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How Effective Are Directed Credit Policies in the United States?

A Literature Survey

Anita M. Schwarz

U.S. policy on directed credit has a limited impact on growth — partly because it is oriented more toward equity than growth. U.S. credit programs have generally succeeded in increasing credit to, but not necessarily in increasing investment by, the targeted group.

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This paper — a product of the Financial Policy and Systems Division, Country Economics Department — is part of a larger effort in the department to study the effectiveness of directed credit policies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Maria Raggambi, room N9-033, extension 37664 (November 1992, 30 pages).

Schwarz surveys U.S. experience with directed credit as background for a larger study of the Asian experience. Almost half of net credit lent in the United States annually is directly affected by government policies — half of net credit covering budget deficits, and half falling under various federal credit programs.

But the main difference between U.S. and Asian credit policy is that U.S. credit policy is oriented more toward equity than toward growth. Different sectors are affected differently by U.S. credit policies.

Few empirical studies test how U.S. credit policies affect growth — perhaps partly because of the motives behind those policies. Few empirical studies even test whether the policies effectively increase credit to the target group. Schwarz outlines a method for testing the effectiveness of credit policy, then examines existing empirical work to see how it fits that methodology.

The first common empirical technique examines credit allocation in the economy. Schwarz finds that for the largest program, housing credit, the effect of credit program on credit allocation is very small and may be negative when cross-program effects are considered.

The second common empirical technique examines individual sectors. Results here are mixed. In agriculture, much of the credit raises the demand for land, providing a gain for land-owners rather than increasing production. In education, less than a third of the students who got government credit would not have gone to college without it. So in both cases, the credit had a positive impact but at a sizable cost.

Schwarz concludes that despite its huge volume, directed credit in the United States has a limited impact on growth. The credit programs have generally succeeded in increasing credit to the targeted group, but not necessarily in increasing investment by that group.

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I. Introduction

Concurrent with the discussion of the effectiveness of directed credit policies in the Asian context, it is useful to look at directed credit policies in other OECD countries. Such studies help isolate characteristics of the Asian economies which may be unique to the Asian context, but are perhaps replicable, and at the same time bring up empirical and conceptual issues which would need to be resolved in evaluating the effectiveness of directed credit both in the Asian context and in a broader LDC context. This paper focuses on the literature regarding the effectiveness of credit policies in the U.S. One primary difference between credit policy in the U.S. and in East Asia is its objective. In the U.S. equity considerations have been a major focus in credit programs, while in East Asia the focus has been on growth. In the U.S. credit policy has favored housing, agriculture, and small business. There has been little support for industrial investment either in growing or declining industries. Nevertheless, it is useful to survey the U.S. experience to determine whether the credit policies have been effective in achieving whatever objective they were designed to achieve.

The U.S. federal government, despite the presence of a highly developed financial system, maintains an extensive involvement in credit allocation. Looking at aggregate statistics, over the 1980's, 23.6% of the net credit lent in U.S. credit markets was lent directly to the federal government to cover its budget deficit. A further 25.8% was lent to private entities, but was supported by a federal credit program, although most of it was housing oriented and involved only a small subsidy (see below).¹ Such programs include direct lending programs by federal

¹ There may be a small amount of double-counting if in a particular year the government borrowing to cover its budget deficit includes money to finance credit programs. However, most direct loans programs are financed as revolving funds with disbursements in a particular year

government agencies (1.4% of total credit lent), loans guaranteed by the government (4.5%), loans made by government-sponsored credit agencies (9.8%)², and loans to state and local governments which have tax-exempt status (10.2%). Of the total credit lent to the private sector, 33.8% fell under the aegis of a federal program. But federal government involvement in credit allocation does not end here. The tax deductibility of certain credit activities like residential mortgages and investment tax credits offered for particular investment activities clearly influences the amount of credit demanded and thus allocated by the market to these activities. This paper will focus on the effects of specific credit programs, ignoring the impact of the tax code and other government regulations.

In some respects, these aggregate numbers of government involvement exaggerate government impact on credit allocation. To measure impact, one has to look at the difference in credit allocation before and after government programs have been implemented. This kind of information is not available since the programs have been in place for a long time and major structural shifts have occurred in the U.S. economy during that time. The impact of government credit programs on credit allocation then has to be measured by some alternative means.

Credit which is heavily subsidized generally changes the allocation of credit in that entities with a low demand for credit at market prices will have a much higher demand for credit at subsidized prices unless credit demand is inelastic. In addition, in the absence of credit programs,

funded by repayments on past loans. The loan guarantees also do not generally affect the budget unless defaults exceed the loan guarantee fees paid by borrowers. Government-sponsored enterprises raise credit directly through private credit markets and not through the budget. The tax-exempt status of state and local borrowing represents an opportunity cost in terms of revenue to the budget, but does not cause a direct budgetary outlay.

² Most of the loans by the government sponsored enterprises are to financial institutions. Loans to financial institutions are generally not included in the figures for overall credit, which measure the credit to final borrowers, not to intermediating institutions. However, these loans are intended to increase lending to particular groups of final borrowers and are customarily included in a measure of government involvement in credit markets.

some entities will be credit rationed at market prices. The program may not carry an explicit subsidy, but may make credit available to entities which would ordinarily have been rationed. This type of program carries an implicit subsidy in that the market would have been willing to make credit available to the rationed entity at some price above market due to higher risks. By making credit available at market prices, the previously rationed entity is being subsidized. Therefore, the degree of explicit subsidy does not completely measure the impact of a program on credit allocation, but heavily subsidized programs would generally have a greater impact than non-subsidized programs, assuming similar elasticities for credit demand.

The degree of explicit subsidy varies considerably across programs. Over half of the loans guaranteed by the Federal government are processed through the Federal Housing Administration where the degree of subsidy is low, amounting to 1.2% of the value of the loan. Less than 25% of the direct lending and loan guarantee programs carry subsidies greater than 10% of the value of the loan. The bulk of the lending by the government-sponsored enterprises, 94%, is also housing related. The degree of subsidy here is difficult to estimate, but the co-existence of private credit enterprises which deal in secondary market mortgage transactions suggests a low subsidy level. Thus, while the breadth of U.S. government involvement in credit markets is immense, the depth of involvement in micro credit allocation appears far more limited.

