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Public Services

Insuring Canada's Exports:

The Case for Reform at Export Development Canada

Maciej Kotowski

In this issue...

Export Development Canada competes with private companies in providing trade credit insurance. Is it time to rethink the Crown agency's mandate?

The Study in Brief

With Parliamentary review of the *Export Development Act* due in 2008, the federal government should seize the opportunity to streamline the operations and priorities of Export Development Canada (EDC). Straightforward economic reasoning and ongoing developments in the global financial services industry call into question the scope of financial services now marketed by EDC. Policymakers should consider restructuring EDC's operations to create a truly competitive export finance and export insurance environment for Canadian companies.

This *Commentary* contends that the privatization of EDC's short-term insurance portfolio is an overdue and easily implemented option. Withdrawing from the short-term credit insurance market would make EDC a more streamlined organization, enhance government revenues and bring Canada's export-credit insurance regime in line with international norms. More importantly, the withdrawal of the government-backed insurer from the market would level the playing field and spur the development of a more robust private credit insurance market. Ultimately, this will benefit Canadian exporters.

Highlighting the experience of other OECD countries, this *Commentary* contends that EDC's withdrawal from short-term credit insurance would not adversely affect Canadian exporters. Indeed, expanded competition would enhance companies' access to these financial tools. Although this *Commentary* concedes the inevitability of government involvement in some export financing and insurance—principally due to political considerations—a restructuring of a portion of EDC's activities would constitute a first step in ensuring a more vibrant credit insurance industry in Canada to the benefit of exporters and the economy.

The Author of This Issue

Maciej Kotowski was a Summer Fellow at the C.D. Howe Institute in 2007. He is currently a graduate student in economics at UC Berkeley.

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Export credits have been called the "financial lubricant" of international trade (Moravcsik 1989, 176). However, selling goods on credit to foreign customers carries many risks — a buyer may become insolvent, a war might break out or a foreign government may impose currency controls. Export credit insurance offers companies a simple way to manage such risks. By insuring their accounts receivable, exporters can reduce their exposure to commercial and political risks.

Two characteristics distinguish the Canadian market for export credit insurance. First, unlike the practice in most OECD countries, a state corporation — Export Development Canada (EDC) — enjoys a dominant market share in both short-term and medium-term credit insurance. Second, also unlike in most OECD countries, EDC competes with private insurers in marketing its services to Canadian companies. While some observers may consider a competitive state corporation as benign, many also recognize the market distortion that EDC's activities entail, especially if they crowd out private competitors. Together, these peculiarities make Canada's export credit insurance regime anomalous and anachronistic.

Globally, export credit insurance has emerged over the past two decades as a primarily private-sector activity, with most governments withdrawing to underwrite only extreme and speculative risks. In Europe, for example, private insurers account for 95 percent of export credit insurance. Some countries, such as the United Kingdom and Australia, have privatized large segments of their previously government-administered programs. In Canada, however, the Export Development Canada, markets and underwrites the bulk of export credit risk. International experience suggests that government intervention in export credit insurance markets — and in short-term, export credit insurance in particular — is not necessary. The Government of Canada should reduce this sphere of EDC's operations. Such action would spur the development of the private insurance market in Canada, add a modest source of tax revenue to the federal government, result in insurance being offered on unambiguously market terms, remove a distortion from the Canadian financial market, and bring Canada more in line with its OECD peers and trading partners.

The EDC

Export Development Canada is Canada's official export credit agency. The Crown corporation provides financial facilities — such as insurance on accounts receivable, export loans and direct financing — to Canadian companies and to foreign buyers of Canadian goods. EDC enjoys a broad mandate to promote Canada's export trade, and it has considerable leeway in the types of financial transactions it pursues (see Box 1 for an overview of EDC's main services). Although this *Commentary's* focus is on insurance, EDC's other services should be kept in mind to appreciate the corporation's scope of activities.

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Box 1: *EDC's Main Financial Products*

Insurance Products
- Accounts Receivable Insurance (Export of Goods)
- Single Buyer Insurance (Export of Goods, Short-term coverage)
- Performance Security Insurance (Export of Capital Goods, Services, Long-term Projects)
- Contract Frustration Insurance (Export of Capital Goods, Services, Long-term Projects)
- Political Risk Insurance (Export of Capital Goods, Services, Long-term Projects)
- Domestic Trade Credit Insurance (offered jointly with COFACE)

Financing Products
- Pre-Shipment Loans
- Business Promotion Loans for small and medium enterprises
- Foreign Buyer Financing
- C-TPAT Compliance Loans
- Accounts Receivable Guarantee
- Products aiding companies seeking factoring services
- Equity investments
- Note Purchases
- Direct Foreign Investment Products
- Leasing

Bonding Services
- Guarantees to allow Canadian companies secure bonds or letters of guarantee.

Credit Information Services
- Information about foreign buyers.

Canada Account Services
- Insurance and loans offered as Canada's official Export Credit Agency (ECA) with transactions explicitly underwritten by the Government of Canada.

History

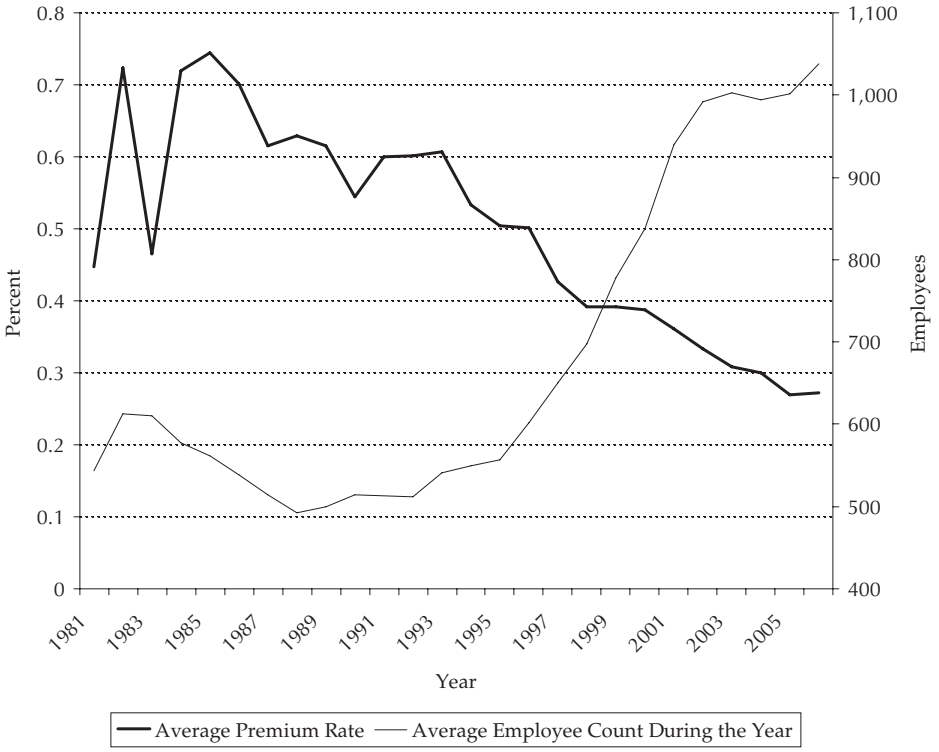
EDC began as the Export Credits Insurance Corporation (ECIC) in 1944 to aid the financing of exports to Europe following the Second World War.[1] ECIC's mandate was broadened in 1969 with the creation of the Export Development Corporation, which was re-branded in the early 2000s as Export Development Canada. The most notable change in EDC's operations occurred following the 1993 review of the *Export Development Act*. The 1993 reforms allowed EDC to offer a wider array of products and gave the corporation greater leeway in the financial transactions that it pursues.[2] In retrospect, the reform drastically shifted EDC's operations — for example, since 1993 EDC's average credit-insurance premiums have declined by more than 50 percent and EDC's staff has grown commensurably to meet the corporation's expanded operations (Figure 1). Furthermore, since 1993 the risks underwritten by EDC have grown approximately seven times to $58.5 billion in 2006 and correspond to about 12 percent of Canadian exports (Figure 2).[3]

