

GOVERNMENT INCENTIVE TOOLS

A STUDY

Report to the
President's Commission
on Critical Infrastructure Protection
1997



This report was prepared for the President's Commission on Critical Infrastructure Protection, and informed its deliberations and recommendations. The report represents the opinions and conclusions solely of its developer, KPMG Peat Marwick LLP.

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INTRODUCTION

The following sections provide information related to enticing private sector investment into infrastructure protection. Among the mechanisms available to the government in stimulating investment into any desired activity or asset are the following:¹

- grants (including formula grants; project grants; direct payments for specified or unrestricted use; sale, exchange, or donation of property; and/or use of property, facilities, and equipment);
- government guaranteed purchases;
- tax credits;²
- accelerated depreciation allowances;³
- direct loans; and
- loan guarantees.

For each of the foregoing, a definition is provided. This is followed by a brief description of some of the pros and cons of utilizing the specific mechanism to induce investment into infrastructure protection initiatives. Examples of actual implementations of each mechanism are then included to illustrate practical applications as used by governments to promote specific activities. None of the examples provided herein are intended to serve as a vehicle for the PCCIP recommendations, but are intended rather to demonstrate how each mechanism can be utilized.

Additional governmental mechanisms for inducing investment not addressed herein include the provision of specialized government services; governmental advisory services and counseling; dissemination of technical information; training; and tax exempt bonds.⁴

GRANTS

General Definitions⁵

Project Grants. A project grant is funding, for fixed, or known periods, of specific projects for the delivery of specific services or products without liability for damages for failure to perform. Project grants include fellowships, scholarships, research grants, training grants, traineeships, experimental and demonstration grants, evaluation grants, planning grants, technical assistance grants, survey grants, construction grants, and unsolicited contractual agreements.

Formula Grants. Formula grants include allocations to states or their subdivisions in accordance with a distribution formula prescribed by law or administrative regulation, for activities of a continuing nature not confined to a specific project.

Similar to the grants described above are other vehicles for providing companies and organizations with financial and non-financial resources. These are:

Direct Payments for Specified Use are financial payments from the Federal government provided directly to individuals, private firms, and other private institutions to encourage or subsidize a particular activity by

¹ Additional mechanisms include tax exempt bonds (at the municipal level); provision of specialized services; advisory services and counseling; dissemination of technical information; and training.

² This section does not attempt to provide any tax advice, nor does it propose modifications to the existing Tax Code or public policy regarding income tax. It is provided herein for informational purposes only.

³ IBID.

⁴ Tax exempt bonds (municipals) are not included herein because they are typically issued by state or local governments for public projects. These municipal bonds are obligations whose interest is exempt from Federal, state, and/or local tax. They are backed by the full faith and credit or revenues of the issuing authority.

⁵ Definitions from the 1997 Federal Domestic Assistance Catalog, General Services Administration

conditioning the receipt of the assistance of a particular performance by the recipient. This does not include solicited contracts for the procurement of goods and services for the Federal Government.

Direct Payments with Unrestricted Use includes financial assistance from the Federal government provided directly to beneficiaries who satisfy Federal Eligibility requirement with no restrictions being imposed on the recipient as to how the money is spent. Included are payments under the retirement, pension and compensation programs.

Use of Property, Facilities, and Equipment includes programs which provide for the loan of, use of, or access to Federal facilities or property wherein the Federally-owned facilities or property do not remain the possession of the recipient of the assistance.

Sale, Exchange, or Donation of Property and Goods/In-Kind Contributions include programs which provide for the sale, exchange, or donation of Federal real property, personal property, commodities, and other goods including land, buildings, equipment, food and drugs. This does not include the loan of, use of, or access to federal facilities or property.

Pros and Cons

Grants generally do not have to be paid back, thus there are no financial liabilities for the company receiving the grant. This makes them perhaps the most attractive form of assistance as companies' capital budgeting decisions focus on items like maintenance, staffing, training and other features of managing the investment or project that might not be covered by the grant.

Because grants do not have to be paid back, there is no guarantee that the government will get the desired results projects could be a waste of funds. This forces the government into a position of project monitoring combined with the establishment of progress payments to ensure that the required investment is actually taking place. In fact, determining what actually qualifies for a grant can be difficult -- even when the regulations appear to be explicit.

Another disadvantage of grants is that the process to obtain a grant can be time consuming and expensive. If receiving a grant is perceived by industry as too time intensive or if companies perceive too many restrictions regarding how the grant can be used, private industry will not want to invest the time it takes to receive or manage the grant.

In cooperative agreements/joint ventures companies are required to pay some of the associated costs. There could be a problem convincing the companies that the costs they must pay create or protect shareholder value.

Examples

National Institute of Standards and Technology Advanced Technology Program (ATP). The National Institute of Standards and Technology in the Department of Commerce developed a bill to stimulate economic growth by developing high risk technologies through industry driven, cost shared partnerships. The type of assistance awarded is titled project grant (cooperative agreement).

Examples of projects funded under this program include:

1. Printed writing board manufacturing technology
2. Flat panel display manufacturing
3. handwriting recognition
4. magnetoresistive random access memories
5. Software for managing complex software data

Special Economic Development Economic and Adjustment Assistance Program-Sudden and Severe Economic Dislocation (SSED) and Long Term Economic Deterioration (LTED). The Economic Development Administration, Department of Commerce developed this grant to assist states and local areas develop and or implement strategies designed to address structural economic adjustment problems resulting from sudden and economic dislocation such as plant closures, military base closures, defense contracts cutbacks, and natural disasters or from long term deterioration in the area's economy.

These grants may be used to develop an economic adjustment strategy to implement such strategies. Implementation grants may be made for the construction of public facilities, business development and financing loan funds, technical assistance, training of any other activity that addresses the economic adjustment problems.

Allegany County, Maryland Water Project. The unincorporated communities of Carlos and Shaft are located south of the City of Frostburg in Allegany County, Maryland. The population of these two communities is 500. There are no minorities. The per capita income for the area is \$10,619 with an unemployment rate of 10.2% in March 1997. The area's major industry is coal mining.

This water project will benefit 184 users and improvements will include the replacement of the existing water systems which have a long standing history of significant non-compliance. The existing systems have been on the EPA non-compliance list since June 1993. Due to lack of filtration, the residents of Carlos-Shaft are exposed to cryptosporidium and giardia.

Both areas have a median household income (MHI) of less than 80% of the state MHI. The State of Maryland, Department of the Environment, has proposed an advisory to boil water until the service areas are connected to the new water supply. The construction of this very important project will also result in the regionalization of the water supply systems for the area.

The \$3,169,700 total project cost will include a Rural Utilities Service (RUS) loan in the amount of \$508,700 and a grant of \$1,661,000, and a grant in the amount of \$1,000,000 from the State of Maryland.

Southeast Water District No. 2 - Louisiana. The Southeast Water District No. 2 of Vermilion Parish is a small rural water system located in the southeastern part of Vermilion Parish in Louisiana, with a population of 1683. The present water facility serves 628 customers. Median Household Income for the water district area range from \$10,600 to \$24,651, which is below the Median Household Income for the State of Louisiana.

Vermilion Parish is located in South Central Louisiana along the Gulf of Mexico. The present unemployment rate for Vermilion Parish is in excess of 5.2 percent, which is just lower than Louisiana's rate of 5.8 percent. Vermilion Parish is in an area of flat coastal lowland topography with agriculture and oil field production being the major employers.

The Parish has been a location of intense oil exploration, drilling and production for over sixty years during the 1970's and 1980's, numerous oil field waste disposal facilities were in operation, with some of these disposal facilities being abandoned and not properly cleaned up. Three sites in particular are on the Environmental Protection Agency's (EPA) Superfund Site list. Early in 1996, an additional site within the water district service area was required to be remediated by EPA and the Louisiana Department of Environmental Quality. Additionally, the oil field exploration industry for nearly fifty (50) years, until 1995, ordinarily drilled seismic shot holes, which punctured the Chicot Aquifer. These holes were typically not properly sealed and provided an entry point for contamination from the surface for agricultural and oil field chemicals. These actions created several negative characteristics of the raw groundwater in the water district service area. As a result of these potential problems, residents living near the existing water district service area have requested water service be extended to serve their homes and businesses with safe long term water.

The proposed water project will include constructing 10,750 linear feet of six (6) inch water lines; 18,700 linear feet of four (4) inch water lines; 13,000 linear feet of three (3) inch water lines; 25,600 linear feet of two (2) inch water lines; and eight (8) fire hydrants. In addition, the construction included valve boxes, gate valves, fittings, service connections and service lines for the additional customers.

The completion of this project will not only provide water service to an area presently not being served by a community water system, but will definitely eliminate a health hazard for the residents of the area. In addition, additional fire protection will be provided for the rural areas of Vermilion Parish.

The \$475,000 project will be funded by a USDA Rural Development loan of \$325,000 and a grant of \$150,000.