The paper is organized as follows. Section 2 contains brief descriptions of the major federal credit programs in existence in 1989 with some statistics regarding magnitude and degree of subsidy. Section 3 discusses methodological issues in an analysis of the effectiveness of credit programs. Section 4 discusses the existing empirical work, and Section 5 concludes.

II. Description of federal credit programs

There exist a variety of types of federal credit programs with different implications for credit allocation and the federal budget. The first type is the direct loan program. Under direct loans, a federal government agency makes the loan to the borrower with no financial intermediary involvement. The loans are usually operated as a revolving fund, so that funds received as repayments of previous loans are used for making new loans. However, should the repayments fall short of new lending requirements, money will have to be appropriated from the budget. Some of the direct loans are also involuntary in that guaranteed loans which have defaulted often become direct loans. Over time, the ratio of direct lending to guaranteed lending has fallen considerably, from about 1/3 in the 1950's to 15% in 1989.

Table 1 provides statistics on the major direct loans programs in existence in 1989. The individual programs listed in Table 1 comprise 98% of the overall direct loan obligations assumed by the government in 1989. However, as a percentage of the total outstanding loans, they comprise only 75%, pointing out the changes in the relative importance of the different programs historically. The largest direct loan programs not currently accumulating significant new loan obligations include several loan funds directed by the Agency for International Development (AID), education programs which have shifted toward loan guarantees rather than direct lending, the Economic Support Fund of the President, and several housing related programs.

From Table 1, it is apparent that level of subsidy varies greatly, from 5% of the value of the loan for Tennessee Valley Authority loans to 70% for P.L. 480 loans. Little information exists on the volume of write-offs as can be seen from Table 1. What information does exist suggests that government agencies are reluctant to write-off loans, making the repayment rates much worse than indicated.

TABLE 1

MAJOR DIRECT LOAN PROGRAMS OF THE U.S. GOVERNMENT, 1989							Millions of \$
Program	Description	New Loans	% Subsidy	Subsidy cost	Outstanding loans	% write-offs	Losses
Commodity Credit Corporation ³	Short term loans to producers of agricultural commodities	10,746 (54%)			13,695 (7%)	0.6%	76.7
Foreign Military Sales ⁴	Procurement of U.S. military equipment by foreign governments	4,460 (22%)			20,821 (10%)		
Veterans' Administration	Purchasing of VA foreclosed homes by creditworthy individuals	977 (5%)	16.0%	156.3	1,629 (1%)		
Farmers' Home Administration	Purchasing and operating farms, disaster assistance, improving rural housing, etc.	900 (4%)	8.3%	74.7	52,122 (25%)	1.3%	677.6
Export-Import Bank	Provides direct loans to finance U.S. exporters	705 (4%)	11.6%	81.8	8,274 (4%)		
P.L. 480 Long term export credits	Meeting needs of developing nations through sale of agricultural commodities	739 (4%)	70.0%	517.3	12,261 (6%)		

³ The exact amount of subsidy in any given year depends on the difference between market prices and the support price guaranteed to the farmer.

⁴ All of these loans are being forgiven. The repayment record on these loans was so miserable that they have been converted into grants.

MAJOR DIRECT LOAN PROGRAMS OF THE U.S. GOVERNMENT, 1989							Millions of \$
Program	Description	New Loans	% Subsidy	Subsidy cost	Outstanding loans	% write-offs	Losses
Housing and Urban Development	Housing for the elderly or handicapped	350 (2%)	21.7%	73.0	7,560 (4%)		
Small Business Administration	Small businesses and those who suffer losses from physical disasters	265 (1%)	14.2%	37.6	5,822 (3%)	8.5%	494.9
Tennessee Valley Authority	Provides financing for resource development in the Tennessee Vally area	250 (1%)	5.0%	12.5	2,150 (1%)		
Rural Electrification Administration	Provides financing for rural electricity and telephone systems	177 (1%)	15.2%	26.9	33,452 (16%)		
TOTAL All Federal Programs⁵		20,005 (100%)	22.5%	884.7	207,402 (100%)	0.8%	1,760

SOURCE: "Special Analysis F," in *Special Analyses: Budget of the United States Government, Fiscal Year 1989*, Executive Office of the President, Office of Management and Budget (Washington: U.S. Government Printing Office, 1988), pp. F-64-78.

⁵ The average subsidy is calculated only for the programs where the subsidy amount is available.

It is also important to determine some government objective for each loan program by which the program results can be measured. Almost 90% of the direct loan obligations are intended to support American business, with the lion's share going to agribusiness and rural infrastructure. However, it must be emphasized that although these loans support American business, they are not designed to generate higher growth as the Japanese system of directed credit is alleged to do. These business-supporting programs include all those listed in Table 1 except the loans from the Veterans' Administration (VA) and Housing and Urban Development (HUD). The three agricultural related loan agencies, Commodity Credit Corporation (CCC), Farmers' Home Administration, and the Rural Electrification Administration, may have some limited objective of increasing equity. However, the primary recipients of price supports from the CCC and the beneficiaries of the other rural programs are not generally the rural poor. Similarly, the Small Business Administration (SBA) provides loans for small businesses for equity reasons, but also to correct some perceived imperfection in the capital markets (the bias against lending to small firms). The remaining loan agencies often have less business-related objectives. The HUD program provides housing for the elderly or the handicapped and can be considered purely equity enhancing. The VA loans are a mixture of equity enhancing and business support. Initially the VA loans were meant to boost the housing market, and the adjustment of VA interest rates to stimulate the economy suggests that they provide support to the construction industry. However, there is also some concern toward equity in that there are limits to the purchase price of a home financed by the VA.

