Is There a Case for Trade and Investment Promotion Policy?

Brian R. Copeland*

Abstract

Despite major reductions in tariffs and other policy-induced barriers to trade over the past 50 years, there is a great deal of evidence that substantial trade frictions between countries still exist. Whether government policies aimed at reducing trade and investment costs lead to welfare improvements depends on the source of the costs and the mechanism by which costs are reduced. This paper investigates the rationale for export and investment promotion programs, focusing on market failures. The tentative conclusions are that sunk costs prevent many firms from becoming engaged in foreign markets, and that many of these costs are information related, raising two potential sources of market failure—information spillovers (or externalities), and problems related to asymmetries of information. The market creates incentives for firms to respond to these problems in various ways. Theory and some limited empirical however suggest that these responses go only part way towards resolving the underlying problems establishing a market-failure based case for some government activity in the area of export and investment assistance and promotion. The types of activity that may help address market failures are discussed and the small empirical literature on the effectiveness of existing export promotion programs is examined.

* Department of Economics, University of British Columbia. This paper was prepared for the Department of Foreign Affairs and International Trade, Government of Canada. The views in this paper are those of the author. Author's address: Department of Economics, 997-1873 East Mall, University of British Columbia, Vancouver, B.C. V6T 1Z1 Canada. E-mail: copeland@econ.ubc.ca

Introduction

Despite major reductions in tariffs and other policy-induced barriers to trade over the past 50 years, there is a great deal of evidence that substantial trade frictions between countries still exist. This is not surprising—it is costly to trade, even within a country. There are transportation costs, costs of finding customers, costs of establishing, joining and maintaining distribution networks, costs of dealing with more than one regulatory environment, and so on. Some of these are a natural consequence of dealing with different types of customers, partners, and suppliers, possibly over large distances. Others are the result of heterogeneity in government regulations across countries due to differences in history, culture, and other local circumstances. Yet other costs are due to government policies which directly or indirectly restrict the movement of goods, services and people across borders.

Many costs must be borne prior to, or in the early stages of, attempting to export to foreign markets. To the extent that they reflect a need to acquire information relevant to dealing in new markets, these costs are sunk—they are for the most part not recoverable if the attempt to establish a foreign market presence is unsuccessful. Sunk informational costs also deter direct investment flows between countries—firms considering foreign investment have to develop knowledge of the foreign regulatory environment, foreign supply networks and foreign labour relations. Hence both trade and investment are lower than they would be in the absence of such costs.

It is tempting to argue that government policies aimed at reducing trade and investment costs would lead to welfare improvements; however, this depends on the source of the costs and the mechanism by which costs are reduced. In a world with heterogeneity in location, culture, and government behaviour, many of these costs are inevitable and attempts to provide subsidies or to introduce other policies to offset them would simply create other inefficiencies. Moreover, specialized firms exist to help importers and exporters cope with some of the difficulties

in entering new markets—that is, the presence of trade-inhibiting costs creates incentives for the private sector to develop expertise to overcome them. However, if market failures or political failures contribute to trade costs, then there is a potential for policy to reduce these costs and to increase the flow of trade and investment.

Many governments operate export and/or investment promotion and assistance programs. Since trade agreements constrain government behaviour by placing restrictions on explicit and implicit export subsidies, these programs typically offer indirect support and broadly available information and logistical assistance, often coordinated through consulates. Although there is a small empirical literature that attempts to determine whether such programs are effective in increasing trade and investment, there has been relatively little work that addresses the question of whether such programs are justifiable at all.

This paper investigates the rationale for export and investment promotion programs. Although in the past there have been various motives for promoting trade and investment—ranging from mercantilism to building international alliances—I focus on market failures. I first ask whether there exist market failures that tend to systematically inhibit the flow of trade and investment; and then ask whether there is any reason to believe that government programs can address these market failures better than private sector responses. If these two criteria are satisfied, then I will argue that there may be a role for government to act to improve the functioning of the market by helping firms to overcome some of the barriers to trade and investment.

The literature in this area is recent, and still somewhat thin. Much research still needs to be done, and so the conclusions reached in the paper are tentative. I first briefly review the empirical evidence on trade costs. A variety of evidence suggests that sunk costs prevent many firms from becoming engaged in foreign markets, and that many of these costs are information related. I next review the theoretical literature relevant to information-related sunk costs, and private sector responses to these problems. Two sources of market failure underlie much of this

analysis—information spillovers (or externalities), and problems related to asymmetries of information. The market creates incentives for firms to respond to the problems in various ways—industry associations attempt to internalize the free rider problem arising from information spillovers; intermediaries and middlemen help firms deal with firm-specific information problems; and firms adapt their organizational forms to reflect the informational environment in which they operate. However, theory suggests that these responses go only part way towards resolving the underlying market failures, and there is some limited evidence consistent with this view. This suggests that there is a market-failure based case for some government activity in the area of export and investment assistance and promotion. The types of activity that may help address market failures will be discussed. Finally, I briefly review the small empirical literature on the effectiveness of existing export promotion programs.

Evidence on trade costs

A large literature attempts to measure trade costs [see Anderson and van Wincoop (2004) for a recent survey, and Curtis and Chen (2003) for a focus on Canada]. Much of the early work used aggregate data and attempted to measure the "border effect"—that is, the extra costs of trading across an international border in comparison with the costs of trading within a country [McCallum (1995) is the seminal paper]. Recently, a great deal of work using firm level data has looked at the microeconomics of trading; this has helped to build up a picture of the variations in engagement with international markets across firms [see Bernard and Jensen (1995) for early work, and Greenaway and Kneller (2007) for a recent survey]. Some work has attempted to determine the sources of, and measure, different types of trading costs, although this work is still in its early days.

Firm level data reveal that there is a great deal of heterogeneity across firms in how engaged they are in international trade. A number of papers have found that many firms do not export. For example Bernard and Jensen (1995, 1999) find that

the majority of US firms in the tradable goods sector do not export. Eaton, Kortum and Kramarz (2004) find that only 17.4 percent of French manufacturing firms export. Bernard, Jensen and Schott (2005) find that, among those firms that do export, much of the activity is concentrated in a relatively small number of firms—81 percent of US trade is accounted for by the top 1 percent of firms that trade. It is important to put keep these numbers in perspective. It is not just international borders that inhibit exporting: many firms sell only in a very localized market within their own country as well. In one of the most detailed studies of the effects of distance on shipping, Hillberry and Hummels (2005) use establishment-level data on manufacturing shipments within the U.S. They find two key results. First, the major impact of distance on shipments occurs within a very small radius of the establishment location. Shipments within a zip code region (roughly a four mile radius) are three times higher than outside the same region. And they find that there is a huge decline in shipments as distance increases up to about two hundred miles, but not much decline after that. That is, the effect of distance on shipping is highly nonlinear. Second, they find that the major reason for the decline in shipments as distance increases is that the number of establishments shipping commodities falls with distance, and the number of commodities a given establishment ships falls.

These results are important for a number of reasons. First, they are relevant for studies of the border effect, and suggest that the cost of shipping over borders may be biased upward in studies using aggregate data. For example, previous studies have found high levels of state-level home bias—suggesting that there may be state level border effects within the US. Hillberry and Hummels show, however, that the state-level home bias effect disappears when computing measures of distance using 5-digit zip codes. This is because of the nonlinear effect of distance on shipments. Most of the trade friction due to distance occurs within a very short radius of the establishment and so cannot be explained by border effects.

Second, the result that the main cause of the decline in shipments over longer distances is due to the extensive margin (decline in establishments shipping and commodities shipped) is consistent with other evidence that many firms do not export. However, they find that this is just as true within countries as it is between countries. The question of what causes this is not resolved by their work. They suggest it is due to agglomeration: firms producing specialized intermediate goods locate near each other. However, presumably firms locate near each other in part because of the costs of trading over large distances. The nature of these costs cannot be inferred from their work, but the results are consistent with evidence of fixed costs of trading which prevent many establishments from exporting at all.

Much of the evidence from other studies is consistent with the existence of fixed and/or sunk costs of exporting. For example, Bernard and Jensen (2004) using US data infer evidence of substantial sunk entry costs into foreign markets from a pattern of behaviour in which exporting in the past has a large and significant impact on the likelihood of exporting in the present. Roberts and Tybout (1997) find similar evidence using Colombian data. Using aggregate data, Eichengreen and Irwin (1996) find that history matters for the pattern of bilateral trade flows, a result that is consistent with fixed costs of beginning to export.

A large amount of international trade is in intermediate goods and there is evidence that international fragmentation of production and the importance of international supply chains has been increasing over time. Hummels, Ishii and Yi (2001) calculate an index of vertical specialization in international trade for 10 OECD countries—essentially the fraction of the value of a country's exports accounted for by embodied imports. Vertical specialization accounts for about 21 percent of exports from these countries, and its importance increased by about 30 percent between 1970 and 1990.

Trade costs affecting trade in intermediate goods are influenced by many of the factors that affect trade in final goods, but there are some differences as well. In particular, there can be a cumulative effect of trade costs, if goods and components cross borders during various stages of production. In an interesting

paper Yi (2003) argues that changes in the cumulative effect of trade costs can be important in explaining both the overall growth of world trade, and the increased vertical specialization during the past few decades. The argument is that small reductions in trade barriers will not encourage vertical specialization, but that larger reductions will, so that the relation between the reduction in trade costs and the volume of trade is non-linear—the elasticity of the response of trade flows to reductions in trade costs can be increasing as trade barriers get lower.

Sources of costs of accessing foreign markets

We still do not have a clear picture of the sources of costs of accessing foreign markets, although there are pieces of suggestive evidence. Here I focus on costs that are not due to explicit policy-induced trade barriers, and which could be affected by trade and investment promotion and assistance programs. Consequently I also do not discuss transportation costs in any detail.

Infrastructure

Infrastructure is not the focus of this paper; here I just note that transportation and communication infrastructure play a large role in affecting trade costs, and that public policy plays a critical role in the development and maintenance of infrastructure that is relevant to international trade. A couple of recent papers provide some evidence on this. Limao and Venables (2001) construct indices of the quality of a country's transportation and communications infrastructure and show that these have a significant effect on both transportation costs and trade volumes. Dollar et al. (2003) use survey data from Latin America on the quality of infrastructure (including power outages, time to get telephone connections installed, and time required for customs clearance) and find that export success at the firm level is negatively related to poor infrastructure.

While one might expect that problems with infrastructure would be more of an impediment to trade in developing countries than in developed countries, there is some theoretical work

which suggests that public infrastructure may not be efficiently provided. Bond (2006) and Bougheas et al. (2003) develop theoretical models of public infrastructure investment in the context of international trade. Since investments in communication and transportation infrastructure benefit producers and consumers in both countries via effects on trade, they argue that there are spillover effects across countries which result in the levels of infrastructure being suboptimal from a global perspective.

Public policy regarding the organization and management of infrastructure also has an effect on trade flows. Fink et al. (2002) argue that public policies in the maritime shipping industry result in market power that leads to substantial impediments to trade by raising shipping costs. Micco and Serebrisky (2004) find that improvements in airport infrastructure and deregulation in the air cargo market resulted in reductions in transportation costs.

Much of the emphasis in this paper will be on policies designed to help domestic firms in foreign markets. However, it is worth emphasizing that investment in transportation and communication infrastructure in one's own country is one of the key ways that governments can facilitate trade.

Information: Networks and Contracting

Information costs impede trade in a variety of ways. Rauch (2001) provides a good survey. These include costs of identifying new markets, developing distribution channels, finding suitable and reliable suppliers, dealing with local regulations, learning how to adapt a product to local market conditions, learning the right marketing strategy for the foreign market, issues of asymmetric information about quality of both one's own product and those utilized in the foreign market, and many others. Information issues are also important for trade within one's own country, but I will focus on those issues which are important for foreign trade and investment.

Although it may be intuitively clear that information problems exist, evidence concerning the magnitude of the problems

is difficult to come by. However, several influential recent studies suggest that information problems are empirically relevant.