Distance Learning and Telemedicine Grants in Pennsylvania. 1996 Grant Award: Green County Vocational-Technical School -\$336,124. Green County Area Vocational-Technical School, in partnership with a consortium of 5 Green County School Districts and Waynesburg College, will use an RUS grant award to establish electronic communication among partners so that teachers and students located in one rural area can connect with teachers and students that are located in a different area, as well as be able to access other information gateways. The grant will also help support staff development that enables technologically-literate teachers to be "Trainers of Trainers." These instructors will provide technical training to their colleagues and eventually serve as specialists in instructional diversity and learning styles, authentic assessments and community based learning.

GOVERNMENT GUARANTEED PURCHASES

General Definition

The Federal government has the ability under certain Acts to guarantee minimum purchase levels to maintain needed industrial capacity and capabilities. Such is the case with national security where it may not be economically feasible for a company to maintain a production line for the manufacture of items considered to be critical to national security. Under this scenario, the government may determine that maintaining a production line is necessary and therefore uses its authority to guarantee minimum purchases from producers.

Pros and Cons

From industry's perspective, the major advantage to this type of arrangement is that a market is created where, in the absence of government intervention, one would not exist. This permits companies to maintain capacity and capabilities (including trained personnel, specialized equipment, vendor arrangements, and plant space) for production of specific items. It further provides increased revenues for the company which can translate into additional profit.

Another advantage accruing to the company receiving a purchase commitment is that the government does not hold the company in violation of certain antitrust statutes. This further fortifies the company's position in the market by facilitating its operation without competition.

A disadvantage associated with purchase commitments is that they may distort the economy by providing a subsidy to industry. By making purchase commitments, the government may also promote cost growth as companies recognize the critical and unique nature of their production capabilities. This can have the effect of increasing costs to the government and/or decreasing efficiency of the contractor. Also contributing to potential cost growth is the fact that companies operating without competition tend to command higher prices than companies in a fully competitive market.

Example

The Defense Production Act (DPA) - 50 U.S.C. 2091 et.seq. The Defense Production Act (DPA) was established in 1950 for the purpose of mobilizing the production capacity of the US as a response to the material shortages experienced during World War II and the outbreak of the Korean War. DPA lapsed in the early 1960s, but was reactivated in 1985, and amended in 1992 by P.L. 102-558. The President delegated the authorities contained in the DPA through Executive Order 12919, dated June 7, 1994, and were carried through with reauthorization on September 30, 1995.

DPA is comprised of three Titles as follows:

Title I - Priorities and Allocations

Purpose: Since enactment of DPA, the authorities contained in Title I have been used to provide the US Armed Forces with the materials they need to meet any threat to national security. Title I specifically authorizes the President to:

1. require priority performance on contracts and orders, as necessary, to meet approved national defense and emergency preparedness program requirements; and
2. allocate the Nation's materials, services, and facilities as necessary to promote national defense.

Authorities: E.O. 12919 delegated the authorities contained in Title I to the Federal departments and agencies. To implement these authorities the Department of Commerce administers the Defense Priorities and Allocations Systems (DPAS). DPAS (1) establishes priority ratings for contracts; (2) defines industry's responsibilities; and (3) institutes enforcement procedures. The Department of Defense is delegated the authority to apply priority ratings to contracts and orders.

Amendments: The FY 1995 Defense Authorization Act redefined "national defense" for purposes of DPA and amended the DPA to allow the authorities contained in Title I to be used in the event of a national disaster, such as assisting victims of hurricanes and earthquakes.

Project Cases: During Desert Shield/Storm two cases illustrate how Title I authorities can be utilized.

In one case, the demand for Global Positioning System (GPS) Receivers outstripped the capacity of existing suppliers. Title I authorities were used to expedite shipments and to allocate available systems to units in the coalition force that had the most urgent requirements.

In a second case, Motorola, Inc. had stopped production of Search and Rescue radios in accordance with market demands. Motorola anticipated that suppliers of key components would play a critical role in production start-up. Title I enabled the Commerce Department to work with Motorola's supplier base and reduced the time to restart production of the radios by more than half.

Title III - Expansion of Productive Capacity and Supply

Purpose: DPA Title III was reactivated in 1985 and authorizes actions to expand production capacity for critical technology items, modernize domestic production capabilities, ensure reliable sources for critical items, and integrate defense and commercial production. Title III addresses acknowledged industry shortfalls by offering financial incentives which reduce the risk of establishing needed industrial capacity. Title III focuses on developing end-item procurement sources, not on developing new technologies. These sources support multiple weapons systems, and can restrict competition to domestic sources.

Program Funding: In 1992 Congress cleared the way for Title III to commit up to \$200 million a year for approved project proposals. As of 1994, seven projects had been funded totaling approximately \$85 million in contract awards.

Authorizations: The Department of Defense is authorized to use financial incentives such as purchases of industrial resources or critical technology items for government use or stockpiling; purchase commitments allowing the government to guarantee a market for an industrial resource or critical technology item; and purchase of production equipment which can be installed in government or commercially owned facilities.⁶

Congress maintains control and oversight of the Title III program by requiring the identification of industrial base shortfalls and the projects chosen to address them in the defense budget or in a budget amendment. DPA requires a 60 day comment period after Congressional notification before any action can be taken to address industrial shortfalls. If no response is made, the Department of Defense is authorized to formally enter agreements using the financial incentives described above.

Amendments: 1992 DPA amendments defined what constitutes a domestic source as a business concern that (1) performs in the United States or Canada substantially all of the research and development, engineering, manufacturing, and production activities required to fulfill a contract with the US government relating to critical component or a critical technology item and (2) procures from subcontractors that meet these same requirements. Foreign ownership does not preclude a firm from being considered a domestic source.⁷

Project Cases: Since 1985, Title III has been instrumental in establishing domestic production capability for key materials and components used in the Nation's weapons systems. Representative projects include:

High Resolution Imaging Flat Panel Display Systems: This project was jointly funded by Title III (\$30 million), the Advanced Research Projects Agency (\$20 million), and industry (\$50 million). The objective of the project was to develop manufacturing expertise and a pilot facility to produce ultra-high resolution displays needed for mapping, satellite imaging, target designation, and intelligence applications. The first year of the effort achieved significant improvements in manufacturing processes and cycle time.

Semi-Insulating Gallium Arsenide (SI GaAs) Wafers: This project was valued at \$31.5 million and is helping to retain a viable domestic capability to produce SI GaAs wafers in support of military and commercial requirements. SI GaAs contracts were awarded in March 1994. All three selected contractors have significantly increased production capabilities and sales.

Title VII - General Provisions

Purpose: DPA Title VII includes general provisions that provide the President of the United States a set of tools that can be used to plan and put in place the mechanisms required to meet any threat to national security.

Authorities: Title VII provides several important general provisions, including:

1. standards and procedures by which voluntary agreements and advisory committees may be developed with representatives from the private sector to help provide for the defense of the United States;
2. the authority to establish and train an executive reserve of recognized experts from the private sector that can be called upon in the event of a national emergency;

⁶ The DPA language additionally provides for Title III objectives to be achieved through loans, loan guarantees, and grants as financial incentives, but in a 1985 agreement between the Office of Management and Budget and the Department of Defense, the program was restricted to purchases and purchase commitments.

⁷ Of the seven projects approved (one was terminated) under Title III through 1994, two had direct foreign involvement, and two were indirectly influenced by foreign-owned firms. If a contract is awarded to a foreign company, standard clauses are included in the contract informing the contractor that the International Traffic in Arms Regulations must be followed.

3. Section 721, commonly known as the Exon-Florio Provision, authorizes the President to review certain mergers, acquisitions and takeovers by foreign firms and to prohibit those actions that would threaten or impair national security; and
4. the authorization to appropriate funds for the execution of the Title III program.

TAX CREDITS

General Definition

The general business tax credit is a limited non-refundable credit against income tax that is claimed after all other non-refundable credits have been claimed by a company. The general business credit for a tax year is the sum of (1) the business credit carryforwards to the year, (2) the amount of the current year business credit, and (3) the business credit carrybacks to the year.

Limitations. The general business credit may not exceed a limitation based on the amount of tax liability. This limitation is determined separately for the general business credit attributable to (1) components other than the empowerment zone employment credit and (2) the empowerment zone employment credit component. For purposes of (1) above, the general business credit may not exceed net income tax less than the greater of (a) the tentative minimum tax, or (b) 25% of net regular tax liability above \$25,000. For purposes of (2) above, the general business credit may not exceed net income tax less the greater of (a) 75% of the tentative minimum tax, or (b) 25% of net regular tax liability above \$25,000. The result under (2) above is reduced by the general business credit allowed for the tax year that is attributable to the components other than the empowerment zone employment credit to arrive at the limitation on the general business credit attributable to the empowerment zone employment credit component.

