and Lucas (1994).
19. Lucas (1994), using aggregate U.S. data, makes an estimate of 1 percent of GDP, for a nominal interest rate of 6 percent. Lucas shows that this estimate can be supported by calculations using Bailey's (1956) framework, the models of Sidrauski (1967a, 1967b), or a variation of the approach used by McCallum and Goodfriend (1987). In models such as those of Dotsey and Ireland (1994) and Wang and Yip (1993), which take into account the distortionary effects of

- inflation on investment decisions, this cost can be substantially higher, roughly 3 percent or 4 percent of output.
20. See, for example, Kasman (1993), Anderson and Riela (1993), or Hilton, Gerdts, and Robinson (1993).
 21. See, for example, Kneeshaw and Van den Bergh (1989) on the disadvantages associated with the implementation of monetary policy through an administered rate such as the discount rate.
 22. In a standard welfare analysis such as that of Bailey (1956), a decrease in the average incidence of a tax would automatically lead to an increase in welfare. However, if the decrease in the average incidence of the tax is effected through new opportunities for tax avoidance, analyses such as that of Lucas (1994) suggest that such results would depend on the beneficiaries of the new tax avoidance technology bearing the full cost of any new tax avoidance activity. In other words, if sufficient "externalities" exist, the net effect on welfare may be ambiguous.
 23. See, for example, Greenspan (1992); for a discussion, see Feinman (1993, 585-86) or Hilton, Gerdts, and Robinson (1993). Recent endorsements by economists include those of Feldstein (1991) and Goodhart (1993).
 24. That is, the rate has not changed in the sense that the marginal tax rate on reserves remains equal to the fed funds rate. Obviously the fed funds rate will change over time.

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*I*ntervention in Credit Markets and Development Lending

Aruna Srinivasan

In developing countries an inadequate supply of credit is often seen as a major constraint on production and growth. As a consequence of this perception, the governments of many developing countries have directed public funds on a large scale to certain areas of the economy including industry, agriculture, small and medium-sized firms, and to a lesser extent, housing and exports. Until recently, these governments approached credit provision by increasing the number of specialized financial institutions, such as agricultural and industrial development banks, by encouraging commercial banks through loan quotas and subsidies to lend to priority sectors, and by using the central bank to implement development policy. Brazil, India, Jamaica, Mexico, the Philippines, and Thailand, among other countries, have used credit programs of this type as a main component of their development strategies. The credit programs were frequently set up with the help of bilateral and multilateral donor agencies such as the World Bank. Such credit allocation programs have been justified on the grounds that they increased growth and productivity, improved income distribution, and displaced the indigenous financial system that was viewed as exploitative.¹

Pointing to the experience of the past forty years of government intervention in credit markets in developing countries, critics charge that the emphasis on income distribution is misplaced and that the programs have also failed to reach other objectives. Evaluations of credit programs sponsored by

The author is a senior economist in the financial section of the Atlanta Fed's research department. She thanks Hugh Cohen, Curt Hunter, Frank King, and Larry Wall for comments.

the World Bank and other agencies (World Bank 1989) have found that, despite massive subsidies, development banks created by governments in less developed countries have been beset by insolvency and liquidity problems and have had little success in reaching the intended beneficiaries: individuals without collateral or with below-average income. In addition, high default rates and the erosion of portfolios by low—and often negative—real (inflation-adjusted) interest rates have undermined the solvency and liquidity of conventional banks that participated in these credit programs. In light of the interventionist policies, critics argue that economies became “financially repressed” with misallocation of savings and credit.² Some economists have argued that the failure of directed credit programs resulted from the limited role of market forces in determining interest rates and a lack of savings mobilization in the design of the credit programs.³ To address these problems, governments have moved toward financial liberalization and the lifting of many of the old controls. Although financial liberalization policies have improved conditions in some countries, the viability of many credit institutions still depends on the continued support of their governments. Moreover, it has become increasingly clear during the past decade that the distortions created in credit allocation may have offset the gains from improved access to financial services and intermediation. Meanwhile, the indigenous financial systems that the commercial banks were designed to replace have flourished.

These shortcomings of credit allocation programs in many developing countries raise the question of whether government intervention has an ongoing role to play. This study examines an alternative justification for credit market intervention that takes an intermediate position between the old view that governments should intervene as an integral part of the development process and the view that government should not attempt to influence market forces. This view argues that information imperfections in credit markets can create problems that can be mitigated only by government intervention.

Information imperfections or asymmetries in credit markets arise because banks and borrowers have different knowledge of relevant information: a borrower will know more about his or her own business than the banker, and the banker may know more about business conditions in general than the borrower. Information asymmetries imply that competitive markets may not lead to socially efficient outcomes and can result in market failures.⁴ From this perspective, all attempts at

government intervention in credit markets should be justified by clear reference to a market failure, and in the event of a market failure, government intervention is called for.

This study argues that the failure of government intervention through conventional banks, as currently experienced by many countries, is not surprising given the fact that government credit institutions face the same problems as commercial banks in relation to borrowers. In fact, there is reason to believe that government intervention through conventional commercial banks may have perverse effects and increase the inefficiency in credit markets. Even in government intervention programs, conventional banks have continued to use standardized lending contracts that have not been successful in mitigating problems of information asymmetry because they have largely used direct mechanisms to screen potential borrowers. These direct mechanisms tend to rely heavily on conventional forms of collateral and have benefited wealthier borrowers who would have received credit anyway. Both theory and empirical evidence suggest that unless the government has superior information, it is difficult to make a case for credit market intervention on efficiency grounds.

More recent work in credit markets in low-income countries suggests that nontraditional lending arrangements are successful in overcoming problems of information asymmetry. These lending arrangements use indirect mechanisms to screen borrowers and replace traditional collateral with peer pressure and social sanctions. Moreover, these lending schemes have been more effective in reaching low-income borrowers and exhibit loan repayment rates significantly higher than those at conventional banks. On the negative side, however, there are high costs associated with implementing these contracts, and it is not obvious that they are more socially efficient than conventional lending contracts. Most of the alternative lending programs operate on a small scale and do not have the economies of scale associated with conventional banks.

This article also examines similar arguments for government intervention in credit markets in the United States that are based on social equity and market failures. Charles W. Calomiris, Charles M. Kahn, and Stanley D. Longhofer (1993) provide a survey and analysis of government intervention in the housing market, which they argue has been motivated by distinct and often conflicting social objectives ranging from efficiency to “retributive justice” or punishing lenders who discriminate. Recently, the heightened interest in community development lending has raised

the question of whether government or commercial banks should do more to encourage this activity.⁵ Proponents of community development lending argue that there are bankable risks in low-income communities and that the existing financial structure is particularly weak in servicing these communities.⁶ Many features of community development lending in the United States are similar to those found in credit markets in low-income countries. While the experience of credit programs in low-income countries suggests that conventional banks do not have a comparative advantage in community development-type lending, the success of alternative lending institutions and programs in developing countries has led many to advocate setting up such schemes worldwide, including in the United States.

In analyzing the foreign experience of credit market intervention and the implications for the United States, this article first examines the main features of credit markets in low-income countries and then uses developments in information theory to investigate whether intervention is justified in financial markets explicitly on the basis of accounts of market failure. The third section reviews the experience in regulating credit markets in low-income countries. Neither theory nor experience suggests that government interventions through conventional commercial bank systems have been very effective. The discussion continues with an analysis of alternative or nontraditional lending programs in low-income countries. The fifth section discusses existing community development banks and loan funds in the United States that would qualify for subsidies under the community development lending plans currently under consideration.

Significant Features of Credit Markets

It is now widely recognized that credit markets in low-income countries do not work like classical competitive markets. Instead, certain institutional features of financial markets in low-income countries are explainable in terms of market imperfections that, in turn, lead to arguments for government intervention.⁷

A first significant characteristic of these financial markets is that there are limitations on the kind of collateral that can be used. Most individuals in low-income countries have few assets that can be collateralized. Conventional banks and government-run credit programs, which have found it difficult to screen and monitor borrowers directly, tend to rely heavily on collateral such as land. Because land ownership is cor-

related with income, borrowers with above-average income have been found to have greater access to targeted credit. Moreover, the lack of an institutional and legal framework implies that collateralization works imperfectly. For instance, land rights are not always well formed so that individuals can use their land as collateral.

A second significant feature of these markets is the lack of complementary infrastructure. For example, the scarcity of insurance tends to exacerbate default problems.

Finally, the flow of information between lenders in credit markets in low-income countries is quite restricted, and financial intermediation occurs across relatively small groups or small areas. Because these markets lack good records or individual credit histories, reputational mechanisms are not as commonplace as in developed economies. In addition, the few existing reputational mechanisms function only locally, making information gathering a costly process.

These characteristics give rise to the following problems related to imperfect information and enforcement: (1) Borrowers differ in the likelihood that they will default, and it is costly to determine the extent of that risk for each borrower. This problem is conventionally known as the “screening problem” or one of adverse selection. (2) It is costly to ensure that borrowers will take actions to make repayment more likely. This is the “incentives” or moral hazard problem. (3) It is difficult to compel repayment (the “enforcement problem”).⁸

Efficiency Arguments as a Basis for Credit Market Intervention

Both imperfect information problems (including moral hazard and adverse selection) as well as enforcement problems can be used to justify intervention in credit markets on efficiency grounds.⁹ In positing earlier models of credit markets under imperfect information, Dwight Jaffee and Thomas Russell (1976) and Joseph E. Stiglitz and Andrew Weiss (1981) used models based on adverse selection and moral hazard to rationalize a welfare-enhancing role for government intervention. More recent studies, such as that of David DeMeza and David Webb (1987), however, conclude that even in the presence of market failures, government programs may have perverse effects because policymakers do not have an informational advantage in providing credit. These recent theoretical developments

raise two important questions: What is the link between inefficient outcomes in credit markets on one hand and imperfect information and enforcement problems on the other? Can this linkage be used as the basis for government intervention in credit markets?