Portes and Rey (2005) find that information costs play a significant role in inhibiting international trade in financial assets. Previous work had documented a significant home bias in asset holdings, and several authors had suggested that "informational distance" between countries may be part of the explanation. Portes and Rey use a gravity model, where the volume of asset trade between countries depends on their incomes and on trading costs. They first confirm that the physical distance between countries reduces asset trade flows. Since financial assets are essentially weightless, they argue that transport costs cannot be the explanation, and they investigate whether distance may be a proxy for information costs. They use measures of information flows between countries, such as the number of telephone calls between countries and the number of branches in country j of banks with headquarters in country i (to explain trade between i and j). The hypothesis is that large values of either of these variables indicate better information flows and therefore should be associated with a larger volume of asset trade. Their results confirm this—both variables are statistically significant, and both tend to increase asset trade flows. Moreover, the sign on the distance coefficient gets smaller once these variables are included, suggesting that distance is indeed proxying for information.

Portes and Rey (2005) also use the same approach to investigate the effects of information flows on trade in manufactured goods. As with asset trade, better information flows (as captured by their telephone and banking variables) are associated with increased goods trade. And as with asset trade, the coefficient on distance falls once the information variables are included: the elasticity of trade flows with respect to physical distance falls from -0.55 to -0.28. The distance variable is often thought to be capturing transportation costs when explaining goods trade; this suggests that it is also capturing the effects of information flows.

Nicita and Olarreaga (1999) test for two different effects of information. First, if there are fixed costs of entering and devel-

oping a reputation in new markets, one would expect that current export success in a given market would depend on past success. Evidence for this has been found in firm-level data in the work of authors such as Bernard and Jensen (2004). Nicita and Olarreaga also find this effect using aggregate trade data from four developing countries (Egypt, Korea, Malaysia and Tunisia). Second, they attempt to estimate the effects of information spillovers across countries; that is, the extent to which export success by Egyptians in, say, the US could enhance Egyptian success in other countries via information flows between the US and these other potential trading partners of Egypt. To measure information flows between two countries, they use trade in newspapers between the countries and telephone calls between the countries. They interact exports to a given country with a variable measuring information flows between the importing country and other countries. The coefficient on this interacted variable is positive and significant, which is interpreted as providing support for the notion that (1) information flows matter and (2) information spillovers across countries matter for export success.

If information flows matter for trade, then informal networks of friends, relatives, and other personal contacts should facilitate trade. One channel through which these networks could be developed is via immigrant flows. Gould (1994) finds that, all else being equal, an increase in the stock of immigrants from a country tends to lead to increased trade with that country. Immigrant tastes for goods from their country of origin may account for some the increased import flows, but they find positive effects for both exports and imports. Head and Ries (1998) perform a similar exercise for Canada, and find that a larger immigrant stock from a country tends to increase both imports from and exports to that country, although the elasticities are smaller than Gould found for the US. They speculate that the smaller effect may be due to Canada's resource-intensive export trade profile. Natural resource products are sold on organized markets so that information flows may not matter as much as for differentiated manufactured goods. Some support for this

view is found in the work of Rauch and Trindale (2002) and Feenstra and Hansen (2004) which will be discussed below.

Networks might be expected to matter for trade within a country as well as between countries. Combes et al. (2005) consider the role of business and social networks in affecting trade within France. Using data on bilateral trade flows between 94 French regions, they estimate a gravity model and first establish the existence of a border effect for trade between regions. Similar results have been found for trade within the US (Wolf, 2000); and as noted above, Hilberry and Hummels (2005) have suggested that one reason for such effects is that producers and input suppliers tend to locate close to each other. Transportation costs are no doubt one reason for this; but Combes et al. provide some evidence that information costs play a role as well. They use data on migration within France in a similar way that Gould (1994) and Head and Ries (1998) use data on international migration to proxy for social networks linking regions. And they use data on plants from affiliates located in different regions to capture business networks. Both network measures are found to be associated with increased trade between regions. Moreover, once these information network variables are included, the size of the measured border effect drops by about 50 percent, and the measured effect of transport costs falls by about 60 percent.

In a similar study, using US data, Millimet and Osang (2007) revisit the Wolf (2000) results on border effects which seem to inhibit trade between US states. They also use data on inter-state migration to proxy for social networks. The network variable is significant and its inclusion leads to a substantial reduction in the impact of the border.

While the Gould, Head/Ries, and Combes et al. studies provide evidence that network ties matter for trade, their evidence does not tell us why they matter. One view, as noted above, is that networks promote trade by facilitating information flows, helping to match buyers and sellers, helping to adapt products to the local market, and so on. An alternative possibility [emphasized in the historical work of Grief (1989, 1993)] is that networks help to overcome opportunistic behaviour (those that renege on agreements can be sanctioned by all in the net-

work). In this view, networks are compensating for problems in contract enforcement in international trade. The recent literature on contracting [see Spencer (2005) for a review] suggests that problems in contract enforcement may also influence the decision by firms to set up affiliates in foreign markets; hence there is some reason to expect that the Combes et al. use of affiliates as a proxy for business networks may be capturing the contracting effect.

Rauch and Trindale (2002) use data on ethnic Chinese networks to try to distinguish between these two channels. They estimate a gravity model and ask if trade is enhanced by the presence of larger ethnic Chinese populations in both the importing and exporting countries. Moreover, they distinguish between homogeneous goods that are traded on organized exchanges and differentiated manufactured goods. The argument is that information problems are unlikely to be important for those goods traded on organized exchanges, and so a positive network effect here would lend support for the contract enforcement hypothesis. If the network effect is larger for differentiated products, they interpret this as support for the market information hypothesis.

They find that for all types of goods, the presence of ethnic Chinese networks tends to increase trade; and that the effect is larger for differentiated goods than for goods traded on organized exchanges. There is thus support for both the contract enforcement and market information hypotheses. Moreover, since there is a positive effect on trade arising from the presence of ethnic Chinese networks, this suggests that private sector responses to information or contract enforcement problems that would be available to all producers are not successful in fully dealing with all of the information problems. This suggests a potential role for policy.

Information costs and the organization of firms

The recognition of the importance of vertical specialization for trade flows has led to a recent and still developing literature which integrates theories about the organization of firms with

models of international trade[1]. In these models, firms can decide which stages of production should be internal to the firm, and which should be outsourced; and, in either case, they can decide whether to keep all production domestic, or spread some or all of it across borders. That is, a firm has the option of sourcing production from local or foreign affiliates, and/or from local or foreign independent suppliers. Trade and contracting costs affect all of these decisions.

If firms are considering outsourcing production, then they must find suitable suppliers. In some cases, standardized inputs can be purchased on a spot market. In other cases, suppliers must make firm-specific investments to produce specialized inputs that would have little value to alternative firms. In such cases, it is important that firms find a good match when looking for suppliers. Hence information costs such as those discussed above can be important determinants of the flow of trade in intermediates. Moreover, contracting issues loom large. If a supplier cannot write complete contracts with a purchaser regarding quality or firm-specific investments, then there may be a hold-up problem—once a supplier has made a firm-specific investment, the purchaser can take advantage of the sunk costs and attempt to get a better deal from the supplier; and suppliers who recognize this then have reduced incentives to make firm-specific investments. The ability to monitor costs and the quality of institutions affecting contract enforcement will then be important factors affecting the international organization of production, and hence the volume of trade.

Work in this area is still in its early stages, but there is some supporting evidence for these theories. For example, Nunn (2005) finds that countries with a legal system that is more effective in enforcing contracts have a comparative advantage in contract-intensive production activities and Antras (2003) interprets evidence that capital intensive goods tend to be imported into the US via intra-firm transactions whereas la-

[1] See for example Grossman and Helpman (2002), Antras (2003), McLaren (2000), Antras and Helpman (2004), Nunn (2005), and the survey by Spencer (2005).

bour intensive goods tend to be imported at arms length, as consistent with theories that the hold-up problem affects the decision of firms regarding how to organize their activities in foreign markets.

One of the most important themes of this literature is that the organizational form of the firm responds endogenously to the structure of trade costs and the institutional environment. Changes in trade costs will affect not just the volume of trade flows, but also decisions about whether to decentralize production and whether to set up foreign affiliates or enter into contracts with independent suppliers. This suggests that one must be cautious in interpreting evidence on the effects of trade costs on trade flows. On the one hand, high trade costs may encourage firms to organize in different ways which can mitigate the effects of trade costs—for example they may use a less fragmented production structure which could lead to much less trade but not necessarily a large drop in welfare. That is, one should not assume that welfare is proportional to trade flows. On the other hand, because of the cumulation of trade costs when intermediate goods cross borders repeatedly during the various stages of production, small trade costs can have a bigger dampening effect on trade flows than one might initially expect.

Trade costs and the Internet

The development of new information and communications technologies has increased the flow of information across borders and should therefore have contributed towards reductions in some of the trade costs discussed above. There are numerous examples that suggest this has happened. Niche markets, such as those for various collectible items have been linked by Internet auction sites such as Ebay; this has turned many individuals into exporters operating out of their home. On a much larger scale, there are many business-to-business websites that link global suppliers.

A few recent studies have begun to try to quantify these effects. Freund and Weinhold (2004) hypothesize that Internet usage will reduce the fixed costs of entering foreign markets by

reducing information costs. They use the number of web hosts in a country as a measure of Internet usage in a country and find that Internet usage is positively associated with exports from a country. Causality is, however, difficult to disentangle because Internet usage is endogenous and influenced by openness to trade. Clarke and Wallstein (2006) use indicators of the regulatory framework in a country to instrument for Internet usage and find that increases in Internet usage in developing countries are associated with increased exports to developed countries. They do not find similar results for exports from developed countries but note that there is little variation across developed countries in Internet access by manufacturing firms in the year they consider (2001). More work still needs to be done to identify causality, but these studies are not inconsistent with the hypothesis that Internet access is affecting trade costs.

On the other hand, there is abundant evidence that trade costs are still significant despite the improvements in information and communication technology. Buch (2005) in her study of international banking finds little or no evidence that the effect of distance on the foreign asset volume of banks decreased during the period 1983-99. Disdier and Head (2008) in a meta-analysis of over 1,400 estimates of distance effects find that the effect of distance on trade flows has been surprisingly persistent over time. Hence while new technologies may have mitigated some trade costs, substantial trade frictions still remain.

Is there a market failure?

As the above review indicates, the recent literature has uncovered several interesting stylized facts about trade costs. First there is evidence suggesting that something over and above standard trade restrictions and transport costs inhibits trade:

- there are measured "border effects" in terms of inhibited trade even when transport costs and measurable trade barriers are controlled for;
- there are sunk costs for firms that enter new export markets;
- many firms do not export, and those that do tend to be more productive.

Next there is evidence that information issues are part of the explanation:

- social and ethnic networks affect trade patterns;
- information flows between countries affect trade patterns;
- the quality of the contracting environment affects trade patterns.

And finally, there are some other trends in trade and investment patterns which are suggestive of market responses to informational and contracting aspects of trade costs:

- there has been a growth in vertical specialization of production;
- there is a lot of intra-firm trade;
- intermediaries play a huge role in the economy and there is some evidence that they are important in playing a matching role in international trade.

With these stylized facts in mind, I now turn to the issue of whether there is a case for governments to engage in activities to help their firms engage in foreign markets.

Firms may choose to enter foreign markets in a variety of ways—via exporting, foreign direct investment, joint ventures, franchising, and other organizational forms. For some products (such as for some types of services) a commercial presence in the foreign market is the only feasible way of selling to foreign customers. In other cases, foreign investment and exporting are complementary—exports of some types of goods need to be backed up with sales or servicing support; or production may be fragmented, as various parts of the production process are carried out in different countries. In yet other cases exporting and foreign investment are substitutes, and firms have to choose among very different ways of producing goods and services for foreign customers. In this paper, I will focus on the role of governments in helping domestic firms engage in foreign markets via any of these methods. Many of the costs of accessing foreign markets apply to all forms of market access—exporting, investment, joint ventures, etc. In other cases there are differences which I will try to highlight. To avoid being too pedantic,

I will sometimes focus on exporting, but similar arguments will apply to investment[2].

To focus the discussion, we must be clear on the objectives for government policy in this area. Although governments have many policy objectives, three seem potentially most relevant to export and investment promotion policy: (1) correcting market failures; (2) meeting "non-economic" foreign policy objectives; and (3) dealing with income distribution concerns. My focus will be on market failures and most of the rest of this paper will be concerned with that motivation. However, I will first briefly discuss the other two motivations.

