In recent years, many countries have sought to expand their exports. Many governments have tried to reduce biases against exports and to neutralize incentives between export and import-competing activities. Their policies have sometimes included "active" instruments of export promotion, such as export credit and export insurance programs. Export credit programs provide credit for export activities before or after shipment; export credit insurance programs insure export credit against commercial or political risks.

This article examines from an overall economic perspective reasons for these programs and briefly reviews their use in three industrial and seven developing countries. It focuses on the subsidy elements of the programs and their effects on exports and resource allocation.

Domestic Distortions

The theory of domestic distortions provides much of the rationale for export promotion in general, and particularly for export credit programs (Bhagwati and Ramaswami 1963; Bhagwati 1971; Johnson 1966, 1971). It demonstrates that where protection creates a bias against exports and where policymakers are unwilling to eliminate the bias, an equivalent subsidy to export activities can restore neutrality, encourage trade along lines of comparative advantage, and improve economic welfare. These antiexport biases arise when
prices in a country’s domestic market diverge from world prices and cause high-cost domestic production to be subsidized while internationally competitive export activities are taxed.

Export credit programs are intended to offset such biases against exports. Preshipment credit lowers the price of capital by offering working capital to exporters at rates less than or equal to those available to domestically oriented activities. Postshipment credit lowers the prices of export goods (particularly capital goods) by providing credit on more favorable terms than are otherwise available. These programs generally contain implicit subsidies, and if they did not, they would be incapable of offsetting the antiexport bias.

A distinction is needed between policies that offset and those that remove biases. In theory, interventions that remove or offset biases could be structured to be equivalent. In practice, however, other considerations argue in favor of removing the cause of the bias:

- The goal of export subsidies is a “neutral” system in which a producer receives the same price for selling in the international and the domestic market. Attaining this would require a complicated system of differential subsidies, keyed to the levels of protection.
- Export subsidies increase biases against nontraded goods and may create new unintended distortions (for example, postshipment credit favors capital goods over consumer goods).
- It is difficult to know how much to compensate exporters and how frequently to change the rates.
- The introduction of new distortions does not counter the political and economic pressures that caused the original problem. Indeed, it may increase the pressure (Cuthbertson 1983, p. 37).
- An “active” export promotion program must be financed through increased taxes or government control of economic activity. In developing countries, taxes on international trade generate about a third of government revenue, so the taxes would increase incentives to import-competing activities, raise the costs of exports, and undermine the effectiveness of the program.
- Trade can be financed within the exporting or importing country, depending on prevailing interest rates. A subsidy within the exporting country will distort the financing decision, causing too much of the trade to be financed in the importing country and drawing credit from other high-priority uses.

To avoid new distortions, the intervention must occur in the market where the distortion is found. For example, credit policies ought to be directed toward credit market distortions. Preshipment credit illustrates this point. It changes the price of capital and rewards producers for using more of it. The approach could conceivably be accurate enough to offset other distortions; more probably, it will simply be
intended to compensate for a general antiexport bias (caused by protection, for example), in which case a new distortion will result.

When the capital market is distorted, an economy produces inefficiently the wrong combination of goods and services. Eliminating the distortion would create incentives to increase the output of all goods and to shift the mix between traded and nontraded goods. In this case, a carefully chosen intervention in the capital market could alter relative factor prices, increase production, and allow the economy to reach the right output.

In contrast, a product market intervention leaves factor prices distorted; it moves the economy toward the right product mix, but does not simultaneously increase output. Similarly, a factor market intervention is not the right way to correct a product market distortion: for example, it is inefficient to subsidize capital for exporters for the purpose of neutralizing tariffs protecting import-competing production.

A related suggestion is to use taxes or subsidies in factor markets to compensate exporters for any cost advantages that their international competitors may enjoy. But such measures could undermine the principle of comparative advantage, the foundation of international trade. They cause factor prices to differ between exportables and other activities while keeping factor prices in exportables equivalent to those in other countries' exportable activities; again, this causes the economy to underproduce an incorrect combination of goods and services.

Capital Market Failures

Government provision of export credit is sometimes offered on the grounds that capital market failures may prevent exporters from obtaining short-term preshipment credit at rates comparable to those for other activities. Causes of difficulties may include (1) costs associated with risk and information, (2) fragmented or poorly developed capital markets, or (3) government policies that direct credit to domestic activities, such as housing or agriculture.

- **Incomplete information** on export risk can cause lenders to charge higher rates or to demand more collateral. However, these terms are not capital market distortions if they are commensurate with the risks. Unpaid exports are a drain of a country's assets and should be discouraged. If the perceptions of exporters, insurers, or financiers are wrong, the right response is to provide correct information (Virmani, p. 31). Even here, since information is costly, intervention is not justified on theory alone; it must be guided by a suitable evaluation of costs and benefits.

- **Access to credit** is sometimes cited as the biggest problem facing exporters. Lenders distinguish among activities on the basis of
risks, and in an efficient market, lower-risk activities will obtain more or cheaper credit than higher-risk activities. If financial institutions are required to offer credit on equal terms to activities with different risks, they will prefer lower-risk activities—thereby giving the appearance of a “shortage” of export credit. If lenders are freed from this restriction, some potential borrowers will choose not to obtain credit at the higher rates. But this is not sufficient reason to conclude the market is misallocating credit or that intervention would improve it.

- **Segmented markets** may cause some exporters (especially larger firms) to receive preferential credit while others receive none. Such segmentation is evidence of a market failure only if the exporter receiving the favorable terms is actually the higher risk. Guaranteeing access to credit at uniform terms will cause less risky export activities to subsidize riskier activities, or other activities to subsidize exports, or the exporting country to subsidize importing countries (to the extent that importers capture the benefits of export subsidies). Under these circumstances, a market failure would exist if exporters with different risks received the same credit terms.

