Queen's Economics Department Working Paper No. 1263

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4-2011

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April 2011

Abstract

When national competitiveness is invoked as a policy objective, trade experts have learned to retort that countries don't trade, firms do. This focus on the importance of the firm in international trade is consistent with the most recent developments in trade theory, but policy needs to catch up. Recognizing the growing anomalies in observed trade patterns relative to traditional models of trade based on national comparative advantage, the "new trade theory" of the 1980s looked at industries not countries, leading Nobel prize-winner Paul Krugman, a pioneer in this literature, to suggest the need for a new trade policy. Recent work on what some call the "new-new trade theory" focuses on the trading behaviour of individual firms, making a tight link between trade and productivity. In this paper we demonstrate how focusing on firms should be the foundation for a *new*-new trade policy, one that creates exciting opportunities for trade and investment promotion strategies, along with the need for much more targeted consultation strategies. We also discuss the implications of the new-new theory for regulatory coordination, and on new ways to cooperate with interlocutors in developing countries on the evolution of 21st century trade policy.

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1 Introduction

When national competitiveness is invoked as a policy objective, trade experts have learned to retort that countries don't trade, firms do. This focus on the importance of the firm in international trade is consistent with the most recent developments in trade theory, but policy needs to catch up. Traditional trade theory argues that countries gain from exporting those goods and services that they are relatively good at producing while importing goods and services that other countries are relatively good at producing, but actual trade patterns do not match the theory. Recognizing the growing anomalies in observed trade patterns, the "new trade theory" of the 1980s looked at industries not countries, leading Nobel prize-winner Paul Krugman, a pioneer in this literature, to suggest the need for a new trade policy. Recent work on what some call the "new-new trade theory" focuses on the trading behaviour of individual firms, making a tight link between trade and productivity.[1] Given the centrality of productivity to Canadian public policy, trade negotiators must again revise their perspective. In this article we demonstrate the need for a new new trade policy. In the newest theory, trade still plays an important role in a country's growth and prosperity, but the role of policy in promoting these beneficial effects has changed. We sketch the evolution of this 21st century theory and discuss its implications for trade policy and research.

2 The Evolution of Trade Theory

Traditional trade theory, rooted in the principle of comparative advantage, adopts countries as its basic unit for analysis. Countries trade because they are different in terms of technology and/or their relative supplies of the factors of production (labour, capital, land, etc.). Gains from trade are, by the same token, realized at the national level. The theory predicts that trade will be inter-industry (Portugese wine for English wool in Ricardo's famous example). The theory also predicts that increased trade will result in increased specialization, and that the greater the differences in factor supplies and/or technological development, the greater the volume of trade among countries. The general policy prediction is that economic welfare for all could increase through the mutual specialization induced by dismantling of trade barriers.

Life does not conform neatly to theory. Comparative advantage has had limited success in explaining trade patterns and the observed impact of trade liberalization. By the 1980s, actual

[1] A list of representative papers in the new and new-new trade theory can be found in the references at the end of the paper.

trade appeared to be mostly intra-industry (Europeans buying Boeing jets while Americans buy Airbus) and mostly between countries that are similar in their factor supplies and technological level. Liberalizing countries were observed to diversify their production and trade rather than to specialize. Even worse for theory, the gains from trade liberalization based on comparative advantage were estimated to be surprisingly small compared to the apparently powerful role that trade expansion played in the growth of the global economy in the post-World War II period.

Some of these puzzling patterns were partially explained by the "new trade theory" developed in the 1980s. In this approach, the unit of trade analysis was no longer the country but the industry. The models incorporated differentiated products, and consumers had a corresponding taste for different varieties. Monopolistic competition was the standard industry market structure with all firms using the same production technologies. The good news: the new trade theory strengthened the policy case for trade by pointing to new sources of gains - a rise in efficiency resulting from increased scale of production and welfare gains for consumers from access to increased variety and from lower costs of imports. The bad news: new trade theory opened the door, by at least a crack, to "strategic trade policy"-subsidies for national champions that might be able to exploit increasing returns to scale through export expansion. Unhappy theorists emphasized the possibility of "lose-lose" outcomes if rival governments subsidized the same industry to gain global market share in supposedly strategic industries (as in the case of commercial aircraft). Unfortunately, some features of trade data were still inconsistent with the predictions of new trade theory. Exporting industries did not export to all countries as implied by their theoretical cost advantage and import-competing industries sometimes experienced productivity gains following trade liberalization, despite a smaller scale of production.