Adverse Selection. Adverse selection in credit markets arises when borrowers have unverifiable hidden knowledge about their likelihood of repayment. In such a market, lenders will therefore tend to be more cautious. The interest rate in this market is determined by considering the average quality of the loan portfolio, which creates an externality between borrowers.¹⁰ In effect, bad borrowers inflict an externality on good borrowers by raising the interest rate.¹¹ Lenders may not use interest rates to clear the market; instead they may fix the interest rate, rationing access to funds.

The Stiglitz-Weiss model of credit markets seems relevant for thinking about lending by conventional banks in low-income countries in which it is reasonable to suppose that banks will not have ready access to information about individuals' abilities to undertake and manage projects. The model appears to yield an unambiguous policy conclusion that lending will be at too low a level from a social point of view. In fact, Stiglitz and Weiss show that a small subsidy to credit markets is welfare-enhancing in this model. The subsidy offsets the effect that bad borrowers have on good, thus encouraging some of the better borrowers to borrow.

The result is not, however, robust to respecification of the model, as DeMeza and Webb (1987) have observed. Instead of assuming that projects have the same expected return, DeMeza and Webb assume that projects differ in their expected profitability, with good projects more likely to yield a higher return. Their model shows that at any given interest rate, in the presence of adverse selection, some projects with a negative social return will be financed. Thus the competitive equilibrium has socially excessive investment levels. DeMeza and Webb argue that the qualitative implications of adverse selection for policy turn out to be ambiguous because they depend on assumptions that are not empirically testable. Although neither model predicts that lending will be efficient in the presence of imperfect information, the implication for interventions is not robust to changes in the information problem facing lenders.

Moral Hazard. The Stiglitz-Weiss model of credit markets can be extended to allow for moral hazard, which is the possibility that individuals who are in debt will change the effort that they put into a project or change the riskiness of the project. In response to

higher interest rates, borrowers may select investment projects that have a higher potential payoff but a greater risk of failure. Because of concerns about changing incentives, lenders may choose to ration credit rather than charge higher interest rates. As a consequence, some borrowers who are potentially able to repay loans may be unable to obtain credit.

Moral hazard raises some interesting issues regarding the nature of lending contracts in competitive markets. Moral hazard may lead to problems of common agency in that lenders affect the probability that the loans of other lenders will be repaid when they change the terms and conditions of their own loan contract. Externalities between lenders may lead to excessive levels of indebtedness and less monitoring than is socially optimal and to an argument for restricting certain kinds of borrowing. A priori, it is difficult to predict the direction of the inefficiency, and it is also difficult to design direct interventions for these inefficiencies.

The issue of moral hazard therefore suggests that the incentive effects per se need not lead to an argument for government intervention in credit markets. However, when combined with the feature of multiple indebtedness, outcomes are likely to be inefficient, and government intervention designed to deal with such externalities may actually increase the inefficiency.

A recent paper by Stephen D. Williamson (1993) studies the effects of government credit programs in two private information models of credit markets. Williamson's models are more general than previous work in this area because they include elements of moral hazard, adverse selection, costly information acquisition, and incentive problems as determinants of optimal contractual arrangements. The first model is one in which a borrower's investment project return is observable by a lender at a cost. In this model, a program of direct government loans has no effect because it simply displaces an equal quantity of private lending. The second model has an adverse selection environment in which there are good borrowers and bad borrowers. Although the type of borrower is private information in this model, there is a costly screening technology that reveals type. This model has the property that, in general, government loan programs will have no effect unless they alter the incentives of borrowers or are subsidized. Williamson concludes that the costs of subsidization must be borne by someone, which implies that government lending is not necessarily socially efficient.¹²

Overall, the studies suggest that the effect of imperfect information on the amount of investment undertaken is ambiguous. The conclusions give no clear

direction for policy to improve the workings of credit markets, although theory suggests that markets will not typically work efficiently in the presence of imperfect information. Moreover, there is little empirical evidence about the magnitude of the inefficiencies, and theory does not suggest that government interventions can lead to net improvements in welfare.

Enforcement Arguments. Low-income countries have a long history of enforcement problems in credit programs. In particular, conventional lenders have had great difficulty ensuring that borrowers exercise prudence in the use of funds so that the likelihood of repayment is enhanced. Most imperfect information models of credit markets assume that if projects are sufficiently profitable, loan repayment is guaranteed. For two primary reasons, this outcome is not necessarily the case in developing countries where borrowers may be able but unwilling to repay. First, there is little or no penalty for default, so borrowers do not expect to be sanctioned for not repaying. Second, although credit contracts may be backed by collateral requirements, the ability to foreclose on assets is far from straightforward in many countries. This situation results from poorly developed property rights and other difficulties of foreclosing on delinquent borrowers. (The box below presents information on default rates for a select group of countries.)

In certain important respects, the government is sometimes part of the enforcement problem, failing to sanction borrowers because of political constraints and occasionally engaging in debt forgiveness programs.¹³ Whatever the distributional merits of such programs, there can be little doubt that they diminish borrowers' incentives to make their projects successful. It is not surprising therefore that government-run credit programs suffer from a greater default problem.

Overall, the theoretical work in this area suggests that if information and enforcement problems are the barriers to the development of an effective capital market, there is no reason to assume that government lending agencies would be in a superior position to address these problems. Indeed, the lack of incentives for government bureaucrats to monitor loans may exacerbate the problem.

Conventional Credit Programs

Capital markets in many parts of low-income countries often are underdeveloped.¹⁴ The inability of those outside a limited geographic area, such as a village, to monitor loans has posed a major impediment to developing effective capital markets. In the absence of access to conventional banking systems, businesses and individuals have turned to traditional moneylenders, even though the moneylenders are often reviled for charging usurious rates. The reasons for these high rates remain a subject of controversy. The popular view is that these rates are exploitative. This view implicitly assumes that competition is limited. Karla Hoff and Stiglitz (1990) have questioned the extent of exploitation, however, suggesting that the high rates are a result of three factors: high rates of default, high correlation among defaults, and high costs of screening loan applicants and of pursuing delinquent borrowers. Because of the importance of local information, moneylenders' loans are generally concentrated within a narrow geographic area; the inability to diversify means that the risks they must bear are higher. The implication is that the lending market carries high risk premiums. Both in the rates charged and the institutional

Examples of Financial Distress

Bolivia. In late 1987 the central bank liquidated two of twelve private commercial banks; seven more reported large losses. In mid-1988 reported arrears stood at 92 percent of commercial banks' net worth.

Costa Rica. Government-owned banks, which make 90 percent of all loans in Costa Rica, considered 32 percent of loans "uncollectible" in early 1987. Losses of private banks were an estimated 21 percent of capital plus reserves.

Philippines. Two large government-owned banks were liquidated in 1986, and their bad assets (equal to 30

percent of the banking system's assets) were transferred to a separate agency.

Tanzania. In early 1987 the major financial institutions had long-standing arrears amounting to half of their portfolios, and implied losses were nearly 10 percent of GNP.

Uruguay. After several banks failed in the early 1980s, the central bank began purchasing their bad assets. By 1985 it had acquired over \$800 million in bad loans. The cost of recapitalizing the banks has been estimated at 7 percent of GNP.

arrangements by which loans are extended, traditional moneylending differs markedly from conventional banking institutions.

Policymakers responded to this exploitative view of moneylenders by providing subsidized institutional credit as an alternative to the moneylender. To implement these credit programs, most developing countries have relied heavily on conventional commercial banks even though the paradigm of a profit-making private sector banking system is not very helpful because of extensive state ownership in the banking system. Such state-controlled banks concentrate their lending activities in areas dictated by the government and do not enforce loan repayment in many circumstances. The history of these financial institutions is now widely agreed to have been of only limited success according to standard economic criteria. Overviews of the issues and an outline of the historical experience are available in Dale W. Adams, Douglas H. Graham, and J.D. Von Pischke (1984) and Avishay Braverman and J. Luis Guasch (1986).

The main symptom of the poor performance of conventional banks in developing countries is the high loan-default rate. Irfan Aleem (1990), for example, reports default rates at conventional banks of 30 percent for Pakistan (see the box for more examples). Inability to repay loans can be attributed to economywide shocks, but some authors have turned to the imperfect information arguments discussed in the previous section. Lenders may be unable to identify good projects (giving rise to adverse selection) and find it costly to monitor their implementation (leading to moral hazard). Such problems are partly related to the limited infrastructure available for information gathering described earlier. However, the existence of imperfect information problems cannot alone explain the historically poor performance of conventional bank lending. Lenders can also have incentives to offer loans without undertaking appropriate monitoring and without adequate screening of projects. It also seems unlikely that expected profitability has been a dominant criterion in making loans. Predominantly state-owned banks have been encouraged to lend to certain sectors and activities as an end in itself, irrespective of any clearly defined social or private profitability criteria.

In addition, as was discussed above, enforcing loan repayment is not straightforward, either because bank officials do not have the right incentives or because the government is not committed to loan repayment for political reasons or because there are high costs of enforcing loan repayment by seizing collateral or using other sanctions. The question arises of why loan pro-

grams subject to such difficulties persist. With their low levels of repayment, many programs resemble grants more than loans. Viewed in this way, moribund loan programs might be regarded as relatively efficient ways of servicing political constituencies. However, such schemes may not be without some economic cost, especially if they generate expectations that prevent the operation of genuine credit programs alongside. Governments also seem to be anxious to maintain their monopoly on the conventional banking sector, which may inhibit financial development.