- **Weak financial structures** may fail to allocate credit according to the criterion of its highest value. Directed credit policies create rents; they allocate credit to activities beyond their level of comparative advantage; and they further segment, rather than strengthen, weak financial structures. There is no a priori reason why exporters are more efficient users of credit than others; preferential credit is unlikely to improve capital market efficiency and is likely to be inferior to general deregulation of financial markets.

- **Government policy failures** often produce the situations that are asserted to be capital market failures. Government policy may direct credit toward nonexport activities, such as housing, agriculture, or the fiscal deficit. In such cases, all credit users, including exporters, lose at the expense of those favored activities. Although such favoritism may suboptimally allocate credit, there is no a priori reason why export credit subsidies are preferable to eliminating the biases of the original credit policy. Ultimately, empirical evidence is required on the nature and the extent of the policy failure and on the additional costs and benefits of further government intervention.
Risk, Uncertainty, and Incomplete Insurance Markets

Rationales for government provision of export insurance are related to market failures and the difficulties of finding insurance with "reasonable" premiums to cover export risks. The lack of insurance or (where it is available commercially) the "high" premiums are sometimes attributed to market failures.

The uncertainties inherent in international trade drive a wedge between the world price and the exporter's certainty price which discounts for this risk (see De Gregorio 1987 and Fitzgerald and Monson 1988 for details). This wedge is not a distortion. It represents the difference between what the buyer expects to receive—allowing for a finite probability of nonpayment—and the price the buyer expects to pay. It is an irreducible element of risk, outside the control of the exporter or its government, present in all commercial transactions. Private markets provide alternative instruments to redistribute this risk optimally (for example, prepayment, letters of credit, private insurance, and self-insurance). Government intervention alters the choice among them. However, the existence of the risk does not, in itself, justify governments' providing assistance.

All such assistance institutionalizes, transfers, and perhaps (through risk-pooling) reduces this wedge and its associated costs to the exporting country. But it cannot eliminate them. Export insurance reduces the costs if premiums are less than exporters' perceived losses from self-insurance; or if insurers have better perceptions of risk than exporters; or if insurance is subsidized. In the first two cases, the private market could profitably offer insurance without subsidy provided the administrative costs could also be covered. When insurance is subsidized, the government absorbs part or all of the costs of reducing export risk. These costs, including the scheme's administration, might be significant; they might even exceed the benefits of risk reduction.

Other distinctive features of risk may be the reason why export insurance is not available to all exporters. Incomplete markets are not necessarily market failures, nor do they justify intervention (see Schlesinger and Doherty 1985). Causes of incomplete markets include moral hazard, adverse selection, the risk-seeking and risk-avoiding behavior of exporters, and the "loading" of premium rates to exceed expected losses.

Moral Hazard

Moral hazard exists if the insured exporter has an incentive to change its behavior once it obtains insurance. Suppose insurers make insurance available at premiums based upon exporters' expected
losses. The availability of insurance allows exporters to change their behavior, sell to riskier customers and transfer greater risk than they would bear if they could not get insurance. Over time, unless insurers can accurately predict this behavior and set premiums accordingly, they will suffer larger-than-anticipated losses; premiums will rise; and some insurers and exporters may withdraw from the market (see Kunreuther and Kleindorfer 1983).

Pauly demonstrated that moral hazard may cause incomplete insurance markets, since “some events may be ‘uninsurable’ for some persons and not for others” and “some events, though uncertain, may not be insurable for anyone” (1968, p. 534). In a recent paper, Arnott and Stiglitz (1986) reiterate this conclusion. They point out that “there is no a priori presumption that . . . non-market institutions [such as governments] deal more adequately with the problems arising from moral hazard than those relying on market-oriented institutions” (p. 5). Empirical estimation is necessary to demonstrate that government intervention would encourage a more efficient allocation of resources.

Adverse Selection

The risks of various international transactions will differ, and an exporter can generally distinguish riskier transactions (for example, first-time shipments) from less risky ones (for example, shipments to long-standing customers). If insurers cannot distinguish risks as finely as their clients, they must base premiums on broad averages of claims, rather than charging differentially according to risk. Exporters then have an incentive to insure high-risk sales (since the premium is less than their expected losses from these sales), whereas they would lose by insuring low-risk sales. Over time, insurers would have to raise premiums as they revised their estimates of risk to recapture earlier losses or to prevent future losses. Rising premiums increase the threshold of risk at which exporters buy insurance. In time, only a few, high-risk exports would be insured. Note that adverse selection does not affect exporters’ behavior in the way that moral hazard does. With moral hazard, insured exporters sell to riskier customers. With adverse selection, exporters sell to the same customers, but assume more of the risk as premiums rise over time.

Adverse selection and moral hazard are not market failures. They are inherent features of risk and asymmetry of information and they occur whether insurance is provided by private insurers or by the state. The cost of subsidized export credit insurance will rise if the problems of moral hazard and adverse selection increase. To the extent that state action could ameliorate these problems, it may be better to provide exporters with more information on risks than to
offer them insurance; even then, however, the information can be compiled and disseminated privately.

**Other Reasons for Incomplete Markets**

Export insurance markets may also be incomplete because exporters are inclined to take risks; because to differing degrees they are averse to risks; or because insurers “load” premium rates above losses expected under self-insurance. The first reason is unlikely, but if it were to hold, government action to reduce risk would be self-defeating. The second is plausible and indicates the market, though incomplete, functions well and is not a failure. The third reason is possible if imperfect insurance markets permit premium loading with insurance premiums which exceed exporters’ risk premiums. Even if evidence of imperfect competition were available, government regulation of the terms of service—which is common in most insurance markets—would be preferable to direct state provision of insurance.