Carrybacks and Carryforwards of Unused Credits. When the general business credit exceeds the above limitation in any year, the excess or unused credit may be carried back three years and forward 15 years. The order in which these credits are claimed in any carryback or carryforward year is as follows: (1) carryforwards to that year on a first in, first out (FIFO) basis; (2) the business credit earned in that year; and (3) the carrybacks to that year on a FIFO basis.⁸

Pros and Cons

An obvious advantage to the corporate tax credit is that it gives companies a real dollar reduction in their annual income tax. Thus, the thinking is that the company will have more capital to spend, and will therefore be better able, and perhaps more inclined, to make the investments deemed necessary. Capital budgeting decisions of projects enjoying tax credits may rank higher because of the tax savings associated with qualified projects.

Just as obvious is the major disadvantage to the corporate tax credit; these credits require an Act of Congress. This is an extremely time consuming and political process and is subject to annual revisions, addendums, and supplements.

Examples

Credit for Increased Research Expenditures. To stimulate research activity in the United States, a non-refundable income tax credit is available. This credit is available to taxpayers in addition to provisions that allow for the expensing or for the capitalization and amortization of research expenses. The credit is generally applicable to the excess of the current year's research expenses over a base amount. For the credit to be applicable, the expenditures must be incurred in carrying out a trade or business, and the

⁸ 1997 U.S. Master Tax Guide, pg. 355-356

research must be undertaken to discover information that is technological in nature and intended to be useful in the development of a new or improved business component of the taxpayer.⁹

Expenditures incurred for research after commercial production, research outside the United States, research in the social sciences or humanities, or for funded research are ineligible for the credit. Expenditures must be incurred before July 1, 1995, or after June 30, 1996 and before June 1, 1997.

Alternative Fuels Credit. A tax credit is allowed for the domestic production of oil, gas, and synthetic fuels derived from non-conventional sources (such as shale, tar sands, coal seams, and geopressured brine) that are sold to unrelated persons. The credit is claimed by attaching a separate schedule to the tax return showing how the credit was computed. For 1995, the credit is \$5.83 per 5.8 million BTUs (energy equivalent of one barrel of oil) produced and sold from facilities placed in service after 1979 and before 1993 or from wells drilled after 1979 and before 1993. Such fuels must be sold before 2003. The time period is extended for certain facilities placed in service before July 1, 1998, subject to a written binding contract in effect before 1997. The credit is reduced by an amount which bears the same ratio to the amount of the credit as (1) the amount by which the reference price for the calendar year in which the sale occurs (\$14.62 for 1995) exceeds \$23.50 bears to (2) \$6. The credit and phase-out range are adjusted for inflation. Producers of certain natural gases from non-conventional sources may not claim a credit for such fuels if they elect an incentive price for the gas under the Natural Gas Policy Act of 1978.

Credit for Qualified Electric Vehicles. A non-refundable credit is allowed in service for vehicles placed in service after June 30, 1993 and before 2005. The maximum credit is \$4,000 per qualified electric vehicle. The credit applies to a motor vehicle powered primarily by an electric motor drawing current from rechargeable batteries, fuel cells, or other portable sources of electric current. The original use of the vehicle must commence with the taxpayer. For vehicles placed in service in 2002 through 2004, the credit is reduced by the amount of the credit allowed. The credit is recaptured as an increase in tax in the year in which the vehicle ceases to be a qualified electric vehicle.

Enhanced Oil Recovery Credit. Unless an election is made to have the enhanced oil recovery (EOR) credit not apply, this credit is available for up to 15% of qualified costs attributable to qualified domestic EOR projects. To the extent that a credit is allowed for these costs, the amount otherwise deductible or required to be capitalized and recovered through depreciation, depletion, or amortization must be reduced. The amount of the credit allowable is phased out as the average wellhead price of uncontrolled domestic oil rises from \$28 to \$34 per barrel.

The amount allowable as a credit is reduced by an amount that bears the same ratio to the amount of the credit as (1) the amount by which the reference price for the calendar before the calendar year in which the tax year begins exceeds \$28 bears to (2) \$6. The credit is adjusted for inflation. For 1996, the reference price for 1995 (\$14.26) multiplied by the inflation adjustment factor (1.485) does not exceed \$228, and therefore, no adjustment is necessary.

A qualified EOR project is a domestic project involving one or more tertiary recovery methods that can reasonably be expected to result in more than an insignificant increase in the amount of crude oil that will ultimately be recovered where the first injection of liquids, gases or other matter began after 1990.

Credit for Electricity Produced from Renewable Sources. A non-refundable credit is available for the domestic production of electricity from qualified energy resources. The credit is 1.5 cents (adjusted for inflation) per kilowatt hour of electricity produced from a qualified energy resource at a qualified facility during the 10-year period after the facility is placed in service that is sold during the tax year by the taxpayer to an unrelated person.

⁹ KPMG's Tax and Financial Incentives for Business around the World, 1994, pg. 471

Corporate Tax Credit for Financial Institutions. Foreign and domestic financial institutions constructing new facilities and creating jobs can receive a 50% tax credit for up to ten years. Eligible applicants must build a new facility of 900,000 square feet and maintain 2,000 jobs in the state. Organizations maintaining 1,600 jobs are eligible for a 40% credit; those maintaining 1,200 may apply for a 30% credit.

Tax Credit Related to Data Processing Equipment. Provides a credit for 100% of the Property Tax paid on data processing equipment, against the firm's Corporation Tax liability. Any credit not used to offset this liability must be applied against the firm's liability under the following taxes: Insurance Premiums Tax, Unrelated Business Income of Non-Profit Corporations Tax, Air Carriers Tax, and Public Services Corporation Tax. Electronic data processing equipment includes computers, printers, peripheral computer equipment, bundled software and any other related equipment. The credit is effective for Property Tax paid on the October 1994 grand list.

Business Tax Credit for New Manufacturing or Economic Development Activities. Provides a 10% tax credit each year over seven years for an economic based industry creating 1,000 jobs and occupying 250,000 square feet. The value of this seven year credit is \$25,000,000. The full range of advantages are:

Jobs Created	Size of Facility	% Credit	7-Year Value of Credit
1,000	250,000 sf	10.0%	\$ 25 Million
2,000	500,000 sf	15.0%	\$ 50 Million
3,000	750,000 sf	21.5%	\$ 86 Million
4,000	1,000,000 sf	25.0%	\$100 Million

Tax Credit for Machinery and Equipment Expenditures. Companies with less than 250 full-time employees qualify for a 10% credit and those with more than 250 full-time permanent employees and less than 800 qualify for a 5% credit. This credit applies to the increase in a company's spending on machinery and equipment over the previous year which was acquired for and installed in their state.

ACCELERATED DEPRECIATION ALLOWANCES

General Definition

When a long-lived asset is acquired, the accounting measurement of income, as well as the Internal Revenue Service (IRS) Tax Code, requires that the cost of the asset be expensed over its useful life in a systematic and rational manner. The cash outflow from purchasing an asset takes place in the year the asset is acquired, but the costs of the assets are matched with revenue over the life of the asset to determine income. Therefore, depreciation expense will reduce the taxable income during the lifetime of the asset, not just in the year of acquisition. The cost of an asset to be depreciated is often called a tax shield. To the extent that depreciation may be taken, it shields income of future years against tax.¹⁰

Companies generally calculate depreciation one way when calculating taxes and another way when reporting income to investors. Most use the straight line depreciation method for stockholder reporting, but they use the fastest depreciation rate permitted by law for tax purposes. Under the straight line method as used for stockholder reporting purposes, one normally takes the cost of the asset, subtracts its estimated salvage value, and divides the net amount by the asset's economic life. Faster depreciation methods are used for tax purposes show greater depreciation in early years to minimize the tax liability at the corporation.

For tax purposes, Congress changes the permissible tax depreciation methods from time to time. Prior to 1954, the straight line method was required for tax purposes, but in 1954 accelerated methods (double

¹⁰ Management Accounting: A Decision Emphasis, Don T. DeCoster, Eldon L. Schafer, 1982, pg. 410

declining balance and sum-of-the-years'-digits) were permitted. Then, in 1981, the old accelerated methods were replaced by a simpler procedure known as the Accelerated Cost Recovery System (ACRS). The ACRS system was changed in 1986 as a part of the Tax Reform Act, and it is now called the Modified Accelerated Cost Recovery System (MACRS).¹¹

Most tangible property placed in service after 1986 must be depreciated using methods prescribed under MACRS. Depreciation for recovery property placed in service after 1980 and before 1987 is computed under ACRS.