By the non-economic foreign policy motive, I mean that governments may have reasons for wanting to increase commercial ties with some countries for reasons beyond purely economic benefits. There may be political and national security benefits from building up a trading and investment relationship—the integration of economies via international trade and investment may increase interdependence, foster personal and cultural ties, and reduce the likelihood of conflict. These sorts of political concerns, for example, were part of the motivation for creating a customs union in Europe after the Second World War. Moreover, the ties built between countries via trade and investment may also be useful in facilitating cooperation between countries on other issues, such as global environmental concerns. Finally, a trading and investment relationship may also be part of a development strategy and be either a substitute or complement for direct foreign aid. Hence there may be cases where governments in high income countries want to promote trade and investment with less developed countries. I will not

[2] The focus in this paper is on the rationale for governments to help their own firms engage in foreign markets. I will not discuss the issue of attracting investment by foreign firms to one's own country. Although some of the arguments discussed here will apply, the issues there are quite different, since governments have open to them a much more comprehensive range of instruments (such as tax incentives, domestic regulatory measures, and so on) to attract foreign investment. There is a literature on whether countries should try to promote foreign investment in their own country. A useful recent review is Hanson (2001).

pursue these motivations here, except to note that they may provide additional arguments for export promotion over and above the purely economic-based case I focus on below.

The other argument that is sometimes made specifically for export promotion that I will not pursue here is the income distribution motive[3]. If an export promotion program is not operated on a cost recovery basis, it is a form of export subsidy. Domestic firms and individuals working for firms that benefit from the program will reap benefits from the subsidy. Those not in the affected sector are less likely to reap benefits, and may incur costs (such as higher taxes to finance the program). Hence export promotion programs can affect income distribution by raising income of targeted groups at the expense of others.

There are precedents for using export subsidies to affect income distribution—the agricultural sector is perhaps the best known example. Moreover, issues of income distribution are important when thinking about regional development—an export promotion program might be part of a strategy to stimulate economic development in a particular region of a country. However, this motivation will not be pursued here for several reasons. First, export subsidies are an inefficient way to raise income or employment[4]. Export subsidies allow firms to offer their products to foreigners at lower costs than otherwise; hence such a policy ends up subsidizing foreigners. In addition, export subsidies encourage firms to alter their production in order to benefit from subsidies rather than to respond to market signals and produce what they are most efficient at doing. There are better ways to alleviate poverty and promote regional development than favouring firms that export over those that do not. Finally, much of the effort in recent rounds of trade negotiations has been aimed at reducing or eliminating the use of export subsidies that exist for reasons of income distribution. The use of

[3] The income distribution issue also comes up in the context of promoting domestic investment abroad; however, there the concern is often that outgoing foreign direct investment may result in job loss in the domestic economy.

[4] See Panagariya (2000) for the standard case against export subsidies.

export promotion policies for such purposes is contrary to the spirit, and in most cases the rules, of trade agreements. Hence, for all of these reasons, it would be unwise to base the case for export promotion purely on income distribution or regional development motivations.

I will instead start from the premise that a case for active export promotion policy intervention needs to be based on the existence of market failures. By a market failure, I mean cases where free markets fail to generate an outcome that is efficient. Market failures typically arise when there are externalities (so that individual agents do not bear the full social costs or receive the full benefits of their activities), incomplete markets (for example, it may not be possible to buy insurance against some contingencies); or market power (where agents are able to exert some monopoly or monopsony power). Market failures can also arise from government policy failures. For example, certain types of economic activity in some markets may require regulatory approval and the process may not be transparent or may be subject to corruption.

Adopting a market failure approach means that the objective of an export and investment promotion policy is not to promote engagement in foreign markets per se. Rather, the objective is to help overcome market failures so that export and investment activity moves to the level that would be achieved if markets were efficient. While in practice this objective may be difficult to achieve, the key point is that with this approach exports are not to be promoted for their own sake, but rather promotion would be limited to cases where an increase in exports would be the most efficient use of the economy's resources, and therefore would lead to a higher real level of well-being.

There are three sources of potential market failure suggested by the work reviewed in previous sections: externalities arising from various types of information and reputational spillovers; incomplete markets (mostly arising from information issues that affect contracting); and market power. These will be explored in what follows. However, even if we identify market failures, it will not automatically follow that the government should act. Firms can adapt to market failures in various ways,

and private institutions can evolve in response to market failures. The issue is whether the government can improve on private sector outcomes in a complex environment. My approach in what follows is to first identify sources of market failure, then discuss the adequacy of private sector responses to these market failures, and then review the implications for policy.

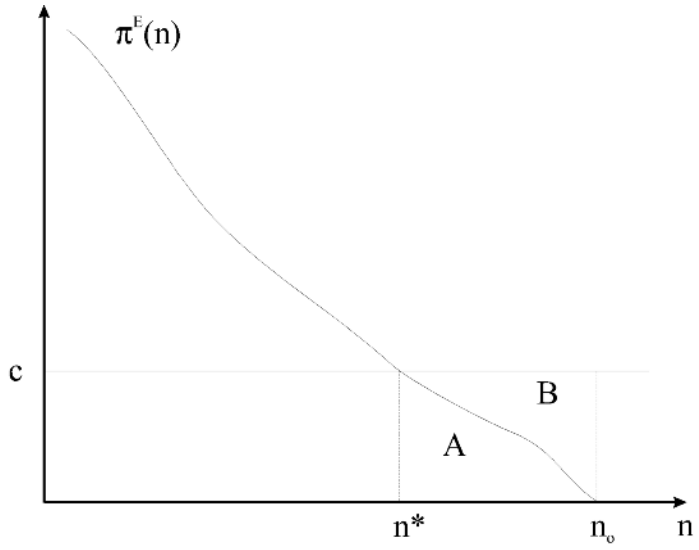
Sunk costs are not enough

The existence of fixed or sunk costs associated with entering foreign markets, either via exporting or investment, is not in itself an indication of market failure. These types of costs will prevent some firms from exporting or engaging in FDI. However, if all of the costs and benefits of the investment in sunk or fixed costs accrue to the investing firm, then there is no market failure. It will be efficient for some firms to export and others to not export. If the exporting or investing activity is expected to be profitable, then firms should be able to raise private capital to finance the up-front costs. In principle, this is no different than raising funds to build a factory. If the private sector is not willing to finance the costs, it is an indication that the expected return from entering a new market is not worth the upfront investment. As long as markets are functioning well, it is not clear how the government could do better than the private sector.

This is illustrated in Figure 1. Suppose there are many firms which are potential exporters. Firms are indexed by n. Let $\pi^E(n)$ denote the expected profits of firm n once it becomes an exporter. Low n firms are the most productive. Let c denote the sunk costs which must be incurred in order to become an exporter. Then a firm will export only if $\pi^E > c$. In the figure, all firms $n \leq n^*$ will export, while the less profitable firms (those indexed by $n > n^*$) will not export. If there were no sunk costs, an additional $n_o - n^*$ firms would export. However, if the government were to offer a subsidy to offset these costs (and suppose it somehow managed to identify those marginal $n_o - n^*$ firms), the cost of the subsidy would be area A+B in the figure, while the increased expected profits would only be area A.

Hence while the subsidy would generate more exports, it would yield a net social loss of area B.

Figure 1: Sunk costs and the optimal number of exporting firms



This is essentially the classic argument raised by Baldwin (1969) against using fixed costs to justify infant industry protection. Baldwin's point was that the argument for intervention requires a market failure, and that fixed or sunk costs alone do not result in a market failure. The extensive recent literature which demonstrates that sunk costs play an important role in preventing some firms from entering foreign markets is not an indication of market failure, nor is it an argument for policies to promote exports or foreign investment. This does not mean that the existence of sunk or fixed costs of trading or investment are irrelevant to policy. As we discuss below, sunk costs in conjunction with market failures can lead to a case for intervention.

Dynamic gains from exporting

One of the most robust results to emerge from the literature on firm heterogeneity and international trade is that firms that ex-

port are more productive than those that do not export [the seminal paper is Bernard and Jensen (1995); recent surveys include Greenaway and Kneller (2007) and Wagner (2007)]. Two hypotheses have been suggested account for this. The first is self-selection. Referring to Figure 1, only the most productive firms can afford to pay the fixed costs of becoming an exporter. The second possibility is that firms become more productive because they export—they are exposed to more competition, new ideas, and new technologies; all of which leads to an increase in productivity. Sometimes this is referred to as the "learning by exporting" hypothesis. This is intriguing to many because it suggests that an increase in exporting can yield dynamic benefits to the economy via its effects on productivity. However, as I discuss below, this does not provide a market failure-based argument for export promotion policies.

Many studies find evidence supporting self-selection—firms that export tend to be more productive than non-exporters prior to the point at which they begin exporting [see reviews by Greenaway and Kneller (2007) and Wagner (2007)]. However, the evidence on the "learning by exporting" hypothesis is mixed. Some studies, such as Bernard and Jensen (1999) have found that productivity growth does not significantly differ between exporters and non-exporters. Others have found evidence of increases in productivity among exporters. Greenaway and Kneller (2007) note that slightly more studies find support for the learning hypothesis than those that do not. Results vary with methodology, but also across countries. A difficulty with work in this area is that if the self-selection hypothesis is correct, then those firms which export are more productive and innovative to begin with. Even if we observe that firms increase their productivity after they begin exporting at a faster rate than firms that do not export, it may not be exporting that is responsible. It may just be that some firms have attributes that make them more innovative, and this is what causes them to be successful in both domestic and export markets.

Baldwin and Gu (2003) use firm-level panel data and find evidence that exporting improves productivity for Canadian

firms. They also use survey data that suggests channels via which exposure to foreign trade can increase productivity: exporters are more likely to use foreign technologies and engage in collaborative R&D with foreign firms; and information flows regarding foreign technologies increase after firms begin exporting. They also find that the productivity-enhancing effect of exporting is greater for younger firms, and for those that are domestically controlled: this is consistent with a learning effect.

These results do not, however, provide an argument for export promotion. Referring to Figure 1 again, the expected profits of a firm once it becomes an exporter include anticipated future increases in productivity. If these benefits are internalized by the firm, then private decisions weighing expected gains against sunk costs of entering export markets should yield efficient outcomes. It is possible that firms may not anticipate the future increases in productivity that result from exporting. However, it is difficult to see how governments should be able to anticipate these outcomes any better than the private sector. Dynamic gains from exporting do not constitute a market-failure-based argument for export promotion. Such an argument would require that the gains not be fully internalized by firms, and for this to occur, we need externalities. The most likely form of externalities in this context would be information spillovers across firms; this will be considered in the next section.

Information problems

The acquisition of information is a major sunk cost associated with entering foreign markets. As discussed earlier, there are many different informational requirements—information about market opportunities, how to access distribution networks, how to find suitable suppliers, how to deal with local governments and rules and regulations, and others. Such knowledge can be costly to acquire, but once obtained, it may be easily disseminated, either via word of mouth, written reports, via employees who leave and move to other firms, or simply via demonstration effects—firms can learn from each other simply by watching

what their rivals do. This suggests that information spillovers exist. A firm investing in the acquisition of information will not reap the full benefits from the investment if other firms benefit from the knowledge without having to bear the cost of acquiring it. Information is not a private good in such cases, and hence there will be market failures—there will be underinvestment in the acquisition of the relevant information, which would lead to an unwillingness for marginal firms to invest in some of the sunk costs associated with entering foreign markets. Hence information spillovers could form the basis of a market failure that results in less engagement in foreign markets than is socially efficient.

The other key aspect of informational issues arises from asymmetries of information—the domestic firm and its potential customers, clients or suppliers all have private information about their product quality, work effort, costs, etc. For example, adverse selection problems arise if the domestic firm has difficulty in distinguishing between different quality levels when searching for suppliers, partners, or consultants in the foreign market. Another adverse selection problem arises when foreigners do not know the quality of products that domestic firms are trying to export to them. Moral hazard problems arise when it is difficult to observe the effort or care and attention that suppliers put into tasks that a potential exporting or investing firm has contracted with them to do. Informational asymmetries can lead to market failures; however, institutions (such as intermediaries) do develop in response to these types of problems, so we must consider the extent to governments can improve on private sector and institutional responses already in place.

It is useful to organize our discussion around four different types of information: (1) general information, such as that regarding potential market opportunities or how to do business in the host market, that would be useful to many firms within an industry; (2) information which accumulates via experimentation and experience—such as learning which products or marketing strategies will work in new markets; (3) information which is very firm-specific, such as finding a good local partner or supplier for a specific firm, or dealing with a firm-specific

regulatory issue; and (4) information about domestic firms and products that needs to be disseminated to foreign customers, such as for example information regarding one's product quality and/or a firm's service provision capabilities.