**Industrial Policies**

In recent years, “strategic trade” rationales based, for example, on economies of scale (Helpman and Krugman 1985, Krugman 1966) or rents in imperfectly competitive international markets (Brander and Spencer 1983, Brander 1986) have been put forward to justify export promotion. Even in the limited cases where these rationales would hold, they would require much larger export incentives than those usually offered under export credit and insurance programs. Furthermore, Grossman (1986) questions whether policymakers have enough information to implement strategic trade policies and adjust them to changing market conditions. He points out that poorly implemented policies could be worse than none at all.

**Export Externalities**

Some analysts think that “externalities” associated with production for the export market (for example, from training, competing with stronger firms, introducing new technology, and so forth) cause divergences between private and social costs and benefits. For example, “innovating” exporters are thought to create externalities. By establishing market share in a market previously closed to suppliers from a given country, innovating or “first time” exporters lead...
the way for others. Breaking into a market can have large effects. The first Japanese exporter of transistor radios may have led the way for an entire electronics industry.

At other times, people have argued there are externalities from import substitution or “self-sufficiency.” The benefits of exporting or import substitution are usually cited qualitatively, so it is impossible to measure them against the costs of resource misallocation or to know whether overall the externalities create biases for or against exports. Even if a proexport bias is warranted, the externalities are attributable to the act of exporting, not to the provision of credit or insurance. It suggests that the right policy would be to eliminate the antiexport bias directly or to intervene in the market where the externality arises.

Employment and the Balance of Payments

Unemployment and trade deficits have also been cited as justifications for export credit and insurance programs (see Baron 1983 and Fleisig and Hill 1984). Export credit and insurance are unlikely to have much impact on such problems, which may require a broader macroeconomic response. Both programs are unlikely to have appreciable long-run benefits unless they eliminate distortions (Fleisig and Hill, pp. 18–20); if they introduce distortions, they move the economy away from an efficient allocation of resources. Even if export credit and insurance were temporarily to increase exports and employment, the exchange rate would appreciate, imports would increase and employment in import-competing activities would fall to offset the temporary improvements. In evaluating the French experience when export credit subsidies reached 0.5 percent of GNP, Melitz and Messerlin (1987) concluded that they “are likely to be distortionary in ways which more than offset any macroeconomic advantage which they allow. The case for such subsidies is not persuasive” (p. 167).

Matching Other Countries’ Programs

Proponents of subsidizing export credit and insurance programs sometimes argue that a country should match the terms offered by others. This matching is claimed to provide fair treatment for exporters, to avoid dislocations of industry, or to be necessary to convince other nations to reduce their subsidies (Baron, p. 82).

Providing fair treatment. The costs of all inputs, including credit, vary internationally, and a nation’s comparative advantage in international trade is determined by the costs of all factors. “Fair”
is a value-laden term. A notion of fairness which prescribes that a nation match for its own exporters any advantages enjoyed by others undermines the principle of comparative advantage and thus leads to an inefficient allocation of resources, domestically and internationally. It is the same as saying that governments should subsidize natural resources when they are costly in order to compete against nations in which they are cheap, or that governments should subsidize costly labor.

**Avoiding Industrial Dislocation.** Industries can be kept in business if their government subsidizes them enough in international markets, but this policy often costs the economy more than the wages of the jobs retained. In the absence of distortions, much of the benefit of postshipment credit accrues to the importing country, while the exporting country bears its costs. Unless distortions are being offset, the exporting country never gains; at best, it breaks even (see below). If country A makes an export sale only because its government matches other nations' credit and insurance terms, then it bestows a gift upon the importer while imposing allocative and administrative costs upon itself. In short, it taxes its own citizens and subsidizes foreigners. There is no a priori reason to assume that exporting provides other benefits that offset this cost. If competitors' concessionary postshipment financing is thought to be permanent, country A would be better off reallocating resources to other activities than forever incurring the costs of competitive intervention.

**Convincing Others to Reduce Subsidies.** Only a few developing countries—Brazil, the Republic of Korea—may be powerful enough to threaten other countries with subsidies in export credit programs. Even so, it is costly for industrial countries to try to compete in a subsidy race. The race amounts to a “prisoner’s dilemma,” in which the seemingly rational action of each participant leads to the worst outcome for all of them. The GATT Subsidies Code (see below) was adopted to prevent this. Even if rich countries’ governments tax their citizens for this purpose, it does not follow that developing countries can gain by doing so.

**Development Aid**

It is sometimes argued that industrial countries can use their own export credit and insurance programs as vehicles for development aid. Though designed primarily to facilitate exports and to benefit the exporting country, such programs give some benefit to the importing country to the extent that exporters reduce prices. However, their commercial nature makes them questionable vehicles for trans-
mitting development aid; the rationale of transferring wealth is an argument against developing countries adopting these programs.

Status under GATT

Because industrial countries have used export credit and credit insurance for many years, developing nations may think that these programs are acceptable under GATT, that GATT is irrelevant to the subject. However, Paragraphs j and k of the Illustrative List of Export Subsidies of the Subsidies Code prohibit export credit and credit insurance offered at rates below financing costs or market rates (Hufbauer and Erb 1984, Snape 1984, Nam 1986).

Nonetheless, the GATT Subsidies Code has serious weaknesses. Paragraph j permits subsidized export credit insurance as long as premiums are not “manifestly inadequate” to cover operating costs and underwriting losses. This vague terminology permits the continuation of loss-making programs of export insurance. In Paragraph k, GATT effectively hands over to the OECD the task of regulating industrial countries’ export credit subsidies, and the proscriptions of the Subsidies Code are very weak with respect to developing countries. In practice, industrial countries use their own legislation to impose countervailing duties on developing countries that subsidize export credit.

Institution Building

Some hold that institutions in developing countries are weak: one of the benefits of credit and insurance schemes, then, is to strengthen financial institutions and to train personnel. However, even if one subscribes to this view, there are further questions. First, since the same argument would apply to any government program or institution, are these the best government institutions to be building and the best skills to be teaching? Second, are institutions strengthened in a cost-effective manner? Finally, does the institution building yield social benefits greater than those which would flow from alternative uses of the resources?