The absence of proper incentives for shareholders and depositors on the one hand (the principals) and borrowers and bank employees (the agents) on the other hand has also been a factor in the poor record of credit programs through conventional banks. Designing optimal banking arrangements involves providing the correct incentives for both sets of agents so that borrowers use loans productively and bank employees monitor and apply sanctions in the interests of depositors and shareholders. The experience of credit programs in low-income countries suggests that the lack of incentives for the agents (bank employees and borrowers) is key in understanding why lending through conventional banks has failed. Although in the past there has been relatively little interest in developing new institutions to implement effective lending programs, attention has recently turned to the question of how conventional banks can be modified to improve their performance according to economic criteria. There has also been increased interest in how alternative lending arrangements such as group lending have overcome agency problems discussed above. The following section discusses two lending arrangements that have used nonstandard lending contracts to provide credit.

Alternative Financial Institutions

Recent discussions of credit markets in low-income countries have shown increased interest in combining the advantages of conventional banks and traditional moneylenders. Although conventional commercial banks have a comparative advantage in intermediating funds over larger geographic areas and reaping scale economies, they seem to fare worse in solving enforcement and information problems. The traditional moneylenders, on the other hand, have a comparative advantage in overcoming information and enforcement problems. Lending arrangements that fall between

conventional bank lending and finance from money-lenders offer some promise as institutional solutions that might combine the advantages of both. Such non-traditional arrangements, which are able to replace conventional forms of collateral with other mechanisms such as social ties, include group lending schemes and rotating savings and credit associations, or *roscas*.¹⁵ Group lending schemes are primarily credit programs, and *roscas* have an important savings component.

Group Lending Schemes. Group lending programs have a number of key features that help them overcome information and enforcement problems, but the use of peer monitoring is among the most widely discussed and imitated. Peer monitoring involves requiring that neighbors who are in a good position to monitor the borrower pay a penalty if the borrower goes bankrupt. It falls into a class of group incentive mechanisms whereby borrowers may take actions that directly affect each other's utility, may provide advice or information to each other, and may insure each other (Hal R. Varian 1990). In addition, some of the borrowers may be able to influence the composition of the group.

Of the banking institutions that have used group lending to provide credit in developing countries, the Grameen Bank in Bangladesh is the oldest and also appears to be among the more successful. It makes more than 400,000 loans a month with an average size of approximately \$70. Its default rate is around 2 percent, in contrast to conventional lenders in Bangladesh, who have default rates ranging from 25 percent to 70 percent (Mahabub Hossain 1988). The major sources of funds for Grameen Bank are loans from the central bank and grants from international aid agencies and foreign governments. Grameen Bank also draws on deposits of members in various savings plans.

The bank's customers are organized into five-person groups who are mutually responsible for repaying the loans. Each group member must establish a regular pattern of weekly saving before applying for a loan. The first two borrowers in a group must make several regular weekly payments on their loans before other group members can borrow. According to Hossain, "The group functions as an institution to ensure mutual accountability. The individual is kept in line by a considerable amount of pressure from other members of the group. The existence of the group thus acts as collateral for the bank loans. The credibility of the group as a whole and its future benefits in terms of new loans are in jeopardy if one member defaults on loan repayments" (1988, 26). Thus Grameen Bank is able to exploit the local knowledge of the members of

the group and has devised an incentive structure whereby the selection and monitoring costs are internalized.

Varian (1990) enumerates several aspects of the Grameen program that involve the group incentive mechanisms mentioned above: (1) mutual monitoring—agents influence other agents' costs of engaging in desirable and undesirable activities; (2) mutual insurance—members are expected to assist each other in times of need; (3) formation of the group—the group is formed by the individual members; (4) mutual assistance—agents are expected to provide information and assistance to other agents; and (5) sequential decisions—the incentive system is sequential in nature; members of the group are awarded loans on the basis of the outcome of the other members' projects.

Through such mechanisms, the Grameen program appears to meet several criteria for effective provision of credit. By joining together, small borrowers can reduce the costs of borrowing and improve their access to credit. The lender's costs are reduced because lending to a group lowers the risk of dealing with small businesses and circumvents the problems involved in selecting borrowers. The groups themselves must be selective in accepting new members. In this way, groups act as a substitute for lender acquisition of information about borrowers and thereby reduce the costs of processing loans. Group members encourage each other to repay on time so that the rest can qualify for loans in the future. This dynamic directly reduces the lender's default risks.

By and large, group lending schemes have improved access to credit in developing countries. Most group lending arrangements are not profit-maximizing institutions, but several recent studies have analyzed the economic incentives inherent in group lending programs and their applicability to private capital markets. Studies by Varian (1990) and Stiglitz (1990) focus on the informational advantages of group lending. Varian focuses on the general contracting problem and uses the Grameen Bank model to explore some questions about group incentive schemes using a principal-agent framework. One question addressed is whether mutual insurance among borrowers is beneficial and whether it improves the economy's ability to handle the moral hazard trade-off between risk-bearing and incentives. Varian shows that mutual insurance is beneficial only if the borrowers can monitor each other better than the bank or other market-based insurance schemes.¹⁶ Varian also demonstrates the advantages of sequential lending arrangements in which the result is obtained because an individual borrower's payoff depends on the returns that other borrowers receive from their projects.

Stiglitz argues that peer monitoring is not without its costs. The members of the borrowing group in Grameen Bank bear risks that, in the absence of the monitoring problem, could be absorbed better by the bank. This fact poses an analytical problem—that is, are the gains from increased monitoring worth the costs of increased interdependence? Under fairly restrictive assumptions, Stiglitz shows that the transfer of risk from the bank to the borrowing groups increases borrowers' welfare.

The papers by Stiglitz and Varian assume that borrowers will repay if they are able. In the kinds of environments in which group lending is used, banks typically have few sanctions against delinquent borrowers. However, such economies have a greater ability to impose effective social sanctions against individuals who harm others in their social group. Group lending provides a way to harness these nonmarket institutions to enforce loan repayment. Timothy Besley and Stephen Coate (1991) model the trade-off in repayment rates between group lending and individual lending by considering two countervailing externalities in group lending. A positive externality arises from the possibility that a successful borrower may repay the loan of a partner who obtains a bad return on his project. A negative externality arises if the entire group defaults when at least some members would have repaid had they not been saddled with the liability of their partners' loans. Besley and Coate show that only if social penalties are sufficiently severe will group lending necessarily yield higher repayment rates than individual lending.

These studies, together with the experiences from individual countries, suggest some of the ingredients in a successful group lending scheme with peer monitoring. First, the members of the group must be provided with incentives to monitor the actions of their peers. In the Grameen Bank the incentives lie in the fact that members of the group are jointly liable for repayment of loans and the fact that they cannot gain access to credit until the debts of the group are discharged. Second, smaller groups work more effectively than larger ones. In experiments with different sizes of groups the Grameen Bank found that larger groups have a free-rider problem in monitoring: because the costs to each member in a large group are relatively small if another member defaults, the incentives to monitor are lower. The increased risk of potential defaults in smaller-sized groups increased the incentives for peer monitoring. Third, self-formed groups have been crucial to the success of Grameen Bank because there are strong incentives for groups with similar risk

characteristics to form. Group lending has an advantage over conventional lending not only in monitoring but also in selection and in reducing the subsidy to individuals who pose a greater default risk. Groups created at the initiative of governments or private development agencies have not been as effective because they undercut the force of local sanction.

But the Grameen Bank model for group lending is not without drawbacks. First, the formation of small groups also increases the risk from a single member's default. Stiglitz shows that only at low levels of monitoring costs do the gains from peer monitoring offset the loss in expected utility from the increased risk-bearing. Another negative aspect of group lending arises if the entire group defaults, when at least some members would have repaid had they not had the liability of other members' loans.¹⁷ Finally, most of the existing schemes are not self-sustaining but rely on external funding sources, including the central bank and multilateral aid agencies. Few collect deposits, partly because the supply of subsidized external funds reduces the intermediary's incentive to provide this service but also because deposit taking is viewed as outside the scope of tasks of group lenders.¹⁸

Rotating Savings and Credit Associations. Conventional financial intermediaries in low-income countries have been slow to develop deposit services, but a variety of informal arrangements allow small businesses and households to pool their savings. The most common form of deposit services are provided by the rotating savings and credit associations, or *roscas*.¹⁹ *Roscas* are formed among individuals whose circumstances and characteristics are well known to each other, and they intermediate in the most basic way. A small number of individuals (typically fewer than fifty) form a group. Members pool money by making periodic payments into a fund, which then rotates among members as a lump-sum payout. *Roscas* allow at least some members to finance large expenditures sooner than they would have if they had relied on their own savings. They are primarily used to save for the purchase of an indivisible durable good. Defaulters are sanctioned socially.

There are two major forms of *roscas*. The first type, the random *rosca*, allocates funds randomly to one of the members. In the next period, the process repeats itself, except that the previous winner is excluded from the draw. The process continues until each member has received the funds once. Individuals may also form a bidding *rosca* in which the funds are allocated via a bidding procedure. The individual who receives the funds in a given period does so by bidding the

most in the form of a pledge of higher future contributions to the rosca or of one-time side payments to other members. In a bidding rosca, individuals may still receive the funds only once; the bidding process merely establishes priority.