The next major development in trade theory, the "new-new trade theory" beginning in the early 2000s, drew its inspiration from dynamic industrial models of firm entry, innovation, growth, and death. The unit of trade analysis shifted from the industry to the firm. These models share many of the features of the new trade theory of the 1980s, but now incorporate differences in firms' characteristics both within and across industries, especially with regard to productivity. This literature has identified an important additional source of gains from trade-a rise in productivity as increased trade forces the least efficient firms out of the market and reallocates resources and production to the most efficient firms.

In the next section we elaborate on this firm-level view of trade and discuss the impact of trade liberalization on the economy when seen through this lens. In the third section, we present some of the general policy implications emanating from this approach.

3 The Trade World According to the New-New Trade Theory

The new-new theory based on firm-level analysis has generated empirical studies that use firm- and plant-level data from a wide variety of countries to document a new set of observations regarding the international activities of firms. The new-new trade literature has generally agreed on the following stylized facts, with subsidiary implications:

1. Participation in international markets is relatively rare among firms, and export and import intensity among firms that do participate in international markets is low:
    - Relatively few firms in an industry export and/or use imported inputs.
    - Exporters export only a small portion of their production and imported inputs only account for a small share of firms' inputs.
2. Firms that participate in international markets are different than those that do not:
    - Exporters, firms which use imported inputs, and firms which engage in foreign direct investment tend to be larger, more productive, relatively more capital- and skilled labour-intensive, and pay higher wages than firms which do not participate in international markets.
    - Firms entering export markets grow faster in terms of employment and output than non-exporters.
3. Trade shows considerable dynamism both in terms of changes in the size of existing trade flows (the "intensive margin") and in terms of the appearance of new trade flows - new products being introduced to export markets or the diversification of already exported products to new markets (the "extensive margin"):
    - There is continual firm entry into and exit from export markets associated with the continual change in the composition and destination of exported products.
4. Trade liberalization increases productivity primarily because of within-industry reallocations rather than across-industry reallocations:
    - Trade liberalization increases average productivity by reallocating market shares and resources within industries from low-productivity firms to high-productivity firms.
5. Firm process technology choice is linked to the decision to enter export markets:

- Firms entering export markets tend to adopt newer, mass production technologies which increase firm productivity relative to older, more flexible technologies suited for a smaller domestic market.

Each of these observations emphasizes the critical role of differences among firms in the same industry. Such firm heterogeneity with respect to their production technologies manifests itself in considerable variation across firms in their decision of whether or not to participate in international markets and the magnitude of that participation. Trade-related productivity gains in the economy emanate mainly from a change in the composition of firms within an industry, as weaker firms exit, and production is reallocated to more efficient firms that grow faster. These gains are in addition to the traditionally recognized productivity gains flowing from improved access to cheaper imported intermediate goods and services, and to the exploitation of plant-level economies of scale available to the firm with its existing technology.

Empirical evidence also suggests that high productivity at the firm level often precedes entry into international markets, suggesting the presence of significant firm-level sunk costs that raise the productivity threshold that firms must clear to be able to profitably enter foreign markets. Examples of such costs include the expenditures that firms must undertake to obtain foreign market intelligence, identify foreign partners, address foreign regulatory requirements, set up distribution and after-sales service networks in export markets and so forth.