Finally, it is important to emphasize that these information problems are not unique to exporting or foreign investment. Firms trying to develop new markets within the domestic economy will face similar types of information problems. Hence in thinking about whether there exist market failures that are sufficiently serious to warrant the expenditure of government resources, one must consider whether there is anything different about entry into foreign markets than into domestic markets. Moreover, if export or investment promotion programs are to be justified, would the same case apply to domestic markets?

General Information

General information relevant for firms from the home country doing business in a particular foreign country has many of the characteristics of a public good. It is costly to assemble and update, but once the information has been accumulated, it can be distributed at very low marginal cost. Moreover, if one agent pays to acquire the information, there is nothing that prevents that agent from transmitting the information to others without compensating the original producers of the information. This suggests that the market may under-provide such information and this can lead to a market failure.

There are some caveats. If the information is complementary to other activities that can be used to generate revenue, then one would expect the private sector to invest in some information acquisition. So for example, if a firm supplies specialized consulting services helping firms to move into specific foreign markets, it may provide more general information as part of a marketing strategy to attract clients for the more lucrative and specialized information services. We would therefore expect to see the private sector provide some general information, although the presence of spillovers suggests that the level of provision may not be efficient. Second, the growth of the Internet

and open-source models of information transmission will also tend to alleviate the under-provision problem.

Overall, however, the public good aspect of this type of information suggests that either public provision or subsidization may be justified. This can take various forms, such as subsidizing research in business schools, coordination of information gathering activities, and public provision via public agencies.

The public good aspect of general information also applies to domestic markets. However, there is likely to be much less need for general information provision for domestic firms in the domestic market than for those looking to expand in foreign markets. Simply living in a country, being exposed to the domestic media, being able to relatively easily hire people with a common background but with experience in various markets within the country, and being part of various domestic social and business networks of the type discussed by Rauch (2001) all suggest that the domestic information problems are likely to be less severe within a country than between countries.

Moreover, government-funded programs already exist within the domestic market that have the effect of promoting the provision and transmission of information relevant to market expansion within the domestic economy. Business school education is subsidized, and this facilitates the transmission of general information about doing business in the domestic market. Publicly funded education programs also facilitate the development of information networks, as students develop contacts during the course of their education. Federal and provincial governments both invest in information acquisition and dissemination—via agencies such as Statistics Canada, and via various government departments that employ people to help businesses learn how to cope with various regulatory issues when moving into new domestic markets.

Information generated via experience and experimentation

Much information and knowledge is obtained via experimentation and experience. Success in developing new products and entering new markets requires trying new ideas, many of which

will fail, before hitting upon a path that is fruitful. However, once the right path is found by one firm, others can follow it without going through the costly trial and error process. The successes and failures of particular firms in trying different strategies in new markets provide information to other firms about what might work and what might not. This is another example of an information spillover. It is different than the type of information spillovers discussed in the section above. In that section, the focus was on information that already existed based on previous histories and experiences. The information simply had to be assembled, synthesized and disseminated. The information I am focussing on in this section can only be generated by the activities of private firms that try new ideas and different strategies in new markets. No one knows ahead of time what will work or not work and so the only way to generate the information is for firms to make the investments in sunk costs and try to succeed. Some will, and some won't. But the results of their activities, positive or negative, generate information to others. The issue is whether a free market will yield the efficient level of experimentation, or more specifically, will a sufficient number of firms be willing to make the investments in sunk costs to enter foreign markets?

Hausmann and Rodrik (2003) and Hausmann, Hwang and Rodrik (2007) developed a model which can be adapted to provide a useful way of thinking about this problem. In their model, there is uncertainty about costs and productivity for various goods within a country. Firms have to spend fixed (sunk) costs to try different opportunities. Their success or failure conveys information to other firms—if they are successful, entry occurs and the entrants can avoid paying the fixed discovery costs. This yields spillovers across firms. One implication is that there will be underinvestment in exploration of production opportunities. Hausmann et al. then explore the implications of this work for the design of an industrial policy.

Our focus here is not on industrial policy, but on the incentives of domestic firms to engage in foreign markets. However, their model can be reinterpreted and adapted to yield some insight into our problem. Suppose that firms in the home country

are capable of producing a variety of goods and are successful in selling these goods in the domestic market. But there is uncertainty about how to sell in foreign markets. The way to resolve this uncertainty is to try different ways of dealing with foreign markets—one could try to sell different products, or try to enter different markets, or try different strategies (teaming up with a foreign partner, looking for distributors, setting up a subsidiary, etc.). Some will succeed; many will not. Each success or failure will convey information to other firms. Hence the benefits of exploring different ways of approaching foreign markets will not be fully captured by those firms doing the exploration. This will result in insufficient investment in learning about how to succeed in foreign markets. This is another example of a market failure. This will affect overall trade and investment volumes, and also the pattern of trade and investment—a country will tend to enter foreign markets more in those industries where success was achieved (perhaps by chance), and will also export more in sectors where there are organized markets and the exploration issue is not so important.

There is some evidence on the presence of information spillovers. Some case studies provide examples where information spillovers have been very important for export success—the role of an agreement between the Daewoo Corporation of South Korea and the Desh Garment Company in Bangladesh in acting as a catalyst for the development of Bangladesh's export-oriented garment industry is a well-known example [see Rock (2001)]. The evidence from large samples of data on the existence of such spillovers is, however, mixed[5]. Some studies [such as Clerides at al. (1998) and Greenaway and Kneller (2003] find evidence that spillovers from other exporters exist, while others such as Bernard and Jensen (2004) do not. Aitken et al. (1997) find that there exist spillovers from foreign multinationals (MNEs) to domestic exporters, but not from general export activity. Aitken et al. (1997) use panel data from Mexican manufacturing plants for the period 1986-1990 and investigate whether the probability that a firm exports is affected by the local concentration of either total

[5] See Greenaway and Kneller (2007), pp. F142-F144 for a brief review.

or MNE-based exporting activity in their regional industry by other firms. They find that exporting success is positively correlated with proximity to MNEs, but is not affected by the overall local concentration of exporters. They interpret their results as evidence that there are information spillovers from MNEs, but not from other (domestic) exporters. Clerides et al. (1998), on the other hand, find that there are spillovers across exporters in Colombia—the probability of becoming an exporter is positively affected by presence of other exporters in the local industry. Greenaway and Kneller (2003) use UK plant-level data and also find that the probability of exporting is positively affected by the local concentration of other exporting firms. Bernard and Jensen (2004), however, find no evidence of information spillovers in their study of the exporting behaviour of US firms. More empirical work on information spillovers is needed, since the existence and importance of such externalities is an important precondition for a market-failure-based argument for government export promotion.

Rodrik (2004) has a number of suggestions for how to structure industrial policy when market exploration issues are relevant. Some of these ideas are relevant for the design of an export or investment promotion policy. Promotion policy that is designed as a response to market exploration externalities should be targeted towards firms that are trying something new; that is, it should be aimed at helping firms that are attempting to break into new foreign markets (new either in terms of location or product line) that have not already been tapped by other domestic firms. This is because the motivation for policy intervention here is that firms learn from each other via spillover effects. Once it is clear how to succeed in certain markets, there are diminishing returns from experimentation. Again, the objective is not to subsidize exporting per se, because there is little if any evidence that exports per se generate externalities. Rather, the objective is to try to compensate for under-investment by the private sector due to the externality that arises from information spillovers.

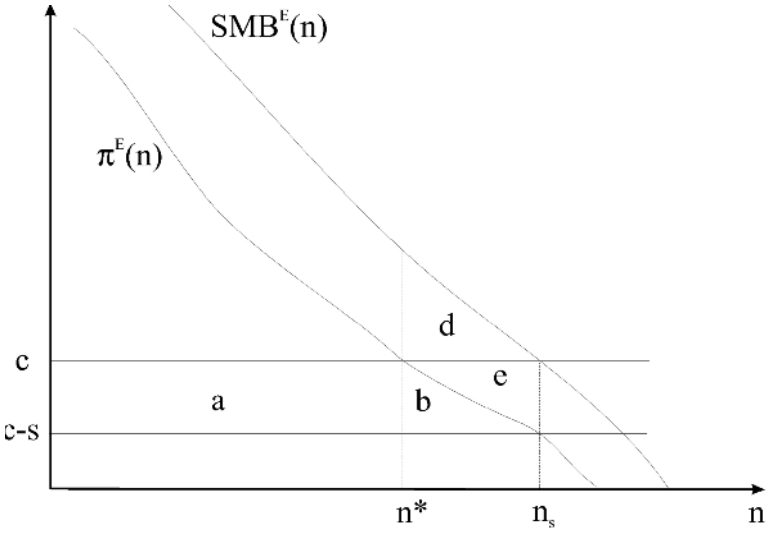
A major concern with this type of policy is whether it amounts to the government picking winners. In the framework of Rodrik et al., it is not so much that the government needs to

pick winners, but that it has to restrict its help to firms trying to break into new markets. Those implementing the policy need to be willing to accept that some firms will succeed and some will fail. Support should target access to the foreign market—essentially to deal with sunk costs of exporting to or otherwise engaging in foreign markets. Long-term public support for production or exporting should not be provided.

What form should government support take? The simplest version of a theoretical model of this type argues for a start-up export or investment subsidy to help cover fixed costs of accessing foreign markets in industries where information spillovers matter. This is illustrated in Figure 2, which focuses on the case of exporters. Consider a variety of possible untapped export markets (different products or locations), and index them by n. Let $\pi^E(n)$ be the expected profits of a typical domestic firm entering market n, and let c denote the sunk costs of becoming an exporter in that market. Because there are information spillovers resulting from the exporting decision, the social benefits of entering a new market exceed the private benefits. Let $SMB^E(n)$ denote the social marginal benefits of entering market n. In the absence of government intervention, the equilibrium number of markets entered by domestic firms is n*. This is less than the socially efficient number of markets, ns. Because of the externality, a free market leads to an outcome with not enough exporting.

If the government offers a subsidy s to firms that begin exporting in new markets, then the equilibrium number of markets served by domestic exporters will increase to the socially efficient level, ns. The cost to taxpayers of the subsidy is area a+b+e, but this is offset by an increase in producer surplus of a+b, and an increase in information spillover benefits of area d+e. The net social gain is d, which is positive. Subsidies to promote exporting into new markets are welfare-improving in the presence of information spillovers.

Figure 2: Spillover benefits from exporting



In practice, however, there are strong arguments against using explicit subsidies to promote exports. Not only would this violate WTO rules, but there are also a number of well known incentive problems that arise when governments hand out subsidies. Once a government starts handing out subsidies, firms that it did not intend to target have incentives to change their behaviour to collect subsidies. That is, there are incentive compatibility problems with subsidies. The literature on cash versus in-kind transfers (Blackorby and Donaldson, 1988) is relevant here, and strongly suggests that subsidies are not an appropriate instrument.

A better alternative is for the government to provide services (at below market cost) that are only useful to the types of firms the government wants to target. That is, rather than providing a cash subsidy, the government provides an indirect subsidy by providing (at below market cost) services useful to exporters entering new markets. These types of services include provision of information, facilitating access to the relevant foreign bureaucracy, setting up trade shows, and so on. The government may not know exactly what services to provide for particular industries and markets, and firms may not know what strategies will work

for particular products in particular markets. Hence there is a need for interaction between government service providers and the private sector in the design and evolution of policy. As Rodrik (2004) notes, this can be a delicate balancing act. The government needs information from the private sector to be useful and so consultation and interaction with the private sector is important for success; but the system has to be set up in a way that those implementing policy act in the public interest (that is dealing with information externalities), rather than implementing policies that simply raise rents for targeted firms.

Notice that these services could involve both general information and firm-specific services. The spillover argument in this context calls for policies which help firms enter new markets; in its starkest form it calls for a firm-specific subsidy, as noted above. With subsidies ruled out, approaches to addressing spillover-related externalities would thus focus on provision of firm-specific information. Firm-specific information issues will be discussed in more detail in the next section—one of the issues that governments need to consider is whether their export and investment promotion activity might crowd out private sector intermediaries who also provide such services.