How Effective Are Export Credit and Insurance?

Do export credit and export credit insurance significantly increase export incentives, and does the exporting country capture a sufficient portion of their benefits? This section shows that in the absence of distortions which they are offsetting, the exporting country cannot gain from subsidized postshipment credit; that the importing
country cannot lose; and that the incentive effects of subsidized preshipment credit are likely to be relatively small.

Postshipment Credit

The price responsiveness of exports determines the way that the benefits of postshipment credit are divided between the exporting and the importing countries. Suppose an exporting country introduces a postshipment credit subsidy when it cannot influence export prices. As figure 1 shows, the subsidy shifts the exporting country's supply curve from $S$ to $S'$ (the vertical distance $BC$ represents the unit subsidy) and the exporting country retains the full subsidy. Its sales at the world price increase from $Q'$ to $Q''$ and its exporters receive the subsidy for each unit exported—a windfall on the original exports, plus a small gain on the marginal units. Although the exporting country retains the full subsidy, it still suffers a resource misallocation loss equal to the area $ABC$, which measures the extent to which the cost of producing $Q'$ $Q''$ exceeds the revenue. The importing country's welfare is unchanged, since it pays the same price regardless of the subsidy.

Now suppose that the exporting country is unable to increase its exports (perhaps because they are subject to a quota under an international marketing arrangement). Its supply curve is vertical (figure 2). The subsidy transfers income to exporters within the exporting country, does nothing to increase exports, and does not change the exporting country's economic well-being. Exporters receive the unsubsidized world price ($P_w$) plus the subsidy ($s$) from their government; the exporting country retains the subsidy (since output is unaffected); so the subsidy represents an income transfer from its taxpayers to exporters. The importing country has no welfare gain since the price and quantity of imports are unchanged.

Now take the case in which the exporting country can influence world prices (that is, supply and demand curves have some price elasticity). The expression $S = E_s/(E_s - E_d)$, with a positive elasticity of supply ($E_s$) and a negative demand elasticity ($E_d$), gives the share of the subsidy received by the importing country, and $1 - S$ gives the share retained by the exporting country (see

Bruce Fitzgerald and Terry Monson 99
Fleisig and Hill, pp. 42–43). Other things being equal, the share retained by the exporter increases as demand is more price elastic and as supply is less price elastic. The importing country gains through a lower price. This gain increases as demand becomes more inelastic. Figure 3 illustrates this conclusion: as supply shifts rightward, the price decline (and hence the importer’s gain) is larger for the more price inelastic demand curve ($D'$). Using Stern, Francis, and Schumacher’s (1976) estimates of supply and demand elasticities in international trade, Fleisig and Hill concluded that the importing countries received between 50 percent and 100 percent of the subsidy in OECD export credit programs.

This analysis leads to the conclusion that the exporting country is likely to lose less of its subsidy if it concentrates on subsidizing those products that are in competitive world markets, because export subsidies will then transfer rents to inframarginal exports if the country already exports the product. It is therefore important to determine the degree to which the subsidy provides rents to existing exports.¹³

**Preshipment Credit**

Credit subsidies can do little to offset antiexport bias. Consider a case in which the world price of a potential export is $100; the world value of material inputs per unit of output is $50; inputs are subject to no protection; labor costs per unit of output are $30; and nominal protection on sales in the home market is 20 percent. Effective protection on export sales is zero, whereas effective protection on domestic sales is 40 percent.

Now assume the government subsidizes preshipment working capital to offset the home market (antiexport) bias. With a market interest rate of 20 percent and a subsidized rate of 10 percent, the subsidy provides an export incentive between 2.5 percent and 10 percent if the exporter finances its material inputs ($50) for three months to one year; it ranges between 4 percent and 16 percent if the exporter finances its material and labor inputs ($80) for three months to one year. In contrast, effective protection on domestic sales remains at 40 percent, so a further subsidy of $24 – 37.5 percent is required to offset the bias. And if the exporter borrows 100 percent of the world value of output ($100) for six months, the antiexport bias will be eliminated only if interest rates are forty percentage points below the market rate (for example, 10 versus 50 percent).
Industrial Countries

Industrial countries' export credit and insurance programs have been expensive, difficult to control, and subject to political and economic pressures that have tended to subvert their objectives.\textsuperscript{14}

THE UNITED STATES. The U.S. Export-Import Bank finances 5–10 percent of all U.S. exports and 25–35 percent of exports of capital goods. In 1982 it was estimated that 95 percent of its financing went to three sectors—nonelectrical machinery, electrical equipment, and transportation equipment (Feinburg 1982, p. 34). Estimates of its annual credit subsidies in the late 1970s and early 1980s range from $500 million to $1 billion (Fleisig and Hill 1984, Baron 1983, Boyd 1982).\textsuperscript{15} Its operating losses from 1982 to 1985 are estimated at $1.25 billion (U.S. Senate 1985; U.S. Export-Import Bank 1984, 1985). But this figure understates its true losses, since the Export-Import Bank's accounting practices do not adequately treat problem loans: in 1985, the Comptroller General indicated that one-third ($44.9 billion) of its loans were probably uncollectable (U.S. Export-Import Bank 1985, p. 39). The Foreign Credit Insurance Association (FCIA) brokers commercial and political risk insurance for the Export-Import Bank; it insured an average of 5 percent of U.S. exports during 1971–82, and Huszagh and Greene conclude that "export credit insurance has never really become a significant facilitating factor in U.S. sales abroad, in spite of the fact that it has been available for twenty years" (1982, p. 258–59). It provided a modest subsidy of at least one-half of 1 percent of the value of insured exports (U.S. Export-Import Bank 1984, 1985).\textsuperscript{16}

THE UNITED KINGDOM. The Export Credits Guarantee Department (ECGD) has a long history of subsidizing exports. Byatt (1984, table A) reported that its credit subsidies ranged between 300 million and 500 million pounds sterling a year in the early 1980s; Fleisig and Hill (1984, tables 1, 2) estimated these subsidies to be about $500 million annually between 1978 and 1980, some 11 percent of the exports it financed. The ECGD also subsidizes commercial and political risk insurance. Its premium income covered operating costs plus net claims (claims paid less recoveries) in only one year between 1973 and 1982; its losses in 1982 and 1983 were about $500 million (Byatt 1984, Shapiro 1983).