This emphasis in the new-new trade theory on the role of fixed costs is also relevant for the decision at the firm level of whether to serve foreign markets via exports or via (horizontal) foreign direct investment (FDI). To establish abroad, firms face fixed costs of establishing an affiliate. The theory argues that, if transport costs to a given market outweigh the fixed costs of establishing a foreign affiliate, the firm will choose to serve the foreign market via FDI. There is some empirical support for this prediction in that firms tend to serve closer foreign markets through exporting and more distant markets through a foreign affiliate.

The fact that firms must commit significant resources to enter and sustain a presence in foreign markets (through exporting, importing, or FDI) also implies that the risks and uncertainties inherent in the international arena loom large. Firms that participate in international markets face greater uncertainties about success abroad than at home. They may have less knowledge than local firms in foreign markets ("information asymmetries") and face additional risks from fluctuations in real and nominal exchange rates or from regulatory changes abroad.

To summarize, 21st Century theoretical and empirical work in international trade stresses the important roles of (1) firm-level differences, (2) firm-level sunk and fixed costs of participating in international markets, and (3) reallocation of market share and productive resources across firms within industries in response to changes in the trading environment. In the next section, we explore the policy implications of this new-new trade theory.

4 Towards a New-New Trade Policy

Reciprocity remains fundamental to international relations in general and especially to trade negotiations, but a mercantilist understanding of reciprocity is more than ever incoherent with the achievement of the objectives of trade policy. Countries don't trade and industries don't trade: firms trade. Jobs come from productive firms, and typically only the most productive firms trade. Understanding and acting on this reality requires adjusting the usual models trade negotiators use in identifying their offensive and defensive interests and in evaluating the importance of new agreements.

The emphasis in the new theory on firm-level heterogeneity, the importance of fixed costs of participating in international markets, and the increasing complexity of global strategies of multinational firms, has not changed the basic message of trade theory that there are gains from international trade and investment. Indeed, the newest theory suggests that these gains are even larger than previously thought. However, the policy implications are different. Just as firms are heterogeneous, so are the impacts of trade policies, depending on the specific facts concerning the population of firms within an industry in a country and the broader economic policy context in which trade policy is implemented. In this section we sketch some of the policy implications of the new-new theory.

4.1 The Importance of Extensive Margin Responses

Trade negotiators typically focus on existing products imported from and exported to current markets (e.g., top ten export lists). The new-new trade theory and empirical evidence indicate that trade liberalization is likely to lead, however, to a diversification of exports and imports, as well as to an increase of existing flows. Thus, in the new-new trade policy, the focus should shift to new firms entering export markets, to incumbent exporters' introduction of new products into existing markets, and to the diversification of their exports into new markets. In technical terms, the focus must shift from intensive margin responses to extensive margin responses.

To take one example, recent empirical studies suggest that the impact of the WTO for a newly acceded member is almost exclusively on the extensive margin of trade, (trade in goods that were not previously traded and/or exports into new markets). Indeed, WTO membership may have a negligible or even a negative impact on the intensive margin (the volume of already-traded goods). The evidence also indicates that new preferential agreements, in contrast, appear to have the opposite effect: the reduction in the extensive margin in absolute terms often outweighs the rise in the intensive margin. Some authors have shown that these changes at the extensive margin and the rise in imports of new varieties are responsible for important increases in productivity growth. The WTO, they suggest, by facilitating such trade, has potentially large welfare effects. This research raises questions about the value of new regional agreements; it also implies that it may be more important to put negotiating resources towards markets where Canadian access is limited now, rather than aiming at marginal improvements in existing markets.

An intriguing possibility, then, as some authors suggest, is that the WTO is not really about reducing trade barriers, variable or fixed. Rather it serves to resolve uncertainty in the mind of potential exporters regarding the evolution of international trade rules. They respond by exporting newer products into newer markets-i.e. responses on the extensive margin. In multilateral trade negotiations in the WTO, it follows, squeezing water in bound tariff rates (which reduces uncertainty affecting the extensive margin) may be more important than fighting for reductions in applied rates (which may primarily affect the intensive margin). Future empirical research should consider other forms of uncertainty faced by exporters at the extensive margin including issues covered under non-tariff barriers (NTBs) and trade facilitation. Similarly, with investment sidelined in Geneva, negotiation efforts have been devoted to FIPAs. Such agreements appear to focus more on the treatment of established investors in developing countries, and less on barriers to entry for new investors.