Straight Line. The straight line method of computing the depreciation deduction assumes that the depreciation sustained is uniform during the useful life of the property. The cost or other basis, less estimated salvage value, is deductible in equal annual amounts over the asset's estimated useful life. An asset may not be depreciated below its salvage value. Straight-line depreciation under MACRS and ACRS is generally computed in this manner, except that a recovery period is used instead of the useful life and salvage value is not taken into account.¹²

Example. Assume a company purchases an asset for \$20,000 on January 1, 1996. This asset has a 3-year life with a \$5,000 salvage value, so \$15,000 will be depreciated over the three years. Thus:

Year	Calculation	Depreciation Expense
1996	\$15,000/3	\$ 5,000
1997	\$15,000/3	\$ 5,000
1998	\$15,000/3	<u>\$ 5,000</u>
Total		\$15,000

Double Declining-Balance. Under this accelerated method, depreciation is greatest in the first year and smaller in each succeeding year. The depreciation basis is reduced each year by the amount of the depreciation deduction, and a uniform rate of up to 200% of the straight-line rate is applied to the resulting balances. Salvage value is not taken into account in determining the annual allowances under the declining-balance method, but, under this method of depreciation, an asset may not be depreciated below a reasonable salvage value. The yearly depreciation expense is calculated by multiplying a constant rate times the decreasing book value. The book value is the purchase cost minus the accumulated depreciation. The depreciation expense amount for a period is calculated by dividing the yearly depreciation expense amount by the number of periods in the accounting year. Under MACRS rules, the double declining-balance method is used to depreciate 3-, 5-, 7-, and 10-year property.

Example. Assume an asset is purchased on January 1, 1996 at a cost of \$350,000 with a salvage value of \$35,000. The asset has a five year life. Using the double declining balance method, the constant rate is calculated to be 0.40 (1 / 5 years * 2). Thus, the depreciation schedule for the first four years is displayed below:

Year	Calculation	Depreciation Expense	Book Value
At Acquisition			\$350,000
1996	0.40(\$350,000)	\$140,000	\$210,000
1997	0.40(\$210,000)	\$ 84,000	\$126,000
1998	0.40(\$126,000)	\$ 50,400	\$ 75,600
1999	0.40(\$ 75,600)	\$ 30,240	\$ 45,360

¹¹ Intermediate Financial Management, Eugene F. Brigham, Louis C. Gapenski, 1996, pg. 249

¹² 1997 U.S. Master Tax Guide, pg. 319-320

The example asset has a salvage value of \$35,000 which means it cannot be depreciated below \$35,000. The double declining balance method depreciates this asset to \$35,000 before the end of the fifth year. The yearly depreciation expense amount for the fifth year is initially calculated as: $0.40(\$45,360) = \$18,144$. This amount is divided by 12 to get the period depreciation amount: $\$18,144 / 12 = \$1,512$. The asset is depreciated each month by the period expense amount, \$1,512, until its book value is equal to its salvage value of \$35,000. The depreciation schedule for the fifth year is as follows:

Period	Period Expense	Book Value
Start of Year 5		\$45,360
1	\$1,512	\$43,848
2	\$1,512	\$42,336
3	\$1,512	\$40,824
4	\$1,512	\$39,312
5	\$1,512	\$37,800
6	\$1,512	\$36,288
7	\$1,288	\$35,000

The asset is completely expensed by the seventh period in the fifth year.

Sum-of-the-Years-Digits. Under the sum-of-the-years-digits accelerated method, changing fractions are applied each year to the original cost or other basis, less salvage value. The numerator of the fraction each year represents the remaining useful life of the asset, and the denominator, which remains constant, is the sum of the numerals representing each of the years of the estimated useful life (the sum-of-the-years-digits). This method, if elected, may be used for group, classified or composite accounts.¹³

Example. Assume a company purchases an asset for \$100,000 on January 1, 1996. This asset has a 5-year life with a \$25,000 salvage value, so \$75,000 will be depreciated over the five years. In Year 1, the fraction will be $\frac{5}{15}$, in Year 2 it will be $\frac{4}{15}$, in Year 3 it will be $\frac{3}{15}$, and so on. Thus:

Year	Calculation	Depreciation Expense
1996	$\frac{5}{15}(\$75,000)$	\$25,000
1997	$\frac{4}{15}(\$75,000)$	\$20,000
1998	$\frac{3}{15}(\$75,000)$	\$15,000
1999	$\frac{2}{15}(\$75,000)$	\$10,000
2000	$\frac{1}{15}(\$75,000)$	\$ 5,000
Total		\$75,000

MACRS. Historically, an asset's tax depreciable life was closely related to its estimated economic life; it was intended that an asset would be fully depreciated at approximately the same time that it reached the end of its useful life. However, MACRS created several classes of assets, each with a more or less arbitrarily prescribed life called a recovery period that bears only a rough relationship to the expected economic life.

¹³ 1997 U.S. Master Tax Guide, pg. 320

A major effect of the MACRS system has been to shorten the depreciable lives of assets, thus giving businesses larger tax deductions and thereby increasing cash flows available for reinvestment. Table 1 describes the types of property that fit into the different recovery periods, and Table 2 sets forth the MACRS recovery allowance percentages (depreciation rates) for the various classes of investment property.

Table 1. MACRS Most Commonly Used Recovery Periods

Recovery Period	Type of Property
3 years	Specially designed tools and devices, and tractor units.
5 years	Automobiles, trucks, computers, copiers, and other designated equipment.
7 years	Most industrial equipment, office furniture, and fixtures.
10 years	Certain longer-lived types of equipment.
27.5 years	Residential rental real property such as apartment buildings.
39 years	All nonresidential real property, including commercial and industrial buildings.

Property in the 27.5- and 39-year categories (real estate) must be depreciated by an alternate MACRS straight line method, but 3-, 5-, 7-, and 10-year property can be depreciated by either the alternate straight line method or by an accelerated method which uses the rates shown in Table 2.

When a firm has the option of using for tax purposes straight line or the accelerated rates shown in Table 2, it will generally elect to use the accelerated rates. The yearly recovery allowance (or depreciation expense) is determined by multiplying each asset's depreciable basis by the applicable recovery percentage given in Table 2.

Table 2. MACRS Recovery Allowance Percentages for Personal Property (not real estate)

Ownership Year	Recovery Period			
	3-year	5-year	7-year	10-year
1	33%	20%	14%	10%
2	45	32	25	18
3	15	19	17	14
4	7	12	13	12
5		11	9	9
6		6	9	7
7			9	7
8			4	7
9				7
10				6
11				3
	100%	100%	100%	100%

To illustrate, consider the 5-year recovery allowance percentages. The straight line percentage would be 20% per year, so the 200 percent declining balance multiplier is $2.0(20\%) = 40\% = 0.4$. However, because the half-year convention applies, the MACRS percentage for Year 1 is only 20%. For Year 2, there is 80 percent of the depreciable basis remaining to be depreciated, so the recovery allowance percentage is $0.4(80\%) = 32\%$. In Year 3, $20\% + 32\% = 52\%$ of the depreciation has been taken, leaving 48%, so the percentage is $0.4(48\%) = 19\%$. In Year 4, the percentage is $0.4(29\%) = 12\%$. After 4 years, straight line depreciation exceed the declining balance depreciation, so a switch is made to straight line (this is permitted under the law). However, the half-year convention (see below) must also be applied at the end of the class life, and hence the remaining 17% of depreciation must be taken (amortized) over 1.5 years. Thus, the percentage in Year 5 is $17\%/1.5 = 11\%$, and in Year 6, $17\% - 11\% = 6\%$.

Half-Year Convention. Under MACRS, the assumption is generally made that property is placed in service in the middle of the first year. Thus, for 3-year property, depreciation begins in the middle of the year the asset is placed in service and ends three years later. The effect of the half-year convention is to extend the depreciation out one more year, so 3-year property is depreciated over four calendar years.

Depreciable Basis. The depreciable basis is a critical element under MACRS, because each year's allowance (depreciation expense) depends jointly on the asset's depreciable basis and its MACRS recovery period. The depreciable basis under MACRS is equal to the purchase price of the asset plus any shipping and installation costs. The basis is not adjusted for salvage value (which is the estimated market value of the asset at the end of its useful life) regardless of whether MACRS percentages or the alternative straight line method is used.

Sale of a Depreciable Asset. If a depreciable asset is sold, any profit, defined as the realized salvage value minus the then-existing undepreciated tax book value, is taxed at the firm's marginal tax rate. For example, suppose a firm buys a 5-year class life asset for \$100,000 and sells it at the end of the fourth year for \$32,000. After four years, the asset's tax book value is equal to $\$100,000(0.11 + 0.06) = \$100,000(0.17) = \$17,000$, so $\$32,000 - \$17,000 = \$15,000$ is added to the firm's operating income and is taxed.¹⁴

For example, assume that a company purchases a \$100,000 computerized inventory control system, which has a MACRS 5-year recovery period. It is placed into service on March 15, 1996. The company must pay an additional \$20,000 for delivery and installation. Salvage value is not considered, so the system's depreciable basis is \$120,000. (Delivery and installation charges must be included in the depreciable basis rather than expensed in the year incurred.) Each year's recovery allowance (tax depreciation expense) is determined by multiplying the depreciable basis by the applicable recovery allowance percentage in Table 2. Thus:

Year	Calculation	Depreciation Expense
1996	0.20(\$120,000)	\$ 24,000
1997	0.32(\$120,000)	\$ 38,400
1998	0.19(\$120,000)	\$ 22,800
1999	0.12(\$120,000)	\$ 14,400
2000	0.11(\$120,000)	\$ 13,200
2001	0.06(\$120,000)	\$ 7,200
Total		\$120,000

Pros and Cons

Allowing companies to classify investments in assets related to critical infrastructure protection in the shortest recovery periods may promote desired investment as companies enjoy the tax benefits associated with fast depreciation.