FRANCE. The Compagnie Francaise d'Assurance pour le Commerce Exterieur (COFACE), the semipublic Banque Francaise du Commerce Exterieur, and the Banque de France offer a range of
export credit and insurance programs. Duff (1981, p. 931) called the French system "the most costly in the world." His estimated 1980 subsidy ($2.0 billion to $2.5 billion) approximates Melitz and Messerlin's estimates of $1.5 billion to $2.7 billion annually during 1981–84 (1987, tables 1 and 3); it is higher than Bobe's range of 2.4 to 4.4 billion francs annually ($0.5 billion to $0.9 billion) between 1974 and 1978, exclusive of central bank preferential discounting (1983, table 14); and Fleisig and Hill's total of $1.2 billion to $1.4 billion dollars for 1978–80, again exclusive of rediscounting (1984, tables 1, 2). Whatever the exact figure, the French system clearly involved substantial costs during the 1970s and early 1980s.

**Developing Countries**

The programs of the seven developing countries examined here all emphasize short-term preshipment credit; Korea and India have postshipment credit programs as well; and insurance is available in some, but not all, of them. In most countries, these programs are administered by export promotion agencies that provide other services to exporters. We have not evaluated the economics underlying the other functions they perform.

**COLOMBIA.** A public body (PROEXPO) rediscouts subsidized export credit. Until recently, 80–85 percent of this credit was for preshipment purposes. The differential between export credit and other interest rates varies, but has averaged 20 percent in recent years. The effective subsidy given by 1986 PROEXPO credit averaged 5.7 percent of value added in 1986. PROEXPO has favored export activities that use relatively more credit. Its subsidies have been nonuniform, ranging from 0.5 percent for beverages to 18.0 percent for oil refining (Schenone 1986). PROEXPO has recently reduced its subsidy for working capital in order to increase subsidies for long-term fixed investment in export activities.

PROEXPO is financed from interest earnings on its lending and a duty surcharge on all imports. In 1987, this surcharge was raised from 5 percent to 6 percent, and PROEXPO used part of the surcharge to subsidize nontraditional exports. The surcharge is a direct drain on the government's tax receipts, and a large one. It cost nearly 70 billion pesos (about $750 million) between 1980 and the first half of 1986 (Schenone, table 7). In the first quarter of 1987, it represented about 4 percent of total government revenue.

Despite PROEXPO credit and other export promotion measures, Colombia's minor exports declined by 34 percent between 1980 and 1984—the years when the subsidy reached its maximum. Export subsidies were too weak to offset the increasing inward orientation
of the economy. In the same period, exports of all developing countries in the Western hemisphere increased by 8 percent and exports of Asian developing countries increased by 21 percent (International Monetary Fund 1986).

**Hong Kong.** Although Hong Kong has no officially sponsored export credit program, the Hong Kong Export Credit Insurance Corporation (HKECIC) offers export credit insurance. The government established HKECIC in 1966, provided its paid-up capital, and guarantees its insurance and guarantee liabilities (Rhee 1985, p. 121). HKECIC’s insurance activities provide a small export subsidy and in themselves do not add significantly to export growth. On the strong assumption that insured exports would not have occurred without insurance, HKECIC’s activities accounted for only 4 percent of all exports between 1980 and 1985.

In evaluating government-sponsored programs, one must distinguish between economic and accounting profits. Some programs have received their capital from the government, the capital being invested in government bonds or notes. These investments generate a steady stream of receipts comparable to annual budgetary appropriations. As long as the annual operating losses are less than these receipts, the agency shows an accounting “profit” even though it is inherently uneconomic and commercially unviable. Thus it is important to determine whether the “profit” is from operating revenues or other sources. Over the period 1975 to 1985, HKECIC suffered cumulative underwriting losses. But investment income on its initial capital plus undistributed surpluses allowed it to show an accounting profit that averaged 5.8 percent of its assets (HKECIC, various years). These underwriting losses plus forgone income on accumulated losses represented a subsidy of 0.13 percent of the value of insured exports.

**India.** A range of export credit and export credit insurance is available in India. The Export Credit Guarantee Corporation of India (ECGCI) has offered export credit insurance and export credit guarantees since 1957; the central bank rediscounts export credit at concessional rates; the Ministry of Commerce provides a small interest subsidy on banks’ export credit; and the Export-Import Bank of India finances longer-term credit.

The export credit guarantees of ECGCI represent 75–80 percent of ECGCI’s insured and guaranteed values; insurance accounts for the rest and covers 10–20 percent of Indian exports (ECGCI 1984, and Reserve Bank of India, various years). ECGCI has always made accounting profits, but it has suffered some underwriting losses. For example, in 1983–84 the sum of net claims, employee remunera-
tion, other expenses, and depreciation was 17 percent greater than premium income (ECGCI 1984, Income and Expenditure Account, p. 33). ECGCI also has a history of rejecting and delaying claims. Three years or more are not uncommon, and many negotiations take longer. These delays reduce the attractions of rates that are among the lowest in the world.

The central bank rediscounts export credit above a minimum threshold, based on a bank's previous lending. Preferential rates for exports have been 5-9 percent below other short term rates. In addition, the Ministry of Commerce uses general revenues to fund an interest subsidy of at least 1.5 percentage points to export credits. This is intended to compensate for indirect taxes not covered by duty drawbacks—that is, a factor market subsidy is used to offset biases against exports originating in product markets. This program appears to function poorly, probably because India's conservative and highly regulated banking industry considers export credit to be risky. In the long run, deregulation of the banking system and liberalization of the trade regime may supply credit to exporters better than subsidizing short-term interest rates.