In summary, to evaluate the gains from trade liberalization, trade negotiators must examine not just the expansion of existing trade flows but the expansion of imports and exports of products that previously were not sold internationally, the diversification of currently exported products into new markets, and the entry of firms with purely domestic operations into exporting.

4.2 The Importance of Fixed and Sunk Costs of Trade

The presence of significant fixed and sunk costs of exporting, importing, and foreign direct investment changes the traditional market access agenda. (A further implication is the heightened importance that can be attached to trade promotion in the sense of assisting firms to "go

global.") To the extent that market entry costs deter firms from entering export and import markets, they also have negative impacts on technology choice, productivity and the dynamism of Canadian firms. If market failures impede entry into exporting and importing, programs aimed at assisting firms in overcoming such problems remain important. When the fixed costs of entry into a foreign market are high but tariffs are low, the policy focus must shift to the often cumbersome and expensive procedures for getting products across borders. Trade facilitation, as it is known at the WTO, assumes increased importance.

Thus, more important than tariff issues in negotiations on trade in goods (NAMA in the WTO context) is the achievement of reductions in costs associated with compliance with non-tariff requirements for market access (e.g., conformance with product safety standards and licensing requirements concerning highly technical products or professional competencies etc.). In North America, the Canada-US Regulatory Cooperation Council should consider how regulations affecting imports as well as exports affect a firm's ability to exploit new technologies. To encourage firms to diversify across markets, having compatible regulation all along a complex supply chain should be a policy objective. Furthermore, if growth in the world economy comes from Asia, especially China, then that is the market where regulatory obstacles will have the greatest impact on Canadian firms.

In summary, the new-new trade theory highlights the positive links between firms' access to foreign markets and aggregate productivity growth. An objective of trade policy should be to lower regulatory obstacles which limit this access for Canadian firms. In general, there is a role for policy to create an enabling framework for the global strategies of firms.

4.3 The Importance of Firm-Level Data Analysis

Quantitative analysis is always essential for assessing the magnitude of the impact of trade liberalization, but negotiators must now examine the characteristics of individual firms, not just the average characteristics of industries. Analysis of firm-level data is needed to quantify the distribution of productivity by industry, relative first to the threshold of export market entry in the event of a reduction of trade barriers and second to the threshold for market exit in the event of increased import competition.

Firm-level data is also required to estimate fixed and sunk costs associated with participation in international markets. For example, if no firms in an export-oriented industry are close to the export threshold and the fixed costs of entering export markets are large, the gains from liberalization may be limited to existing exporters expanding their presence in established

markets. In this case, the dynamic effects of liberalization on productivity and the economy may be relatively small. In a similar vein, if many import-competing firms are near an exit threshold (due to their use of dated technologies, say), trade liberalization will exact a disproportionately heavy toll on those firms as they leave the sector. The distributional impacts of trade liberalization due to accelerated industrial adjustment will loom large and will have to be weighed against the correspondingly large gains in average productivity within the industry and the positive dynamic economy-wide effects.

Empirical studies using firm-level data for Canadian firms are generally few in number, especially relative to other countries. Statistics Canada has the data but has not made them readily available. Since an improved understanding of the factors that affect Canadian firm-, industry-, and economy-level productivity matters for policy, this situation should be remedied by making these data more accessible. The more that we understand the impact of engaging in trade at the level of the firm-where trade actually takes place-the better we are positioned to formulate trade policy in a fully informed manner. An added benefit: with access to such data, researchers will be able to quantitatively assess the benefits of trade agreements for Canadian firms and the Canadian economy.

In summary, data measured at the level where trade actually takes place, the firm, must be collected and analyzed to provide information for policy makers on the characteristics of firms that do trade and on those that don't (but that are potential entrants into international markets if trade barriers are reduced). Such data must also be used to allow for a quantitative assessment of the impact of trade liberalization policies on firm-, industry-, and economy-level employment, output, productivity, etc. and on Canadian consumers' welfare.