A disadvantage associated with redefining and/or reclassifying depreciation schedules is that it is a cumbersome process involving modification to the existing Tax Code. This would be less difficult than providing for a new tax credit program, but it would still require a time consuming legislative process.

¹⁴ Intermediate Financial Management, Eugene F. Brigham, Louis C. Gapenski, 1996, pgs. 249-252

DIRECT LOANS

General Definition

Direct loans are defined as financial assistance provided through the lending of Federal monies for a specific period of time, with a reasonable expectation of payment.¹⁵ Direct loans from the government may or may not require interest payment by the borrower.

Direct loans have been used to expedite production and deliveries or services to aid in carrying out Government contracts for the procurement of industrial resources or a critical technology item for the national defense. In this situation, the President may make provision for loans (including participation in, or guarantees of, loans treated in the next section) to private business enterprises (including research corporations not organized for profit) for the expansion of capacity, the development of technological processes, or the production of essential materials, including the exploration, development, and mining of strategic and critical metals and minerals, and manufacture of newsprint. Such loans may be made without regard to the limitations of existing law and on such terms and conditions as the President deems necessary, except that:

- (1) financial assistance may be extended only to the extent that it is not otherwise available on reasonable terms; and
- (2) except during periods of national emergency declared by the Congress or the President, no such loan may be made unless the President determines that--
 - the loan is for the expansion of capacity, the development of a technological process, or the production of materials essential to the national defense;
 - without the loan, United States industry cannot reasonably be expected to provide the needed capacity, technological processes, or materials in a timely manner;
 - the loan is the most cost-effective, expedient, and practical alternative method for meeting the need; and
 - the combination of the United States national defense demand and foreseeable non-defense demand is not less than the output of domestic industrial capability, as determined by the President, including the output to be established through the loan.

No loans may be made under this section, unless the industrial resource shortfall which such loan is intended to correct has been identified in the Budget of the United States, or amendments thereto, submitted to the Congress, accompanied by a statement from the President demonstrating that the budget submission is in accordance with the provisions of this law. Any such loan may be made only after 60 days have elapsed after such industrial resource shortfall has been identified.

If the making of any loan or loans to correct an industrial resource shortfall would cause the aggregate outstanding amount of all loans for such industrial resource shortfall to exceed \$ 50,000,000, any such loan or loans may be made only if specifically authorized by law.

The requirements of the paragraphs above may be waived under the following circumstances:

- during periods of national emergency declared by the Congress or the President; and
- upon a determination by the President, on a non-delegable basis, that a specific guarantee is necessary to avert an industrial resource or critical technology shortfall that would severely impair national defense capability.¹⁶

¹⁵ Office of Management and Budget

¹⁶ UNITED STATES CODE SERVICE, TITLE 50. WAR AND NATIONAL DEFENSE, TITLE 50 APPENDIX -- WAR AND NATIONAL DEFENSE, DEFENSE PRODUCTION ACT OF 1950, TITLE III. EXPANSION OF PRODUCTIVE CAPACITY AND SUPPLY, 50 USCS Appx @ 2092 (1997)

Direct loans are administered by the government and private lenders do not participate in the process. Therefore, these loans are inherently guaranteed by the government which means that the government has direct default exposure. Another distinguishing feature of direct loans is that the government's funding costs with which it finances loans is the lowest available.

Pros and Cons

Direct loans may be advantageous where the cost of gathering information about borrowers is high. Under these situations, private lenders may not participate to the extent necessary to carry out desired activities without the guarantees in place to shield the banks from default.

A disadvantage of using direct loans is that the government eliminates the private lender from the process thereby assuming the role of the bank. The government is typically ill suited for managing a portfolio of risk as well as the private sector and may not have the same insight into project viability as private lenders. This can introduce unwanted risk into a loan portfolio.

Direct loans from the government may offer a greater subsidy than a pure loan guarantee involving a private lender because in addition to the cost of the implicit guarantee, most government agencies charge fees that are less than the true administration and borrowing costs.

Examples

Callaghan Water, Virginia. The community of Callaghan is located in the Western side of Allegheny County, Virginia, near the West Virginia line, approximately 5 miles west of the Town of Covington, the county seat; 111 miles southwest of Charlottesville.

The County operates a 200,000 gallons per day (gpd) wastewater treatment facility. The cities of Covington (5 miles east of Callaghan) and Clifton Forge (12 miles northeast of Callaghan) treat the other wastewater at their plants. The County has a 750,000 gpd capacity reserved at Covington's 3 million gpd treatment facility. Clifton Forge allocated 300,000 gpd to Allegheny county from its 2 million gpd facility.

Allegheny County does not currently own and operate a water treatment facility. The County currently has 750,000 gpd reserve capacity in the Covington water plant. While the County does not have a designated reserve capacity in the Clifton Forge plant, by agreement the County can purchase water from Clifton Forge subject to available capacity.

The County continuously receives requests from residents requesting public water. Many of the individual well supply systems in the Callaghan Area have experienced problems with water quality, shortage of water, or both. The poor water quality is due to primarily the presence of iron and sulfur. In addition, since sewage disposal consists of septic tanks, there exists strong potential for contamination of individual wells with fecal coliform bacteria. The average depth of existing wells is reported to be less than 200 feet.

One of the items in the County's comprehensive plan is to make basic infrastructure improvements necessary to protect public health and safety and enhance the livability and economic attractiveness of the area.

The new water system will provide an adequate supply of potable water that meets quality and quantity standards to 170 households, an adult home and an elementary school. The new surface water treatment plant, distribution system and storage tank will also provide the community with fire protection and handle expected growth in the area.

The estimated \$1,788,000 project cost is to be funded with a USDA Rural Development Rural Utilities Service (RUS) loan of \$431,000 and a \$632,000 grant. In addition, the Virginia Department of Housing and Community Development, through Community Development Block Grant funds, will provide a \$700,000 grant. An additional \$25,000 will be provided by private sources.

Mojave Public Utility District, Cache Creek Water Project, California. Cache Creek is a small residential community (40 households) located in the Mojave Desert about 60 miles east of Bakersfield and 5 miles northwest of Mojave on Highway 58 in Kern County.

Cache Creek's present water system has inadequate storage (20,000 gal.), an inadequate distribution system (undersized metal lines that are severely corroded and leaking profusely) which has required 37 shutdowns for leak repairs in the last four years. Some of these lines are too shallow and freeze during the winter months. All of these conditions have caused repeated disruption of services to the residents.

The problems of low water pressure, leaking water lines and proximity to septic systems has prompted the Department of Health Services to recommend replacement of the water system for repeated violations of Safe Drinking Water Standards.

The estimated \$584,600 project cost is to be funded with a Rural Utilities Service loan of \$34,600, a \$400,000 grant and a \$150,000 CDBG contribution. The purpose of this Water 2000 project is the complete replacement of the existing water distribution system, add storage capacity, and tie-in to the Mojave Public Utility District's existing water main. With the completion of this project, the 96 residents of the community will have a safe, reliable water supply.

Green Township Municipal Authority, Pennsylvania. Green Township is approximately 25 miles north of Indiana, PA in west-central Pennsylvania.

The Green Township Municipal Authority proposes to construct public water treatment, storage and distribution systems for the Villages of Starford, Lovejoy, Barr Slope, Dixonville and Cookport. Currently, these communities are served by wells contaminated with insufficiently treated effluent from on-site septic systems and mine drainage. This project will result in a safer water supply and healthier living conditions for 395 residential and commercial users in the Township including a nursing home. The project involves the development of 5 wells, 4 storage tanks, approximately 60,000 feet of water lines and two treatment facilities.

The \$2.288 million project is being funded with a USDA Rural Development loan of \$1,591,000 and a grant of \$400,000. An additional \$297,000 will be provided by state and local sources.

First Electric Cooperative Corporation, Arkansas. Received a \$12,536,000 Electric loan (FY 1994) to add 2,450 new customers, construct 146 miles of distribution, 3 miles of transmission line, and make other system improvements in 14 counties.

Export-Import Bank Direct Loan Program. Ex-Im Bank offers fixed-rate loans directly to foreign buyers of U.S. goods and services to help U.S. exporters compete against foreign suppliers offering officially supported export credits and to fill in gaps in the availability of private export financing.

Ex-Im Bank will consider extending to a company's foreign customer a fixed-rate loan covering up to 85 percent of the U.S. export value. The buyer must make a cash payment to the U.S. exporter of at least 15 percent of the U.S. export value. At the preliminary stage, Ex-Im Bank frequently offers the option of guarantee support or a direct loan.

Capital equipment, large-scale projects, and related services are eligible for direct loan financing. Ex-Im Bank direct loans generally involve loan amounts over \$10 million or a repayment term of five or more years. Transactions involving loan amounts of \$10 million or less are ordinarily financed by a domestic financing institution or third party, and Ex-Im Bank support takes the form of a guarantee.