Firm-specific information issues

The third type of information problem that leads to sunk costs of engaging foreign markets arises from the fact that firms will have informational needs specific to their circumstances. There is a variety of such needs: firms may need to find distributors in the foreign market or to be matched up with foreign suppliers or partners; they may need to deal with regulatory issues that are specific to their firm; and they may need to learn about aspects of the foreign market specific to their product or their firm. Because these types of information needs are more firm-specific than those discussed above, the information spillover problem is less compelling. On the other hand, asymmetric information problems are likely to be pervasive, leading to potential problems with adverse selection and moral hazard. Moreover, there are search costs (such as in looking for the right supplier or dis-

tributor); and there are economies of scale in maintaining a base of knowledge about potential suppliers and distributors. This can put new entrants and small firms at a disadvantage.

These are the types of information problems for which the social and business networks highlighted by Rauch (2001) and Rauch and Trindale (2002) are particularly important. Access to a network of trusted contacts who can help deal with the various informational issues raised above can help to overcome the asymmetries of information and economize on search costs. The evidence that these networks matter supports the view that these types of information issues are important.

The key question here, however, is whether governments can improve on market responses to these information problems. Firms can follow a number of strategies to deal with the types of information problems discussed above. They can form joint ventures with established firms in foreign markets to take advantage of the local expertise of the established foreign firms. They can alter their organizational structure by setting up foreign affiliates to gain an established presence in foreign markets. And they can hire consultants or intermediaries with specialized local knowledge to deal with the various issues in which the firm may be at an informational disadvantage.

Fragmentation, Joint Ventures, and Direct Foreign Investment

One of the important consequences of information problems is that they can affect the structure of firms. Bernard et al. (2005), in their examination of exporting behaviour at the firm level in the US, find that 90 percent of US exports and imports of goods move through multinational firms; about half of US imports arise from intra-firm trade, and about a third of exports involve intra-firm trade. Joint ventures and other forms of contractual relationship with foreign partners are a pervasive form of engaging foreign markets.

While the option of setting up, purchasing, or partnering with a foreign affiliate can help overcome some of the information issues discussed above, it does not eliminate the problem. Although in the long run, having a foreign presence may be a key

part of successful entry into a foreign market for many types of products and services, it will in the short run raise sunk costs, and hence the information issues that arise at the point where a firm is considering beginning the export or investment process may well be amplified. All of the issues concerning asymmetries of information, regulatory uncertainty, and intermediaries apply just as much to foreign investment and choosing foreign partners as they do to exporting. Moreover, there is a wide range of factors that affect the choice to serve foreign markets via export, contractual relationships, or direct foreign investment[6]. Access to foreign information networks is only one of these many factors so such an option will not be cost effective to all firms that are in the early stages of accessing foreign markets.

Intermediaries

If information relevant to facilitating trade or investment across borders is costly, then the market will create incentives for specialized firms or agents to acquire the relevant information and sell their services to firms engaging in trade or investment across borders. That is, there exist middlemen or intermediaries that facilitate trades, match up buyers and sellers, help firms to set up foreign affiliates, and provide some quality control services. Examples of such intermediaries include wholesalers, large retailers, brokers, trading companies, and consultants. Intermediaries also perform these services for trade and investment within countries; one of the issues here is whether there is any reason to suspect that intermediaries are less effective in facilitating cross border activity than they are in dealing with trade and investment inside a country.

The theoretical literature has focussed on two main explanations for the existence of intermediaries relevant for our purposes here [see Spulber (1996)]. The first is matching buyers and sellers. By acquiring specialized knowledge of both sides of

[6] There is an extensive recent literature on the way in which information and contracting problems determine the structure of firms operating in an open economy. Spencer (2005) has a good survey.

the market, intermediaries can reduce search costs for their clients and increase the efficiency of trades. The second is helping to overcome asymmetric information problems regarding quality and reliability of products or suppliers.

Rubinstein and Wolinsky (1987), Johri and Leach (2002), Shevchenko (2004) and others have developed models in which intermediaries match up buyers and sellers. In these models, buyers and sellers seek a good match, but search is costly. For agents on both sides of the market, there is imperfect information about who would be a good trading partner. Intermediaries can help facilitate matches, by investing in a technology which helps identify or facilitate good matches, by holding inventories, or by developing a base of knowledge about market participants. Johri and Leach (2002) show that intermediaries raise welfare by improving the average quality of matches between buyers and sellers and by facilitating increased production (because consumers find a match more quickly). Shevchenko (2004) also argues that intermediaries are welfare-improving, but that they do not fully overcome the information problems. He points out that intermediaries face a hold-up problem. They have to make up-front investments in a product line or in developing a range of clients, etc. Consumers would like them to carry a larger variety of products because it would increase the likelihood of a good match. But consumers cannot pay them up front for making this investment. Instead, intermediaries have to move the product they have, and their bargaining position with respect to consumers is weakened ex post. Consequently, there is underinvestment by intermediaries in the range of products they carry.

An alternative explanation for intermediaries is developed in the work of Biglaiser (1993). In his model, asymmetric information about product quality leads to an adverse selection problem. In the absence of middlemen, either high quality goods are driven out of the market, or producers have to engage in costly signalling to convince customers of their quality. Middlemen make an investment in skills needed to detect quality, and they have an incentive to develop a reputation for selling high quality goods. Future profits deter middlemen from accepting payoffs from low quality producers to recommend low qual-

ity goods to their clients. Biglaiser shows that if there are large differences in the quality of goods, middlemen increase the efficiency of the market. In related work, Biglaiser and Friedman (1994) show how middlemen can improve market outcomes when there is moral hazard (cases where producers can cheat on contracts by choosing to produce goods with lower quality than contracted). Again, middlemen have an incentive to develop a reputation for recommending producers with high quality output, and they punish those suppliers who cheat on quality.

Both the matching/search and quality certification roles of intermediaries are relevant to our understanding of how market institutions develop in response to the types of information problems that firms face when beginning to export to or invest in foreign markets. Firms need to find customers, suppliers and partners; hence they face search and matching problems. Moreover, firms need to ensure that those with whom they contract in foreign markets provide goods and services at the quality levels they require. Intermediaries help deal with these problems.

Rauch and Watson (2002) model aspects of intermediation that are specifically relevant to the issue of firms beginning to invest in or export to foreign markets. They develop a model where intermediaries draw on their networks of contacts to help producers find better matches (such as distributors, suppliers. etc.). In equilibrium, agents with large networks choose to become intermediaries. There are clearly potential gains from the presence of intermediation. Moreover, intermediaries with a large network have a comparative advantage in providing information that will increase the efficiency of other producers. However, because of the information problems and the matching framework, the market falls outside the realm of perfect competition, and hence there is no presumption that the market equilibrium will be Pareto efficient.

Schroder et al. (2005) develop a very simple model of intermediaries in which exporting firms may use intermediaries to pool the fixed costs of accessing foreign markets. In their model, firms are more likely to use intermediaries in markets where access costs are high, or in markets that are small relative to the size of access costs.

There is not yet much empirical evidence on the behaviour of intermediaries in international trade and investment. The best known study is that by Feenstra and Hansen (2004) who study Hong Kong's role as an intermediary for Chinese trade. They find that mark-ups by intermediaries are higher for differentiated goods, for goods sent to China for further processing, and for goods with higher price variance. They interpret this as evidence in support of the hypothesis that intermediaries help overcome informational problems. This is consistent with the theories above. They also find evidence that the intermediaries have market power. They find, for example, that mark-ups vary across export markets, which they interpret as evidence of price discrimination.

Schroder et al. (2005) use data on French exports from 1985-1990 and find that 17 percent of exports were handled by intermediaries (trading, retail, or wholesale firms). They investigate the determinants of the use of intermediaries. They find that intermediaries are more likely to be used when exporting to markets with a low level of enforcement of civil rights—they argue that fixed costs of accessing such markets are relatively high, thus increasing the demand for intermediary services. Smaller markets are also more likely to be served by intermediaries (there is more of an incentive to pool the fixed costs of market access when the market is small); but distance from France does not have a significant effect on the use of intermediaries. This latter result is consistent with theory, if distance effects reflect transport costs; however, if informational fixed costs of market access are correlated with distance from France, then the result would be not so consistent with theory.

In a study of intermediation and its effects on direct foreign investment, Evenett (2003) suggests that law firms may provide some intermediation services in dealing with foreign mergers and acquisitions. In particular, purchases of foreign firms are subject to approval by various local authorities, and the presence of specialized law firms could be expected to facilitate these transactions. Evenett approaches the issue empirically by asking whether the presence of branch offices of US law firms in foreign countries facilitates merger and acquisition activity

by American firms. His results are mixed—the presence of the biggest law firm in his sample is associated with more such activity, but the presence of the other big 5 firms is associated with less activity.

In summary, both theory and evidence suggest that private sector intermediaries can help firms deal with some of the information problems associated with attempting to enter new markets. Does this leave any role for governments to supplement the activities of private sector responses to the relevant information problems?

In many ways, it is premature to give an answer to this question. As noted above, there is very little evidence on the activities of intermediaries and middlemen and how effective they are in facilitating export to and investment in foreign markets. The theoretical literature is also still quite underdeveloped. The literature suggests that intermediaries can improve welfare by facilitating increased trade and investment, but that they will not achieve first best outcomes. Issues of how to choose among many intermediaries, and contracting problems when there is uncertainty about whether the intermediary can be trusted, have not been addressed by the literature. There will be both adverse selection and moral hazard problems in the market for intermediaries. There may also be issues of market power: because of information economies of scale, big intermediaries may have an advantage—they will have larger networks and will also have more to lose if their reputations are damaged. And the market for intermediaries may in some cases be quite thin [see Emran and Shipi (2002)]. Intermediaries will not exist unless there is a large enough demand for their services to cover their fixed costs, but that demand will not arise unless there has been a flow of exporters and investors into the new market. These are all issues that await future research.

These theoretical possibilities (which have not yet been fully studied) suggest that there will be imperfections in the market for intermediation. Moreover, this is consistent with Rauch's (2001) contention that the evidence that social and business networks enhance trade is evidence that intermediaries

are not providing frictionless services. However, because of the gaps in both the theoretical and empirical literature noted above, the case for government intervention to provide firm-specific services to assist engaging in foreign markets is very weak. Government activity may help some firms enter foreign markets, but it may also crowd out intermediaries who are assisting other firms to enter foreign markets. Figure 3 illustrates.

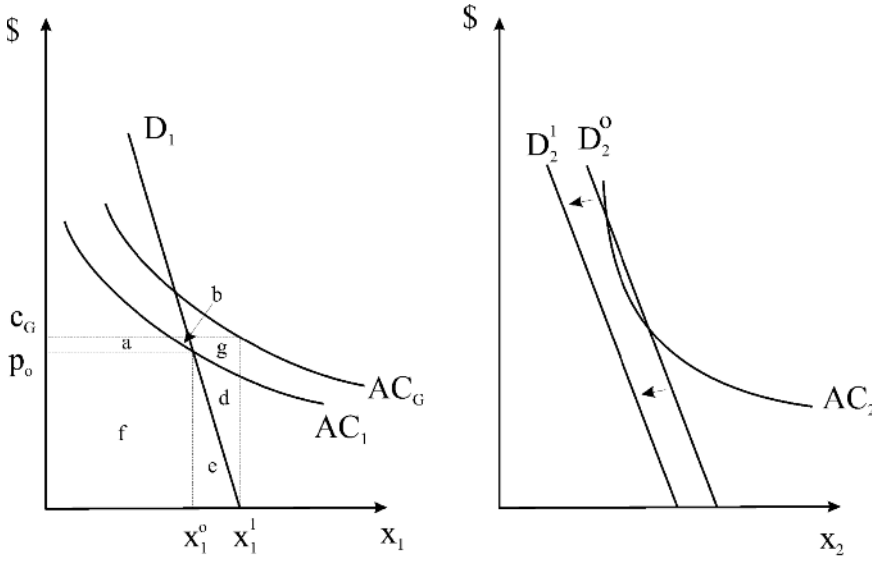
Suppose there are two intermediaries labelled 1 and 2, with declining average cost curves AC_1 and AC_2 respectively. Their services will be differentiated substitutes, so they will act as monopolistic competitors. The demands for their services are given by D_1 and D_2. These demand curves are interdependent, so a decline in the price charged by intermediary 1 will shift inwards the demand for the services of intermediary 2. Initially, suppose the price charged by intermediary 1 is p_o and the quantity of services provided is x_1^o. Intermediary 2 is also selling services since its demand D_2^o is high enough to cover its average costs.