4.4 The Importance of Identifying Value-Added in Traded Goods

The impact on a country's exports of its own import liberalization because of value chain linkages has been widely recognized by policymakers-for example, Canada recently eliminated all tariffs on production inputs. With many manufacturing processes today broken down into separate parts and spread across different countries before the finished product is assembled for export in one of them, attributing the full value of the product to the country from which it is exported to its final consumer destination can give an exaggerated idea of the importance of trade with that country.

Hence, a new accounting of a country's contribution to global trade is needed to take these linkages into proper account. In short, we need a value-added concept of exports-and, indeed,

of imports, recognizing that these might embody Canada's previously exported components or intellectual property, such as in the case of a Blackberry device assembled in Taiwan and shipped to Canada. Such a value-added trade account would complement the current trade accounts based on gross value of trade, which are needed for purposes such as the balance of payments.

In summary, firm-level analysis of trade has highlighted the complex processes behind producing goods for exporting, including the use of imported intermediates. Policy makers should use a value-added approach to measure trade flows to provide an accurate picture of Canada's and its trading partners contributions to global trade.

4.5 The Importance of Firm-Level Innovation

The dynamic industrial models that are now at the heart of trade theory take explicit account of the ongoing need for firms to make investments in new technologies and products in the context of uncertainty about the outcomes of this investment. For firms, these outcomes can represent the difference between life-sustained or expanded presence in markets-and death-i.e., firm exit from the market. For countries, successful innovation (and, by the same token, failed innovation) at the firm level can change their apparent comparative advantage. But just as innovation is important to trade success, entry into export markets can drive firms to innovate, in particular in terms of process innovation aimed at achieving cost efficiency in serving larger markets.

Research and development (R&D), which is critical to sustaining export performance by generating new products to introduce into world markets as old ones become obsolete, is not evenly distributed across firms; it is concentrated in firms that tend to be large and multinational. In this context, the pronounced home bias in R&D activity in multinational firms tends to concentrate innovation in the countries that are the main sources for outward FDI. For smaller countries, inward FDI may therefore be a two-edged sword-bringing the conventionally understood benefits of superior technologies and business methods (reflecting the fact that only the most productive firms in any country can overcome the costs of becoming a multinational) but also sapping the vitality of the local innovation system. Canada's poor R&D record notwithstanding one of the world's most generous tax incentive structures may have something to do with the fact that it is one of the most highly foreign-invested economies in the world.

In summary, new-new trade policy cannot be conducted without reference to other areas of policy such as industrial and innovation policy. Policy implications thus flow in both directions-from trade to innovation policies and vice versa. The dynamic industrial models that have been integrated into the new-new trade theory recognize that firms must invest in new technology on

an ongoing basis to remain competitive. At the same time, the firm-level empirical literature on innovation shows that trade engagement is tightly linked to both product and process innovation.

4.6 The Difficulty of Firm-Level Consultations

Trade policy still begins at home: negotiators cannot know their objectives without talking to economic actors and citizens, but knowing whom to talk to is now more complicated. The usual story has been that, at the economy-wide level, overall welfare gains from trade liberalization allow winners to compensate losers at least implicitly-hence the logic of the WTO Single Undertaking. We have always understood, however, that this economic logic faces political difficulties: for example, gains for service providers don't help displaced dairy farmers. The new-new trade theory implies that the differential gains within industries complicate the picture even further. Import-competing industries that will shrink as a result of liberalization will nonetheless likely have firms that become winners, expanding their share of the domestic markets and possibly entering export markets. Consultations thus need to include potential new exporters as well as existing exporters.

At the same time, it is evident that it will be difficult to mobilize industry associations in support of negotiations since they will be conflicted because they represent both winners and losers. Industry associations tend to be more cautious in supporting trade liberalization when winners and losers are likely to be found in the same industry, rather than winners being concentrated in some industries and losers in others; this makes mobilization of support for new agreements more difficult.