1 See Standing Senate Committee on Banking, Trade and Commerce (1996) for an overview of EDC's history.

2 See Benedek et al. (1998, 3-8) for a comparative analysis of the pre- and post-1993 *Export Development Act*.

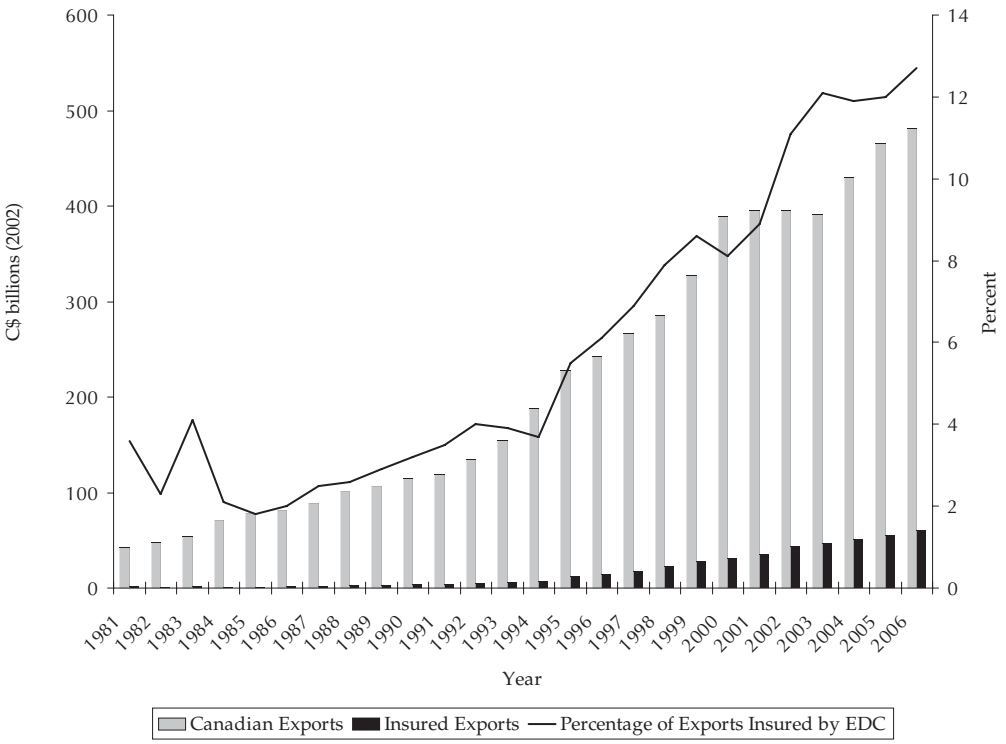
3 Care needs to be exercised in interpreting such figures if one is to gauge the importance of EDC's insurance for Canadian exports. Most of the covered exports, for instance, would have likely happened without EDC's coverage per se, as insurance could have been obtained elsewhere or a company could have exported without insurance.

Figure 1: *Average Insurance Premiums and Employee Count at EDC (1981–2006)*



Source: EDC Annual Report (Various Years); Average Premium Rate calculated including guarantee fees to allow the series to extend to the early 1980s. Excluding guarantee fees does not significantly change the series, especially since 1993 when more disaggregated data is available.

Figure 2: *EDC Export Credit Insurance and Canadian Exports (1995–2006)*



Sources: EDC Annual Report (various years); IMF.

An early review of EDC noted five reasons guiding legislators in the corporation's creation (Raynauld et al. 1983). First, the promotion of exports was seen as desirable: exports created jobs, improved Canada's balance of payments and allowed for the implementation of strategic industrial policy. Second, EDC could be used as a tool for diversifying the destinations of Canadian exports by facilitating trade with riskier or developing markets (Funatsu 1986, Schich 1997, Eeckhoudt and Louberge 1988, Rienstra-Munnicha and Turvey 2002). Third, EDC could help change the composition of exports favouring, for example, the development of manufacturing industries. Fourth, financing channelled through EDC could allow Canada to match other countries' export-subsidy programs. Historically, this point has been salient in the aerospace industry. Finally, the Crown corporation could fill a perceived "market void." At the time, few insurance companies in Canada offered export credit insurance and the government-backed EDC was seen as a supplement to the private market. However, subsequent studies have challenged all of these justifications — not uniquely advanced in the Canadian context — -on policy and economic grounds (see for instance Niskanen 2001; Stephens 1999; Ray 1995, ch. 1; Raynauld et al. 1983; but cf. Moser et al. 2006, Egger and Url 2006, Abraham and Dewit 2000).

Current Activities and Structure

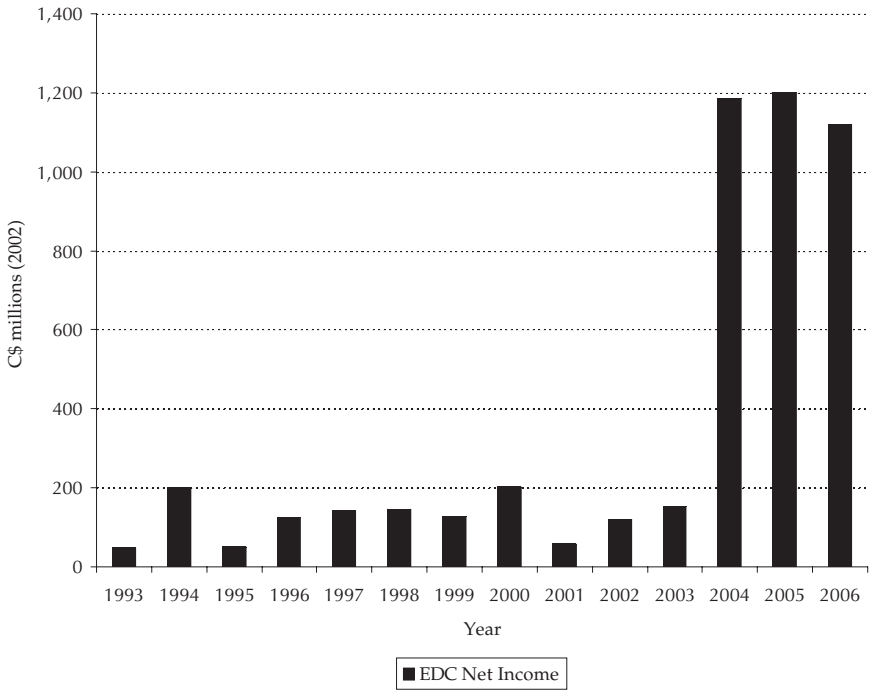
Today, EDC remains an Ottawa-based Crown corporation with a staff of about 1,030. The corporation's administrative expenses in 2006 totalled $203 million and its total net income was $1.2 billion.[4] EDC's operations can be divided into two classes. First, EDC manages the Canada Account, which the federal government uses to provide explicitly government-backed financial support to exports deemed to be in the country's national interest. Historically, the Canada Account has been used to offer both loans and insurance to Canadian exporters. Canada Account transactions are approved by both the ministers of International Trade and of Finance and are accompanied by a withdrawal from the Consolidated Revenue Fund. Examples of past Canada Account transactions include several sales of Bombardier aircraft and the financing of Romania's purchase of a CANDU nuclear reactor. Recently, the Canada Account's use has dwindled as more transactions are performed under EDC's Corporate Account.

The Corporate Account is EDC's main business focus. Transactions booked under this account are nominally backed by EDC, and the associated terms are said to be consistent with the principles of the market; that is, premiums, fees and conditions are claimed to be equivalent to what one would find if a private company offered the same service. No explicit, contemporaneous government appropriation is used to finance specific Corporate Account transactions. Rather, EDC uses its retained earnings, initial government investment and status as a Crown corporation to raise capital to finance Corporate Account operations.[5] That said, such an operating

4 EDC's net income has been inflated during the past three years because of reversals in provisions for losses on loans and insurance (Figure 3).

5 See the Standing Senate Committee on Banking, Trade and Commerce (1996) for an additional review of EDC's operations. In reviewing Crown financial institutions, the Committee was largely sympathetic to the view that government-backed financial institutions should not crowd out private sector providers of similar services.

Figure 3: *EDC Net Income (1993–2006)*



Source: EDC Annual Reports (Various Years).

structure suggests an implicit annual appropriation of public funds to EDC. For instance, until 2006 EDC treated its profits as retained earnings and reinvested these funds into the corporation. The government could have, in principle, chosen to allocate these funds elsewhere, but chose instead to allow EDC to retain them (Figure 3).

Several contentious issues arise from these practices. Foremost, EDC's insistence on offering services on market terms introduces an inherent tension or paradox. Notwithstanding possible regulatory complications, given the apparent profit generated by EDC's corporate portfolio, the same bundle of services — loans, insurance, etc. — should, in principle, be readily available from private sector actors; however, it is not. The conclusions of an early review of EDC's operations continue to be relevant today: "Why, then, do [private institutions] refuse to provide services identical to those of the EDC? The contradiction is irreconcilable. The answer to the question is obvious: EDC claims notwithstanding, the agency does not operate on a commercial basis" (Raynauld et al. 1983, 7).

Assessing the degree of EDC's departure from operating on a strict commercial basis is difficult due to the possible cross-subsidization across and within various product lines, the lower cost of capital that it enjoys and the different regulatory setting in which it operates as a semi-autonomous arm of the federal government. These are, of course, issues that one encounters when examining the operation of most Crown corporations.