Table 2 shows similar statistics for the second type of government credit program, the guaranteed loan. Under this type of program, the government agrees to pay the principal and sometimes the interest on all or part of the loan if the borrower defaults. Generally, the government also collects some fee which partially pays for the insurance. Unlike direct loan

TABLE 2

MAJOR GUARANTEED LOAN PROGRAMS OF THE U.S. GOVERNMENT, 1989							
Millions of \$							
Program	Description	Commitments	% Subsidy	Subsidy cost	Outstanding commitments	% loan termination	Losses
Federal Housing Administration	Help families become homeowners	61,790 (54%)	1.2%	741	290,729 (53%)	1.9%	5,524
Veterans' Administration	Mortgage guarantees for veterans with no downpayment	17,940 (16%)	6.6%	1,184	149,957 (28%)	1.7%	2,489
Export-Import Bank	Guarantees to facilitate U.S. exports	10,200 (9%)	2.5%	255	5,023 (1%)		
Guaranteed Student Loans	Guarantees of education loans to undergraduate and graduate students	10,039 (9%)	33.6%	3,373	42,306 (8%)	4.4%	1,861
Farmers' Home Administration	Guarantees loans for rural housing and farm purchase	3,600 (3%)	0.8%	29	5,806 (1%)	4.7%	275
Small Business Administration	Credit assistance to small businesses	3,596 (3%)	9.1%	327	10,037 (2%)	5.6%	559
Commodity Credit Corporation	Loan guarantees for export sales which might not occur otherwise	3,500 (3%)	13.7%	480	7,846 (1%)	10.7%	837
Foreign Military Sales	Procurement of U.S. military equipment and services disasters	2,300 (2%)	7.5%	173	7,553 (1%)		
Rural Electrification Administration	Guarantees of private loans for power generation	1,319 (1%)	17.3%	228	3,583 (1%)		
TOTAL All programs		115,306 (100%)	7.6%	8,742.8	544,837 (100%)	2.0%	10,876

SOURCE: "Special Analysis F," Special Analyses: Budget of the United States Government, Executive Office of the President, Office of Management and Budget (Washington: U.S. Government Printing Office, 1988), pp. F-79-87.

programs, these programs entail no budgetary cost to the government at the time the commitment is made. However, they do increase the contingent liability of the government. The individual guarantee programs listed in Table 2 include 99.1% of the commitments incurred in 1989 and 96% of the outstanding loans as of 1989. The only sizable program in terms of outstanding commitments not included is a program for low rent public housing administered by the Department of Housing and Urban Development. The overall level of subsidy is relatively low, but as with the direct loan programs, the degree of subsidy varies considerably, from .8% of the value of the loan for loans from the Farmers' Home Administration to 33.6% for student loan programs. The termination rates for these loans are also low, but are primarily due to the low termination rates on housing loans.

Unlike the direct loan programs, many of these programs have mixed objectives. The guarantees from the Export-Import Bank, the Farmers' Home Administration, the Commodity Credit Corporation, Foreign Military sales, the Rural Electrification Administration, and the Small Business Administration are generally to enhance business. The housing loan guarantees contain both equity and business objectives. The SBA loan guarantees are both equity and business-oriented. The student loan guarantees, however, are generally equity-oriented.

The third type of support the government provides to credit markets is through government-sponsored credit agencies. These agencies sometimes function simply as financial intermediaries, buying loans, such as mortgages, from primary originators, and then issuing mortgage-backed securities to investors. By thus creating a secondary market for long term debt such as mortgages, the government makes mortgages less risky for the original lender, encouraging more capital to flow into the preferred sector. Sometimes the credit agencies actually hold the primary loans in their own portfolios for investment purposes. In neither case, do the activities of these government-sponsored credit agencies affect the government budget. The agencies are

responsible for raising their own funds. However, their debt does enjoy benefits such as equal standing with Treasury debt for bank investments, enabling these credit agencies to borrow in credit markets at rates only slightly above Treasury rates. Table 3 contains statistics for the government-sponsored credit agencies. No comparable data on subsidies are available since the subsidy occurs in the below market funding of the credit agency and not on a per loan basis. The primary programs here are housing oriented, with smaller programs for agriculture and student loans. The outstanding loans from the Student Loan Marketing Association have been converted into direct loans and are thus included within that category in Table 1.

TABLE 3

LENDING BY MAJOR GOVERNMENT-SPONSORED ENTERPRISES, 1989			Millions of \$
ENTERPRISE	NEW LOANS	OUTSTANDING LOANS	
Federal Home Loan Banks ⁶	260,000 (57%)	143,856 (19%)	
Federal Home Loan Mortgage Corporation	77,499 (17%)	318,377 (42%)	
Federal National Mortgage Association	54,857 (12%)	252,067 (33%)	
Farm Credit Banks ⁷	55,262 (12%)	48,225 (6%)	
Student Loan Marketing Association ⁸	6,365 (1%)	0 (0%)	
TOTAL	453,983 (100%)	761,706 (100%)	

SOURCE: "Special Analysis F," in Special Analyses: Budget of the United States Government, Fiscal Year 1989, Executive Office of the President, Office of Management and Budget (Washington: U.S. Government Printing Office, 1988).

⁶ The Federal Home Loan Bank System makes a large number of short terms loans to its member institutions, resulting in the new loan figure being larger than the outstanding loan figure.

⁷ See note 6 for the Federal Home Loan Bank System.

⁸ The outstanding loans of the Student Loan Marketing Association have been converted into direct loans and are included under that category.

The last type of government involvement in credit markets comes through the issuance of tax-exempt securities. The federal government has allowed securities issued by state and local governments to have tax-exempt status. The money raised from such issues has frequently been used for private purposes designated by the state and local governments. Due to the tax-exempt status, the securities carry a lower interest rate. The subsidy element is the difference between the market interest rate and the cost of raising these tax-exempt funds. Table 4 shows the distribution by purpose of the tax-exempt securities issued in 1989. Unfortunately, the total outstanding issues are not available by sector, only in aggregate. In 1989, this total stood at \$1046.2 billion, about 10% of the credit market debt owed by nonfinancial sectors.

