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The impact of Preferential Trade Agreements on the margins of international trade

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ABSTRACT

In this paper we consider the trade creating effects of Preferential Trade Agreements (PTAs) for a large sample of countries within the period 1962–2000. The paper builds upon existing literature by examining whether any significant effects of PTAs occur through a change in the variety of exports (the extensive margin) or through a change in the volume of existing products (the intensive margin). To address this issue we employ the commonly used gravity equation as well as a matching approach to deal with potential self-selection problems. Our results indicate that exports respond positively to the formation of a PTA between countries, and that much of this increase in exports occurs along the extensive margin. We also show that the extensive margin responds more strongly to the formation of a PTA in larger exporters and for larger country pairs.

1. Introduction

In the last two decades there has been a proliferation in the number of Preferential Trade Agreements (PTAs).[1] According to Urata and Okabe (2007) the number of PTAs reported to the WTO was 25 in 1990, 91 in 2000 and 194 in 2007. For a long time, most PTAs were regional in focus with members being geographically close to each other (e.g. EU, NAFTA). More recently, however, countries or regional blocs have signed PTAs with diverse and geographically distant partners.[2] Moreover, regional groupings have become more diverse (e.g. ASEAN).

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[1] In what follows we take Preferential Trade Agreements (PTAs) to mean any preferential access for members of such an agreement.

[2] For example, the US has signed agreements with Israel (1985), Jordan (2002), Australia (2004), Morocco (2005) and Peru (2009) amongst others, while the EU has signed agreements with Turkey (1996), the Faroe Islands (1997), the Palestinian Authority (1997), Tunisia (1999), South Africa (2000), Morocco (2000), Israel (2000), Mexico (2000), Chile (2004), Algeria (2006) and Cote d'Ivoire (2008).

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As discussed in the literature (e.g. Viner, 1950) there is a trade-off involved when discussing the benefits of PTA membership. On the one hand, there is a *trade creation* effect that comes from the elimination in distortions between the relative prices of domestic goods and those of other members. On the other hand, there exists the potential for a *trade diversion* effect due to the introduction of distortions between the relative prices of members and non-member goods. A large number of empirical papers have addressed the issue of whether membership in a PTA creates trade between members and whether trade diversion is an outcome of the presence of a PTA. The gravity equation has developed as the standard tool to estimate the effects of PTAs on trade between members. To account for PTA membership, a dummy variable is included in the model which equals one if two countries are members of a particular PTA and zero otherwise. The coefficient on the PTA variable is then used as an indicator of the effect of PTA membership on trade flows between member countries (i.e. trade creation effects). Studies have also attempted to examine the potential trade diversion effects of PTAs by including binary variables that take the value one if only one member of a country pair belongs to a PTA (see for example Frankel et al., 1996). The results of such studies are mixed depending upon the sample, the time period, the specification of the gravity equation and the particular PTAs considered.

An extension of this literature has been to consider specific PTAs rather than bundling them all into one dummy variable, by constructing PTA dummies for each of a number of specific PTAs. This allows one to examine the impact on trade flows of specific PTAs. Using such an approach has lead to mixed results. Aitken (1973), Abrams (1980) and Brada and Mendez (1983), for example, found membership in the European Community to have a positive and significant effect on trade flows among members, while Bergstrand (1985) and Frankel et al. (1995) found insignificant effects. Frankel (1997) finds a positive impact from MERCOSUR membership, insignificant effects from membership in the Andean pact, and occasionally negative effects from membership in the European Community.

One important issue that has recently been addressed is the issue of endogeneity: membership in PTAs is likely to be endogenous as countries self-select into PTAs for reasons related to the level of trade. To account for endogeneity, studies have used panel models with fixed effects and Heckman control functions, examples including Baier and Bergstrand (2002), Magee (2003), and Baier et al. (2008). A couple of recent papers (Egger et al., 2008; Baier and Bergstrand, 2009) employ matching techniques to control for endogeneity. Both studies find evidence in favour of the trade-creating effects of PTAs. The study of Egger et al. (2008) concentrates on the trade-structure effects of PTAs, though they do report results for the volume of trade. In particular, Egger et al. (2008) consider panel data and concentrate on the contemporaneous effects of PTA formation on trade comparing trade performance between two small windows prior to and post PTA membership. The more recent paper of Baier and Bergstrand (2009) concentrates on the effect of PTAs on the volume of trade. Different to Egger et al. (2008), they employ cross-section data and an alternative matching procedure that allows them to identify the *long-run* impact of PTAs on trade volume.

The empirical literature on the trade effects of PTAs largely ignores the two margins of trade, namely the extent to which countries trade different volumes (i.e. the intensive margin) or a wider variety (i.e. the extensive margin) of goods. This is despite the fact that a great deal of attention has been paid to the margins of trade in recent empirical and theoretical contributions in international trade. Part of the reason for this interest is the increasing availability of highly disaggregated trade data as well as product-level export data at the firm level, along with advances in the measurement of product variety (e.g. Feenstra, 1994). A further reason, however, relates to developments in the theory of international trade and economic growth, with a number of models emphasising the benefits of international trade in providing access to new products or new varieties of existing products (see, for example, the seminal contributions of Rivera-Batiz and Romer, 1991; Grossman and Helpman, 1991). In these models, a country's access to foreign inputs raises productivity levels, thereby generating static gains from trade. New foreign inputs also lower the cost of innovation, enabling the creation of new varieties, and this generates dynamic gains from trade. Recently, Feenstra and Kee (2008) have shown that the variety of exports is also related to country productivity in a sample of 48 countries. Their theoretical model relates to the recent literature on heterogeneous firms (e.g. Melitz, 2003), with firms self-selecting into exporting markets. Since more productive firms self-select into export markets and are thus more productive than the average domestic firm, an increase in the number of firms exporting and therefore an increase in export variety is associated with rising productivity.