Regulatory Setting

The *Export Development Act* and related regulations define EDC's mandate and powers. The corporation is accountable to Parliament through the Minister of

International Trade and is audited by the Auditor General of Canada. As a federal Crown corporation, EDC is considered an agent of the Government of Canada; therefore, any obligations that it assumes are guaranteed by the federal government. This allows EDC to raise capital from the market at better rates than available to private-sector competitors. With the government as the corporation's owner and guarantor, the Canada Account/Corporate Account distinction may become blurry at times. All of EDC's funds are ultimately Canada's funds, but the Corporate Account does not need a minister to sign off on transactions. The corporation has a practice of treating any accounting profits as retained earnings and, therefore, does not face pressure to make regular dividend payments to the government.[6] The *Act* also exempts EDC from federal taxes.

As Canada's official export credit agency, EDC adheres to the provisions of the OECD Arrangement on Officially Supported Export Credits (sometimes called the OECD Consensus). This Arrangement specifies guidelines followed by OECD export credit agencies in the provision of medium- and long-term (more than two years) insurance or project financing. Such rules include minimum rates and standard repayment schedules. The Arrangement originated in the mid-1970s as a mechanism to prevent a credit war among export credit agencies (Levit 2004; Gianturco 2001, 52; DFAT 2000, 28-31; Moravcsik 1989). It has been considered largely successful, but a few countries have created institutions, Canada's EDC among them, to circumvent its provisions. Since EDC claims its Corporate Account transactions adhere to "market principles," EDC considers those transactions (and thus the bulk of its business) as beyond the Arrangement's scope. This practice draws criticism from foreign governments and other export credit agencies (Rodriguez 2001, 10-11; Levit 2004, 104).[7]

Some other international rules also mildly constrain EDC's activities. For instance, EDC financing is subject to the rules of the World Trade Organization (WTO) on export subsidies and emerged as one of the contentious points in the recent Canada-Brazil dispute regarding alleged unfair subsidization of regional aircraft sales. With regard to export credit agencies, the WTO rules are typically interpreted as suggesting that their operations as a whole should "break even" in the medium to long term.[8]

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6 In 2007, EDC made a dividend payment of $300 million. My understanding is that this is the only dividend payment within the last 17 years and was probably due to several large reversals in provisions for losses on loans and insurance within the last three years.

7 These kinds of operations are sometimes called "market-windows." Some foreign export credit agencies also operate market-windows. The most notable non-Canadian example is the German KfW. Also, PEFCO in the United States may fit these criteria in some cases (see Baker 2005).

8 Break-even operations, however, do not imply the absence of subsidies. Aggregation of gains and losses may mask subsidies targeted to specific industries or export markets (Abraham and Dewit 2000, Melitz and Messerlin 1987). This, of course, would come at the detriment of non-favoured companies or export markets that would face higher premiums or interest rates to allow for cross-subsidization, given a break-even constraint.

Taken together, the EDC's regulatory regime gives it several advantages. These include:[9]

- Full financial backing of the Canadian government. This reduces the financial cost of capital for EDC and reduces the need for reinsurance of assumed risks;
- Exemption from federal taxation;
- Absence of private sector pressures such as the need to earn a market-determined rate of return and to offer regular dividends; and,
- An option to partition risky transactions between the Corporate and Canada Account. In principle, this option allows EDC to take on more speculative transactions that may not be possible otherwise due to exposure.

Clearly, some of these advantages amount to an implicit subsidy while others are more indirect. Moreover, several of these points have been identified elsewhere as the key elements that may distort the market when a government financial institution engages in export insurance or financing (European Commission 1997).

Export Credit Insurance

As noted above, the sale of credit insurance is one of the core services marketed by EDC. Credit insurance protects a seller from the risks of buyer non-payment. Buyer non-payment may be due to either commercial or political misfortune. Whereas commercial risks are encountered in both domestic and international trade, the presence of political risks makes international trade riskier; however, companies frequently purchase insurance for both domestic and international sales. A company may seek such insurance coverage for a variety of reasons. For instance, it may need accounts receivable coverage to secure a bank loan.

Broadly, trade credit can be classified into three types based on the payment terms. Credit extended up to one year is typically classified as short term. (In practice, most short-term transactions have payment terms of up to 90 or 180 days.) Most commercial goods are sold under such contracts. Credit extended between one and five years is typically called medium-term; more than five years is classified as long term. The longer repayment terms are normally associated with sales of capital goods such as aircraft or machinery.

The division of trade credits by repayment terms allows for a rough characterization of the risks involved, which increase as the repayment terms are extended. Similarly, risk increases as a transaction becomes more foreign. Domestic transactions tend to be the least risky. Exports to OECD members or high-income states are a little more risky. The greatest risks are associated with long-term transactions with customers in developing or low-income countries.

9 Some of these points are elaborated upon in the so-called "Gowlings Report" (Gowling, Strathy & Henderson 1999, 52).

The Market for Export Credit Insurance

Many companies find the presence of commercial or political risk troubling and are willing to purchase insurance against this uncertainty. In this respect, export credit insurance is just like any other kind of insurance. One party, an exporter for instance, is willing to pay another party, an insurance company, to assume part of the original risk. The insurance company earns some revenue while the exporter obtains peace of mind.

Historically, the provision of export credit insurance has been associated with state involvement through government-sponsored export credit agencies. The first such agency was the United Kingdom's Export Credits Guarantee Department (ECGD), established in 1919. Other countries followed suit in the 1920s and 1930s. The Berne Union, a loose organization of export credit agencies that promotes best practices and information exchange, was established in 1934. After the Second World War, other developing countries set up their own agencies, and many transition economies did so as well in the 1990s.[10]

Although export credit insurance originated as a government program, today it is sold by several kinds of organizations. Export credit agencies in the form of government departments, state-owned corporations or contracted private companies continue to be important players. Some, such as EDC, have evolved from insurance-only roots to offer a broad range of services. Others are more restricted, concentrating only on underwriting medium- and long-term credit risks.[11]

The growth of trade, the emergence of more sophisticated insurance tools and statutory changes in many countries have spurred the development of private financial institutions insuring export credits. In particular, specialized insurers have developed an appetite for short-term credit risks, and the private market in this respect is well developed globally. Several private companies, as a recent IMF review of the industry notes, are also pushing into medium- and long-term insurance (Wang et al. 2005). Currently, there are three large private credit insurers — Euler Hermes, Atradius and Coface — and a collection of smaller insurers (Table 1). Noting the role risk aggregation and extensive information systems play in delivering credit insurance services, it is not surprising that the market has seen some consolidation, especially following the market's liberalization in Europe during the 1990s The industry's 2006 global premium income totalled about $6.25 billion (Euler Hermes 2006).

As a financial service, export credit insurance competes with several (imperfect) substitutes. For example, letters of credit, bank guarantees, factoring, or the securitization of trade receivables, offer companies different avenues to manage

10 Brief histories of government-backed export finance can be found in Moravcsik (1989) and Gianturco (2001). See also Delphos (2004).

11 See Berne Union (2007) for an exhaustive listing. The Berne Union membership consists of about 50 export credit insurance providers, including state agencies and major private-sector insurers active in export credit insurance.

Table 1: *Estimates of Global Market Share (2005)*

Company	Market Share (percent)
Euler Hermes	35.75
Coface	18.52
Atradius	21.89
Cedito y Caucion	8.77
CESCE	2.57
AIG	2.16
Mapfre	2.47
QBE	1.89
CGIC	1.71
Other	4.27

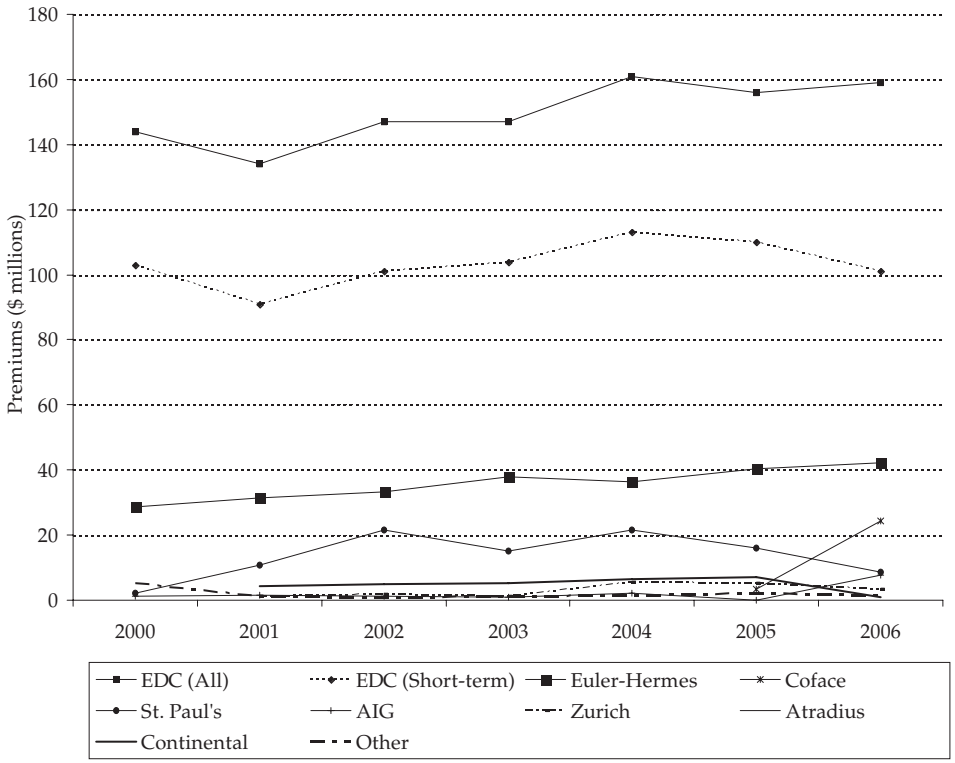
Source: Euler Hermes 2007.