The borrower must be a creditworthy entity in a country eligible for Ex-Im Bank assistance. The borrower may be an entity other than the buyer. Generally, on government or government-sponsored projects, Ex-Im Bank looks for a host government guarantee. Private sector borrowers may be considered on their own merits or may offer a creditworthy bank as a guarantor. Ex-Im Bank will also consider doing project finance where the risk of the project is taken. Applicants should consult with Ex-Im Bank about any special conditions that may apply to the importing country.

Ex-Im Bank requires that the buyer make a cash payment to the exporter equal to at least 15 percent of the U.S. export value. The cash payment may be paid in a lump sum before disbursement of the financing, or it may be paid in installments equal to at least 15 percent of the value of each completed shipment and related disbursement under the contract. The alternative selected is negotiated between the buyer and seller. Ex-Im Bank will consider extending a loan to the foreign borrower covering up to 85 percent of the U.S. export value.

Repayment terms on transactions supported by direct loans normally range from five to ten years, depending on the export value, the product or project being financed, the importing country and the terms offered by officially supported competitors. The maximum repayment term is five years for relatively rich countries and ten years for relatively poor countries. Exceptions exist to these general guidelines by agreement among the OECD countries. Payments are usually made in semiannual installments, on the 15th of the month, beginning six months after final delivery, the mid-point of deliveries or completion of the project, whichever is appropriate.

Interest rates on direct loans are fixed for the life of the loan at the time of Ex-Im Bank's Final Commitment. Interest is payable on the installment dates on outstanding balances. Ex-Im Bank charges the minimum OECD rate applicable to the category of the importing country and the repayment period. A \$100 processing fee must accompany each new application and each application for a Final Commitment that is not a conversion.

The loan agreement sets forth transaction-specific provisions, as well as standard Ex-Im Bank terms and conditions which are not subject to negotiation. When Ex-Im Bank extends a direct loan to a borrower, Ex-Im Bank enters into a loan agreement with the borrower and requests the issuance of a promissory note by the borrower. The utilization procedures are detailed in an annex to the loan agreement.¹⁷

Arizona Telephone Company. Located in the Havasu River Canyon at the southern end of the Grand Canyon in north central Arizona is the Havasupai Indian Reservation. Most of the residents live in the Supai Village which is located approximately 2,500 feet below the canyon rim and only accessible by foot, horseback, or helicopter. Prior to 1989, telephone service was almost non-existent. There were only 29 residents with telephones, served by an antiquated switch that was more than 30 years old. Only three calls could come in and three calls could go out at any given time; that is if the 75 mile "open wire" toll facility was not damaged by lightening, ice, or wind. It seemed that although it was difficult for a technician to travel to the facility for maintenance due to the remoteness of the route, the affects of bad weather found no trouble finding the site. In 1989, the Arizona telephone Company which provided service to the Supai Village, received a loan from RUS to improve service. A new digital central office switch was installed to provide one-party service to 60 residents. Emergency medical service via helicopter is now a telephone call away. Tourism is more profitable since visitors can contact the local hotel, campgrounds, and visitor office to obtain information about the area and make reservations. In addition, the local school is now connected to distance learning centers providing students with access to information resources that will enhance their educational opportunities. At one time, the thought of all these things actually happening were as remote as the location of the Supai Village in the Grand Canyon. An RUS loan, however, made what was once just a thought into a way of life.

¹⁷ Source: U.S. Export-Import Bank

Citizens Telephone Company, Georgia. Heavy rains fell on south central Georgia in the early part of July 1994. Officials were predicting “the worst flood since 1929.” At the peak of the flooding, the Flint River rose ten feet above the flood level stage rendering parts of Interstate 75 impassable. Despite precautions and the relentless work of emergency crews, at least 30 people lost their lives. President Clinton declared four counties disaster areas. During disaster situations telephone service is critical. Emergency crews and citizens must communicate to save lives. During this emergency, the local telephone company, Citizens Telephone Company experienced extensive flood damage which disrupted service to over 572 rural residents. RUS has a history of providing assistance to its borrowers in the aftermath of a disaster. The immediate restoration of telecommunications services to rural residents is a primary concern. Once the flood waters receded, Citizens assessed the damage to be approximately \$1 million. Neither Citizens or the local residents had flood insurance because this area of Georgia was not a designated a flood hazard area. RUS immediately approved the deferment of Citizens’ current loan obligations to the government so they could promptly replace what was lost in the flood and restore full service.

LOAN GUARANTEES

General Definition

Loan guarantees are privately held loans which are guaranteed by the government in the event of a default. The guarantee generally stipulates that the government will pay some or all of the principal and interest of the loan. There are three types of guarantee programs: (1) loan insurance, (2) categorical guarantees, and (3) special project guarantees. Loan insurance programs require borrowers to pay fee to cover expected costs associated with the loan. If the fees are properly calculated and collected, a loan insurance program operates in much the same way the open capital markets operate where insuring default risk is similar to insuring casualty risk.¹⁸ Categorical guarantees collect no fees to cover the estimated costs of the loan and therefore offer a greater degree of subsidy to the borrower. Special project guarantees are most often associated with large projects where few loans distorts portfolio management practices of the lenders.

Loan guarantees are used by the federal government to induce private sector activity deemed to be in the public good. These guarantees are considered by some to be the best way to stimulate certain investments within the private sector by conditioning acceptance of the guarantee on the performance of certain activities. Loan guarantees are commonly used by the government to stimulate education, housing and small business activity. Budget appropriations must cover the estimated amount of a loan guarantee credit subsidy. Subsidies are equal to the net present value of the difference between the interest rate on the guaranteed loan and what that rate would have been using the equivalent U.S. Treasuries interest rate, plus the default risk of the loan.

From an economic standpoint, loan guarantees fail when governments subsidize private parties for activities that would have been undertaken without the guarantees or when borrowers misuse the subsidies by not complying with the government’s intent.

Pros and Cons

An advantage of loan guarantees is that they tend to reduce interest costs to borrowers by improving the liquidity of assets in the secondary markets and by reducing lenders’ concerns regarding default risk. With a guarantee in place, the private sector lender is insulated from all or part of the default risk which is assumed by the government providing the guarantee.

Another advantage of using loan guarantees is that they may be appropriate in responding to situations of financial market imperfections, such as when the cost of gathering information about borrowers is high.

¹⁸ The Economics of Federal Credit Programs, The Brookings Institution, 1987.

Under these situations, private lenders may not participate to the extent necessary to carry out desired activities without the guarantees in place to shield the banks from default.

A potential advantage to the borrower of using loan guarantees is that the government tends not to charge fees reflective of default risk. This means that a borrower can secure financing at a lower cost than may otherwise be possible. This is particularly true if the borrower's financial strength would either prohibit it from securing financing from the private sector or would make such financing too expensive.

Most loan guarantee programs have an inherent subsidy element caused by the fact that full administrative costs are not recaptured from borrowers. In guarantees where fees are collected, such as in loan insurance programs, these fees may not cover the true costs of the program's administration and default risk because cost collection and allocation may not be accurate. Additionally, when low risk to borrowers opt out of traditional financing programs the fees for those companies that remain typically increase. This is not true in guarantee programs where program fees do not always reflect default.

Another disadvantage of loan guarantees is that it is difficult to determine the true risk of some projects financed with loan guarantees because of the unique nature of such projects. (Many projects deal with innovation which makes due diligence on the guarantor's part difficult.) Additionally, government loan guarantee programs are often more risk averse than private investors which can foster the government support of less innovative, low-risk projects. Interestingly, when loan guarantees are used, the elimination of sub-optimal projects may not occur or such elimination may be attempted by government officials not as experienced in analyzing projects as the private sector.

A distorting effect of loan guarantees is that they are often most valuable to the highest risk projects and consequently have a counteractive effect on distribution of coverage for other proposals for guarantees. This is evident when companies with weak borrowing positions compete for limited loan guarantees against companies with strong borrowing positions. Often, the companies that best qualify for loan guarantees are typically firms that have the financial resources to secure financing without guarantees. Because government loan guarantees have annual ceilings which determine the aggregate amounts, guarantees flow to the most creditworthy projects which can cause a substitution for private-sector credit given program capacity constraints.

Another distorting effect occurs when the loan guarantees limit financing to exclude operating costs which may force borrowers to choose subsidized capital-intensive projects over un-subsidized operating-cost-intensive projects irrespective of the underlying economics of each.

The fact that loan guarantees may include an interest rate subsidy that is subject to scrutiny by critics of corporate welfare and other public intervention actions also is a disadvantage of using existing loan guarantees or creating new programs.

Finally, loan guarantees are subject to moral hazard whereby borrowers and/or lenders do not take all the necessary actions to ensure that loans are repaid. Loan guarantees reduce the investment that a company must recoup through operations. A loan guarantee coupled with a tax credit may yield no equity during the construction of project. Equity that is built in the out years of a project are affected by depreciation which reduces equity meaning that an owner could choose to close a facility, pay off bondholders with the loan guarantee and turn the facility over to the government.