Besley, Coate, and Glenn Loury (1992a, 1992b) have analyzed the economic role and performance of roscas. They developed a model in which individuals save for an indivisible good and studied roscas that distribute funds using random allocation and bidding. The allocations achieved by the two types of roscas are compared with those achieved by a credit market and with efficient allocations more generally. Besley, Coate, and Loury found that bidding roscas are generally dominated by credit markets. (This finding is not surprising because both institutions use prices to allocate access to the indivisible good, but the credit market has greater flexibility.) Nonetheless, the element of chance offered by random roscas is of some value.

Roscas also appear to be vulnerable to problems of default by individuals who refuse their membership commitment after winning the pot. Such defaults would seem to affect bidding roscas more than random roscas since the gains from early default are greater in the former, and individuals with the lowest disutility from social sanctions have a stronger incentive to bid in order to obtain the pot early.

The Efficiency of Alternative Financial Institutions. The theory and empirical evidence on nonstandard lending contracts suggests that they have been successful at overcoming problems of information asymmetry and enforcement. However, most of these schemes tend to operate on a small scale and to intermediate funds among relatively closed groups, thus contributing to market segmentation. The efficacy of these lending schemes has to be judged against the segmentation problem. Further, it is not clear that the benefits from these programs exceed the costs of implementation. For example, group lending has been shown to be socially beneficial only at low levels of monitoring costs.

Is there any role for public policy in these institutional innovations? There are externalities in the institutional innovations discussed above that can be mitigated by government intervention. In particular, with group lending an individual who bears the initial cost of organizing such an institution is providing a form of social capital from which all members of the group will benefit. If there is an undersupply of this socially beneficial service, then the government has a role as organizer and catalyst in the formation of such institutions.

Community Development Lending in the United States

The motives for government interventions in credit markets in the United States are similar to those in low-income countries. A primary goal of intervention has been to provide credit to individuals who possess adequate collateral and income but may be denied access to credit markets because they are minorities or other individuals about whom it is costlier to gather information. An alternative goal for intervention is to help provide credit to individuals who lack sufficient collateral to satisfy lenders' concerns. The issues that arise in designing and implementing credit programs for these borrowers in the United States are similar to those found in credit markets in less developed countries.

Current policy discussions are beginning to recognize the multiplicity of federal laws and existing private and quasi-public institutions and programs that facilitate community development lending in the United States. The bank regulations governing community development lending include the fair lending laws, the Community Reinvestment Act (CRA), and the Home Mortgage Disclosure Act (HMDA).²⁰ Fair lending laws prohibit discrimination on the basis of age, sex, race, and a variety of other characteristics. The Community Reinvestment Act, passed in 1977, encourages banks to meet the credit needs of all members of their communities, including low- and moderate-income members. The Home Mortgage Disclosure Act, passed in 1989, requires banks to file information on the disposition of loan applications by race, gender, and annual income. In addition to commercial banks, savings and loans, and credit unions, a variety of nondepository institutions engage in community development lending. These include community development corporations, microenterprise or microloan funds, community development loan funds, private mortgage insurers, small business investment companies, private venture capital funds and pension funds, and specialized institutions such as the National Cooperative Bank and the Neighborhood Reinvestment Corporation. These institutions are generally funded by foundations, churches, and other charitable organizations and are primarily interested in fulfilling specific social goals. They are involved chiefly in character lending as their borrowers do not have the collateral or credit record that would be required by conventional banks. Their loans are likely to be smaller, to have higher transactions costs associated with them, and to be accompanied by

technical assistance (including credit counseling and marketing advice) to borrowers.

Several new community development lending proposals are also currently under consideration in Congress.²¹ These proposals are variants of the Community Development Banking and Financial Institutions Act proposed in July 1993. The act would create a Community Banking and Credit Fund with authorization for \$382 million in federal funds over the next four years. The fund would invest in community development banks, which would in turn lend to consumers and small businesses that traditional bankers might avoid. The fund would be able to contribute capital, to issue grants, to make loans, and to provide deposits to the development institutions. The act discourages existing financial institutions, targeting instead nonprofit and other community-based institutions. To qualify as a community development financial institution under the act, an institution must meet two criteria. First, its primary mission must be to provide credit in low-income areas. Second, it must encourage, through representation on its governing board or otherwise, input from residents of the investment area or the targeted population (see F. Jean Wells and William Jackson 1993b).

Because the act restricts participation in community development banking to nonprofit lenders, this study evaluates their economic role and performance.²² In particular, the discussion that follows considers the activities of the major community development banks and provides an overview of the approximately 100 community development loan funds and microloan funds currently operating.

Community Development Banks. The existing community development banks (CDBs) provide a useful starting point for a discussion of community lending.²³ There are five CDBs currently operating. The CDBs are chartered, regulated, and able to engage in the same businesses as commercial banks. However, their mandate to fulfill specific social goals differs significantly from that of commercial banks, and they incorporate a broad range of development activities in addition to lending services. All of the CDBs are under a holding company that owns an insured depository institution and has other for-profit subsidiaries and nonprofit affiliates. For instance, the Shorebank Corporation in Chicago includes a bank, a for-profit real estate development subsidiary and venture capital company, and a nonprofit training and development company. CDBs typically operate with grants from foundations, corporations, and state and local governments. Shorebank's largest common stockholders are foundations

and religious institutions that have never been paid a dividend. A portion of their liabilities consists of deposits that pay below-market rates of interest.

Microloan Funds. Microenterprise loan funds are unregulated, typically nonprofit organizations that provide credit and management assistance.²⁴ The various bills under consideration in Congress suggest a prominent role for these funds whose mandates are similar to those of CDBs. Some loan funds are independent entities while others are affiliated with banks or a consortium of lenders. For example, the Southern Development Bancorp, an Arkansas-based community development bank, operates a microloan fund, the Good Faith Fund. The first loan funds were started in the mid-1980s, and since then their numbers have grown dramatically. More than 100 microenterprise loan funds are operating currently, and many more are in various stages of formation (see Shorebank Advisory Services 1992 and Kathryn Tholin 1993). Microloan funds and community development loan funds operate with grants and loans from foundations, corporations, and state and local governments.

Because of their lack of collateral and credit history and the small size of their loans, the microloan funds borrowers are appropriate as candidates for peer monitoring.²⁵ Approximately one-half of the funds, ranging from the Lakota Fund on the Pine Ridge Indian Reservation in South Dakota and the Women's Self Employment Project in Chicago to the Cascadia Revolving Fund in Washington, use the group lending method.²⁶ All of these funds target low-income individuals and replace traditional collateral with peer pressure. Results from these experiments with group lending are mixed. Some of the funds have effectively lowered risk through peer pressure and report loan-loss figures that compare favorably with those for conventional banks. For example, the Lakota Fund found that its default rate declined significantly from 28 percent to 7 percent once it adopted peer monitoring. Similarly, in the Women's Self Employment Project, peer pressure has ensured timely repayment, and not a single member has defaulted to date. However, other funds, including the Good Faith Fund, have found peer monitoring to be insufficient. In its first two years, this fund had a 40 percent default rate, and it has since moved to a modified version of the Grameen Bank model.

Another problem with microloan funds is that they are costly to run. The Women's Self Employment Group, for example, spends more on running its two loan programs than it lends.

Finally, microloan funds have been successful partly because they tend to operate on a small scale and

are tailored to meet the specific needs of borrowers. This success also poses a potential danger, though, in that heightened federal interest together with increased funding may force them to develop too rapidly without recognizing regional or cultural distinctions. There is also a problem with expanding the programs. Few funds in the United States have been able to grow beyond several hundred borrowers; in contrast, a typical Grameen branch in Bangladesh may lend to 1,500-2,000 people at a time (Shahid Khandker, Baqui Khalily, and Zahed Khan 1993).

The experience of the CDBs and loan funds suggests that risk-mitigation associated with community lending is labor intensive and consequently expensive. Many private lending institutions may not be able to bear the costs of risk-mitigation activities (including the costs of screening, counseling, and educating applicants, monitoring borrowers, and acquiring information about community development lending risks) and still pay a return that would attract deposits and investment capital to banking. As a result, some banks have sought support from third parties, such as non-profit organizations, to screen applicants and work with borrowers and others to share risks by forming loan consortiums.

Conclusion

Interventions in credit markets are widespread in developing countries. The traditional argument for intervention is that it increases growth and productivity, improves income distribution, and displaces the exploitative indigenous financial system. To assess the relevance of credit market intervention schemes to the development problems in low-income countries and the United States, this article adopts a different perspective and reviews the applicability of recent developments in the theory of market failure to policymaking in credit markets. It then examined the institutional features of credit markets that are explicable in terms of market imperfections and related them to theoretically well-motivated arguments (based on moral hazard and adverse selection) for credit market interventions under a broad set of circumstances. However, these arguments for intervention on the basis of informational problems assume that policymakers have an informational advantage in providing credit. The empirical evidence on credit market interventions reviewed suggests that economists and policymakers are still a long way from being able to use the theoretical results on moral haz-

ard and adverse selection to identify a robust class of cases in which government intervention is likely to be successful.

There is also a long history of enforcement problems in credit programs in low-income countries that reflects poorly developed property rights and the failure of governments to sanction borrowers because of political constraints. It has become increasingly clear over the last decade that the distortions created in the allocation of credit outweighed the gains from improved access to financial services and intermediation.

While conventional financial institutions and development banks created by the government have been beset by insolvency and liquidity problems, alternative lending arrangements have been more successful at overcoming information problems and in providing credit to targeted groups. Among the better-known of these lending arrangements are group lending programs that replace traditional collateral with peer pressure. Group lending is especially appropriate when banks have few sanctions against delinquent borrowers and there are limitations on the kinds of collateral that can be used.