credit risks. These tools will not be addressed here in detail, but each involves a slightly different transaction model (see Alsen et al. 2003; Stephens 1999; Schmidt 2006).Unlike in most OECD countries, Canada's short-term credit insurance market is dominated by a state-owned enterprise, the EDC. Moreover, unlike in many countries such as the United States or New Zealand, where the state-backed provider of credit insurance has a mandate not to compete actively with private insurers, EDC does not have such a restriction on its mandate. Thus, there is a possibility that EDC's presence may act to crowd out potential private entry into the Canadian market.

Over the past decade, EDC has enjoyed a 60 percent to 70 percent market share in the Canadian credit-insurance market (Figure 4 and Table 2). The exact figure depends on one's definition of the market and whether one considers all credit insurance, or only short-term credit insurance as the relevant market in which to measure industry concentration. Despite EDC's dominance, several private insurers offer credit insurance in Canada. Coface, Euler-Hermes and Atradius — -the specialized credit insurers — are all licensed to operate in Canada. Other insurers are free to expand their operations to underwrite credit risks if they meet the necessary approvals and licences.

A point of contention in the industry's market organization has been EDC's involvement in short-term domestic insurance since the 1993 revision of the *Export Development Act.* Since then, various reforms have been pursued that both reduced and expanded EDC's abilities to underwrite domestic risks. The present scheme sees EDC

Figure 4: *Credit Insurance Premium Income in Canada (2001–2006)*



Source: EDC Annual Report (Various Years); Office of the Superintendent of Financial Institutions (OSFI).

Note: Chart refers to Direct Premiums Earned for credit insurance by major credit insurers in Canada. Data includes both export and domestic trade-credit insurance. EDC (All) includes earned premiums for both short-term and medium-term insurance. Data for private insurers includes all credit insurance premium income-which may include both short-term and/or medium-/long-term (OSFI filings do not indicate exposure lengths). In practice, most of the private insurance extended would be for short-term credit risks. EDC and Coface market a joint policy where EDC assumes export credit risks and Coface insures domestic trade credit risks. EDC (Short-term) is presented net of this reinsurance by Coface as reported in EDC's Annual Reports.

Table 2: *Major Trade Credit Insurance Providers Globally and in Canada (2006)*

	Total Credit Insurance Premiums†	Canadian Credit Insurance Premiums†	Global Market Share	Canadian Market Share‡	Worldwide Employees	Credit Rating (S&P)
EDC	159*	159*	1-2%‡	64%	1,038	AAA
Euler Hermes	2,361	42.15	35%	17%	5,500	AA-
Coface	1,265	24.48	19%	9.9%	1,523	AA
Atradius	1,687	3.27	22%	1.3%	3,304	A

Sources: EDC, Euler Hermers, Coface, Atradius Annual Reports. Office of the Superintendent for Financial Institutions (OSFI).

* Includes guarantee fees of $12 million and short- and medium-term credit insurance premiums.

† CAD (millions). ‡ Estimate by author based on earned premium income. Other insurers not shown see Figure 4.

and Coface marketing a joint policy for accounts receivable — Coface assumes risks for domestic transactions while EDC assumes the international portion of the portfolio.[12]

Governments as the Providers of Export Credit Insurance

Whereas most financial services or insurance did not originate with state provision, export credit insurance in its modern form is an exception. Export credit underwriting is typically traced back to the British ECGD in the early 20th century. The most likely line of reasoning behind the creation of government agencies to insure export credit probably went as follows:[13] The risk associated with exporting to some countries was viewed by many companies as unacceptable, perhaps because of a lack of detailed information about buyers, political uncertainty, or some other risk associated with international trade. Similarly, established insurance providers and banks also viewed the risks involved as high and were wary of extending insurance or similar financial facilities at rates worthwhile to potential exporters. Without coverage, exports that would have happened in the absence of risks were not realized. If governments established a facility to underwrite such risks, the hitherto unrealized exports could take place. Given many governments' affinity for promoting exports, such agencies presented an attractive option.

As evident from the above rationale, underwriting by export credit agencies emerged out of a curious mixture of correcting a perceived market failure by directly providing (cheaper) financial services and of political-economy considerations supporting domestic companies. We can consider both reasons separately with some focus on the Canadian situation.

Expanding Exports

A key premise behind government-sponsored export credit insurance schemes is that they will serve to boost exports (*inter alia*, Funatsu 1986). Inexpensive insurance coverage can make previously marginal transactions — marginal due to the risks involved — less risky and thus more palatable to companies. Two recent studies (Egger and Url 2006; Moser et al. 2006) attempt to quantify the relationship between government-sponsored insurance coverage and exports from Austria and Germany. Both studies find a statistically significant positive relationship between the volume of exports and the amount of government-sponsored insurance. A similar positive correlation is observed in the Canadian context, as detailed in the Appendix. Although, such evidence is consistent with the premise that insurance has a positive effect on export volumes, it stops short of establishing a direct causal link.

12 A similar partner scheme was proposed in the Gowlings Report (Gowling, Strathy & Henderson, 56). Given EDC's status as a Crown corporation and dominant position in the Canadian credit-insurance market, one may question the competition policy implications of such an arrangement, but this case will not be addressed in detail in this study.

13 This account is adapted from Stephens (1999, 1). See also Ray (1995) and Moser et al. (2006).

Market Failures?

The idea that government intervention is required to address some sort of potential market failure is common and, in some respects, less controversial. It is well known that insurance markets are susceptible to the challenges posed by adverse selection, where only those with a high level of risk choose to purchase insurance coverage, and by moral hazard. All insurance providers, whether government-backed or not, need to contend with these facts.[14] Beyond these ambient concerns, two often cited challenges in export credit insurance are the presence of undiversifiable risks and the challenges that arise in serving very small companies. Whereas a government agency can address both of these issues, it is only able to do so because it does not face the same market-imposed budget constraint confronting private insurers.

Undiversifiable Risks

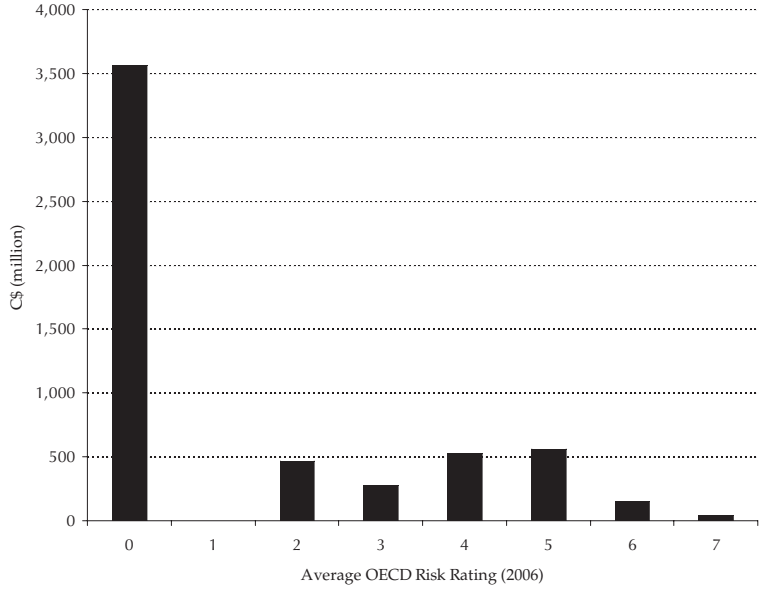
An initially appealing argument suggesting a place for government insurance is based on the challenges that private insurers have in diversifying their portfolios. Ideally, an insurance company would like to insure many independent and relatively small risks and usually seeks out reinsurance to create an acceptable balance within its portfolio. For very large or unusual risks, however, private reinsurance might be expensive to procure or may not be on offer. If such risks are to be insured (whether they *should* be insured is a related question to keep in mind), it can only be done by governments or government agencies, such as EDC, since they operate in a more secure financial setting than private companies. Indeed, the same argument is often advanced in support of government-backed catastrophe insurance for earthquakes, hurricanes or terrorism.[15] In terms of export credit insurance, political risks are the closest class of risks that may sometimes be considered very difficult to insure. Such risks are difficult to predict and may come with substantial losses, as they may affect many individual policies. Together, these factors have led to the conventional, and potentially self-fulfilling, wisdom that such risks are best left to public agencies (Stephens 1999, 30).