TABLE 4

TAX EXEMPT SECURITIES ISSUED IN 1989		Billions of \$
Purpose	New Issues	
Public organizations	77.0	(74%)
Private nonprofit organization	14.0	(13%)
Industrial development bonds	5.8	(6%)
Housing bonds	4.5	(4%)
Student loans	1.8	(2%)
Pollution control	1.2	(1%)
TOTAL	104.4	(100%)

SOURCE: "Special Analysis F," in Special Analyses: Budget of the United States Government Fiscal Year 1989, Executive Office of the President, Office of Management and Budget (Washington: U.S. Government Printing Office, 1988).

III. Methodological Issues

Section II describes the magnitude of government involvement in credit allocation by sector. What is surprising is that the literature on the effectiveness of this directed credit for the U.S. is largely either theoretical or descriptive. The empirical work suffers from the inability of economists to determine the marginal increase in borrowing due to credit policy. While the overall level of borrowing is available, as is the level of borrowing under each type of credit program, most economists believe that many of the loans would have been made without the lending program, resulting in a subsidy to the targeted sector rather than in a change in the allocation of credit. The problems cited with attempts to measure the changes in credit allocation include the long duration of the programs and the substantive changes in the nature of the programs in the course of their existence. The duration of the programs becomes a problem due to structural changes in the economy, e.g., demand for farm credit has been affected by the decline in the importance of the U.S. agricultural sector. Some empirical literature does exist, and its results with notes on methodology will be discussed below.

The lack of firm evidence on the allocative effects of credit policy is particularly troublesome given the mechanisms through which directed credit leads to growth.⁹ First, we would expect that directed credit would lead to increased borrowing in the targeted sector. This first step is crucial to the effectiveness of directed credit, regardless of whether the ultimate goal is growth, equity, or some other objective. Second, the increased borrowing must lead to increased investment in the targeted sector. If the amount borrowed is used to fund land speculation or consumption, then the directed credit policy will not be successful in promoting

⁹The objective of some credit programs is not promoting growth, but smoothing decline. As Reich notes, several Japanese and German programs are designed to ease resources out of an industry. Other objectives may be oriented toward equity. Robert B. Reich, "Making Industrial Policy," Foreign Affairs (60), Spring 1982, pp. 852-81.

growth. Some degree of monitoring by the government may be necessary to make sure that the funds are used for their intended purposes, but even sufficient monitoring does not guarantee an increase in investment. If the investment would have taken place without the credit policy, then the credit policy merely frees up funds to be used for some other purpose, i.e., the funds are fungible. Third, the increased investment must be productive and increase output in the targeted sector. For investment to be productive, the project must be cost-efficient, and credit constraints must be binding. If credit previously has not been a constraint on output, then increasing or subsidizing credit will not increase aggregate output. And finally, growth in the targeted sector must lead to overall growth throughout the economy. Generally, credit to the targeted sector is allocated away from other sectors. This reallocation can be justified on two grounds: (1) credit market imperfections which prevent an equilibrium allocation from reaching the targeted sector and (2) positive externalities generated by the targeted sector.

If the first condition above is not satisfied, namely that borrowing in the targeted sector does not increase, as many economists claim, then directed credit merely subsidizes the targeted sector. This subsidy may still be effective in producing growth if some previous noncredit distortion had limited output in the targeted sector. The credit policy may thus be regarded as a second best policy. However, even if it is determined that a subsidy is justifiable to a particular sector on economic efficiency grounds, we would still have to determine whether a credit subsidy with its subsequent distortions of financial markets is the second best policy or third or fourth best policy.¹⁰

¹⁰One argument presented by Reich is that emerging industries represent riskier investments and thus receive less credit from capital markets. He argues that the U.S. government already subsidizes some new industries by its own massive investments in the defense and space programs. A credit program may be more neutral in that all emerging industries would be equally subsidized.

A related issue concerns the overall level of borrowing. Directed credit policies may either reallocate existing credit from general market borrowing to target groups or actually increase the level of credit in the market. If the credit policy reallocates existing credit, the policy is welfare-enhancing only if the target group generates large positive externalities, larger than the non-targeted groups, for the economy. If the actual level of borrowing increases, the policy is more likely to be welfare-enhancing. The debate centers on the supply elasticity of funds. If funds are inelastically supplied, credit policy which targets credit toward one group systematically reduces credit availability for other groups. If the funds have a positive supply elasticity, then the aggregate level of borrowing will rise when a government program increases the demand for credit. Estimates from the literature on the supply elasticity of savings with respect to interest range from 0 to 5.¹¹ Of the 11 studies cited by DeFina, 9 show the supply of savings to be relatively or completely inelastic to interest rates, suggesting that directed credit generally reallocates existing credit.¹²

No empirical work looks at the transmission of directed credit to growth as outlined above. Instead what studies do exist generally use an elasticity of demand for a particular type of expenditure with respect to cost from the literature. They then calculate subsidy elements in the federal credit programs and determine the extent to which the credit subsidy reduces the cost of the expenditure. These figures are then combined to determine the increase in demand for the

¹¹Robert H. DeFina, "The Link Between Savings and Interest Rates: A Key Element in the Tax Policy Debate," Business Review, Federal Reserve Bank of Philadelphia, November/December 1984, p.19.

¹² However, these studies have largely been generated to measure the response of domestic savings to fiscal policy changes which have interest rate effects. The supply of credit available to borrowers, however, includes foreign savings as well as domestic savings. The supply elasticity should generally be expected to be higher than for strictly domestic savings. The bulk of credit, nevertheless, continues to be generated domestically. In 1989, only 12.1% of the total credit outstanding was funded from abroad.

credit activity predicted from the calculated subsidy levels. These calculations provide the first step in the transmission of directed credit into growth. The two most comprehensive studies, Gale (1991)¹³ and Bosworth, Carron, and Rhyne (1987),¹⁴ both arrive at their estimates of the effectiveness of directed credit in this manner. While these estimates are extremely useful, before applying their results to evaluating directed credit programs, several points need to be considered.