Examples

U.S. Maritime Administration, Title XI Loan Guarantee. The Federal Ship Financing Program (Program) provides for a full faith and credit guarantee by the United States Government for the purpose of promoting the growth and modernization of the U.S. merchant marine and U.S. shipyards. The Program, established pursuant to Title XI of the Merchant Marine Act, 1936, provides for a full faith and credit guarantee by the

U.S. Government of debt obligations issued by (1) U.S. or foreign shipowners for the purpose of financing or refinancing either U.S. flag vessels or eligible export vessels constructed, reconstructed or reconditioned in U.S. shipyards and (2) U.S. shipyards for the purpose of financing advanced shipbuilding technology and modern shipbuilding technology (Technology) of a privately owned general shipyard facility located in the U.S. The Program is administered by the Secretary of Transportation acting by and through the Maritime Administrator (Secretary). Under the Federal Credit Reform Act of 1990, appropriations to cover the estimated costs of a project must be obtained prior to the issuance of any approvals for Title XI financing.

The primary purpose of the Program is to promote the growth and modernization of the U.S. merchant marine and U.S. shipyards. The Program enables owners of eligible vessels and eligible shipyards to obtain long- term financing on terms and conditions and at interest rates that are comparable to those available to large and financially strong corporations. Such financing terms provide an alternative to other financings available to shipowners and shipyards.

Vessels eligible for Title XI assistance generally include commercial vessels such as passenger, bulkers, cargo, tankers, tugs, towboats, barges, dredges, oceanographic research, pollution abatement, offshore oil and floating drydocks. Eligible Technology generally includes proven technology, techniques and processes to enhance the productivity and quality of shipyards, novel techniques and processes designed to improve shipbuilding and related industrial production which advances the U.S. shipbuilding state-of-the art.

The amount of the obligations guaranteed by the Government is based on the "actual cost" of the vessels or the Technology as determined by the Secretary. The actual cost of a vessel includes those items which would normally be capitalized as vessel costs under usual accounting practices, such as the cost of construction, reconstruction, or reconditioning (including designing, inspection, outfitting, and equipping) of the vessel, together with commitment fees and interest on the related loan during the period of construction. The actual cost of Technology includes those items which would normally be capitalized as shipbuilding technology under usual accounting practices including commitment fees and interest during the construction period but excludes amounts payable to the manufacturer for early delivery of equipment and predelivery expenses which may not be properly capitalized as the cost of the Technology. All items of actual cost must be determined to be fair and reasonable by the Secretary. Some costs are excluded from actual cost (although sometimes considered capitalizable costs) such as legal and accounting fees, printing costs, guarantee fees, vessel insurance and underwriting fees, and any interest on borrowings for the shipowner's equity in the vessels or shipyard's equity in the Technology.

The Act permits guarantees in an amount not exceeding 87 1/2 percent of the actual cost of (1) passenger vessels, designed to be not less than 1,000 gross tons and capable of a sustained speed of not less than 8 knots, to be used solely on inland river and waterways, (2) oceangoing tugs of more than 2,500 horsepower (hp), (3) barges, (4) vessels of more than 2,500 hp designed to be capable of a sustained speed of not less than 40 knots, (5) other vessels of not less than 3,500 gross tons and capable of a sustained speed of 10 knots, (6) ferries engaged solely in point-to-point transportation, not less than 75 gross tons, and capable of sustained speed of not less than 8 knots and (7) Technology. Certain other vessels are limited to 75 percent financing.

Since the Program is a guarantee program, funds secured by the guaranteed debt obligations are obtained in the private sector. The main sources for such funds include banks, pension funds, life insurance companies, and bonds sold to the general public. The maximum guarantee period is the lesser of 25 years or the remaining economic life of the vessel or the lesser of the life of the Technology or remaining economic life of the Technology, as determined by the Secretary. Amortization in equal payments of principal is usually required; however, other amortization methods such as a level debt (equal payments of principal and interest) may also be approved if sufficient security is offered such as long term charters, reduction of the amount of guarantee and/or length of guarantee period.

The interest rate of the obligations guaranteed is determined by the private sector. Generally, in establishing the interest rate the prospective obligee would utilize as a benchmark rate the interest rate carried by U.S. Treasury obligations comparable to the average life of the proposed debt issue. The rate must be determined to be fair and reasonable by the Secretary.

There are a number of MARAD fees associated with using the Program. The applicant must pay a non-refundable filing fee of \$1,000 when the application is filed. Prior to issuance of the letter commitment, the applicant must pay an investigation fee, of one-half of 1 percent on obligations to be issued up to and including \$10,000,000 and 1/8 of one percent on all obligations to be issued in excess of \$10,000,000. The \$1,000 filing fee previously paid upon filing the original application will be credited against the investigation fee.

An annual guarantee fee is payable in advance to MARAD. The fee for a delivered vessel or Technology placed in service will be not less than one-half of 1 percent or more than 1 percent per annum, of the average principal amount of the outstanding obligation, or not less than one-quarter of 1 percent or more than one-half of 1 percent per annum, of the principal amount of an obligation relating to a vessel under construction, reconstruction or reconditioning or Technology under construction or development. Amounts on deposit for the vessel or Technology in an escrow fund held by the U.S. Treasury pursuant to Title XI are excluded in the computation of this charge. Unless otherwise determined by the Secretary, the annual premium rates are based on a ratio of net worth to long-term debt of the shipowner or shipyard, adjusted on an annual basis.

Amounts outstanding on existing Title XI obligations, or amounts outstanding on obligations not previously guaranteed and applicable to vessels may be refinanced up to the applicable financing level (87 1/2 percent or 75 percent) of the depreciated actual cost of the Title XI vessels but not exceeding the amount of the existing obligations being refinanced. Only amounts outstanding on existing Title XI obligations applicable to Technology will be eligible for refinancing up to the applicable financing level (87 1/2 percent) of the depreciated actual cost of the Technology but not exceeding the amount of the existing obligations being refinanced. Refinancing under Title XI must meet all the applicable requirements of the existing statutes and regulations, and the original debt must have been issued within one year after vessel delivery or within one year of the date the Technology was placed in service. Vessels or Technology purchased as "used" are not eligible under this provision.¹⁹

Department of Housing and Urban Development (HUD) Loan Guarantee Recovery Fund. Section 4 of the Church Arson Prevention Act of 1996 establishes the Loan Guarantee Recovery Fund under which HUD guarantees loans made by financial institutions to assist certain nonprofit organizations (those described in section 501(c)(3) of the Internal Revenue Code of 1986) that have been damaged as a result of arson or terrorism. Guaranteed loan funds may be used for activities necessary to address damage caused by acts of arson or terrorism, including:

- (a) acquisition of real property;
- (b) acquisition and installation of personal property;
- (c) rehabilitation;
- (d) construction, reconstruction, or replacement of real property improvement;
- (e) clearance, demolition and removal of buildings, fixtures and improvements on real property;
- (f) site preparation;
- (g) architectural, engineering and similar services;
- (h) acquisition, installation and restoration of security systems;
- (i) refinancing existing indebtedness; and
- (j) other necessary project costs.

¹⁹ U.S. Maritime Administration

For the cost of loan guarantees under section 4, the Secretary is authorized to use up to \$5,000,000 of the amounts made available for fiscal year 1996 for the credit subsidy provided under the General Insurance Fund and the Special Risk Insurance Fund. Funds are available to subsidize total loan principal, any part of which is to be guaranteed, not to exceed \$10,000,000. Legal Authority: Section 4 of the Church Arson Prevention Act of 1996 (P.L. 104-155, approved July 3, 1996). 24 CFR Part 573 (published September 6, 1996 at 61 FR 47403).

CPD has conducted extensive outreach to potential borrowers and lenders, and expects to guarantee the first Section 4 loans early in 1997.²⁰

Federal Housing Administration (FHA) Mortgage and Loan Insurance and Coinsurance. HUD provides insurance for mortgages and loans placed by private lenders on manufactured homes, single family and multifamily properties, and certain health and related facilities. This Federal role is designed to encourage lenders to make mortgage credit available in areas and to borrowers who may not otherwise qualify for conventional loans on affordable terms, such as first-time homebuyers.

Under FHA's authorities, which are numerous and contain a host of differing features, the Department's role is essentially that of an insurance company. Consistent with statutory requirements, HUD will make insurance available in connection with lenders, borrowers, and properties that meet minimum requirements. Down payment requirements vary by program, but are generally less rigorous than those required by conventional lenders. All borrowers pay interest on the loan at a rate that is negotiated with the lender.

All borrowers must pay a mortgage insurance premium (MIP) to offset the insurance risk involved. HUD uses both "one-time" (for most single family mortgages) and "periodic" methods of collecting MIP. The one-time MIP is collected at the front end (insurance endorsement). It cannot exceed 2.0% for FY 1997, and may be added to the loan amount and paid off along with the rest of the loan. In addition, for the basic single family mortgage insurance program, an annual premium is payable, which may not exceed 0.5% of the outstanding principal balance for the full term of the mortgage or a shorter period for lower-risk loans with lower loan-to-value ratios.