The Export-Import Bank of India, established in 1982, provides long-term export credit and, to a limited degree, shorter-term pre-shipment credit to activities eligible for its longer-term loans. It competes with industrial countries' programs, and its efficiency and effectiveness are subject to the same reservations. A rough calculation under alternative sets of assumptions suggests that assistance of somewhere between 104 million and 456 million rupees ($9 million-$40 million) in 1984, and between 138 million and 610 million rupees ($11 million-$49 million) in 1985 could have been given.7

KOREA. From the mid-1960s to 1982, Korea offered several credit incentives for exporters; concessional rediscounting of preshipment credit was the most important. The Korean Export-Import Bank was established in 1976 to provide longer term postshipment credit. In 1977, it assumed administration of the Korea Reinsurance Corporation's export insurance program (Cizauskas 1979b).8

Until 1982, Korea's financial sector was heavily oriented toward exporting. In the 1970s, preferential rediscounting, which gave banks a spread of 2.5 to 5.0 percent between lending and borrowing rates (Rhee 1985, table 19), accounted for 40 percent of the loans and discounts of the central bank (Bank of Korea 1986, p. 24). The differential between the preshipment export credit rate and the general bank loan rate ranged between 2.5 and 18.0 percent in the 1970s; it narrowed in 1980-81 and was eliminated in 1982's financial liberalization. Its subsidy was 1–2 percent of the f.o.b. value of
manufactured exports and 5–10 percent of the domestic value added in manufacturing exports. Access to bank loans for preshipment credit was important only to the degree that it reduced exporters’ reliance on the informal money market, where interest rates were 15–20 percent above commercial bank rates. If exporters had paid these higher rates rather than the subsidized rates, their costs would have increased by between 3.5 percent and 6.7 percent of the f.o.b. price.

Export credit insurance does not appear to have done much to boost Korean exports. Commercial and political risk insurance covered less than 1 percent of Korean exports in 1979–80 (Rhee 1985, annex table 18). Extensive use of letters of credit (L/CS) was the main reason the demand for export credit insurance was so small. During 1968–80, L/CS were used for 84–96 percent of Korea’s exports (Rhee 1985, annex table 5); since then, their share has fallen to 80 percent (Bank of Korea 1985, p. 90). Preshipment credit guarantees issued by Korean insuring agencies have also been relatively unimportant, since commercial banks and borrowers assumed risks and extended preshipment credit on the basis of L/C financing without other collateral. As the banking system was publicly owned until 1982, banks’ preshipment credit represented an implicit assumption of private risk. Nonperforming export loans were 3 percent of total export loans at the end of 1978 (Rhee 1985, p. 101, footnote 30).

The Korean Export-Import Bank provides longer-term finance to Korean exports of capital goods. Its credit has been evenly divided between exports to industrial and to those developing countries, and its outstanding loans showed a tenfold real increase between 1978 and 1985 (Bank of Korea 1986). It finances 2–3 percent of total Korean exports and 15–20 percent of capital goods exports. In the late 1970s it provided a subsidy ranging from 15 to 25 percent of its loans’ face values; its rates were 9–10 percent while the London interbank offered rate (LIBOR) was about 15 percent (Cizauskas 1979a). Since then its subsidy has fallen, because it denominates its loans in foreign exchange and charges world market rates plus a margin. It is nonetheless reasonable to suspect that foreign buyers who use its credit may be subsidized.

It remains controversial whether Korea’s selective credit policies have contributed to Korea’s export growth. Some claim that without favored access to long- and short-term capital, exports probably would have been smaller, since other distortions penalized exporters. Others argue that the huge increase in Korean exports was due to policies other than selective credit—import liberalization and depreciation of the won—and that the insignificant preshipment credit subsidy was a transfer with little effect, provided at fairly high cost.
SRI LANKA. The Sri Lanka Export Credit Insurance Corporation (SLECIC) issues guarantees and offers commercial and political insurance. In 1979–85, guarantees and insurance covered 5 percent of total exports and 13 percent of industrial exports; insurance against commercial and political risks covered 3 percent of industrial exports (Central Bank of Ceylon, 1983, 1985). The central bank also has rediscount arrangements for short-term credit (before and after shipment) on nontraditional exports. Recently, 50–55 percent of central bank rediscounting has been for concessionary export credit; of this, three-fourths was preshipment credit (Lindgren and others 1986a, appendix table 29). The refinancing rate has ranged from 10 percent to 13 percent; the maximum commercial banks could charge was 13–16 percent; and the commercial bank rate on short-term credit for other purposes was around 20 percent. Assuming that the credit program reduced exporters' borrowing costs by five percentage points (from 20 to 15 percent), the credit subsidy totaled about 200 million rupees from 1983 to 1985. This subsidy was small (0.55 percent of the value of industrial exports over the period), but its cost to the central bank was significant. It caused the central bank to lose 160 million rupees in forgone interest earnings (assuming that the export credit rediscount rate was four percentage points below alternative rediscount rates); this equalled 2 percent of the central bank's total net assets at the end of 1985.

Sri Lanka's concessional export credit raises three problems. First, exporters can obtain the credit they need at market rates from the banks; central bank refinancing provided only one-fourth of the increase in commercial bank short-term loans and advances to exporters between 1980 and 1985 (Central Bank of Ceylon 1985; Lindgren and others 1986a, appendix table 29). Second, the concessional credit discriminates against newly established banks, since it allocates credit among commercial banks on the basis of each one's percentage share of outstanding export credit. Third, banks tend to lend to established customers (Cuthbertson 1983, p. 44). These factors cast doubt on how far concessional credit can stimulate extra Sri Lankan exports.