Now suppose that the government starts providing the same services as intermediary 1 for free, but that the government is less efficient than the private sector provider—the government's average cost is AC_G. Because the government charges a price of 0 in this example, Intermediary 1 is driven out of the market by government provision. The lower price offered by the government will increase the amount of services provided to x_1^1, increase the producer surplus of firms using these services by area f+e in the diagram, and would increase the number of firms exporting. However, the cost of providing the government services is area a+b+g+d+e+f, which is greater than the increase in producer surplus. The net social loss in the market for type 1 services is therefore a+b+g+d. But this is not the only cost of the policy. Because the demand for the two types of intermediation services are interdependent, the demand for the services of intermediary 2 will shift in[7]. In the example illustrated, the new demand curve is D_2^1, which is below the average cost curve

[7] For simplicity, I have assumed that the demand cure D_1 takes into account the effect of the price in market 1 on drawing customers away from market 2.

AC_2. Consequently, intermediary 2 is also driven out of business by the government entry into the market.

Figure 3: Crowding out intermediaries



Intermediary 1 Intermediary 2

The above example illustrates how well-intended government policy can reduce social efficiency by crowding out privately provided intermediation services. This need not always be the outcome of government provision of firm-specific intermediation services (as I discuss below), but it suggests that the case for intervention is weak. The complexity of the market for intermediation services and the lack of a clear theoretical or empirical consensus that governments could improve on private sector outcomes suggest caution is needed.

With this note of caution in mind, the above analysis suggests three ways in which government provision of firm-specific export promotion services may improve efficiency. First, governments could help firms select private sector intermediaries. The literature has emphasized the importance of

reputation in the market for intermediaries. Local trade commission offices could help firms find intermediaries with good reputations by helping to establish an information network on the intermediaries themselves. Referring to Figure 3, the provision of such information would shift the demand for intermediation services outward, and help thicken the market.

Second, there are some types of information networks in which government personnel have a comparative advantage relative to private sector agents. For example, a trade commissioner's office may have advantages over private consultants in helping a firm navigate the foreign regulatory system. This advantage would reflect different networks of contacts, but it is also possible that foreign officials will behave differently towards consulate personnel than towards private sector agents alone. Referring to Figure 3, these would be the types of services where the government's average cost of provision ACG is below its private sector counterparts.

Third, some types of government-provided services (such as assistance with regulators, introductions, etc.) could be complementary to other private sector services. The provision of these types of services would shift outward the demand curve for the services of other private sector providers. That is, the government should focus on the types of services that do not crowd out private sector intermediaries, but rather those which are complementary.

Information and foreign consumer demand

Information problems may also arise when there are spillovers across foreign customers regarding the quality or capabilities of home products. This may apply to both foreign consumers looking for final goods and foreign firms looking for intermediate goods and services from home firms. Several papers have studied this issue.

Mayer (1994) developed a model to explore the idea that a firm may have difficulty breaking into new export markets because potential customers have imperfect information about the quality of its products. This was a new twist on the infant indus-

try argument for protection. In his model, foreigners gradually learn about the quality of domestic products produced by perfect competitors: foreign demand shifts out with experience in consuming the domestic good. Since all domestic firms are assumed to produce the same quality, there is an externality in that each firm under-invests in facilitating foreign learning. Mayer shows that this creates an argument for export promotion. In his framework, an export subsidy is the first best instrument—the distortion arises because of under-consumption of domestic goods by foreigners, and an export subsidy will target this distortion. However, other policies that promote exports are consistent with this framework: these would include government-subsidized advertising campaigns, government coordinated trade shows; and other creative policies that help to shift out the foreign demand for domestic goods in the relevant sector. In most cases, these programs need only be temporary, because once the national reputation for quality in the relevant industries is established, there is little return to further promotion.

For this argument to be valid, two key things are needed: learning by customers must shift the demand curve; and there must be spillovers across domestic producers. The need for learning restricts the class of industries—the argument would not apply to standardized goods sold on spot markets where quality is easy to assess (although there could be reputational issues affecting the ability of home firms to honour contracts, to be timely in their delivery, etc). The need for spillovers is important because, if the reputation and learning effects are specific to individual firms, then they can invest in their own reputations.

In the absence of spillover effects across firms, there can still be market failures arising from asymmetric information about product quality. However, in this case the policy implications are sensitive to the set-up of the model. Grossman and Horn (1988) assume that individual firms can choose their own quality and can develop their own reputations. There are no reputational spillover effects across firms and consumers have rational expectations. Subsidies reduce welfare in this model because they allow the marginal (low quality) firm to enter, thus reducing the

average expected quality of products from the domestic country. On the other hand, Bagwell and Staiger (1989) have a model with adverse selection (firms cannot choose their quality) and show that an export subsidy can allow the high quality producers to enter in cases where they are unable to do so in the free market outcome. They show that this can improve welfare.

Despite the Bagwell/Staiger result, the case for using export promotion policies when reputations are firm-specific is weak. One could expand the models to allow firms to find creative ways to signal their product quality. This might not always lead to efficient outcomes, but since the results are sensitive to model structure, the informational requirements for the government to figure out when and where to intervene would be high. Moreover, once we move away from national reputation issues to firm-specific reputations, there is not really anything special about trade. New domestic firms would have similar problems signalling product quality to domestic customers, and so it is not clear that policies targeting export markets are called for in the absence of spillovers.

Indeed, Shy (2000) turns the argument on its head by suggesting that a firm may choose to export to improve its domestic reputation—domestic consumers may not believe the product is of high quality unless they see that foreigners are willing to buy it. In his model, it is possible for there to be excessive investment in exporting. Export promotion can therefore reduce welfare.

Spillover effects are therefore crucial to the argument for export promotion when product reputation is at issue. Is there any evidence to suggest that such spillovers might exist? Wojick (2001) estimates a model of US demand for Japanese cars and finds evidence of both a learning effect and spillover effects of consumer learning across manufacturers. This provides some empirical support for Mayer's argument. Another piece of evidence comes from Rodrik (1988) who notes that the benefits of such policies would vary with the level of concentration in the industry. Rodrik compared Korea and Taiwan and argued that Korea's more concentrated industrial structure allowed its firms to internalize the initial investment in reputation (by selling at lower prices to induce foreign consumption and learning) much

more than firms operating in Taiwan's more competitive industrial structure. This resulted in a different product mix, with Korea tending to be more successful in products that are more reliant on reputation for success.

Even if spillovers in reputation are important, there are other ways the market could respond to at least partially overcome the informational problem. Foreign retailers and other intermediaries have incentives to look for new sources of competitively priced high quality products. Large foreign retailers can determine the quality of products through investments in search, trials, and their own information networks. When they find products of acceptable quality, they can use their own reputations to create a market for them. Biglaiser's (1993) work on intermediaries as guarantors of quality suggests that competing foreign retailers, each with established reputations, could go a long way towards mitigating much of the information spillover problem. It may nevertheless persist for products where the cost to consumers is high (such as automobiles), especially in cases where it may take some time for quality to become apparent (such as in cases where the long-run reliability of the product matters).

When thinking about Mayer's version of the infant industry argument, one usually has developing countries in mind—the idea is that countries that were previously known mainly for the production of primary products or low quality manufactured goods are trying to make the transition to exporting high quality products. Hence one would not expect the argument to apply to most sectors in OECD countries.

However, there are a few sectors where spillovers at the national level are important, even in high income countries. Wine is one example—consumer perception of wines from different countries and regions affects overall demand for different varieties of wines from the same area[8]. These are spillover effects—a

[8] For theory, see Tirole (1996) who develops a model in which rational agents base their estimates of quality on information about a reference group and not just individual agents in that group. For evidence that national and regional reputations affect the demand for wine, see Roberts and Reagans (2003), Schamel and Anderson (2003) and Schamel (2006).

good bottle of wine from a given country encourages consumers to try more varieties from that country; and a few unpleasant choices from another country can discourage them from trying samples from different producers in that country. Moreover, wine is relatively expensive, there is a lot to choose from, and quality can only be detected by consuming the product—one has to open the bottle to determine the taste. Hence information has a large effect on demand.

Industry associations can address these issues to some extent—wineries can pool their resources to market their products, organize trade shows, and engage in other collective marketing activities. But because of the spillover effect in reputations, there is a free rider problem—those that do not contribute may still gain something from an enhanced national reputation for quality or style developed by other firms. Hence industry associations may not be able to fully address the spillover problem; thus potentially leaving a role for governments to help out in export promotion.

Education and medical services are other possible examples where the national reputation for the quality of the services provided can affect international demand. National governments play a role already in setting standards or certifying quality; and hence, if the quality level is not well known to foreigners, there are likely to be spillover effects across those institutions which successfully export their services in these fields.

Finally, tourism is an industry where there are clearly spillover effects affecting foreign demand. Tourists consume a bundle of goods and services provided by a variety of suppliers, so there are spillover effects across firms when seeking to attract foreign tourists. If a hotel is successful in luring a tourist to a particular destination, that tourist will consume food, entertainment and a variety of other goods and services from a variety of firms in that location. Hence the benefits of attracting a tourist to a destination are shared by many firms. Consequently, the private sector is likely to under-invest in tourism promotion. This can lead to an argument for government-sponsored tourism promotion campaigns.

Market failure and government policy: Summary

The previous section identified several potential sources of market failure and, in each case, discussed some of the policy implications. In this section, I bring these different arguments together and summarize their implications for export and investment promotion policy.

Two main sources of market failure lie behind the case for government intervention in export or investment promotion: information spillovers and problems arising from asymmetries of information.

Information spillovers

Information spillovers are of three different types. First, there is a public good problem associated with general information regarding issues such as market opportunities, how to deal with the foreign regulatory process, or how distribution networks work. Because of the public good problem, such information may be underprovided in the market, and hence this is an argument for government involvement in information provision.

A second information spillover is generated by the demonstration effects arising from the actions of firms that attempt to begin exporting or investing in foreign markets. If there is uncertainty about what strategies will work and what markets will be successful venues for export or investment, then it is necessary for firms to experiment and try different strategies. Because firms will learn from the efforts of others, not all benefits of this activity will be internalized and hence theory predicts that too few firms will attempt to engage too few markets.

This second spillover problem cannot be resolved simply by having the government or intermediaries provide more information to firms—the information can only be generated if more firms try to export and invest in foreign countries. Hence the key policy objective would be to increase the incentives for firms to engage new markets. This type of spillover provides the basis for export and investment promotion activity that is specifically intended to encourage more firms to enter new

markets. This may involve a range of activity, such as providing firm-specific information services, facilitating trade shows, and whatever other types of assistance that would more firms make the transition into foreign trade. This is not an argument for increasing the flow of exports or investment per se. Rather, the key is to encourage firms to try new ideas, new markets, and new strategies because the information spillovers come from learning about what works and what doesn't.

There are a couple of weaknesses in this argument which suggest caution in its implementation. The first is that the empirical evidence on the magnitude and importance of this spillover effect is limited and mixed—some studies have found evidence of spillovers; others have not. The second is that the argument that firms do not experiment enough with new strategies and new markets applies to domestic market activity as well. A policy that provides too much inducement to export and invest abroad runs the risk of drawing too many resources away from production for domestic consumers.

A third type of information spillover arises from externalities affecting the foreign demand for goods and services from a particular country. This arises when either (1) there are spillovers in reputation for product quality—that is, the quality of products from a particular country is difficult to measure and is correlated across firms so that one firm's good or bad reputation can affect the demand for products from other firms from that country; or (2) when there are linkages in demand, such as for tourism, where one firm's advertising to attract tourists will generate business for other firms in the same region. Some of these spillover effects will be internalized by intermediaries who have an incentive to seek out high quality products to sell in their local markets. However, in some sectors (such as wine, tourism and education), the market failure arising from demand externalities is likely to persist, and this can provide some justification for government support in marketing efforts. Policies such as support for trade shows and advertising and promotion efforts would address the externalities.

Asymmetries of information

The other class of information problems leading to market failures arises from firm-specific information problems in which there are either informational asymmetries or informational economies of scale. These problems arise from a firm's need to search for partners, distributors, and suppliers; and from the difficulties in determining the quality of the services that they attempt to contract for. The evidence that social networks affect trade flows and patterns is evidence that these information issues are empirically relevant.

Intermediaries are a market response to these types of problems. The literature demonstrates how intermediaries can improve efficiency, but also shows that the first best outcome is unlikely to be achieved for various reasons, including market thinness, hold-up problems, network externalities, and asymmetries of information about the quality of the intermediaries themselves. There is relatively little empirical evidence regarding the effectiveness of intermediaries in facilitating international trade. One would expect that the market for intermediaries would be much more highly developed in some sectors and countries than in others; however this also remains a topic for future research.