The success of these alternative lending schemes has led some to advocate setting up such schemes worldwide, including in the United States. Many features of community development lending in the United States are similar to those found in credit markets in low-income countries. One aspect of the Community Development Banking and Financial Institutions Act proposed in 1993 that has been debated is whether to allow conventional commercial banks and thrifts to qualify for the grants of up to \$5 million that would be handed out to financial institutions specializing in community development, such as community development banks, community development loan funds, and microenterprise loan funds. The experience of credit programs in low-income countries would suggest that conventional banks do not have a comparative advantage in community development-type lending. Indeed, traditional commercial banks and government-owned development banks in many developing countries have not responded to information imperfections and have incurred huge losses on credit programs implemented in recent years. On the other hand, a variety of alternative lending arrangements, including group lending schemes, have used various incentive mechanisms such as peer monitoring to offset informational problems and have maintained default rates at manageable levels. The problem with these alternative lending programs is that they often operate on a small scale and incur high transaction costs because the size of their loans is so

small. Arguments for favoring traditional banks in community development lending would have to weigh the

greater default problem against the better ability to intermediate funds over a larger group.

Notes

1. See, for example, Fry (1988) and Von Pischke, Adams, and Donald (1983). The rationale for such intervention was also that credit programs were easier to implement and monitor than other structural changes such as land reform.
2. These issues were first raised by McKinnon (1973) and Shaw (1973). Alternatively, another group of economists termed the neostructuralists have argued that in the short run, growth is faster under financial repression because there are fewer reserve requirements and other distortionary taxes. See van Wijnbergen (1982, 1983).
3. Several studies in Adams, Graham, and Von Pischke (1984) and Von Pischke, Adams, and Donald (1983) make this argument.
4. In the context of credit markets, economists generally define an inefficient outcome as one in which projects with positive net present value go unfunded.
5. Several community development lending proposals are currently under consideration in Congress and are described in more detail below (see notes 20 and 21). Under the new Community Reinvestment Act proposals, banks would also be judged on the investments they make in community development institutions and housing programs.
6. Wells and Jackson (1993a, 1) argue that the role of government is justified because "community development lending is a specialized and costly form of activity that may require reduced cost funds or low-cost loans to be successful" and that "significant lending in the area will not occur without government support." Minsky and others (1993) claim that "a decrease in the number of independent financing alternatives and a rise in the size distribution of financing sources has increased the financial system's bias towards larger transactions."
7. This discussion is drawn from Hoff and Stiglitz (1990) and Besley (1992).
8. Tschinkel and Wall (1994) suggest that another reason projects with positive net present value may go unfunded is that private developers cannot capture externalities.
9. Other possible justifications for credit market interventions that are not discussed here include the prevention of bank runs, prevention of monopoly power by lenders, and infant industry arguments. These are developed in detail in Besley (1992).
10. An externality exists when the decisions and actions of one market participant affect the well-being of another without the decisionmaker bearing the full cost of his or her actions or reaping the full benefits of those actions. For example, within a neighborhood, the decision of homeowners not to maintain their properties can have spillover effects on the prices of surrounding properties.
11. Adverse selection could be mitigated if there were a separating equilibrium in the credit market. Separation can be achieved by either screening or signalling. Self-selection would result in individuals' types being known to lenders in equilibrium. Self-selection might also be achieved using collateral requirements and loan amounts as in Stiglitz and Weiss (1986).
12. Along the same lines, Lacker (1994) has developed a model of adverse selection with a less restrictive definition of equilibrium, which displays endogenous financial intermediaries and predicts no welfare-enhancing role for the government.
13. Thus, a government will announce that farmers are forgiven their past debts, as occurred in India in 1991 and more recently in Bangladesh (see "Begum Zia's Burden" 1992).
14. The financial systems of most developing countries in the 1950s and 1960s could not adequately support a process of industrialization and agricultural modernization. Formal financial banks consisted of a few institutions, often foreign-owned, which had branches in the major urban centers only. These institutions provided financing mainly to trading companies and natural resource-based industries, which were foreign-owned as well. Local businesses had difficulty borrowing from banks. An indigenous informal financial sector made up of moneylenders, traders, and pawnbrokers provided loans to farmers and small businesses. Informal lenders charged high rates, however, and the scale of lending was small. With banks in most countries owned by industrial groups, these industries had few sources of equity and long-term financing.
15. This is by no means an exhaustive list of alternative or semiformal banking schemes in developing countries; however, they are among the most widespread. Another nonmarket institution that has received widespread interest is the nineteenth-century German cooperative (Bonus and Schmidt 1990 and Banerjee, Besley, and Guinnane 1992). These cooperatives are interesting because they were influential in the diffusion of cooperatives throughout the world. Like group lending programs, these cooperatives had a comparative advantage over conventional lending institutions in dealing with agency problems. They provided a vehicle for peer monitoring and had greater enforcement capabilities through the use of social collateral.
16. The provision of nonmarket insurance by agents in a competitive insurance industry with moral hazard has been shown to be inefficient by Arnott and Stiglitz (1991).
17. The two most common means of providing group accountability are joint liability and limited liability. Joint liability encourages careful selection of members because any mem-

ber can be held liable for the defaults of others. It may, however, deter the relatively wealthy from joining the group because they have more to lose. In rural Zimbabwe, schemes based on joint liability worked well in times of good production but fared worse than other schemes in the same area in times of drought. The threat of default led farmers to withhold repayment and hope for a general amnesty since they would be held accountable for other members' debts.

Group lending schemes based on limited liability are more common. In Malawi and Nepal borrowers are required to place part of their loans in a fund that would be forfeited if any member defaulted. If all members repay their loans, these deposits are returned. This practice has resulted in a better record of repayment. Repayment rates ranged from 88 percent to 97 percent in group lending schemes in Malawi and Nepal during the 1980s. These programs held between 5 percent and 10 percent of the loans as security. These repayment rates compare favorably with other small-borrower credit programs. Another way of imposing limited liability is to link continued access to credit with prompt repayment of existing loans (World Bank 1989).

18. Khandker, Khalily, and Khan (1993) estimate that Grameen Bank's reliance on subsidies increased tenfold between 1986 and 1993.
19. Roscas are known by a number of different names. For example, they are called *Chit Funds* in India, *Susu* in West Africa, and *Kye* in Korea. Recent research in Bolivia showed that one-third to one-half of the adult population in urban areas often participated in roscas and that their rosca payments amounted, on average, to about one-sixth of their salaries (Adams and Fitchett 1990). Savings and loan associations in the United States began life as roscas.
20. The recently released CRA proposals include an investment test that would take into account banks' investment in community development organizations, small and minority-owned businesses, and affordable housing. In addition to CRA, HMDA, and the fair lending laws, two government laws have been recently enacted, but not yet funded, which provide incentives for community development lending. The Bank Enterprise Act (BEA) is a provision in the Federal Deposit Insurance Corporation Improvement Act (FDICIA) that would reduce deposit insurance premiums for banking institutions that lend or establish branches in low-income communities. In addition, the premiums that such institutions pay on checking accounts for low-income people would also be reduced. So far, Congress has appropriated \$1 million for the implementation of BEA. This approach to increasing banking services in low-income areas suggests that Congress is willing to transfer some of the risk of lending to the insurance fund. There is concern that such a transfer will tend to undermine the safety and soundness provisions of FDICIA.

Under the Community Investment Corporations Demonstration Program Act of 1992, the government would underwrite loans to low-income communities through HUD. The program (not yet funded) represents an unambiguous subsidy to these communities.

21. A variety of proposals has been put forward, ranging from those that would set up a separate system of institutions to engage in community development lending to others that would facilitate such lending through commercial banks. Most proposals emphasize private sector involvement, recognizing that funding from government sources may be limited.

The difference between these proposals and many other community development programs is the focus on lending institutions. Typically, government programs for community development have concentrated on community development block grants and categorical lending programs, emphasizing end users. The current set of proposals emphasizes establishing community development lenders, which in turn would make investments and loans in targeted geographic areas and populations.

Proposals that have been mentioned in the press include that by the Jerome Levy Economics Institute (Minsky and others 1993). The Levy Institute proposal emphasizes not only lending but also payments services and savings opportunities to be provided through a specially chartered system of community development banks. A federal bank for community development banks would provide services, including capital contributions, to these banks. Government funds would cover start-up costs. Another suggestion is to allow commercial bank investment in development banks to count toward meeting their Community Reinvestment Act requirements. For more discussion of proposals, see Eubanks and Smale (1993).

22. For a detailed discussion of other community development lending forms, such as community development corporations and other programs at depository institutions and programs in federal law, see Wells and Jackson (1993a), who focus on public/private and private lending programs.
23. Community development banks are defined here to include commercial banks, savings and loans, and credit unions that accept insured deposits and engage primarily in development lending.
24. Shorebank Advisory Services (1992) defines a microenterprise as "a small business that operates from a home, storefront or office and employs fewer than five people. The business may be part-time, tend to be concentrated in the retail and service sectors, and require modest levels of start-up capital. These businesses lack access to conventional sources of credit because of their small size, lack of collateral, insufficient equity and management inexperience."
25. Stern (1994) estimates that most loans are as small as \$200.
26. Most of these funds operate a conventional lending program in addition to the group lending program.

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Review Essay

Selected Finance and Trade Periodicals on Latin America: An Update

Jerry J. Donovan

The reviewer is the research librarian in the Atlanta Fed's research library. He is grateful to a number of people who helped make available, and who assisted in evaluating, the publications reviewed. Special thanks are due Marian P. Francois, Information Specialist at the Overseas Private Investment Corporation (OPIC) Research Library, Washington, D.C.; the staff of the Reference Section of the Joint World Bank-International Monetary Fund Library, Washington, D.C.; as well as William Curt Hunter and Roberto Chang of the Atlanta Fed's research department.