TURKEY. Subsidized export credit, indirect tax rebates, and duty-free imported inputs were elements in the export promotion program that Turkey began in 1980 (see Milanovic 1986). Export insurance was not offered. Export credit received a direct subsidy financed by a 7.5 to 15 percent tax on other credit; it was subject to a lower discount rate, and it was exempt from a 3–15 percent credit transactions tax. The export credit subsidy fell from about three-fourths of export subsidies in 1980 to 7 percent in 1984; it was phased out in January 1985 and reintroduced in November 1986.
The export credit program provided large subsidies, introduced new distortions and involved large costs for the Turkish government. Its subsidies ranged from 16 percent of the f.o.b. value of manufactured exports in 1980 to 1 percent in 1984 (Milanovic 1986, table IV.4). During this period, the differential between export and general credit ranged between 17 and 30 percent; adjusted for inflation, the effective real interest on export credit ranged from −45 percent to 1 percent. The program favored capital goods over consumer and intermediate goods; in 1980, for example, export credit subsidies as a percentage of export value were zero for paper products but as high as 70 percent for electrical machinery. During 1980–82, the credit subsidy represented 10 percent of the value of Turkish exports (Milanovic 1986, table IV). However, Milanovic, in a survey of five firms, concluded that export credit subsidies were the least important of the export promotion instruments implemented between 1980 and 1985.

VENEZUELA. Venezuela offers extensive financing for exports through the Export Financing Fund (FINEXPO) of the central bank. About three-fourths of this financing, available at preferential rates of 5–9 percent, is postshipment and the rest is preshipment credit. FINEXPO provides about one-third of the total directly, and two-thirds indirectly through foreign or national banks. For domestic indirect financing, originating commercial banks have matched FINEXPO’s financing equally (FINEXPO 1986) so the interest rate to the exporter is a blend of the subsidized and the market rates. FINEXPO also offers export insurance jointly with a private provider; it covers political risks, the latter covers commercial risks. The insurance is generally not comparable to that offered in most industrial countries and some developing countries, where a government agency assumes direct responsibility. Between 1979 and 1985, insurance was used for about 6 percent of nontraditional exports.

Since 1976, FINEXPO financing has covered 6 percent of nontraditional exports (0.3 percent of total exports), and the FINEXPO/Commercial Bank program has averaged another 5 percent. The rates of subsidy vary among the programs. In the largest program, the indirect financing of the credit line between FINEXPO and national banks, FINEXPO provides half the financing at 5 percent, and the participating bank provides the other half at the market rate. With the market rate at 14 percent, credit would therefore be available at 9.5 percent—a cost reduction of about one-third. Assuming that credit lasts, on average, for six to nine months, the subsidy would average 2–3 percent of the f.o.b. price of an export. For exporters, the benefit will be greater for goods with low value added than for those with high value-added. With an average value added

Bruce Fitzgerald and Terry Monson
for Venezuelan exports of 68 percent, the subsidy provides a 3–5 percent incentive as a percentage of world value added (see Fitzgerald 1987 for details).

FINEXPO’s credit lines with foreign banks total $100 million, with rates ranging from 6 to 8 percent on terms from one to three years. Direct postshipment financing offers loans for as much as six years for capital goods and twelve years for projects, with minimum rates of 7.5 percent plus a handling fee of up to 0.5 percent. These rates are lower than those at which Venezuela borrows in international capital markets—so the government has been borrowing abroad in order to lend abroad at lower rates.

Conclusions

Many of the economic rationales for subsidizing export credit and export credit insurance do not stand up to close inspection. The best arguments are based on domestic distortions that cause divergences between private and social costs and benefits. However, even these arguments have not been well articulated, nor have they been strongly supported with empirical evidence of their significance.

The experiences of industrial and developing countries do not provide a clear basis for recommending subsidies for export credit and insurance. OECD credit programs have a history of subsidy, and after twenty years of negotiations, major exporting nations’ credits are still not at market levels. Lenders still differentiate according to the level of development of the foreign buyer and, in some countries, there is preferential access to credit at noncommercial rates. The preferential credit and insurance schemes in most of the seven developing countries studied here also provide little clear support for their introduction elsewhere. Most emphasized preshipment credit (although some, such as those in Korea and India, provide longer-term postshipment credit on terms similar to those in OECD countries). Their export credit insurance programs differed markedly: some insure against commercial and political risks; others emphasize guarantees on preshipment credit; others have credit but not insurance programs. The degree of subsidy in export credit programs varies among countries and over time. Some countries’ insurance programs have shown accounting profits; however, more than half the Berne Union members are still cumulatively unprofitable. A general impression is that, instead of responding to capital market failures, preferential export credit is used as a rather weak means to offset biases against exporting found elsewhere in the economy. Finally, export credit insurance has not been shown to stimulate exports to any great extent; in every country except India insured exports accounted for less than 10 percent of total exports.
Rationales for preferential export credit and export credit insurance are reviewed and several countries' programs are examined to determine if these preferential programs are appropriate export promotion instruments for developing countries. Market failure is the most compelling rationale for their introduction but these arguments have not been well articulated and there is no systematic analysis of the costs of alternative government responses. Industrial countries' programs have histories of subsidy while developing countries' preferential programs have not been significant factors in stimulating exports.

Abstract

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1. Balassa 1971, 1978; Bhagwati 1978 and 1988; Krueger 1978; and Little, Scitovsky, and Scott 1970 provide evidence that countries adopting export-oriented policies have enjoyed higher employment and economic growth rates than those pursuing import substitution policies.

2. Commercial risk is “the risk that the foreign private buyer will not effect timely deposit of local currency with instructions to its bank to make payment in foreign currency.” Political risk arises from “actions or non-actions of foreign governments, including the failure or inability to effect payment in foreign currency after deposit by a private buyer of local currency with instructions to transfer” (Moore 1984, p. 140).