First, each of these studies bases the estimates on previously determined demand elasticities. These previously determined elasticities are based on small changes in the cost of the activity. The removal or addition of government programs in all but the mortgage sector involves a fairly large interest rate change. With such a large structural change, the elasticities of demand may not remain constant. This is particularly important since these elasticities are generally taken from a single study at a single point in time and thus represent reasonable, but not necessarily robust, estimates.¹⁵ Given that the government programs usually involve a number of restrictions on type of recipients and use of funds, it is also likely that the credit demand elasticity related to a government program is less than that for an unrestricted change in cost. This is a particularly important issue for certain programs, such as education, where the elasticity used covers a change in the cost of education, not a change in the cost of education credit. Since not all education expenditure is financed through the credit market, the demand elasticity with respect to a particular type of cost would be less than for unrestricted cost changes.

Second, in many cases government intervention has included setting up financial institutions, the government-sponsored enterprises, to deal with market failure. Market failure, in

¹³William G. Gale, "Economic Effects of Federal Credit Programs," American Economic Review 81 (1), March 1991, pp. 133-52.

¹⁴Barry P. Bosworth, Andrew S. Carron, and Elisabeth H. Rhyne, The Economics of Federal Credit Programs (Washington, D.C.: Brookings Institution, 1987).

¹⁵Gale reports that the results were not affected much by using different demand elasticities.

this case, occurs when individual banks cannot sell loans they have made to secondary markets, thus burdening themselves with long term loans financed by shorter term deposits. The secondary market fails to exist because the value of the loans is difficult to assess. The government-sponsored enterprises provided this secondary market, guaranteeing the loans and standardizing the contracts. As individuals have gained experience and information in loan purchasing, in some cases, private brokers have emerged, suggesting that the government enterprises played a key role in generating the information critical to the functioning of these secondary markets. The value of these institutions affects the supply of funds, not the demand for credit and cannot be captured in a loan demand elasticity. In addition, the value of these institutions has changed over time. As noted by Bosworth et al., private mortgage insurance and secondary markets which improve market efficiency now exist in the housing market, lessening the importance of the government-sponsored enterprises, but have not developed in the student loan market. Furthermore, the rate of institutional development may itself be endogenous as a substantial government subsidy precludes the development of private competitors. As a result, the estimates provided by Gale and Bosworth tend to understate the value of government credit programs overall.

A third point, addressed by Gale, but not by Bosworth et al., relates to the overall impact of credit policies. The U.S. has developed separate credit programs for particular sectors rather than an overall credit strategy. As a result, each program attracts credit to its targeted group and away from all others. Multiple programs result in reducing the effectiveness of each individual program. Gale calculates that anywhere from 2.5-175%¹⁶ of a program's effectiveness is offset by other programs, depending on the program and assumptions about credit supply elasticities.

¹⁶ This implies that in some cases the borrower would in fact be better off if all subsidy programs were eliminated.

Fourth, even if the results of these studies show that credit demand in a particular sector did not grow, it does not imply that the policy itself is ineffective due to the degree of aggregation. The targeted group for a housing credit policy, for example, may be a group of low income individuals. If the credit policy effectively grants loans to the targeted group at the expense of higher income individuals demanding housing loans, then equity has been enhanced even if the total number of loans to the housing sector has not increased. The intra-sectoral allocation of funds has been affected by the credit policy. The studies only measure intersectoral allocation changes.

Fifth, estimates of credit demand based on the subsidy element in credit programs do not indicate whether the increased credit has in fact led to increased output. Some studies suggest that agricultural credit may have increased land prices. Similarly, student loans may have increased tuition costs. The credit may have been effective in reaching the target sector, but may then have been inefficiently used. The credit subsidy in these cases simply transfers income to existing landowners or to schools. In the case of education, the government would effectively be subsidizing private institutions of higher education. The value of this subsidy given the existence of public institutions is debatable. A somewhat related point discussed by Bosworth is that some of any subsidy will go to the lender assuming that the supply of funds is not perfectly elastic. The subsidy going to the lender will have no impact on output in the targeted sector.

Finally, the premise of many of these targeted credit programs is that investment in the targeted sectors leads to higher growth in the economy. One rationale for student loans programs, for example, is the positive social externalities generated by an educated population. This ability of targeted credit to generate growth cannot be measured by the calculations discussed above. As such, the empirical work can provide an estimate of how much additional credit is going to the targeted groups, but not of whether the directed credit increases growth.

Furthermore, as noted in Section II, the explicit goal of many U.S. programs has been equity rather than growth. Indirectly, equity may lead to growth or may in fact stymie growth.

IV. Empirical Evidence

Only one article, Gale (1991), addresses overall credit policy in the U.S. Gale's analysis uses simulation techniques to determine the effects of U.S. credit policies on the percentage of credit allocated to each sector of the economy. He takes parameters for supply elasticities, demand elasticities, and repayment rates from the literature, but has to provide two sets of estimates based on the extreme values of the supply elasticities of funds found in the literature, one using a supply elasticity of .5, the other using an elasticity of 5. He finds that credit policies would be effective in increasing the allocation of funds to target groups except in one case. The model assumes that the government must borrow funds to finance the credit program. If the supply of funds is inelastic, interest rates rise when the government borrows. The resulting interest rate rise may offset the credit subsidy if the subsidy is small, as is the case for housing mortgages. However, in all cases, the targeted groups have benefitted at the expense of general nontargeted borrowers. Overall lending to nongovernment has increased when supply elasticities are high, but has decreased when supply elasticities are low. Gale also finds that since each individual program allocates credit toward a particular set of borrowers and away from all other borrowers, the co-existence of multiple programs counteracts each program's effectiveness in directing credit. This is particularly important since the bulk of the literature looks at credit policy directed toward a particular target.