The case for government intervention to provide firm-specific support to respond to these issues of asymmetric information is very weak because there is very little evidence on how well the intermediary market functions. There is a danger that government provision of services may crowd out private sector intermediaries. At the same time, policy could play a role in helping firms find suitable intermediaries, and in helping to transmit information about the quality and reputation of various intermediary services. Government consulate personnel may have a comparative advantage in providing certain types of intermediary services (such as in dealing with foreign officials); in such cases, there is an argument for government provision of such services (on a cost recovery basis).

Other policy implications

Other, more long-term and subtle policies in addition to those discussed above could also help to address market failures arising from information problems. The evidence that ethnic ties matter for trade, that immigration matters for trade, and that communication indicators (such as telephone calls and newspapers) matter for trade suggests that polices that help promote information flows between Canada and current and potential trading partners merit investigation.

The types of policies relevant here could be quite varied. For example:

- promoting educational exchanges where Canadian students spend time abroad and foreign students come to Canada for short- or long-term periods;
- promotion of foreign language training;
- making it easier and more attractive for foreign graduate students to study here—for example by ensuring that spouses can get work permits;
- allowing easier access to foreign television programming via satellite; and,
- facilitating reliable and low cost access to Internet networks.

Measuring the effect of these initiatives on trade flows is difficult and hence it is difficult to weigh benefits against costs. However, most of the policies listed above have much wider benefits than simply increasing trade. Students already study abroad and learn foreign languages as part of a general education. The existence of potential trade spillover benefits is just one more factor that can tip the balance towards increased support for such activities.

Finally, while the focus of this paper is not on explicit barriers to trade, it is important to note that the commitment aspects of trade and investment agreements play a role in influencing a firm's decision to make the sunk cost investments needed to enter foreign markets. Fernandez and Portes (1998) and others have argued that one of the benefits of regional trade agreements is that they help to solve the time inconsistency problem with government trade and investment policy. The

problem is that while governments have incentives to attract direct foreign investment to their country, once firms have borne the sunk costs of entry, there is an incentive for governments to alter policies to extract rent from the foreign firms. Knowing this, firms may be reluctant to invest. A regional trading agreement, especially if it includes provisions for national treatment on investment, can be a way for a government to credibly commit to treat foreign firms no differently than domestic firms, and this can increase investment and trade flows.

Response to export and investment promotion activity by foreign governments

Many governments have export and investment promotion agencies—Lederman et al. (2006) surveyed agencies in 92 different countries. Does the fact that foreign governments engage in promotion activities provide an additional argument for pursuing such activity?

If there are no externalities (information spillovers), then the presence of foreign export promotion activity does not provide an additional argument for export promotion. Referring again to Figure 1, export promotion activities by foreign governments will cause the expected export profit curve for domestic firms pE(n) to shift in, and the equilibrium number of domestic firms exporting would fall. However, if we apply the same analysis of the effects of domestic export promotion as we did in our earlier discussion of Figure 1, we obtain the same result: in the absence of spillovers or other market failures, there is no case for government intervention. If firms fully internalize benefits and costs of exporting, governments cannot improve on market outcomes[9].

If there are information spillovers, then foreign activity can affect the optimal domestic government response; however, the direction of the response is not clear. Consider the experimentation argument for export or investment promotion discussed ear-

[9] Panagariya (2000) makes a similar point in his examination of the case against export subsidies more generally.

lier. In this argument, firms learn from the experience of others in attempting to engage foreign markets. If other governments help more of their own firms enter export markets, then this increases the information base—domestic firms can learn from the experience of their foreign rivals as they experiment with new markets. Given that the information flow is increased by foreign subsidization of experimentation, it is possible that the marginal benefit of domestic subsidization could fall. For example, the fact that a Korean firm discovered the benefits of Bangladesh as a source of textile exports provided information that benefited other exporters in Bangladesh and importers throughout the world.

On the other hand, there may be first mover advantages. If those firms that enter new markets early obtain long-run informational and networking advantages simply by virtue of being early, then foreign subsidization could increase the case for domestic subsidization. Pan, Li, and Tse (1999) study the effects of early entry by foreign firms into China and find that early entrants have higher market shares and profits.

In the case of information spillovers affecting foreign consumer demand for the products and services of domestic exporters or investors (such as the wine or tourism examples discussed above), then export promotion can be thought of as a form of advertising. If other foreign governments market their countries' products more aggressively, this could shift demand away from one's own exporters. The optimal response would then follow from the advertising and marketing literature—more aggressive advertising by one's rivals may require an increase in one's own export promotion to maintain the stock of knowledge capital among foreign consumers. However, this only applies to cases where there are spillovers in reputation about product quality. If firms have their own reputations and there are no reputational spillovers across producers from the same country, then firms can internalize the effect of foreign export promotion on their demand and respond efficiently on their own.

If there are market failures in the market for intermediaries and other countries are providing firm-specific information and other targeted help in entering foreign markets, then the optimal

response by the domestic government is less clear, because of the complexities in the market for intermediaries discussed earlier. As was noted, the case for governments providing firm-specific support to overcome issues of adverse selection and moral hazard in dealing with customers, partners, and suppliers in foreign markets is very weak. The possibility that foreign governments may be engaging in such activity does not change this.

Should we be concerned if foreign governments provide export or investment promotion services to help their firms get established in Canadian markets? If markets are competitive, the standard result is that there are both efficiency and distributional effects. An explicit or implicit foreign export subsidy lowers the costs of imports to Canada and increases aggregate Canadian purchasing power, but reduces real income of those who have strong ties to the affected import-competing sectors. A foreign investment promotion policy also has efficiency and distributional effects, but the distributional effects are different—domestic workers are likely to benefit from the increased demand for labour, whereas domestic capitalists may be hurt by increased competition from foreign-controlled firms. Since aggregate purchasing power increases in both cases, the efficiency grounds for responding are weak—the government could deal with the distributional effects of foreign promotion via other instruments (taxes and transfers). The issues here are similar to those in the literature on whether or not it is appropriate to use countervail laws to respond to foreign export subsidies.

If there is imperfect competition, the effects of foreign export subsidies are more complex and depend on market structure. The major issue here is analogous to the concern about predatory pricing—if the effect of foreign export promotion is to drive out a domestic firm that is making profits on domestic sales and to replace it with a foreign firm that makes those profits, then the welfare effect of foreign export promotion could be negative because of the profit-shifting effect. In this case, there are efficiency grounds for a response. But rather than providing an argument for retaliatory domestic promotion policies, the appropriate response would be to use countervail laws.

Empirical Evidence on the Success of Government Export Promotion Schemes

Theory suggests that export promotion or assistance programs could play a role in helping firms overcome some of the information problems associated with entering new markets. A natural question is whether such programs have been effective in achieving their goals. The literature on this question is quite thin. A few studies in the international business and management literature examine the effect of export promotion programs on managers' attitudes (see Diamantopoulos et al., 1993). Only a few papers have attempted to use data on outcomes to estimate the effects of such programs on trade flows.

Coughlin and Cartwright (1987) look at US state-level export promotion expenditures in 1980 and find that they are positively associated with state-level exports. They infer from this that export promotion programs do stimulate exports. However, they use only cross sectional data, and state-level expenditure could be correlated with something else that is a cause of export success. That is, they are unable to control for unobserved heterogeneity. Similar problems affect a study by Wilkinson and Brouthers (2000) who use state-level data and distinguish between the effects of trade missions, trade shows, and foreign offices on exports. Trade shows are associated with more exports, but the other indicators are not.

Lederman, Olarreaga and Payton (2006) use survey data on export promotion agencies from a cross section of 104 developed and developing countries to investigate the effects of export promotion expenditures on the volume of exports. They find a strong positive correlation between export promotion expenditures and exports. They use an instrumental variable approach to deal with endogeneity issues and interpret their results as implying that each additional dollar spent on export promotion increases exports by about $40; however, the effect is diminishing with GDP and with level of expenditure.

Unobserved heterogeneity and endogeneity are the key problems to be overcome in any study of this type. Are the types of firms that are successful at exporting (independently of

public assistance) also more likely to participate in such programs? Does the use of such programs cause export success, or does export success increase the demand for the use of government services that fall under this category?

Bernard and Jensen (2004) use a panel of data on US firms. This allows them to control for unobserved heterogeneity. They find that state-level expenditures on export promotion have no effect on the probability that firms will export. However, they note that their panel contains data on relatively larger firms; since most export promotion agencies tend to target small and medium sized firms, their sample may exclude those firms for which such programs are most effective. Alvarez (2004) uses firm-level data and investigates the effects of Chilean government export assistance programs on export success. He models the participation of firms in public export assistance programs and finds that that trade shows and trade missions do not increase the probability of export success, although participation in government-supported export committees is positively correlated with export success.

Rose (2005) does not look at export promotion programs *per se*, but rather asks whether the presence of embassies and consulates (and their personnel) in a country contributes to increased exports to that country. There is an important endogeneity problem in that one would export a much larger foreign service presence in a country with which there is a larger trading relationship—that is, trade success could be determining the size of the foreign service contingent rather than vice versa. Rose uses a gravity model with panel data. Fixed effects control for unobserved heterogeneity and instrumental variables are used to control for endogeneity. He concludes that the establishment of a consulate appears to have a small positive effect on exports to a country.

Hence at this stage, there is very little evidence on the effectiveness of government-sponsored programs to promote exports. There is some evidence that export success is correlated with the presence of this type of program, but only a couple of studies have attempted to grapple with the reverse causation issue. This is a fruitful area for future research.

Conclusion

This paper has reviewed the economic case for publicly sponsored export and investment promotion or assistance programs. Two sources of market failure were identified which could form the basis of a rationale for government support in this area: information spillovers and asymmetries of information. The theoretical case for government-supported export and investment promotion as a response to information spillovers is fairly strong; however the empirical evidence on the importance of such spillovers is mixed. More empirical research that assesses the magnitude and existence of such spillovers would help clarify the case for government intervention.

The case for government provision of firm-specific services to respond to problems of asymmetric information is very weak. There are private sector responses (such as intermediaries, changes in the organizational form of firms, joint ventures, etc.) to such problems, and there is very little evidence on how well these market-based responses work. Government intervention runs the risk of crowding out private sector intermediaries.

The literature on these issues is still relatively new, and there is still much that is not known. There is very little information on private sector responses to information problems associated with access to foreign markets. A recent literature on intermediaries exists, but it needs further development, particularly with respect to issues of market thinness and the endogenous development of information networks. There is almost no empirical evidence on how effectively intermediaries help firms overcome information problems when they enter new markets. A small literature attempts to assess the effectiveness of government export promotion programs, but to date we have very little evidence on whether or not such programs actually succeed in increasing the number of firms which succeed in exporting or in setting up new ventures in foreign markets. There is much scope for future research.

References

Aitken, Brian, Gordon H. Hanson, and Ann E. Harrison. 1997. "Spillovers, foreign investment and export behaviour." *Journal of International Economics* 43: 103-132.

Alvarez E., Roberto. 2004. "Sources of Export Success in Small and Medium-Sized Enterprises: The Impact of Public Programs." *International Business Review* 13(3): 383-400.

Anderson, James E. and Eric van Wincoop. 2003. "Gravity with Gravitas: A Solution to the Border Puzzle." *American Economic Review* 93(1): 170-192.

Antràs, Pol. 2003. "Firms, Contracts, and Trade Structure." *Quarterly Journal of Economics* 118(4): 1375-1418.

Antràs, Pol and Elhanan Helpman. 2004. "Global Sourcing." *Journal of Political Economy* 112(3): 552-580.

Bagwell, Kyle and Robert W. Staiger. 1989. "The role of export subsidies when product quality is unknown." *Journal of International Economics* 27(1-2): 69-89.

Baldwin, Robert E. 1969. "The Case against Infant-Industry Tariff Protection." *Journal of Political Economy* 77(3): 295-305.

Baldwin, John R. and Wulong Gu. 2003. "Export-Market Participation and Productivity Performance in Canadian Manufacturing." *Canadian Journal of Economics* 36(3): 634-657.

Bernard, Andrew B. and J. Bradford Jensen. 1995. "Exporters, Jobs, and Wages in U.S. Manufacturing, 1976-1987." *Brookings Papers on Economic Activity: Microeconomics*, 1995: 69-119.