Following the debt crises and economic stagnation that troubled Latin America in the early 1980s, improved government stability, increased privatization, and better control of inflation in these countries led to increased investment there by U.S. interests later in that decade. In the 1990s this progress has continued. A prime example of the improved tenor of the times is the passage of the North American Free Trade Agreement (NAFTA), which took effect at the beginning of this year. NAFTA eliminates or reduces barriers to investment and the trade of goods and services among the United States, Mexico, and Canada.¹ The improved climate for trade and investment activity not only in Mexico but also in the rest of Central and South America has increased the demand for solid, factual financial and commercial reporting, informed analysis and commentary on news events, and accurate statistics covering this part of the world.

This essay reviews a selection of periodical information sources about Latin American finance and trade of interest to businesspeople, investors, and public policymakers. It is the second of two *Economic Review* articles that review information sources on Latin American finance and trade; the first, which surveys reference sources, appeared in the January/February 1994 issue. This essay also updates and expands upon the commentary on a few of

the publications cited in an earlier review of periodical literature on worldwide foreign trade and investment (see the July/August 1991 *Economic Review*).

The current discussion examines eighteen periodical. Journals, reviews, magazines, and institutional publications are examined in the first two sections, and the final section provides somewhat more in-depth coverage of newsletters. Not only do newsletters account for a sizable portion of the English-language periodicals covering Latin American trade and finance, but their typically more frequent publication schedule and more "hands-on" nature seems to warrant this attention.²

Journals, Reviews, and Magazines

The *Journal of Interamerican Studies and World Affairs* (Coral Gables, Florida: University of Miami North-South Center for the Institute of Latin American Studies; quarterly; began 1959) is a scholarly journal primarily of interest to academics and public policymakers; its style is discursive rather than quantitative. Its editorial board includes representatives of such respected institutions as Harvard University, the Hoover Institution at Stanford University, and the University of California, Los Angeles, as well as the *Christian Science Monitor* and the *Miami Herald*.

Despite the journal's scholarly style, its articles on economic and political topics have applications for finance and business. For example, the Winter 1992-93 issue includes lengthy articles (one in excess of seventy pages) on timely topics like winners and losers on the NAFTA "fast track," Chile's redemocratization, and major issues on Ecuador's foreign policy agenda. In addition, shorter articles examine a new stage in the Ecuador-Peru Amazon conflict and Ecuador's foreign policy toward nations outside the western hemisphere and international organizations. Review essays, a book review, and "books received" complete this issue.

Although the analytical articles in the Winter 1992-93 *Journal of Interamerican Studies and World Affairs* are generally unsupported by tables and charts, an abundance of notes and references compensate for this lack.

Latin American Research Review (Albuquerque: The Latin American Institute, University of New Mexico; three issues per year; began 1965) contains scholarly articles, research reports, and notes on Latin American culture, politics, and economics. With an editorial board composed of twenty-six distinguished scholars representing major universities such as The

Johns Hopkins University, Howard University, the University of California, Berkeley, as well as agencies such as the Overseas Development Council, the review is intended primarily for an academic audience.

The issue of *Latin American Research Review* examined (vol. 27, no. 2, 1992) addresses matters of both topical and enduring interest. For example, "Nontraditional Agricultural Exports in Latin America," a thirty-nine-page study, asserts that internal political factors and international lending and aid agencies have pressured countries throughout Latin America to seek radical new treatments for their economic ills. One outward-looking development strategy discussed is the promotion of important new "nontraditional exports."³ Other in-depth articles discuss Mexican migration to the United States, Peruvian economic policy in the 1980s, and contours of the post-1810 depression in Mexico. The issue concludes with "Review Essays," a selection of briefer articles.

Latin American Research Review's solid research, carefully documented with references to credible statistical and academic sources, offers a useful blend of scholarship and practical applications that will interest economic and social policymakers.

Business Latin America: Weekly Report to Managers of Latin American Operations (New York: Economist Intelligence Unit; weekly; began 1966) has a thirty-year track record—first as a component of the Business International Corporation constellation of publications and currently as part of the Economist Intelligence Unit (London) array.⁴

Business Latin America consists of topical articles, typically written by authorities who work on-site in subject countries. For example, in the September 13, 1993, issue, articles on Andean Pact integration, Peruvian privatization, the Venezuelan business outlook, and "greening" a company's image in Brazil originated from Quito, Lima, Caracas, and Rio de Janeiro. Regular features in each issue are "Finance Watch" and "Management Alert," short essays on investment trends and significant political and legal developments. Businesspeople and financiers likely will find this publication valuable.

Two publications previously reviewed in the July/August 1991 *Economic Review*, *LatinFinance* and *Business Mexico*, are worthy of a second mention. *LatinFinance* (Coral Gables, Florida; ten issues per year, plus supplements; began 1989) remains highly recommended for its coverage of financial markets, developments in equity markets, and current events in the corporate

marketplace. The magazine's value to financiers is well illustrated by the January/February 1994 supplement, which featured "Latin American Money Markets," a directory of financial institutions and brokerage houses in each country, as well as six essays on topics such as consolidation in the financial markets, attracting foreign investors, and exchange-rate policy.

Business Mexico (Mexico City; monthly; began 1991) has new merit now that NAFTA has been implemented. This glossy economic development magazine, published by the American Chamber of Commerce of Mexico, A.C., is targeted toward businesspeople and financiers interested in Mexico. Its promotional, "applied" economics tone reflects the organization's objectives of promoting U.S. business interests, trade, and investment in Mexico. Its articles cover issues relevant to trade, agriculture, government, environment, and economic analysis. The magazine also includes feature reports on topical issues. While this publication offers much valuable information, it should be pointed out that statistical data displayed in *Business Mexico's* charts and graphs may or may not be credibly documented, and researchers should check other sources to ensure their validity.

In addition to English-language periodicals specializing in Latin American finance and trade, many general business and finance publications, as well as scholarly journals, include this field. For instance, the March 1994 issue of the *Institutional Investor, International Edition* devotes the cover story to an eight-page feature, "Masters of the Game," introducing a group of chief financial officers from the largest Latin American companies who are "financing Latin America's boom." Similarly, the *Quarterly Review of Economics and Finance* (vol. 33, special issue, 1993) published *Latin America: Privatization, Property Rights, and Deregulation I*, edited by Werner Baer and Michael E. Conroy, the proceedings of the 1992 (first) conference on Latin America 2000: A Collaborative Project of the University of Illinois at Urbana-Champaign and the University of Texas at Austin.

Institutional Publications

Serial publications by such international agencies as the World Bank, the International Monetary Fund (IMF), and the Organisation for Economic Cooperation and Development (OECD) provide statistical data and

cross-country comparative data analysis that undergird research reported in other journals, magazines, and newsletters. For instance, the World Bank (Washington, D.C.) publishes a series of occasional monographs titled "A World Bank Country Study," which address timely country-specific subjects and make the bank's ongoing research available to government policymakers and to the academic, business and financial, and economic development communities. Recent examples of World Bank studies of Latin America include *Uruguay: The Private Sector* (1994), *Chile: Subnational Government Finance* (1993), and *Argentina: From Insolvency to Growth* (1993). Typical sections within these reports present statistical data and interpret countries' macroeconomic frameworks, identify sector strategies and expenditures, examine the role of the private sector, and consider the regulatory structure in major commercial sectors.

International Monetary Fund periodical publications contain, but are not limited to, statistical data such as national accounts for Latin American nations. The statistics found in the IMF's *International Financial Statistics, Direction of Trade Statistics, Balance of Trade Statistics, and Government Finance Statistics Yearbook* will prove extremely useful to marketers and investors as well as policymakers and academics.

The Organisation for Economic Cooperation and Development published *OECD Economic Surveys: Mexico, 1991/1992* (Paris: 1992), the only study of a Latin American nation in the *OECD Economic Surveys* series, more than a year before Mexico achieved OECD membership. Chapter headings include "Macroeconomic Stabilisation after the 1982 Debt Crisis," "Redefining the Role of the State in the Economy," and "Strengthening the Role of Market Forces and Incentives." The numerous diagrams and tables, including a foldout table titled "Basic Statistics: International Comparisons," are derived from official OECD databases.