Borrowers who prepay their loans in the early years of the mortgage are entitled to a "rebate" of the part of the one-time MIP that HUD has collected but not "earned." The periodic MIP alone is used for certain other single family programs (such as the condominium unit insurance program), and for all multifamily authorities. The periodic MIP is assessed by applying a fixed percentage (generally up to 1% per year by statute, less by regulation) to the outstanding balance of the loan during amortization. If a loan goes into default, HUD will provide insurance benefits to the lender consistent with the contract of insurance.

For the multifamily program, this is normally accomplished by HUD taking an assignment of the mortgage. In return for paying insurance benefits to the lender, the lender turns the mortgage over to HUD, which makes HUD the owner of the mortgage. HUD then forecloses on the mortgage. For the single family program, the lender ordinarily acquires title through foreclosure or deed in lieu of foreclosure. The home is then conveyed to HUD in exchange for the payment of insurance benefits. For both the multifamily and single family programs, HUD offsets its insurance losses through the foreclosure of insured mortgages and sale of the properties.

With full insurance, HUD insures the entire loan indebtedness, pays insurance claims on this 100% basis, and generally takes an assignment of the mortgage. The multifamily Coinsurance programs have either been terminated, due to structural flaws, or are inactive. The single family Coinsurance program is being brought to a close, and no new business has been done since December 29, 1994.

²⁰ Source: Department of Housing and Urban Development

FHA operates its programs through four Insurance Funds. The two largest are the Mutual Mortgage Insurance Fund (MMIF) and the General Insurance Fund (GIF). The MMIF is the largest of the Funds, and includes HUD's basic single family home mortgage insuring program.

The GIF is the "catch-all" Fund. It includes a number of insurance programs, including most of FHA's multifamily insuring authorities, and single family insurance for condominium units, Indians, and Hawaiian Homelands. The GIF operates "in the red," and needs annual appropriations to make it whole. The other funds are the Special Risk Insurance Fund (SRIF) and the Cooperative Management Housing Insurance Fund (CMHIF).

These Funds receive premium income and make necessary payments (such as the payment of insurance benefits in the event of borrower default). For budget purposes, the funds are grouped into two accounts (MMI/CMHI and GI/SRI).²¹

Export-Import Bank Loan Guarantee Program. Ex-Im Bank's guarantees provide repayment protection for private sector loans to creditworthy buyers of U.S. exports. The guarantees cover the repayment risks on the foreign buyer's debt obligations. Ex-Im Bank guarantees that, in the event of default, it will repay the principal and interest on the loan. The foreign buyer is required to make at least a 15 percent cash payment. Ex-Im Bank's comprehensive guarantee covers 100 percent of the commercial and political risks. Guarantees covering only political risks are also available.

Ex-Im Bank's guarantees commit the full faith and credit of the U.S. Government. Notes guaranteed by Ex-Im Bank are freely transferable. Ex-Im Bank also guarantees lease financing. Ex-Im Bank guarantees financing for U.S. capital equipment, projects, and services.

Any U.S. or foreign bank, other financing institution, or other responsible party, including the exporter, can be a lender under the guarantee program. Lenders may be located in the United States or overseas. The borrower must be a creditworthy entity in a country eligible for Ex-Im Bank assistance. Generally, Ex-Im Bank looks for a host government guarantee on government-owned businesses or government-sponsored projects. Private sector borrowers may be considered on their own merits or may offer a creditworthy bank as a guarantor. Ex-Im Bank will also consider doing project finance where the risk of the project is taken. Applicants should consult with Ex-Im Bank about any special conditions that may apply to the importing country.

Ex-Im Bank's comprehensive guarantee covers all risks of nonpayment of principal and interest. A guarantee covering only political risks of nonpayment of principal and interest is available for transactions with private or non-sovereign public buyers. It is the only type of guarantee available for transactions in which common ownership between the supplier (or exporter) and the foreign buyer (or guarantor) exists (to the extent such ownership constitutes effective control).

For medium-term transactions, political risks include transfer risk (failure of the appropriate foreign government authorities to transfer the local deposit into U.S. dollars) and other political risks as set forth in the guarantee agreement. For long-term transactions, political risks include expropriation, political violence and transfer risk. Comprehensive and political risk only guarantees of nonpayment of principal and interest are available for loans denominated in readily convertible foreign currencies acceptable to Ex-Im Bank.

Lenders may receive Ex-Im Bank guarantees on (1) loans extended directly to foreign buyers, or (2) on foreign buyers' debt obligations (in the form of a promissory note) purchased from the exporter and without recourse to the exporter.

Ex-Im Bank requires that the buyer make a cash payment to the exporter equal to at least 15 percent of the U.S. export value. The cash payment may be paid in a lump sum prior to disbursement of the financing, or

²¹ IBID.

it may be paid in installments equal to at least 15 percent of the value of each completed shipment and related disbursement under the contract. The alternative selected is negotiated between the buyer and seller. Ex-Im Bank will guarantee up to 85 percent of the U.S. export value.

Lenders are free to charge a market rate of interest on guaranteed loans. Lenders may use a 360-day or 365-day year for interest calculations. Ex-Im Bank's guarantee is available for fixed- or floating-rate loans and covers 100 percent of the interest. For foreign currency loans: Ex-Im Bank's guarantee covers 100 percent interest (fixed or floating). Ex-Im Bank will pay claims in the selected currency, subject to the terms of the guarantee.

Repayment terms on transactions supported by loans guaranteed by Ex-Im Bank normally range from one to 10 years, depending on the contract value, the country, and the terms offered by officially supported competitors.

A \$100 processing fee must accompany each preliminary application and each application for a Final Commitment that is not a conversion. Ex-Im Bank charges the lender a commitment fee of one-eighth of one percent per annum on the undisbursed balance of a guaranteed loan. Commitment fees begin to accrue 60 days after Ex-Im Bank's Final Commitment of the guarantee, on a 360-day year basis. Ex-Im Bank charges a front-end exposure fee, calculated and payable as the guaranteed loan is disbursed. The fee may be financed by Ex-Im Bank. The parties to the transaction, other than Ex-Im Bank, but including the borrower or exporter, must determine who will be obligated to pay the exposure fee to Ex-Im Bank and must notify Ex-Im Bank of such determination at the time of application for a Final Commitment.²²

Export-Import Bank's Working Capital Guarantee Program. This guarantee encourages commercial lenders to make loans to U.S. businesses for various export-related activities. The program facilitates the expansion of U.S. exports. It helps small and medium-sized businesses that have exporting potential but need funds to buy or produce goods, and/or to provide services, for export. It may be used to cover working capital loans to a U.S. business if the lender shows that the loan would not have been made without Ex-Im Bank's guarantee, and Ex-Im Bank determines that the exporter is creditworthy.

The exporter may use the guaranteed financing to:

- Purchase raw materials and finished products for export.
- Pay for materials, labor and overhead to produce goods
- and/or to provide services for export.
- Cover standby letters of credit serving as bid bonds,
- performance bonds, or payment guarantees.

Ex-Im Bank's working capital guarantee covers 90 percent of the loan's principal and accrued interest. Guaranteed loans must be fully collateralized at all times. Acceptable collateral may include export-related inventory, export-related accounts receivable, or other assets. Inventory purchased with disbursements under the Ex-Im Bank guaranteed loan may be used as collateral, as may the accounts receivable generated from the transactions supported. For companies in the service sector, costs such as engineering, design, and allocable overhead may be treated as collateral. The loan can be structured to finance one or more specified transactions, or as a revolving line of credit.

Exporters must demonstrate a successful track record of past performance including at least one full year of operations and a positive net worth. Financial statements must show sufficient strength to accommodate the requested debt. Exporters may apply directly to Ex-Im Bank for a preliminary commitment for a guarantee. If approved, the exporter may then approach various lenders to secure the most attractive loan package. A preliminary commitment is valid for six months. The lender must apply for the final commitment.

²² Source: U.S. Export-Import Bank

Ex-Im Bank imposes no interest rate ceilings or maximum fee limitations; however, lenders should take into account that 90 percent of the risk is covered by an agency of the U.S. Government and price their loans accordingly.

A processing fee of \$500 with each application for a preliminary commitment, \$400 of which will be applied toward the Facility Fee on the operative final commitment, if any; OR A processing fee of \$100 with each application for a final commitment. (No additional fee is charged for conversion of a preliminary commitment to a final commitment.) An up-front Facility Fee of 1.5 percent of the total loan amount, based on a one-year loan. (For loans of up to six months, the Facility Fee is 0.75 percent of the total loan amount.)

To expedite processing, Ex-Im Bank has established a City/State Program, consisting of state and municipal organizations whose staff receive training in Ex-Im Bank programs and can guide the exporter through the application process. A listing of the participants in this valuable resource is available from Ex-Im Bank.²³

²³ IBID.