The challenges linked to insuring long-term political risks are not a strong justification for government provision export credit insurance, especially of the short-term kind. First, political risks are much less of a concern in short-term transactions. Indeed, this helps explain why private insurers have been more willing to expand their operations in this product line. Second, in the Canadian context the aggregate pattern of exports does not suggest that there are significant political risks. In 2006, about 82 percent of Canada's exports were US bound. In total, 93 percent stayed

14 Typically, the risk of moral hazard in credit insurance is addressed by insuring only a fraction, say 90 percent, of a company's sales; thus, the company still has an incentive to manage its credit relationships with care. Adverse selection in credit insurance is typically addressed by extending most insurance on a "whole turnover" basis rather than on an individual transaction level.

15 For a comprehensive overview of the challenges in catastrophe insurance, and the ways that private markets can assume such risks, see Cummins (2006). In general, reinsurance market capacity is fairly deep and financial innovation has continually expanded the methods used by insurers to diversify their portfolios.

Figure 5: *Classification of EDC's Contingent Liabailities on Short-Term Credit Insurance by OECD Country Risk Level (2006)*



Source: EDC Annual Report (2006), OECD Country Risk Ratings (www.oecd.org).

Note: OECD Country Risk ratings are composite ratings summarizing political, economic and financial risks in 167 countries. The sample represents 99.6 percent of EDC contingent liabilities on short-term insurance. Zero indicates the lowest risk level (e.g. Canada) and seven is the highest risk level (e.g. Zimbabwe). Note that the ratings represent only the country component of an export transaction. An individual buyer's idiosyncratic characteristics may make transactions more or less risky.

within the OECD. In terms of short-term coverage issued by EDC, judging by the distribution of year-end contingent liabilities on short-term insurance in 2006, about 44 percent was for transactions to the US, while the OECD accounted for nearly 70 percent of the total. A glance at the distribution of risks, as ordered by the OECD Country Risk classification, presents a decisively skewed distribution to less risky destinations (Figure 5). Indeed, regarding short-term insurance to relatively low-risk countries, idiosyncratic buyer-level characteristics are often more significant in the insurance decision, and the reinsurance of such risks is easier to organize.

Small Companies Are "Underserved"

A second common concern raised in many government reviews of export credit insurance markets centres around the effects a policy change would have on small- and medium-sized enterprises (e.g. The Standing Senate Committee on Banking, Trade and Commerce 1996; European Union [DG Competition] 2006; DFAT 2001). Such a concern among policymakers is understandable given that small companies form both an important political constituency and an absolute majority among exporting companies, even though they account for a fraction of actual export volumes and for a fraction of insurance demanded. A typical argument is that credit insurance for small- and medium-sized enterprises is not sufficiently profitable and thus they will be neglected — or not served at all — by private insurance companies. If any insurance is offered, it is priced at such a high level to make it unattractive for smaller companies.

To understand why smaller companies may encounter relatively higher premiums, one must examine the factors affecting the costs of issuing an insurance policy. First, there is a fixed cost associated with managing an insurance policy that is independent of the amount of insurance purchased. Understandably, such administrative costs get spread out more widely as the size of the insurance policy increases. Second, larger companies are easier to insure as they tend to bring a fairly diversified risk portfolio into the insurance transaction, and they are more likely to have better internal credit-management policies. Thus, in certain respects, larger companies present safer risks than their smaller counterparts, which may lack both a diversified clientele and a sophisticated understanding of their customer's creditworthiness.

With such considerations in mind, how can one conclude that small companies would be "underserved" for export credit insurance? The fact that the market price of a service exceeds a potential customer's willingness to pay is, of course, not indicative of market failure. Rather, it suggests that credit insurance is like any other risk-management tool that is available to a company. It may choose to purchase coverage or it may choose not to. Many smaller companies choose not to purchase coverage because, all things considered, it may not be the right risk management tool for them.[16] To the degree that a company presents a profitable risk to insure, competition among insurers should deliver coverage to that risk. Certainly, export credit agencies may extend insurance coverage to a wider range of companies on strict public policy grounds, but reaching a larger group of companies would involve providing some sort of subsidized coverage. It is easy to see how subsidized insurance coverage can extend the appeal of credit insurance to a larger set of companies, but how non-subsidized coverage accomplishes the same objective is a more difficult argument to make (Panagariya 2000).

Translating these observations to the Canadian context, one is struck by both the large numbers of small exporters and their small combined contribution to overall exports. Seventy-two percent of Canadian exporters — -about 40,000 companies — each exported less than $1 million of goods and services (Statistics Canada 2006).[17] Collectively, this accounts for just 1.8 percent of the value of Canadian exports. In terms of export diversification, an average Canadian exporter sells goods to about two, and sometimes three, foreign countries (Sabuhoro and Gervais 2004). With regards to EDC's short-term underwriting of small company risks, 5,084 small- and medium-sized enterprises bought short-term credit insurance from EDC in 2006, and 90 percent of these insured exports were bound for North America or Europe (EDC Annual Report 2006). In contrast, the largest five companies insured by EDC accounted for 36 percent of its short-term portfolio. The extent that EDC's underwriting encompasses companies that would not have been able to procure coverage from a private insurer is, of course, difficult to ascertain.

The argument that there exists a genuine market failure in the export credit insurance market — and in the short-term export credit insurance market in particular — is shaky at best. And even if such a failure exists, government corrective action need not follow. First, the solution may be worse than the initial problem.

16 European Commission (DG Enterprise) (2003) presents an overview of some of the factors shaping small companies' decisions to procure or forgo credit insurance.

17 The caveat in these figures is that a small exporter is not necessarily a small company.

Second, if a government chooses to take corrective action, using a government agency to directly underwrite insurance risks is only one possible policy option. Indeed, similar outcomes in terms of extent of coverage could, in principle, be obtained through tax policy, for example, without the need for an EDC-like agency — underscoring the importance of not locking in public policy on the default status quo.

The Present Market Division

Drawing on the above discussion, one can characterize where private and government-backed insurers will be active in the credit insurance industry. The short-term credit insurance market can be served effectively by the private sector given the multiplicity of risks and the fairly buoyant reinsurance capacity for such transactions. It is in this field that EDC's operations can be scaled back as such operations are more akin to a commercial venture than a public service. However, medium- and long-term insurance, for a variety of economic and (mostly) non-economic reasons, will continue to attract government interest.

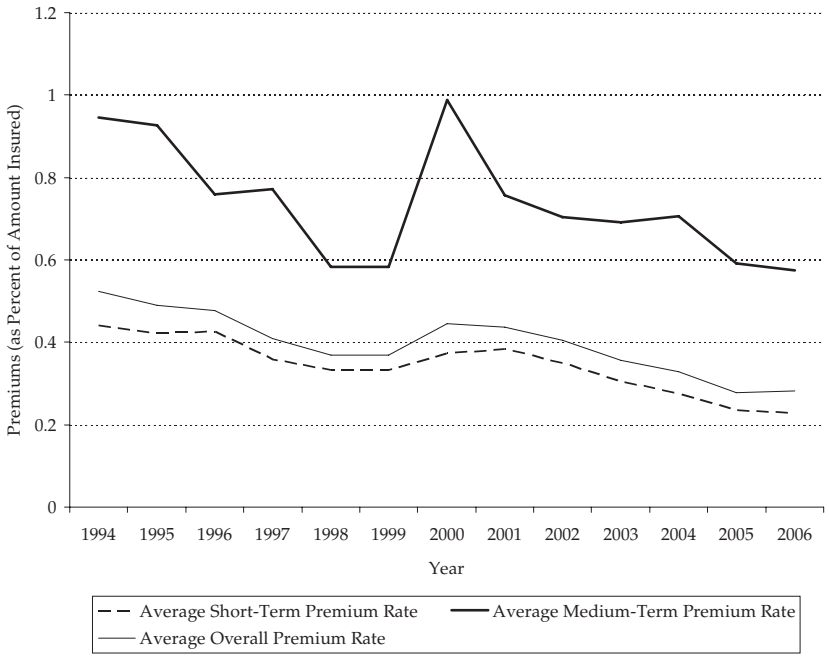
Short-Term Insurance

According to a recent review of the credit insurance industry, "The private sector has grown most substantially in the short-term market, replacing government as the primary provider in almost every industrial country" (Wang et al. 2005, 10). Several reasons account for this development. First, many export credit agencies explicitly withdrew or scaled back their short-term insurance activities during the early 1990s. This revaluation of activity was part of the broader wave of privatizations that happened during this period. It was a product of the consensus that governments should not perform functions that the private sector can perform capably. As noted in a recent IMF survey of export credit insurance: "Representatives of official export credit agencies and private insurers broadly share the view, as evidenced in recent surveys and discussion with staff from the International Monetary Fund, that governments should not do what the private sector is capable of doing and that national agencies should complement, rather than compete with, the private sector" (Wang et al. 2005, 23).