Series of occasional papers from U.S. embassies in Latin America can prove useful also. For example, *Chile—Economic Trends*, published in May 1993 by the economic section of the Embassy of the United States of America in Santiago, offers a comprehensive overview of the Chilean economy and its prospects, primarily for the benefit of U.S. commercial and financial interests. The seventeen-page study opens with a four-year comparative table, "Key Economic Indicators" (see Figure 1), followed by a summary and overview of recent developments, the economic policy setting, and the short-term outlook. Further discussions focus on the current economic situation and trends, exchange rate and monetary policy indicators, inflation,

Figure 1

KEY ECONOMIC INDICATORS*Millions of U.S. dollars unless otherwise noted*

| | <u>1989</u> | <u>1990</u> | <u>1991</u> | <u>1992</u> |
|--|-------------|-------------|-------------|-------------|
| Economic Profile | | | | |
| GDP in dollars (billions) | 25.5 | 26.0 | 31.1 | 40.0 |
| Per capita GDP, current dollars | 1,967 | 1,974 | 2,350 | 2,971 |
| GDP, % change | 10.0 | 2.1 | 6.0 | 10.4 |
| Production, Employment and Prices | | | | |
| Labor force (thousands) | 4,594 | 4,671 | 4,731 | 4,843 |
| Unemployment Rate (average) | 6.3 | 6.0 | 6.5 | 4.9 |
| Industrial production, % change, Dec./Dec. | -1.0 | 1.6 | 11.9 | 9.0 |
| CPI, % change, 12-month rate | 21.4 | 27.3 | 18.7 | 12.7 |
| Balance of Payments and Debt | | | | |
| Exports (F.O.B.) | 8,080 | 8,310 | 8,929 | 9,986 |
| Imports (F.O.B.) | 6,502 | 7,037 | 7,353 | 9,237 |
| Trade balance (F.O.B.) | 1,578 | 1,273 | 1,576 | 749 |
| Current account balance | -905 | -790 | 143 | -583 |
| Foreign debt (Includes IMF) | 17,520 | 18,602 | 17,371 | 18,945 |
| Debt payments | 2,766 | 3,191 | 2,132 | 2,225 |
| Debt payments as % of merchandise exports | 34 | 38 | 24 | 22 |
| Foreign exchange reserves, end-period | 2,943 | 5,347 | 6,639 | 9,009 |
| Average exchange rate (pesos per US\$) | 267 | 305 | 349 | 363 |
| Direct Foreign Investment | | | | |
| Total authorized | 2,959 | 1,446 | 3,395 | 3,014 |
| U.S. share of authorized inflows (%) | 53 | 16 | 44 | 11 |
| Total materialized | 1,020 | 1,356 | 1,140 | 1,389 |
| U.S. - Chile Trade | | | | |
| Chilean imports from U.S. (F.A.S.) | 1,455 | 1,373 | 1,582 | 1,985 |
| Chilean exports to U.S. (C.I.F.) | 1,456 | 1,469 | 1,596 | 1,649 |
| U.S. Trade balance with Chile | -1 | -96 | -14 | 336 |
| U.S. share of Chilean imports (%) | 22 | 19 | 20 | 21 |
| U.S. share of Chilean exports (%) | 18 | 17 | 18 | 17 |

Principal U.S. exports: Mining machinery, fertilizers, computers.

Principal U.S. imports: Copper, fresh fruit, gold.

Sources: Central Bank, National Institute of Statistics, Foreign Investment Committee, and Embassy estimates.

Source: Chile—Economic Trends (Santiago: Economic Section, Embassy of the United States of America, May 1993), 2.

and unemployment, among other topics. Numerous supporting charts and graphs are well documented by sources like the Central Bank of Chile, the National Institute of Statistics, the Foreign Investment Committee, and U.S. Embassy estimates. The concluding section, "Implications for the United States," explores export and investment opportunities for U.S. investors and businesspeople.

Newsletters

A number of newsletters on Latin American business and finance offer timely, in-depth factual reporting and informed commentary on relatively narrow topics of interest to a specialized readership. Though costly, many newsletters provide a good source for consistent cross-country comparisons. Of those selected for review here, some are well established and others comparatively new.

Latin American Consensus Forecasts: A Digest of Economic Forecasts (London; bimonthly; began 1993) is designed for specialists in economic forecasting, segmentation and analysis of markets, and public policy strategy. The newsletter develops its consensus forecasts from bimonthly surveys of sixty or more prominent financial and economic forecasters who estimate such variables as growth, inflation, interest rates, and exchange rates.⁵ Cross-country data are presented for fourteen Latin American nations that have been grouped into two tiers.⁶ Countries of the first tier receive more comprehensive and detailed statistical analysis than those of the second. Nevertheless, second-tier countries' data preserve a consistent protocol with the first tier to allow valid, albeit abbreviated, inter-tier comparisons. Each tier of countries is treated in a separate major section of the digest.

Because all surveyed forecasters do not track and forecast every Latin American country's economic and financial activity, a different group of forecasters contributes to each country's forecast in the consensus. For example, in the December 2, 1993, issue the names of fourteen forecasters are listed for Argentina and twelve for Venezuela, with an overlap of four whose names appear on both lists. Determining the credibility of the forecasters is a task left to the reader. A complete alphabetical list of forecasters' names, with brief credentials, would be a useful enhancement to the newsletter.

The December 2, 1993, issue begins with a cover page highlighting news for the five first-tier countries

and a table of contents for the issue, followed by a summary discussion of recent "Significant Changes in the Consensus" and a three-page discussion of "External Debt and Debt Service" that includes historical data from 1990 to 1992 and consensus forecasts from 1993 to 1996.

The heart of the publication consists of four-page consensus forecasts for individual first-tier countries, which incorporate supporting reference information (for example, government structure, the election calendar, a retrospective table of major economic indicators, trade structure, and historical trade data). The following section, "Additional Countries," presents the consensus forecasts for second-tier nations in tables showing retrospective and projected data for the 1989-92 and 1993-94 periods, respectively. The tables include percent changes for gross domestic product (GDP) and for consumer prices. Data for current account (in U.S. dollars) and for exchange rates are expressed in absolute values.

A section called "Country Debt Ratios" gives 1987-92 actual data and 1993-94 consensus forecast data for all fourteen countries for "Annual Merchandise Exports as a Percent of Nominal GDP," "Total External Debt as a Percent of Merchandise Exports," "Total External Debt as a Percent of Nominal GDP," and "Long Term Debt Service as a Percent of Merchandise Exports."

"Foreign Exchange Forecasts" tables for currencies of all fourteen Latin American countries (in the December 2, 1993, issue) provide an overview of the actual exchange rates at the end of November 1993 and consensus forecasts projecting exchange rates at the end of December 1993, at the end of each month from January to May 1994, and at the end of November 1994. These tables are accompanied by the projected level for one year's percentage change. Historical exchange rate data for each country's currency are provided for year-end rates versus the U.S. dollar.

The back cover of *Latin American Consensus Forecasts* presents a survey of world economic activity, in tabular form, that compares data from the individual Latin American countries and their aggregated total with data from North America, Europe, and Asia/Pacific.

Its combination of background information, macroeconomic statistical data—analyzed and interpreted—and polls on topical issues makes *Latin American Consensus Forecasts* a solid digest of economic projections for Latin American countries.

Latin American Index (Washington, D.C.; semi-monthly; began 1973) presents "information supplied by government, industry, and news media in the U.S.

and abroad." Not an index in the conventional sense of the word, this newsletter consists largely of "indexing" blurbs (in random arrangement) that highlight past, current, and future events and issues, chiefly political and macroeconomic. The topical, somewhat anecdotal tone of the entries—and the lack of vigorous documentation—suggests that the publication finds its market concentrated among those with practical applications for its information rather than policymakers and academics.

Instead of following a consistent format from issue to issue, *Latin American Index* features stories on important news occurring within its semimonthly publication cycle. Two regular sections, "Economic and Business Highlights" and "News Briefs," round out each issue.

Although the *Latin American Index* usually omits reference citations and uses no tabular or graphic presentations, its twenty-one-year proven publication record and its heavy reliance on articles contributed by authors affiliated with prestigious international organizations like the Inter-American Development Bank (IDB) and the United Nations' Economic Commission for Latin America and the Caribbean (ECLAC) outweigh the negative impact of its omissions.⁷ These limitations aside, the *Latin American Index* is valuable for its comprehensive news coverage.

Targeted to attorneys and executives, *Latin American Law and Business Report* (Englewood Cliffs, New Jersey: Prentice Hall Law and Business; monthly; began December 1992) comprises articles written by on-site contributors about political, financial, and legal topics particularly interesting to those involved in Latin American commercial and trade enterprises. Contributing authors are experts in their fields—professional consultants, attorneys, and directors of research situated in prominent firms throughout the United States and Latin America. For instance, contributors to the June 1993 issue include Bear Sterns' Emerging Markets Research Director in New York City; the president of Apoyo, a consulting firm in Lima, Peru; and a partner of Pillsbury, Madison, and Sutro in San Diego. Articles contributed by firms (with no mention of individual authorship)—such as Pinheiro Neto-Advogados, a Brazilian law firm with offices in Sao Paulo, Rio de Janeiro, and Brasilia—may also be used. The credentials of the authors, including their professional affiliations, accompany such articles. Substantial (four- to six-page) articles in the June 1993 issue include "What to Think About Before Signing a Retail Lease" [in Mexico], "Implications of the Mexico-United States Income Tax

Treaty for Mexican Companies, Part II," "Peru: A Survey of Privatization," and "The Securities Markets and the Financing of Mexican Banks and Financial Companies."

In addition to these more in-depth studies, *Latin American Law and Business Report* regularly features a diverse selection of shorter articles. The June 1993 issue, for example, includes brief discussions of capital markets (for instance, Bankers Trust Company's new fund, "First Peru Investment Company Ltd."), energy opportunities (governmental endorsements of gas- and coal-fueled energy projects), World Bank projects open for bid (opportunities for Latin American project consultants needed by the World Bank), and business briefs (such as announcements of expansion plans, new major advertising campaigns, and privatization developments).

The remaining sections of the issue consist of briefer articles on Brazil (such as "Central Bank Confirms That Payment for Consulting Services to Foreign Parent May Be Sent Abroad"), Mexico (including "Active Enforcement of Anti-Dumping Law," detailing procedures to be followed by a company named in an anti-dumping complaint), and Venezuela (including under "Recent Developments" a brief summary of the constitutional crisis whereby Radon Velasquez was elected the country's interim president).

Although relatively new, *Latin American Law and Business Report* appears to be an excellent research tool for finance and trade with Latin American countries, particularly for persons requiring up-to-date knowledge of the law.