The remaining literature focuses on particular sectors in the U.S. economy, generally housing, agriculture, education, small business, tax-exempt state and local projects, or export

financing. These sectors cover over 90% of U.S. credit programs. Unlike the Japanese programs, industrial strategic sectors are not identified or targeted under U.S. programs.¹⁷

Housing

Sixty percent of federal credit activity takes place in the housing market and over fifty percent of housing mortgages are supported by government programs. The programs include the Federal Housing Authority (FHA) loans, Veterans' Administration (VA) loans, and secondary market activities through government sponsored agencies like the Federal National Mortgage Association (Fannie Mae), the Federal Home Loan Mortgage Corporation (Freddie Mac), and the Government National Mortgage Association (Ginnie Mae). Gale's calculations of the subsidy involved in the mortgage market include the cost of loan insurance not passed on to the borrower and amount to a .2% reduction in the interest rate. His simulation study using an interest elasticity of 1.8 for mortgage loan demand¹⁸ concludes that the increase in borrowing from the federal credit programs has been extremely limited. Bosworth comes to the same conclusion. Due to the limited subsidy involved, the effects on resource allocation are limited. However, as Bosworth notes, one major impact of the federal agency activity has been an increase in the liquidity of the mortgage loans, leading to an integration between the mortgage market and other capital markets. Presuming that some market imperfections had prevented this integration previously, we could conclude that correcting these imperfections by instituting secondary markets, for example, would increase the supply of funds to the mortgage market and thus increase the

¹⁷There have been limited attempts at strategic targeting toward the synthetic fuels industry and at large corporations like Chrysler which required bailouts.

¹⁸The loan elasticity used comes from a single study by Dhrymes and Taubman (1969) which looks at the total new mortgages granted per SMSA between 1964 and 1966 as a function of the effective interest rate (including loan fees) and other variables.

allocation of credit to this market. However, this aspect of housing credit, as noted earlier, is difficult to measure and has thus been ignored. The segmentation of the mortgage market itself is a debatable issue. Bosworth attempts to reconcile the conflicting evidence and concludes that in the short run (less than a year), the market is indeed segmented, but in the long run, mortgage markets are integrated with other capital markets. The value of the government provided secondary market activities falls when the market is in fact integrated and these activities could be provided by the private sector.

Agriculture

The second sector with heavy government involvement is the agricultural sector. The rationale for government involvement in the agricultural sector is to provide credit to farmers at rates comparable to those for other sectors of the economy. The concern initially was that many of the rural markets were small and not integrated with national markets, raising the cost of credit to farmers. In fact, farm credit today is generally allocated at more generous terms than credit in the non farming sector. There are 3 major components of agricultural credit policy: (1) the Farm Credit System, (2) the Farmers' Home Administration, and (3) the Rural Electrification Administration. The Farm Credit System did provide for the special credit needs of farmers when these were not being addressed by national credit markets, but may be redundant today given the prevalence of national credit markets. The system also faces the drawback of not being able to insure against industry risk since its assets are limited by law to the agricultural sector. The Farmers' Home Administration is directed toward more marginal borrowers and is heavily subsidized. The rural housing programs have tended to be effective in generating loans simply because they are more heavily subsidized. The emergency loan programs, however, have resulted in a large increase in credit supply to large commercial farms. The Rural Electrification

Administration programs have become heavily subsidized because the loans are made at rates fixed by Congress, irrespective of market interest rates. These programs have led to both more capital-intensive methods of production and to lower utility rates.

The empirical results on the effectiveness of agricultural credit are mixed. Gale's analysis shows a sizable increase in the share of credit going to the farm sector due to agricultural credit policies, in the order of 50% or more. Gale uses the elasticity estimates from a study by LeBlanc and Hrubovcak (1986)¹⁹ which shows that a 1 percentage point reduction in the interest rate increases the demand for agricultural equipment and structures about 1 percent and the demand for land nearly 2 percent. The implications are that loan subsidies primarily are an income transfer to current landowners. Gale estimates that the interest rates charged farmers are about 4 percentage points below what they would be in the absence of subsidies. The LeBlanc and Hrubovcak study suggests that the additional agricultural credit may not have been that effective in generating output growth. An increase in demand for an inelastically supplied factor does not change resource allocation. However, other evidence supplied by Calomiris, Hubbard, and Stock (1986)²⁰ indicates that farm output is affected positively by the value of farm real estate and negatively by the projected debt service burden and number of bank failures. Each of these variables represents a credit constraint. As collateral values rise, farmers can borrow more, raising output. As debt service burdens and bank failures rise, credit to farmers becomes constrained, constraining output. Thus, the Calomiris, Hubbard and Stock paper suggests a stronger link between credit and output than found by LeBlanc and Hrubovcak.

¹⁹Michael LeBlanc and James Hrubovcak, "The Effects of Tax Policy on Aggregate Agricultural Investment," American Journal of Agricultural Economics, 68, November 1986, pp. 767-77.

²⁰Charles W. Calomiris, R. Glenn Hubbard and James H. Stock, "Growing in Debt: The 'Farm Crisis' and Public Policy," Brookings Papers on Economic Activity, 1986 (2), pp. 441-79.

Education

The student loan program, the third of the government credit programs, also initially addressed perceived market imperfections. Since a student's future income cannot be repossessed and sold by a lender, students frequently have no collateral. The future return from education, even if the student's future income could be attached, is risky. The loans are small and have a high potential of default since students are highly mobile with no credit history. Other goals of the programs include promoting education with its positive effects on society and improving equity by providing opportunities for low income students.