Although there is some disagreement on what "complementing" the private sector means, the conclusion is indicative of the direction public policy has taken with regards to export credit insurance. This consensus was reaffirmed in Europe where EU-level regulations in the mid-1990s constrained the ability of governments to back the insurance of so-called "marketable risks" (discussed below). As a recent review of the British short-term export credit insurance market noted, "It is difficult to see what role governments can efficiently play in the short-term business" (Select Committee on Trade and Industry 2000).

Second, during the 1990s many private insurers expanded their capacity to provide credit insurance. This development was partly a response to the aforementioned market opening. However, advances in information technology, regulatory harmonization in Europe and financial market innovation made the delivery of credit insurance easier (Wang et al. 2005, 16). In essence, the underlying

Figure 6: *Average Short- and Medium-Term Premiums at EDC (1994–2006)*



Source: EDC Annual Reports (Various Years).

characteristics of the market have seen a notable transformation during the past 20 years.

From a practical perspective, short-term coverage can be structured in a variety of ways. Typically, a company will purchase a whole-turnover policy, covering all of its sales in a designated group of countries. Single transaction policies are also available, but tend to be comparatively more expensive due to the risk of moral hazard or adverse selection. Although premium rates will vary with buyer location, firm size and past credit performance, typical premiums hover between 0.2 percent and 0.35 percent of the amount insured (Riestra 2003). The average premiums charged by EDC for short-term credit insurance are consistent with this observation (Figure 6).

Medium/Long-Term Insurance

Medium- and long-term export credit insurance remains primarily an activity of official export credit agencies. Such insurance is typically extended for sales of capital goods, with drawn-out repayment terms in excess of two years. Most reviews of export credit agency operations note a general apprehension among private insurers for extending coverage for transactions in excess of two or three years.

Medium and long-term risks remain the domain of official export credit agencies for several reasons. First, and more so than for short-term insurance transactions, medium-term transactions are more likely to involve the export of so-called prestige products such as aircraft or machinery. The attraction of governments to these kinds of exports — whether in Canada, the United States, Brazil or Europe — is well known and will not be probed further here. The political-economy motive likely will keep governments interested in this financial service, regardless of the capacity of private companies to underwrite such export transactions.

Second, unlike short-term exports, medium- and long-term transactions are genuinely more complex to insure. Frequently cited challenges include the idiosyncratic nature of the risks involved, the length of exposure and the large transaction sizes (Stephens 1999, 29; Alsem et al. 2003, 73-4). Additionally, reinsurance becomes a more critical matter as the risk's magnitude and length of exposure increases.[18] Despite these additional risks, several private insurers, such as AIG, Zurich, FCIA or Hiscox, have started offering medium- and long-term policies that cover commercial and political risks. The timid entry of private insurers into this product line should not be attributed necessarily to their unwillingness to insure such risks per se. Perhaps, it indicates an unwillingness to underwrite such risks on terms comparable to those offered by official export credit agencies that dominate this market.

International Experience with Short-Term Export Credit Insurance

Although export credit insurance providers assume a variety of forms, a few stylized facts emerge from an examination of international practices. First, short-term export credit insurance is almost exclusively the domain of private insurers. This is especially true for insurance on transactions between developed countries. Government-backed insurers, like EDC, are generally limited to medium- and long-term risks. This contrasts sharply with Canada's present market structure.

Second, the past two decades have seen substantial insurance industry restructuring. Frequently, such restructuring involved the privatization of an official export credit agency's short-term portfolio or the withdrawal of state-owned companies from the short-term market. The following overview presents recent developments in other developed countries. Readers may wish to refer to Table 3 for a broader comparison.

European Union

Recent estimates suggest that 95 percent of short-term export credit insurance in the European Union is provided by the private sector (Wang et al. 2005). Governments' withdrawal from the short-term market can be traced to the introduction of EU

18 For official export credit agencies, however, reinsurance is a less pressing concern as they are reinsured by their national governments.

Table 3: *ECA Activities in Select OECD Countries*

		ECA Organization			Short-Term Insurance‡		
Country	ECA	Gov't. Dept.	State Enterprise	Gov't. Account with Private Insurer	To OECD† & EU Countries	To Other Countries	Medium-term Insurance
Canada	EDC		■		■	■	■
Australia	EFIC		⌑				⌑
Denmark	EKF	■					■
Finland	FINNVERA		■			■	■
France	COFACE			■		■	■
Germany	Euler Hermes			■		■	■
Italy	SACE		■		✧	■	■
Japan	NEXI		■		■	■	■
Mexico	BANCOMEXT		■		■	■	■
Netherlands	Atradius			■		■	■
New Zealand	NZECO	⌑					⌑
Norway	GIEK		■		■	■	■
Switzerland	SERV	■				■	■
UK	ECGD	■					■
USA	EXIMBANK		⌑		⌑	⌑	⌑

■ Provides service.
⌑ Provides service, but with mandate not to compete with private sector institutions.
✧ SACE is bound by EU regulations not to underwrite "marketable risks." However, it has established a subsidiary, SACE BT, that does underwrite marketable risks as defined by the EU.
† Up to one year.
‡ Excluding Mexico and Turkey.

guidelines limiting government intervention. In particular, since 1997 government-sponsored export credit agencies were forced to cease underwriting "marketable risks." The presence of government underwriters in the market was viewed by regulators as distorting competition (European Commission 1997).

At the crux of the EU policy is the concept of a marketable risk, understood as any risk that the private market is prepared to insure. Within the EU, however, this concept was elucidated in a more concrete fashion. Initially, the committee evaluating export credit insurance defined a marketable risk as any trade-credit risk (worldwide) with repayment terms of up to three years. This concept encompassed all short-term insurance policies and a large portion of medium-term policies. Upon consultation with member states, the Commission narrowed its definition to cover commercial risks associated with credit extended to non-public debtors for up to two years in all OECD and EU countries (excluding Mexico and Turkey).[19] Even the narrowed definition, however, covers the bulk of Europe's export trade, and it would also cover the vast majority of Canada's exports.

Of particular note is the Commission's recognition that government-sponsored insurers distort the market. In particular, the Commission cited the following key

19 Governments are also allowed to back insurance coverage specifically targeted at small enterprises.

advantages for an export credit agency: de jure and de facto state guarantees of liabilities, transfers of direct state aid or capital, and relief from taxation normally payable by similar enterprises (European Commission 1997). As outlined above, many of these features apply to EDC and their effect on market development in Canada is likely similar.

Great Britain

In 1989, the British government decided to privatize the short-term insurance portfolio of its Export Credit Guarantee Department (ECGD). By 1991, the ECGD's short-term business was sold to the Dutch insurer NCM (today part of Atradius). Currently, private underwriters cover all short-term export credit insurance in Britain which has gone further in liberalizing export credit insurance than any other EU member (Riestra 2003, 37). Following the privatization, the ECGD focused on medium- and long-term needs.

Subsequent reviews of the privatization process have revealed little or no negative impact on the availability of short-term export credit insurance. One way to measure the ability of the private sector to offer short-term insurance is the use of government-backed reinsurance. When the British short-term insurance account was privatized, the ECGD offered reinsurance facilities for all companies underwriting short-term export credit risks to ease the privatization process and encourage further market entry. A recent report on the operation of the reinsurance facility concluded that:

> Since the privatization, demand under each of the reinsurance facilities has substantially declined: the Top-Up facility has not been used for four years; the number of high-risk markets covered under the National Interest facility has fallen to five countries; and no applications for support under the Long and Large facility have been made for over 12 months. It is clear that the reinsurance market has become more mature and willing to accept export credit insurance risks such that ECGD is now left with supporting business for a hard core of high-risk countries. (ECGD 2000, 1.)

The report continues, "Moreover, there does not appear to be any evidence that UK exporters have been disadvantaged as compared to their competitors as a result of the privatization."

The British experience has been the boldest shift from a government-backed to a private-sector model of export credit insurance. It shows clearly that such a process can be completed with little disruption to the export trade.

Australia

The Export Finance and Insurance Corporation (EFIC) is Australia's official export credit agency. In 2000/2001, an extensive review of EFIC's operations recommended the privatization of its short-term export credit insurance portfolio. The portfolio's sale was completed in 2003 with Gerling-NCM, now Atradius, as the purchaser.