Latin America Monitor (London: Business Monitor International, Ltd. [BMI]; monthly; beginning dates of individual component reports vary) is a set of regional reports that covers a wide range of topics for Mexico, Brazil, the Southern Cone (Argentina, Brazil, Paraguay, and Uruguay), the Andean Group (Bolivia, Colombia, Ecuador, Peru, and Venezuela), Central America, and the Caribbean.⁸ All the reports share a standard format in which a front-page "Executive Brief" describes in order the topics covered within the newsletter and serves as a table of contents. Each topic, or brief, is also coded with a symbol indicating BMI's estimate of the effect (improvement, deterioration, or no change) of the issue or event on the business environment. One-line forecasts of gross domestic product and inflation complete the front page.

Depending upon current circumstances within individual countries and regions, subjects like the political scene, economic policy and prospects, business sector

focus, and finance or equity trends may receive greater or lesser emphasis in the topical sections of a given regional issue of the *Latin America Monitor*.

The "Executive Brief" section of the April 1994 issue of *Latin America Monitor: Mexico* illustrates the publications' informed, concise style. The discussion rates the effects of the four most potent political and social factors then influencing the Mexican business environment: (1) the negative impact of Ernesto Zedillo's difficult task in reuniting the Institutional Revolutionary Party to compete in an upcoming presidential debate; (2) the negative impact of political uncertainties on economic growth; (3) the positive effect of prospects for improved political stability, especially in light of government conciliation to the Chiapas rebellion; and (4) the positive effects of continuing economic strength as inflation remains constrained and NAFTA expands domestic markets and enhances free-market policies.

The newsletter articles, which flesh out the executive briefs, include insights that may be useful to businesspeople and investors. For instance, *Latin America Monitor: Mexico* (April 1994) observes that the presidential nomination of Ernesto Zedillo (a former budget minister with remaining strong ties to the central bank, where he worked from 1978 to 1987) sends an unambiguous signal to local and international financial markets that President Salinas's economic, social, and political policies will continue if Zedillo is elected. The delicately balanced relationship between political and economic factors is addressed by discussions of GDP growth, devaluation of the peso, the rate of inflation, and the turbulence surrounding the upcoming presidential elections, including the assassination of candidate Luis Donaldo Colosio. Mexico's expected (at the time of publication) acceptance into the OECD is described as "of more than symbolic importance as Mexico's exposure will now attract a lower risk weighting, boosting the return on capital for banks lending to the country."

Data in illustrative tables and graphs are carefully referenced to credible sources such as the IMF, the World Bank, and El Banco de Mexico, making them suitable for certain cross-country comparisons.

Latin American Newsletters, Ltd., based in London, publishes a family of newsletters (in English and Spanish) that cover all the principal countries in Latin America, either individually or as part of a larger group. *Latin American Weekly Report* (weekly [fifty issues per year]; began 1986) examines topical issues in politics, economics, law, the military, and social condi-

tions in a forthright and vigorous style. Unabashed by conventional wisdom, the newsletter tackles questions like "Are Military Coups Still a Threat in Latin America—Or Is It the Wrong Question?" (the cover story of the August 19, 1993, issue). This editorial discusses the extent to which Latin America is free from authoritarian experiments that the military might back.

Countries treated and topics addressed in *Latin American Weekly Report* are highly selective, determined by the editors' views of their current importance and not necessarily covering every Latin American country in every issue. For example, the August 19, 1993, issue includes country-specific discussions of economic and political conditions for Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guatemala, Peru, Nicaragua, and Honduras. Two articles broader in scope, "Assessing European Currency Crisis" and "Japan Turns Sour on NAFTA," and a "Postscript" featuring news briefs from various areas in Latin America complete this issue.

Latin American Weekly Report employs a summary-like style in its editorial treatment of political events and governmental issues. However, abundant references to topics discussed in previous issues and cross-references to topics discussed elsewhere in the same issue make tracing the development and impact of events much easier for the researcher.

To augment its discussions of current events and their implications, *Latin American Weekly Report* publishes a bimonthly supplement, titled *Books, Documents, Studies*, that is included in the regular subscription price. The supplement identifies, reviews, and provides uniform citations for detailed reports on conferences, governmental publications, and other studies offered by international agencies.

Although the style of *Latin American Weekly Report's* discussions may be too anecdotal for some purposes, the newsletter's information can contribute significantly to the analysis of country risk and to strategic planning for marketing as well as provide broad overviews of issues than can be researched in detail through other resources.

Latin American Regional Reports, also from Latin American Newsletters, Ltd. (weekly [fifty issues per year]; began 1986), is a series of reports covering Mexico, Brazil, the Southern Cone, the Andean Group, Central America, and the Caribbean.

In format the *Regional Reports* resemble each other and the *Latin American Weekly Report*, although none of the *Regional Reports* is accompanied by a supplement. The *Regional Reports* share the forthright, anecdotal

dotol style of *Latin American Weekly Report*, its selectivity of topics, and its editorial treatment of political and governmental issues backed by abundant cross-references and back references. Their timetables and comprehensive overviews of current events related to economics, finance, politics, government, social issues, and the military make *Latin American Regional Reports* valuable in analyzing country risk and planning marketing strategies.

A third publication from Latin American Newsletters, Ltd., *Latin American Economy and Business* (monthly; began October 1990), was formed in 1990 by the union of two previous titles, *Latin American Economic Report* and *Latin American Commodities Report*. It offers economic and business data (including tables and graphs); background political commentary; overviews of business, with varied emphasis by topic and/or geographic area; and commodity reports on major product groupings like petroleum, metals, and agriculture.

The front page of *Latin American Economy and Business* is always an editorial focused on a prominent issue like the economic slowdown in Mexico in autumn 1993 or the rise of unemployment in Argentina at that time. Each issue is divided into three fundamental subject areas: country reports, business, and a com-

modities report. The business section is highlighted as a center "pull-out." In issues published in the fall of 1993, this section featured commentaries on topics like central bank activity in Brazil; the Kimberly-Clark experience in Mexico; cross-country comparative statistics on inflation, interest rates, exchange rates, and stock markets; privatization; and sovereign debt. In the three issues from August to October 1993, country reports always discuss Brazil, Mexico, Argentina, and Venezuela while other countries such as Chile, Colombia, Peru, Jamaica, and Costa Rica are discussed according to newsworthiness. Although country discussions treat topical issues, they follow reasonably similar outlines, including presentation of national accounts data and other economic statistics.

Unfortunately, sources for data employed in the newsletter's numerous charts and graphs are seldom documented—some statistics are attributed to ministers of finance and officials of central banks and others cite no source at all. If a business researcher does not object to the anecdotal quality of the sources, then cross-country comparisons of indicators like inflation, exchange rates, and "How Latin American Debt Is Doing" will prove helpful. Such data, however, lack the necessary rigor for more formal macroeconomic or public policy research.

Notes

1. Another example of the improved economic climate is the fact that, within less than a month after the assassination of the Institutional Revolutionary Party presidential candidate, Luis Donaldo Colosio, Mexico was formally invited to join the Organisation for Economic Cooperation and Development (OECD). This action demonstrated the international economic community's confidence in Mexico's basic political stability.
2. In "Latin America and the Caribbean: Resource Guide" (October 1991), a selected bibliography of its Latin American periodical holdings, the Joint World Bank-International Monetary Fund Library in Washington, D.C., listed thirty-five titles, of which twenty-six were in English, and of these twenty-six, ten were newsletters. This relatively high proportion of newsletters is reflected in the selection and treatment of periodicals reviewed in this essay.
3. The term "nontraditional exports" (or "NTX") is used in the literature to describe three distinct phenomena. First, an export can be nontraditional because it involves a product that has not been previously produced in a particular country, such as snow peas in Guatemala. A second type of nontraditional export is a product traditionally produced for domestic consumption but now being exported, like various tropical fruits. Finally, the term can refer to the development of a new market for a traditional product, such as exporting bananas to the Soviet Union. Thanks to David Kaimowitz for suggesting these distinctions.
4. The Economist Intelligence Unit (EIU) traces its origins to the year 1843 when *The Economist* began publication. Now EIU maintains a worldwide news-gathering organization that monitors, analyzes, and reports political, economic, and business conditions. In addition to *Business Latin America*, EIU publishes a series of 165 *Country Profiles* (quarterly) and *Country Reports* (annually), including 32 for Latin America and the Caribbean (from Argentina to the Windward and Leeward Islands). The *Country Reference* series, varying in publication frequency, addresses topics like "Investing, Licensing, and Trading Conditions Abroad" and "Financing Foreign Operations," each available by individual country. Representative of EIU *Research Report* monographs are *Cash Management in the New Latin America*, *Developing Business Strategies for Cuba*, and *Seizing Free Trade Opportunities in the Americas*.

5. Forecasters and econometricians who need such information on a worldwide scale may be interested in the sister newsletter *Consensus Forecasts: A Digest of International Economic Forecasts*. A monthly product of Consensus Forecasts, Inc., London, it features the same format as the Latin American newsletter.
6. The first tier consists of Argentina, Brazil, Chile, Mexico, and Venezuela; the second tier, Bolivia, Colombia, Costa Rica, the Dominican Republic, Ecuador, Panama, Paraguay, Peru, and Uruguay.
7. The Inter-American Development Bank was founded in 1959 to promote individual and collective development of developing member countries through financing, socioeconomic, and technical assistance. The organization was expanded in 1976-77 to include Finland, France, Germany, Israel, Italy, the Netherlands, Norway, Portugal, Spain, Suriname, Sweden, Switzerland, and the United Kingdom.
8. Mexico and Brazil were formerly combined in one report but have been treated in separate publications since 1993. In addition to being treated as a separate entity, Brazil is also covered as part of the Southern Cone.

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