Bernard, Andrew B. and J. Bradford Jensen. 1999. "Exceptional Exporter Performance: Cause, Effect or Both?" *Journal of International Economics* 47(1): 1-25.

Bernard, Andrew B. and J. Bradford Jensen. 2004. "Why Some Firms Export." *Review of Economics and Statistics* 86(2): 561-569.

Bernard, Andrew B., J. Bradford Jensen and Peter K. Schott. 2005. "Importers, Exporters, and Multinationals: A Portrait of Firms in the U.S. that Trade Goods." *NBER Working Paper* No. 11404, June 2005.

Biglaiser, Gary. 1993. "Middlemen as Experts." *Rand Journal of Economics* 24(2): 212-223.

Biglaiser, Gary and James W. Friedman. 1994. "Middlemen as guarantors of quality." *International Journal of Industrial Organization* 12(4): 509-531.

Blackorby, Charles and David Donaldson. 1988. "Cash versus Kind, Self-Selection, and Efficient Transfers." *American Economic Review* 78(4): 691-700.

Bond, Eric W. 2006. "Transportation Infrastructure Investments and Trade Liberalization." *The Japanese Economic Review* 57(4): 483–500.

Bougheas, Spiros, Panicos O. Demetriades and Edgar L.W. Morgenroth. 2003. "International aspects of public infrastructure investment." *Canadian Journal of Economics* 36(4): 884–910.

Buch, Charles M. 2005. "Distance and International Banking." *Review of International Economics* 13(4): 787-804.

Clarke, George R. G. and Scott J. Wallsten. 2006. "Has the Internet Increased Trade? Developed and Developing Country Evidence." *Economic Inquiry* 44(3): 465–484.

Clerides, Sofronis K., Saul Lach and James R. Tybout. 1998. "Is Learning by Exporting Important? Micro-Dynamic Evidence from Colombia, Mexico, and Morocco." *The Quarterly Journal of Economics* 113(3): 903-947.

Combes, Pierre-Philippe, Miren Lafourcade and Thierry Mayer. 2005. "The trade-creating effects of business and social networks: evidence from France." *Journal of International Economics* 66(1): 1-29.

Coughlin, Cletus C. and Phillip A. Cartwright. 1987. "An examination of state foreign export promotion and manufacturing exports." *Journal of Regional Science* 27(3): 439–449.

Curtis, John M. and Shenjie Chen. 2003. “Trade costs and changes in Canada's trade pattern.” *The World Economy* 26(7): 975-991.

Diamantopoulos, Adamantios, Bodo B. Schlegelmilch and K.Y. Katy Tse. “Understanding the Role of Export Marketing Assistance: Empirical Evidence and Research Needs.” *European Journal of Marketing* 27(4): 5-18.

Disdier, Anne-Celia and Keith Head. 2008. “The Puzzling Persistence of the Distance Effect on Bilateral Trade.” *Review of Economics and Statistic*s 90(1): 37-48.

Dollar, David, Mary Hallward-Driemeier and Taye Mengistae. 2003. “Investment Climate, Infrastructure and Trade: A Comparison of Latin America and Asia.” World Bank: Washington DC.

Eaton, Jonathan, Samuel S. Kortum and Francis Kramarz. 2004. “Dissecting Trade: Firms, Industries, and Export Destinations.” *American Economic Review* 94(2): 150-154.

Fernández, Raquel and Jonathan Portes 1998. “Returns to Regionalism: An Analysis of Nontraditional Gains from Regional Trade Agreements.” *The World Bank Economic Review* 12(2): 197-220.

Fink, Carsten, Aaditya Mattoo and Ileana Cristina Neagu. 2002. “Trade in International Maritime Services: How Much Does Policy Matter?” *The World Bank Economic Review* 16(1): 81-108.

Freund, Caroline L. and Diana Weinhold. 2004. “The effect of the Internet on international trade.” *Journal of International Economics* 62(1): 171-189.

Girma, Sourafel and Zhihao Yu, 2002. “The Link between Immigration and Trade: Evidence from the U.K.” *Review of World Economics* 138(1): 115-130.

Gould, David M. 1994. “Immigrant Links to the Home Country: Empirical Implications for U.S. Bilateral Trade Flows.” *Review of Economics and Statistics* 76 (2): 302-316.

Greif, Avner. 1989. "Reputation and Coalitions in Medieval Trade: Evidence on the Maghribi Traders." *Journal of Economic History* 49(4): 857-882.

Greif, Avner. 1993. "Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders' Coalition." *American Economic Review* 83(3): 525–548.

Greenaway, David and Richard Kneller. 2003. "Exporting, Productivity and Agglomeration: A Difference in Difference Analysis of Matched Firms." Leverhulme Centre for Research on Globalisation and Economic Policy *GEP Research Paper* 2003/45.

Greenaway, David and Richard Kneller. 2007. "Firm heterogeneity, exporting and foreign direct investment." *Economic Journal* 117 (517): F134-F161.

Grossman, Gene M. and Elhanan Helpman. 2002. "Integration versus Outsourcing in Industry Equilibrium." *Quarterly Journal of Economics* 117(1): 85-120.

Grossman, Gene M. and Henrik Horn. 1988. "Infant-industry protection reconsidered: the case of informational barriers to entry." *Quarterly Journal of Economics* 103(4): 767-787.

Hanson, Gordon H. 2001. "Should Countries Promote Foreign Direct Investment?" United Nations Conference on Trade and Development, *G-24 Discussion Paper Series*, No. 9.

Hausmann, Ricardo and Dani Rodrik. 2003. "Economic Development as Self-Discovery." *Journal of Development Economics* 72(2): 603-633

Hausmann, Ricardo, Jason Hwang and Dani Rodrik. 2007. "What You Export Matters." *Journal of Economic Growth* 12(1): 1-25.

Hillberry, Russell and David Hummels. 2005. "Trade Responses to Geographic Frictions: A Decomposition Using Micro-Data." *NBER Working Paper* 11339, May 2005.

Hoff, Karla. 1997. "Bayesian Learning in an Infant Industry Model." *Journal of International Economics* 43(3): 409-436.

Hummels, David, Jun Ishii and Kei-Mu Yi. 2001. "The nature and growth of vertical specialization in world trade." *Journal of International Economics* 54(1): 75-96.

Johri, Alok and John Leach. 2002. "Middlemen and the Allocation of Heterogeneous Goods." *International Economic Review* 43(2): 347-362.

Krugman, Paul and Anthony J. Venables. 1995. "Globalization and the Inequality of Nations." *Quarterly Journal of Economics* 110(4): 857-880.

Lederman, Daniel, Marcelo Olarreaga and Lucy Payton. 2007. "Export promotion agencies: What works and what doesn't?" *World Bank Policy Research Working Paper* 4044, March 2007.

Levchenko, Andrei A. 2004. "Institutional Quality and International Trade." IMF Working Paper WP/04/231.

Limão, Nuno and Anthony J. Venables. 2001. "Infrastructure, Geographical Disadvantage, Transport Costs, and Trade." *World Bank Economic Review* 15(3): 451-79.

McCallum, John. 1995. "National Borders Matter: Canada-U.S. Regional Trade Patterns." *American Economic Review* 85(3): 615-623.

McLaren, John. 2000. "Globalization and Vertical Structure." *American Economic Review* 90(5): 1239-1254

McLaren, John. 1999. "Supplier Relations and the Market Context: A Theory of Handshakes." *Journal of International Economics* 48(1): 121-138.

Micco, Alejandro and Tomas Serebrisky. 2004. "Infrastructure, competition regimes, and air transport costs: cross-country evidence." *World Bank Policy Research Working Paper* 3355.

Millimet, Daniel L. and Thomas Osang. 2007. "Do state borders matter for U.S. intranational trade? The role of history and internal migration." *Canadian Journal of Economics* 40(1): 93-126.

Murphy, Kevin M., Andrei Shleifer and Robert W. Vishny. 1989. "Industrialization and the Big Push." *Journal of Political Economy* 97(5): 1003-1026.

Nicita, Alessandro and Marcelo Olarreaga. 1999. "Exports and information spillovers." *World Bank Policy Research Working Paper* No. 2474.

Nunn, Nathan. 2007. "Relationship-Specificity, Incomplete Contracts and the Pattern of Trade." *Quarterly Journal of Economic*s 122(2): 569-600.

Pan, Yigang, Shaomin Li and David K Tse. 1999. "The Impact of Order and Mode of Market Entry on Profitability and Market Share." *Journal of International Business Studies*, 30(1): 81-103.

Panagariya, Arvind. 2000. "Evaluating the case for export subsidies." *World Bank Policy Research Working Paper* No. 2276, January 2000.

Portes, Richard and Hélène Rey. 2005. "The Determinants of Cross-Border Equity Flows." *Journal of International Economics* 65(2) 269-296.

Rauch, James E. 1999. "Networks versus Markets in International Trade." *Journal of International Economics* 48(1): 7-35.

Rauch, James E. 2001. "Business and Social Networks in International Trade." *Journal of Economic Literature* 39(4): 1177-1203.

Rauch, James E. and Vitor Trindade. 2002. "Ethnic Chinese Networks in International Trade." *Review of Economics and Statistics* 84(1): 116-130.

Rauch, James E. and Joel Watson. 2004. "Network intermediaries in International Trade." *Journal of Economics and Management Strategy* 13(1): 69-93.

Roberts, Mark J. and James R. Tybout. 1997. "The Decision to Export in Colombia: An Empirical Model of Entry with Sunk Costs." *American Economic Review* 87(4): 545-564.

Roberts, Peter W. and Ray Reagans. 2003. "Exposure, Attention and Price-Quality Relationships for New World Wines in the US Market, 1987-2001." Mimeo.

Rock, Marilyn. 2001. "Globalisation and Bangladesh: The case of export-oriented garment manufacture." *South Asia: Journal of South Asian Studies* 24(1): 201-225.

Rodrik, Dani. 1988. "Industrial Organization and Product Quality: Evidence from South Korean and Taiwanese Exports." *NBER Working Paper* No. 2722, September 1988.

Rodrik, Dani. 1996. "Coordination failures and government policy: A model with applications to East Asia and Eastern Europe." *Journal of International Economics* 40(1): 1-22.

Rodrik, Dani. 2004. "Industrial Policy for the Twenty-First Century." *KSG Working Paper* No. RWP04-047, November 2004.

Rubinstein, Ariel and Asher Wolinsky. 1987. "Middlemen." *Quarterly Journal of Economic*s 102(3): 581-594.

Schamel, Günter. 2006. "Geography versus brands in a global wine market." *Agribusiness* 22(3): 363-374.

Schamel, Günter and Kym Anderson. 2003. "Wine Quality and Varietal, Regional and Winery Reputations: Hedonic Prices for Australia and New Zealand." *Economic Record* 79(246): 357–369.

Shevchenko, Andrei. 2004. "Middlemen." *International Economic Review* 45(1): 1–24.

Shilpi, Forhad and Emran, M. Shahe. 2002. "Marketing Externalities and Market Development." W*orld Bank Policy Research Working Paper* No. 2839.

Shy, Oz. 2000. "Exporting as a Signal for Product Quality." *Economica* 67(265): 79–90.

Schroder, Philipp J.H., Harald Trabold, and Parvati Trübswetter. 2005. "Intermediation in Foreign Trade: When Do Exporters Rely on Intermediaries?" *Applied Economics Quarterly* 51(3): 267-288.

Spencer, Barbara J. 2005. "International outsourcing and incomplete contracts." *Canadian Journal of Economics* 38(4): 1107-1135.

Spulber, Daniel F. 1996. "Market Microstructure and Intermediation." *Journal of Economic Perspectives* 10(3): 135-152.

Tirole, Jean. 1996. "A Theory of Collective Reputations (with Applications to the Persistence of Corruption and to Firm Quality." *Review of Economic Studies* 63(1): 1-22.

Wagner, Joachim. 2007. "Exports and productivity: A survey of the evidence from firm-level data." *World Economy* 30(1): 60-82.

Wilkinson, Timothy J. and Lance Eliot Brouthers. 2000. "An Evaluation of State Sponsored Promotion Programs." *Journal of Business Research* 47(3): 229–236.

Wolf, Holger C. "Intranational Home Bias in Trade." *Review of Economics and Statistics* 82(4): 555-563.

Yi, Kei-Mu. 2003. "Can Vertical Specialization Explain the Growth of World Trade?" *Journal of Political Economy* 111(1): 52-102.