The empirical work again provides mixed results. Gale computes a more than doubling of the share of credit going to students. The elasticity he uses comes from Bosworth's study. Bosworth cites a Manski-Wise study which shows that a 1 percent net drop in education costs would increase enrollment rates by .1 to .3 percentage points, resulting in an elasticity of between .1 and .3. McPherson (1978)²¹ cites 9 studies which show increases in enrollment rates ranging from .05 to 1.46. Since the costs of education to the student have fallen due to the availability of subsidized student loans, Bosworth calculates that anywhere from .3 to 1.4 million more students were enrolled in higher education in 1984 than would have been enrolled without a subsidized program. The higher of the two numbers comes from using the higher of the two enrollment changes in the Manski-Wise study and assuming that none of the loans would have been available through the private sector. Since 3.3 million students received loans in 1984, less than a third of the loans actually increased borrowing in the best of all possible scenarios, the assumptions of which are unlikely. Another study cited by McPherson which uses time series data rather than

²¹Michael S. McPherson, "The Demand for Higher Education," in Public Policy and Private Higher Education, edited by David W. Breneman and Chester E. Finn, Jr. (Washington, D.C.: Brookings Institution, 1978), pp. 143-96.

cross section finds that a 1 percent drop in tuition costs only induces a .1 percentage point increase in enrollment. Bosworth also regresses enrollment rates from 1962-84 on the armed forces draft, net education cost, per capita disposable income, and a time trend and finds that the time trend and the draft explain most of the changes in enrollment, and the cost of education basically does not matter. Furthermore, critics of the student loan program charge that the two main effects from the programs are: (1) an increase in the number of students declaring financial independence and (2) an increase in the number of low-income students attending private colleges. The value of either of these effects is debatable.

Business

The federal government is directly involved in less than 5% of nonagricultural business financing, the fourth major federal credit activity. The original business financing organization, the Reconstruction Finance Corporation, lent largely to medium-sized firms for manufacturing and to depressed areas of the country. This organization closed in 1953, but reopened as the Small Business Administration. Its objective is to lend only to borrowers who do not meet commercial bank standards. The rationale for the program is twofold: (1) due to the huge fixed cost involved, financing through bond and equity markets is prohibitive for small businesses forcing them to use bank loans which are shorter term and require collateral and (2) small businesses provide economic and social benefits in terms of growth and employment. As private markets have developed, the SBA has increased its level of subsidy, effectively eliminating private competition. Empirical studies on the effectiveness of the SBA programs generally conclude that they are ineffective in increasing the flow of credit to the small firm sector, but have instead replaced private credit to the sector or funded non-creditworthy projects. One study looks at the sectoral composition and employment growth of SBA funded companies vs. privately funded

companies. If some industries are inherently riskier than others and could not be funded privately, SBA funded businesses would generally be located in different industries than privately funded small businesses. However, the distribution of SBA funded businesses in particular industries is almost identical to that of non-SBA funded small businesses. A 1982 study by Armington and Odle²² also looks at the employment growth of small businesses and determines that small businesses generally have larger shares of slower-growing industries and appear to have higher growth rates in regions of the country with overall low growth rates. Small businesses also generate a proportionate share of jobs, not an unusually high number of jobs. Similarly, the credit market imperfections argument works if good credit risks are being denied credit. However, the high default rates of SBA loans suggests that these firms are in fact not good credit risks. Gale's study also shows a limited impact on credit allocation, in the order of a 25% larger share of credit allocated to small businesses due to SBA programs, despite a healthy subsidy.

Tax-exempt

The fifth category of government credit involvement has grown rapidly in recent years. Little evidence exists on the credit allocation effects of tax-exempt state and local financing. These funds are used to finance home mortgages, industrial development, and student loans primarily. By Gale's analysis this tax-exempt group draws 8.3% of the overall credit allocation currently. Its share would be around 6.5% without the tax subsidy.

Export Financing

²²Catherine Armington and Marjorie Odle, "Small Business--How Many Jobs?" Brookings Review, Winter 1982, pp. 14-17.

The information on export financing, the final category, is equally inconclusive. As shown in Table 1, the three export-oriented programs, Foreign Military Sales, Export-Import Bank, and P.L. 480 long term export credits, contribute a substantial share to the direct loans by the U.S. government. They comprise 29.5% of the direct loans and 13.9% of the guaranteed loans. The loan guarantee programs include the loans by the Commodity Credit Corporation in addition to the programs mentioned above. Periodically, the U.S. Congress holds hearings on financing for the Export-Import Bank. Various advocates hail the importance of the Export-Import Bank in generating exports, but no hard analysis exists of whether in fact ExIm financing generates more exports. cursory evidence sheds some doubt on this position. Throughout the 1980's U.S. exports have been rising. The value of exports under ExIm programs has been falling, resulting in a fall in the percentage of U.S. exports under ExIm programs from 8% in 1980 to around 2% in 1990.²³ Furthermore, a survey by the National Association of Manufacturers in 1989 indicates that lack of export financing ranks ninth in importance among factors limiting export growth (out of 12 factors).²⁴

Similar lack of evidence exists for the other export programs, such as the P.L. 480 Program. One explicit aim of the program is to expand markets for exports of agricultural commodities. A recent study cites data showing that 7 of the top 10 importers of U.S farm products and 34 of the top 50 importers received P.L. 480 commodities. However, economists from the Department of Agriculture have been unable to prove a causality between the two.²⁵

²³ Hearing on Export-Import Bank Before the Subcommittee on International Development, Finance, Trade and Monetary Policy of the Committee on Banking, Finance and Urban Affairs, House of Representatives, 102 Congress, 1st Session, April 11, 1991, p. 157.

²⁴ Hearing on ExIm Bank, p. 219.

²⁵ United States General Accounting Office, Report to the Chairman, Committee on Agriculture, House of Representatives, Food Aid: Improving Economic and Market Development Impact in African Countries (Washington: GAO/NSIAD-88-55, December 1987).

The benefit of this and the Commodity Credit Corporation programs to the U.S. is the support for agricultural prices in the U.S. as well as for exports. Since U.S. agricultural prices are in fact higher than world prices, to a limited extent these programs have been successful.

V. Conclusion

The evidence presented sheds some doubt on the effectiveness of U.S. credit programs to generate growth by increasing investment in targeted industries. However, since growth has never been an explicit objective of the U.S. credit policies, this may not be surprising. As discussed in Section III, there are four necessary conditions for directed credit to effectively stimulate growth. The first condition is that credit must increase borrowing in the targeted sector. Gale's work focuses on testing this condition. For the bulk of U.S. directed credit which goes toward the housing market, this first condition will not be met if the cost of government borrowing to fund the credit program raises interest rates, indicating that a large part of the housing credit has gone to inframarginal borrowers, people who would have borrowed anyway. However, as noted earlier, the allocation of credit within the housing sector may be affected and cannot be captured by Gale's simulation model. For other targeted sectors, credit allocation has increased, but the effects of each policy have been reduced by the existence of other programs.