Prior to privatization, the market structure for short-term export credit insurance in Australia was akin to Canada's today-EFIC accounted for 60 percent to 70 percent of issued credit insurance. Moreover, the review concluded that EFIC's market dominance was an important reason private underwriting of export credit in Australia was not as extensive as seen elsewhere, particularly in Europe. A report prior to the privatization

found that there was significant private capacity in the short-term insurance market and noted a fairly healthy return on invested capital in this line of business that would encourage further entry (DFAT 2001). In particular, "The conclusion of that review was that the private market has demonstrated the capacity to underwrite short-term credit insurance and that the large commercial insurers have a scale of operation that allows them to invest in extensive IT-based global networks and client support systems that deliver innovative, cost effective products and services, including to smaller exporters" (EFIC Annual Report 2002, 7).

Privatization was conducted through an open tender process after which a strategic alliance between EFIC and Gerling-NCM was formed to facilitate a transition. Today, EFIC specializes in medium- and long-term export financing and in some services aimed at small- and medium-sized enterprises; it has a staff of about 70.

United States

Trade finance and export credit insurance in the United States is provided by several public and private entities, such as the United States Export-Import Bank (Ex-Im Bank), the Foreign Credit Insurance Association (FCIA) and, of course, other private insurers. Additionally, some export-finance services, such as certain classes of loans performed in Canada by EDC, find their US counterpart in the Private Export Funding Corporation (see Baker 2003). Much like in the British, Australian and European cases, the US has also seen a scaling back of government support for short-term export credit insurance.

Export-Import Bank

Ex-Im Bank, an autonomous agency of the US federal government, is Washington's official export credit agency. As part of its mandate, Ex-Im Bank is restricted from competing with the private sector and is to provide insurance cover or financing only if it is not available from private actors (Rodriguez 2001). Several factors corroborate Ex-Im Bank's reluctant behaviour in export credit insurance provision. For instance, Ex-Im Bank's higher-than-average premiums and stagnant overall volume of extended insurance contrast sharply with EDC (Ex-Im Bank Annual Reports 1996-2005). The primary conclusion to draw from this comparison is that restrictions on Ex-Im's mandate have a genuine impact on its operations. Without such restrictions, the insurance extended by Ex-Im Bank would likely exceed that of EDC, given the large size of the US economy.

Foreign Credit Insurance Association (FCIA)

FCIA was founded in 1961 as a consortium of private insurers to supplement the services offered by Ex-Im Bank. FCIA's policies were guaranteed by the Ex-Im Bank — and thus by the US government — until 1992 when Ex-Im refocused on its own insurance products (Wang et al. 2005, 15). Today, FCIA is a part of Great American Insurance Company (a subsidiary of American Finance Corporation), a private property and casualty insurer. The 1992 break from the Ex-Im Bank, as suggested by one observer, has made FCIA more efficient and allowed the organization to pursue business without emphasis on fulfilling government policy (Baker 2003, 82).

Overseas Private Investment Corporation (OPIC)

Insurance for major long- and medium-term overseas investments requiring transactions may also be obtained from the Overseas Private Investment Corporation (OPIC), a US government agency. Established in 1971, OPIC specializes in extending political-risk insurance for investment projects, primarily to low-income and high political-risk countries. Moreover, like EDC, OPIC claims to charge market rates for the insurance that it extends to investment projects. The focus on longer-term investments in a limited set of countries, and not on export-finance generally, differentiates OPIC from EDC although there is some overlap in both organizations' missions.

Market Reform in Canada

Any reform in EDC's operations should begin with its withdrawal from insuring short-term export credits. Canada will not be breaking new ground in pursuing such a move; as noted above, several countries have privatized their government-backed, short-term export credit insurance operations with no adverse outcomes. Moreover, Canada is in a much better setting in which to consider such an action than those who made the first such move in Europe. Today, private credit insurers are on a much more solid financial footing, and improved technology has eased the evaluation of risks and simplified product delivery. In short, the case for a reduced role for a public agency in this market segment has become even more compelling over time.

Benefits of Reform

A privatization of EDC's short-term export credit insurance operation would confer several benefits to Canadian exporters, EDC itself and to the Government of Canada. First, exporters would benefit from a more vibrant and competitive credit insurance market. EDC's withdrawal from the field would remove a major disincentive currently faced by private insurers in developing their Canadian capacity. Second, with the market's development, Canadian exporters would benefit from the global scale of operations which these credit insurers enjoy.

From EDC's perspective, a withdrawal from the short-term export credit insurance market would allow it to focus more on its medium- and long-term operations. Furthermore, the drawdown of EDC's short-term insurance operations would lead to a streamlining of EDC's administrative burden. Finally, it is unlikely that the withdrawal from the short-term insurance market would impair EDC's ability to formally meet the "self-sustaining" aspects of its mandate in its other operations.

For the government, significant financial opportunities would be realized through the partial privatization process. First, a more vibrant private insurance market would produce increased tax revenues realized through both the taxation of premium income and firm profits-something not applicable to EDC's operations. In the political sphere, the restructuring would bring Canada more in line with its OECD partners and defuse some international criticism of EDC's operations. Finally, a reduction of government involvement in the provision of export credit insurance would reduce the market distortion that such activity entails.

The Reform Process

Since many European export credit agencies reduced their short-term insurance operations more than a decade ago, there is plenty of international experience which Canadian policymakers can draw upon. Generally, two reform processes have been followed in other countries. In the United Kingdom and in Australia, for example, the government sold the short-term insurance division to a private company. Whether this is an effective strategy in EDC's case is debatable. On one hand, a case could be made for a spin-off type sale of EDC's short-term insurance operations as might be performed by any company changing its operational focus. One of the major insurers — or perhaps a different financial services company altogether — would likely be the purchaser. On the other hand, several complicating factors would necessarily colour such a process, such as the degree of integration between EDC's insurance and other business lines. An alternative option would be EDC's gradual withdrawal from the short-term credit insurance market, scaling back its operations in a preannounced fashion.

Regardless of which process is followed, several auxiliary policies are available to ensure a smooth transition from public to private provision of short-term export credit insurance. The British government, for one, provided reinsurance options to all private export credit underwriters following privatization to encourage further entry into the credit insurance market. Nevertheless, as noted above, the demand for such reinsurance declined markedly within a few years of privatization. Encouraging market entry and the expansion of private underwriting of export credit risks should be the goal of any government policies aimed at ensuring a smooth transition.

In Australia, which placed its short-term insurance operations for tender, the successful bidder entered into a two-year "strategic partnership" with EFIC during which it integrated EFIC's short-term account with its own operations. The sale was finalized only after the government was satisfied that the private insurer's operations fulfilled specific benchmarks (see EFIC Annual Reports 2001-2005). If the government chooses to implement such measures to ease a transition, one caveat deserves mention-transitory measures should be introduced with caution as they often can become permanent fixtures of government policy.

Sources of Opposition to Reform

There would be two groups likely to oppose the restructuring of EDC's short-term portfolio, either through sale or through a phased withdrawal. The first is EDC employees concerned that a retreat from the short-term credit insurance market would reduce EDC's personnel needs. For example, when Australia's EFIC divested itself of short-term credit insurance, its staff fell by half, from 110 to 57 (EFIC 2004, 7). Undoubtedly, some of EDC's affected personnel could assume positions in EDC's other roles — in the provision of medium- and long-term export financing, for instance — or in the private sector, given that they are highly skilled in a specialized area.

A second source of potential opposition is exporters who have developed a rapport with EDC's current insurance facilities. Such opposition should be transitory in nature as companies adjust to the new market structure. That said, some companies — very small companies or those with exceptionally poor account risk

management — may experience changes in the insurance that is available to them. International experience, however, suggests that these effects would be marginal.

Outstanding Concerns

The prospect of reducing EDC's short-term insurance activities naturally raises the question of the future for its other business lines. Although the government, in theory, could withdraw completely from export finance and insurance, political considerations make this unlikely. Whereas short-term insurance elsewhere is primarily the domain of private providers, medium- and long-term insurance and export financing remains the domain of government-backed export credit agencies. The desire to offer a financial facility competitive with that found abroad, particularly in financing capital goods exports, would impinge heavily on any decision to drastically remake EDC's other operations. Additionally, political pressure from industries currently benefiting from EDC support will make any large-scale reform politically challenging. Continued claims advanced by governments or the EDC of "filling a market void" should be treated with skepticism, however, as multiple motives are certainly at play.

Political considerations aside, it is necessary for the Canadian government and its public to acknowledge fully the costs of EDC's current operations. The amount may surprise many people, given EDC's ability to earn an annual profit. Rather, the efficacy of EDC's operations should be judged by the opportunity cost they impose on the funds supporting EDC's operations. Additionally, the distortion of the financial services and insurance market caused by EDC's continued presence in these areas is clearly another cost, although more difficult to quantify. Canadians, or their government, should ask whether keeping these resources in EDC or their use elsewhere — tax reduction, infrastructure investment, health or education spending — is more in line with public or government priorities. The forgone opportunities are the real cost of EDC, and they get overlooked with a singular focus on the corporation's formal annual balance sheet. Likewise, the tax treatment, dividend requirements and financial regulations applicable to EDC may be revised or brought in line with what is faced by the private sector.