Negotiators face difficulty finding vocal support to counter vocal opposition to new agreements. The traditional solution has been first to research the net benefit to consumers of bilateral/multilateral trade liberalization and then second to undertake economic studies of the impact on key industries - automobiles, for example. The new-new trade approach implies that perhaps that this second step is dated. Negotiators need research on how firms benefit, not industries. From a communications standpoint such research allows a focus on concrete entities with real plants and identifiable local jobs.

5 Conclusions

Thinking about firms not just industries will lead to exciting new opportunities for Canadian trade negotiators. It will also create challenges. The new-new trade policy underlines the need

to start now to develop the agenda for the next round of multilateral trade negotiations, but explaining the new agenda to traditional interlocutors in business and other trade ministries will not be easy. Developing new models and data sources will also be difficult. But the payoff is the opportunity for more targeted trade policy and trade promotion. Even more important, the new-new theory places trade policy at the heart of the government's productivity agenda.

References

Baldwin, J. and B. Yan. 2010. "Export Market Dynamics and Plant-level Productivity: Impact of Tariff Reductions and Exchange Rate Cycles," in D. Ciuriak (ed.), *Trade Policy Research 2010: Exporter Dynamics and Productivity.* Ottawa: Foreign Affairs and International Trade Canada: 19-62.

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

Bernard, A., J.B. Jensen, S. Redding, and P. Schott. 2007. "Firms in International Trade," *Journal of Economic Perspectives*, 21(3), Summer: 105-130.

Bernard, A., J. Eaton, J.B. Jensen, and S. Kortum. 2003. "Plants and Productivity in International Trade," *American Economic Review*, 93(4), September: 1268-1290.

Costantini, J. and M. Melitz. 2008. "The Dynamics of Firm-Level Adjustment to Trade Liberalization," in E. Helpman, D. Marin, and T. Verdier (eds.), *The Organization of Firms in a Global Economy.* Cambridge, MA, Harvard University Press: 107-141.

Das, S., M. J. Roberts and J. R. Tybout. 2007. "Market Entry Costs, Producer Heterogeneity, and Export Dynamics," *Econometrica* 75(3), May: 837-873.

Dutt, P, I. Mihov, and T. Van Zandt. 2011. "Does WTO Matter for the Extensive and Intensive Margins of Trade?" INSEAD Working Paper No. 011/47/EPS.

Helpman, E. 2006. "Trade, FDI, and the Organization of Firms," *Journal of Economic Literature* XLIV, September: 589-630.

Helpman, E., M. Melitz, and S. Yeaple. 2004. "Export Versus FDI with Heterogeneous Firms," *American Economic Review*, 94(1), March: 300-316.

Helpman, E. and P. Krugman. 1985. *Market Structure and Foreign Trade: Increasing Returns, Imperfect Competition, and the International Economy*, Cambridge Mass.: MIT Press.

Krugman, P. 1992. "Does the New Trade Theory Require a New Trade Policy?" *The World Economy*, 15(4), July: 423-442.

Krugman, P. 1981. "Intraindustry Specialization and the Gains from Trade," *Journal of Political Economy*, 89(5), October: 959-973.

Krugman, P. 1980. "Scale Economies, Product Differentiation and the Pattern of Trade," *American Economic Review*, 70(5), December: 950-959.

Krugman, P. 1979. "Increasing Returns, Monopolistic Competition, and International Trade," *Journal of International Economics*, 9, November: 469-480.

Lileeva, A. and D. Trefler. "Improved Access to Foreign Markets Raises Plant-Level Productivity...For Some Plants," *Quarterly Journal of Economics*, 125(3): 1051-1099.

Melitz, M. and G. Ottaviano. 2008. "Market Size, Trade, and Productivity," *Review of Economic Studies*, 75(1), January: 295-316.

Melitz, M. 2003. "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity," *Econometrica*, 71(6), November: 1695-1725.