The second condition, the link between credit and investment in the targeted sector, has only been addressed in two sectors: agriculture and education. In both cases, the studies indicate weak links between credit and productive investment. The LeBlanc and Hrubovcak study show greater increases in demand for a fixed asset, land, than for variable inputs in response to interest rate changes. The education studies also show some increase in the number of students attending college, but a significantly smaller increase than the amount of credit advanced. Thus, the

efficiency of the credit programs has not been high even if they have been effective in reaching the targeted population.

The third condition linking credit and output in the targeted sector was discussed with regard to agriculture and exports. The paper by Calomiris, Hubbard, and Stock reported a significant link in agriculture. Exports, however, show no such linkage.

The final condition concerns the rate of growth in the targeted industry relative to the rest of the economy. Evidence from small business studies suggests that small businesses supported by the SBA have not in fact grown faster than the rest of the economy.

Overall, none of the studies address all four conditions which must exist for directed credit to be effective toward growth. The scant evidence that does exist suggests that for most credit programs at least one of the four conditions will not be satisfied. The conclusion, therefore, is that the directed credit programs in the U.S. have not been particularly effective in stimulating growth. However, it should be noted that the goal of many of the programs in the U.S. was not growth, but equity. To the extent that marginal borrowers have received funds, some progress toward equity has been achieved.²⁶ Furthermore, in most cases, the credit programs have been effective at increasing the credit allocated to the targeted group. Thus, the directed credit programs have been effective in changing the allocation of credit and perhaps in achieving their objective, which was generally removing market imperfections and enhancing equity, but not

²⁶However, note that the funds generally had to come from somewhere. Either other nontargeted borrowers were squeezed out of the market for loans or an increase in interest rates was able to attract more funds. Further analysis is necessary to determine whether the marginal nontargeted borrowers losing access to funds are poorer than the marginal targeted borrowers who gain access to funds. Furthermore, those who hold government bonds or other interest-bearing assets also gain at the margin from an increase in interest rates when the government borrows to raise funds which would tend to adversely affect the distribution of income from an equity standpoint.

generally in generating growth. The evidence cannot verify whether or not a growth oriented credit program would have been successful.

SELECTED BIBLIOGRAPHY

- Arcelus, Francisco and Meltzer, Allan H. "The Markets for Housing and Housing Services." Journal of Money, Credit and Banking 5, No. 1, Part 1 (February 1973): 78-99.
- Armington, Catherine and Odle, Marjorie. "Small Business--How Many Jobs?" Brookings Review 1, No. 2, (Winter 1982): 14-17.
- Bosworth, Barry P.; Carron, Andrew S.; and Rhyne, Elisabeth H. The Economics of Federal Credit Programs. Washington: Brookings Institution, 1987.
- Buckley, Robert M. and Gross, David J. "Selective Credit Policies and the Mortgage Market." Journal of Money, Credit, and Banking 17, No. 3 (August 1985): 358-70.
- Calomiris, Charles W.; Hubbard, R. Glenn; and Stock, James H. "Growing in Debt: The 'Farm Crisis' and Public Policy." Brookings Papers on Economic Activity 1986, No. 2: 441-79.
- Davis, Richard G. "An Analysis of Quantitative Credit Controls and Related Devices." Brookings Papers on Economic Activity 1971, No. 1: 65-104.
- DeFina, Robert H. "The Link Between Savings and Interest Rates: A Key Element in the Tax Policy Debate." Business Review Federal Reserve Bank of Philadelphia November/December 1984: 15-21.
- Dhrymes, Phoebus J. and Taubman, Paul J. "An Empirical Analysis of the Savings and Loan Industry." In Study of the Savings and Loan Industry, edited by Irwin Friend, pp. 67-181. Washington: U.S. Government Printing Office, 1969..
- Gale, William G. "Economic Effects of Federal Credit Programs." American Economic Review 81, No. 1 (March 1991): 133-52.
- Hamburger, Michael J. and Zwick, Burton. "The Efficacy of Selective Credit Policies: An Alternative Test." Journal of Money, Credit, and Banking 11, No. 1 (February 1979): 106-110.
- Hodgman, Donald R. "Selective Credit Controls." Journal of Money, Credit, and Banking 4, No. 2 (May 1972): 342-59.
- LeBlanc, Michael and Hrubovcak, James. "The Effects of Tax Policy on Aggregate Agricultural Investment." American Journal of Agricultural Economics 68 (November 1986): 767-77.
- McPherson, Michael S. "The Demand for Higher Education." In Public Policy and Private Higher Education, pp. 143-96. Edited by David W. Breneman and Chester E. Finn, Jr. Washington: Brockings Institution, 1978.

- Penner, Rudolph G. and Silber, William L. "The Interaction Between Federal Credit Programs and the Impact on the Allocation of Credit." American Economic Review 63, No. 5 (December 1973): 838-52.
- Reich, Robert B. "Making Industrial Policy." Foreign Affairs 60, No. 4 (Spring 1982): 852-81.
- U.S., Congress, House, Committee on Banking, Finance and Urban Affairs. Export-Import Bank. Hearing Before the Subcommittee on International Development, Finance, Trade and Monetary Policy of the Committee on Banking, Finance and Urban Affairs, 102nd Cong., 1st sess., 11 April 1991.
- U.S., General Accounting Office. Food Aid: Improving Economic and Market Development Impact in African Countries. Report of the General Accounting Office to the Chairman, Committee on Agriculture, House of Representatives (GAO/NSIAD-88-55) December 1987.
- U.S., Office of Management and Budget. "Special Analysis F." In Special Analyses: Budget of the United States Government, Fiscal Year 1989. Washington: U.S. Government Printing Office, 1988.

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