Conclusions

By international standards, Canada's export credit insurance system is an outlier. Short-term export credit insurance has been successfully delivered by the private sector in most OECD countries for more than a decade. Drawing on international experience and noting the developments in the credit-insurance industry during the past two decades suggests that there is a compelling case for a change in EDC's operations that would introduce a more competitive credit insurance industry in Canada.

Appendix: Modelling Exports and Export Insurance

As noted in the text, a key objective of government-backed provision of export credit insurance is its positive effect on the value of exports. With insurance, for example, an exporter might be more willing to sell to new clients or to less-creditworthy clients. Such factors suggest that export credit insurance can be used as a method of expanding export volumes.[20]

A simple test of this hypothesis would include a measure of transacted insurance and political risk in a model of exports. Following Egger and Url (2006) and Moser et al. (2006), this Appendix presents a simple gravity model of Canadian exports from 2006, augmented by measures of political risk and EDC's short-term insurance activity. Consistent with previous studies, insurance tends to correlate positively with export levels, but only mildly so. At this level of analysis, one should be cautious about drawing strong causal inferences from the estimates.

The Gravity Model

Since Tinbergen (1962), economists have known that observed export patterns can be explained reasonably well by the so-called gravity equation. The gravity equation simply suggests that trade levels between any two countries will be proportional to the countries' GDP and the distance between them. Intuitively, wealthier countries tend to trade more with one another, and trade declines as distances between countries increases due to transaction or transportation costs. In its simplest form, a gravity model would predict Canadian exports to country i with the formula:

$$\log(\text{Exports}_i) = \alpha + \beta_1 \cdot \log(\text{GDP}_i) + \beta_2 \cdot \log(\text{Distance}_i) + D_i'\gamma + \varepsilon_i$$

In this case, β_1 is expected to be positive and β_2 is expected to be negative. D is a vector of other variables which may be included in the model, and ε_i is a random, mean-zero, independent error term.

Empirically, such simple models perform surprisingly well in predicting trade flows and have been used to study many questions in international trade, such as the effects of tariffs or the impact of customs unions.[21] The classic application of the gravity model to the Canadian context was McCallum's (1995) study of the effect on the Canada-US border on bilateral trade flows.

Variables

Table A1 summarizes the variables employed in this study. Most variables, such as GDP, distance, exports or population do not require special motivation. Following Egger and Url (2006) and Moser et al. (2006), I include a measure of manufacturing's share in the foreign

20 These arguments are made rigorous by several authors. See among others Funatsu (1986), Abraham and Dewit (2000), Dewit (2001), Egger and Url (2006).

21 See Feenstra (2004) for an overview of the gravity model, its empirical applications and shortcomings.

Table A1: *Summary of Variables*

Variable	Source(s)	Description
EXPORTS	Statistics Canada & Industry Canada (Strategis)	Value of total Canadian exports to country *i*.
GDP	IMF International Financial Statistics, World Bank, and CIA Factbook.	Country *i*'s GDP (PPP) in USD (2006).
POP	IMF International Financial Statistics, World Bank, and CIA Factbook.	Country *i*'s population (2006).
DIST	Author's calculation.	Shortest great-circle distance (km) to country *i*'s capital city from Vancouver, Toronto, Ottawa, or Halifax.
LAND	-	Indicator variable denoting land-locked status of country *i*.
MAN	World Bank	Ten-year average percentage of manufacturing in Country *i*'s merchandise imports.
RISK1	OECD	Average 2006 OECD Country Risk classification for country *i*. OECD ratings are given on an eight-point scale. Greater values correspond to worse risks. I add one to the scale giving the safest risks a value of one and the worst risks a value of eight. See discussion in text.
RISK2	Coface (2005)	Coface "Country @rating" for country *i*. Coface ratings are given on a scale A1, A2, …, D. I employ a simple numerical translation of the scale: A1 = 1, A2 = 2, …, D = 7. Greater values correspond to worse risks. See discussion in text.
EDC	EDC Annual Report (2006)[a]	EDC's short-term credit insurance liabilities associated with country *i*. See discussion in text.

[a]I thank EDC for providing the country-level data not printed in its Annual Report.

country's imports (MAN_i). All variables are converted into US dollars at the average 2006 exchange rate (1 USD = 1.134 CAD).

Of particular note are the variables intended to capture EDC's underwriting activity and the risks associated with exporting to a given country. First, EDC_i measures the level of EDC's contingent liabilities in short-term credit insurance associated with country i at year end (31 December 2006). This variable should provide a good assessment of the comparative spread of EDC's short-term underwriting across all countries. For some countries, this variable is equal to zero, and such cases are excluded from the sample as this variable enters the model via the logarithm. In all cases when the sample size is reduced due to data constraints, more than 99 percent of Canadian exports are accounted for in the remaining data set.

Second, following Moser et al. (2006), I include a measure of political and economic risks in certain specifications of the gravity model. In particular, I draw on two ratings used to manage export credit risks developed by the OECD and by Coface (2005, p. vxi). Both ratings are a summary of overall financial stability, political stability and other potential risks that may affect international transactions. Both ratings assign higher values to risks of decreasing quality.

Table A2: *Estimates of a Gravity Model of Canadian Exports (2006)*

	Dependent Variable: log ($EXPORTS_i$)					
Variable	1	2	3	4	5	6
Constant	3.90** (1.73)	3.57** (1.66)	2.01 (1.73)	4.26** (1.67)	7.91*** (2.26)	6.73*** (2.35)
log GDP_i	1.32*** (0.08)	1.28*** (0.08)	1.16*** (0.09)	0.76*** (0.12)	0.39** (0.17)	0.34** (0.16)
log POP_i	-0.43*** (0.09)	-0.38*** (0.09)	-0.27*** (0.09)	-0.11 (0.10)	0.16 (0.14)	0.34** (0.14)
log $DIST_i$	-1.37*** (0.15)	-1.27*** (0.15)	-1.13*** (0.14)	-0.88*** (0.17)	-0.67*** (0.20)	-0.68*** (0.17)
$LAND_i$	-	-0.84*** (0.24)	-0.80*** (0.21)	-0.44** (0.22)	-0.52*** (0.21)	-0.37 (0.24)
MAN_i	-	-	2.32** (0.96)	2.69*** (1.11)	2.20** (0.96)	2.24** (0.92)
log $RISK1_i$	-	-	-	-	-0.52*** (0.17)	-
log $RISK2_i$	-	-	-	-		-0.82 (0.18)
log EDC_i	-	-	-	0.19*** (0.05)	0.23*** (0.04)	0.22*** (0.04)
R^2	0.80	0.81	0.86	0.87	0.89	0.87
N	201	201	165	130	107	120
% Exports	99.99	99.99	99.52	99.40	99.35	99.22

Notes: Parameters estimated via ordinary least squares. Heteroskedasticity-consistent standard errors in parentheses.

* Statistically different from zero at the 10 percent level. ** Statistically different from zero at the five percent level. *** Statistically different from zero at the one percent level. % Exports indicates the level of Canadian exports accounted for in each sample.

Estimating the Impact of Short-Term Insurance on Canadian Exports

Table A2 presents estimates of the gravity model of Canadian exports in 2006 with several specifications augmented by measures of political/economic risks and EDC insurance. Estimates were performed using ordinary least squares, and heteroskedasticity-consistent standard errors are reported.[24] The results continue to hold when the United States is removed from the sample, which is an outlier due to its size.

As a whole, the results are typical of gravity model estimates and conform to the aforementioned studies. The export destination's GDP is positively correlated with the level of Canadian exports while distance is seen to decrease measured trade flows. Unsurprisingly, land-locked states import less from Canada (part of this effect may be due to a misclassification of export destinations).

Short-term export credit insurance, as measured by the variable EDC_i, is positively correlated with the level of exports. This effect is maintained even after explicitly controlling for the ambient political and economic risks in a

destination country. As expected, both measures of political and economic risks are found to be associated with a lower level of exports. As the model is in logarithms, one can interpret many of the parameters as elasticities. For example, assuming the model is correctly specified, a percent increase in the distance between Canada and an export partner is associated with an approximate 0.67 percent decline in export volumes (in models 5 and 6).

Overall, however, the results demand caution in interpretation and one ought to be wary of drawing more precise conclusions beyond the general positive association between insurance and exports. Although the results are consistent with a causal relationship running from export credit insurance to export volumes, the casual relationship cannot be asserted given the limitations of the data and of the model overall. For instance, it may be equally possible that insurance demand is driven by exports.

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