3. See Anand and Joshi 1979, Corden 1974, and Krueger 1984. Four conditions must be met for subsidies to be the best instruments: (a) nondistorting taxes must finance the subsidies, (b) taxation must involve no collection costs, (c) the subsidies must have no disbursement costs, and (d) income distribution effects of the policies can be neglected (Corden, ch. 3).

4. Baron 1983 provides more detail on issues related to capital market distortions.

5. Portfolio theory indicates that the risk of a large portfolio of risky assets is less than the risks associated with each individual asset. Hence, risk pooling could reduce risk perceived by any one exporter in international transactions and raise its “certainty” price. Similarly, insurers may have different information on international risks than exporters. If this is the case, the insurance premium (representing the insurer's risk perception) may be less than the difference between the expected world price and the exporter's certainty price. Exporters will always insure sales to reduce risk. In either of these cases, if the insurance premium is actuarially neutral, insurance will reduce the differential between the foreign and domestic marginal rates of transformation and bring the economy closer to the riskless optimum.

6. OECD export credit subsidies were over $1 billion annually in the early 1980s, and more than twenty years of negotiations were needed to bring OECD export terms close to market rates (see Fitzgerald and Monson 1988 and the discussion below for details).

7. Four percent of U.S. Export-Import Bank loans and guarantees in 1984–85 were made to low-income economies; 50 percent were made to lower-middle-income countries and 46 percent were made to upper-middle-income and industrial economies (World Bank 1986a income classifications applied to data in U.S. Export-Import Bank 1984, 1985). Feinburg (p. 79) also notes that the U.S. Export-Import Bank does not consider projects' broader effects upon development and may finance projects that exacerbate biases in countries' economic policies (for example, import-substitution projects in countries with this predilection will appear
more attractive than export activities). In 1984–85, 97 percent of U.S. Export-Import Bank loans and guarantees to low-income countries were used to finance the acquisition of aircraft. One half of its 1984–85 loans and guarantees to lower-middle-income economies were for mining, oilfield, and construction equipment; 19 percent financed aircraft; 21 percent financed industrial equipment; and only 10 percent could be considered to be infrastructure loans.

8. For example, in only one year between 1973 and 1982 did the British official insurance agency have premium income in excess of operating costs and net claims; from 1979 to 1982, its net cash flow averaged a negative 50 million pounds; in 1982–83, it had a deficit of 280 million pounds (Byatt 1984, p. 166). It would seem that this loss record would qualify the premiums as "manifestly inadequate." Yet, as far as we know, there have been no complaints brought against it under GATT provisions.


10. Countervailing actions of the United States, the European Communities, Australia, Canada, and Japan rose from a total of 10 in the period July 1980–June 1981 to 67 in the period July 1984–June 1985; of the 232 total countervailing actions between July 1980 and June 1983, 122 (53 percent) were brought against developing countries; nearly every case of subsidization of exports from Brazil, Korea, Mexico, and South Africa against which the United States imposed countervailing duties between 1980 and 1985 involved short- or long-term preferential credit or credit guarantees (Narn 1986, tables 1, 2, 6).

11. This analysis is based on Fleisig and Hill 1984, appendix B.

12. In the case of perfectly elastic export supply, the importing country gains the entire subsidy as it purchases its imports at the world price minus the subsidy.

13. Itoh and Kiyono (1987) similarly conclude that export subsidies on nonmarginal goods (goods and quantities that the country would export without the subsidies) worsen the exporting country's welfare and that, under certain conditions, export subsidies on marginal goods (goods not exported or exported in small amounts under free trade) may improve welfare in the exporting country.


15. The export credit subsidy is the interest rate differential between the subsidized terms and those the borrower would have otherwise paid in capital markets. For postshipment credit, the subsidy is given as the present value of the interest rate differential over the life of the loan; it can be thought of as the difference between the face value of the loan and the present value of the stream of principal and interest payments computed at the market interest rate. The choice of interest rate to compare the subsidized rate is important. For prepayment and short-term postshipment credit, an approximation is the short-term rate which existed on export working capital loans before subsidization. An even higher rate (the curb rate) may be the appropriate comparison when it is felt that exporters did not use commercial bank prepayment working capital before subsidization or when export credit is offered at rates comparable to those on other activities.

Insurance subsidies are the excess of loss claims plus operating expenses over the insurer’s premium income adjusted for investment income from the agency’s initial capital and any operating surpluses. A simpler measure is the accumulated difference between premium income and costs plus losses. Both measures are roughly equal when the agency’s surpluses offset other years’ losses.

16. FCIA’s operating costs could not be separated from other Export-Import Bank costs. If these costs were added, the subsidy would be even larger.

17. These estimates were derived by applying the difference between the prime rates of Indian long-term lending institutions and the Export-Import Bank’s lending rates to its loans, advances, and discounts. In 1984 and 1985, its lending rates were 8 percent when lending directly to a commercial bank and 9 percent when...
lending directly to the exporter, while prime rates of Indian long-term lending institutions ranged from 11.5 to 20.0 percent (Reserve Bank of India 1984/85, p. 71). Its loans, advances, and discounts were 4.15 billion rupees in 1984 and 5.54 billion rupees in 1985.

18. The Korean Credit Guarantee Fund also provides preshipment guarantees (Rhee, p. 101).
19. Output value is converted to value added assuming the low 0.20 ratio of value added to sales found in Bank of Korea 1984, p. 80.
20. Assuming that it borrowed at LIBOR plus 1 percent (that is, 16 percent) for seven years and made loans of seven-year maturities with 10 percent interest rates, the discounted present value of the subsidy over the seven years is 17 percent of the loan's face value. If the loan were over ten years, the subsidy would be 21 percent.
21. Information provided in correspondence from Yung Rhee.
22. That is, $0.5 \times (14\% - 9.5\%)$ to $0.75 \times (14\% - 9.5\%)$.

References


Bruce Fitzgerald and Terry Monson

111


