GDN Project:

The Impact of Tariff Protection on FDI in Developing and Transition Countries: Is the Tariff Jumping Argument Working for These Countries?

Non-technical Abstract

1. Introduction

The first two papers focus on the strategic interactions in oligopolistic markets between domestic and foreign firms, on one side, and domestic firms and the domestic government, on the other. Our analysis encompasses both positive and the normative analysis whereby the latter concentrates on examining the optimal tariff policy.

The distinctive characteristic of the firms in our set-up is their asymmetry. The asymmetries, depending on context, come from a) a gap in the marginal costs between the developed country firm that uses advanced technology and the developing country firm that initially produces with old, less efficient technology; b) spillovers that are assumed to be basically unilateral, stemming from developed country firm to the developing country firm; and c) the ability to innovate with firms from developed markets having more resources than firms from developing economies to conduct R&D.

As for the used analytical apparatus, we rely on non-cooperative game theory under symmetric information. The benchmark concept is an n-stage competition model from dynamic non-cooperative game theory with homogenous goods. However, unlike most of the paper that model oligopoly either in the Cournot or the Bertrand style, we use a perfect price flexibility setup based on Boone (2002).

The third paper will be based on an empirical analysis of panel data. We will follow a two stage approach. First, in order to assess the productivity levels of firms and their evolution in time we will estimate the production function using two different methodologies a) a semiparametric approach similar with the one used by Pavcnik (2002) that allows us to correct for the presence of selection and simultaneity biases in the estimates stemming from the fact that a firm's private knowledge influences its decision to exit the market and its decision on its inputs; b) a stochastic frontier analysis as described by Kumbhakar and Lovell (2000). In the second step we will distinguish between changes

in productivities due to trade from changes determined by other factors (e.g. technological change).

Our empirical analysis will be performed on an unbalanced panel data of firms from Czech Republic and the Baltic countries. Data on firms based in Czech Republic comes from ASPEKT database and contains 3883 firms followed from 1992 since 1999 (descriptive statistics are included). The corresponding statistical offices will provide the firm level data for firms operating in the Baltic countries. In the case of Estonia, we will have data for 660 firms over the period 1993 – 2002. We will also try to update the data on Czech firms so that we could cover the entire period 1992 – 2002.

2. Findings and results

The first two papers assume a world formed by two countries – a developing and a developed one. In this simplifying setup we discuss the optimal tariff policy in the regime in which the domestic government cannot pre-commit to the level of tariff ("non-commitment" regime). In both papers we consider the case in which firms from developing countries are less efficient than their counterparts from developed economies. Yet, we consider the cases in which firms operating in developing markets are catching up with the more efficient firms either through spillovers or through own R&D efforts.

We assume that domestic country's government sets tariffs unilaterally. Also, depending on the context, we consider "domestic country" to be either a developing or developed country. In this latter case, the government enacts tariffs in order to induce the appropriability of intellectual property rights (IPR) in a North-South trade situation. This allows us to study the link between policies in developing countries (in this case a loose IPR regulation) and the retaliation policies of governments from developed, Western countries. As a result we can study the implications of such retaliatory actions for profits and social welfare in less developed, Southern countries.

1) The first paper entitled "Foreign Direct Investment, Tariff Jumping Argument and the Market Conduct in the North–South Trade" analysis the way in which governments from developing countries can induce higher competition and enhance productivity and consumers' surplus by means of tariff protection. When trade barriers are high

multinational enterprises (MNEs) faced with a choice between exporting to the local market and local production may opt for the latter in order to "jump" over the domestic tariffs. The gains from tariff protection, however, are higher when domestic firms can catch up, through spillovers, with the technology used by firms from developed economies. Therefore, this is the case that we investigate in this paper.

Most studies that assess the impact of government policies on inward FDI and social welfare in imperfectly competitive markets assume that firms interact either in Bertrand or Cournot manner. We know very little about the linkage of tariff protection and FDI under different market structures. Unlike Cournot or Bertrand type of conduct, when there is price flexibility (or an auction-like setting of the market price), the similarity or dissimilarity of firms' unit costs might be a decisive factor that determines how competitive is the market conduct in an industry. More precisely, when the distribution of cost efficiency, measured in terms of unit costs size, is rather uneven, the most efficient firms might have an incentive to behave aggressively and under-price some of the less efficient competitors in the industry. However, when firms are similar in terms of cost efficiency, there is a balance of power and hence firms might tend to be "nice" to each other and charge high prices. Therefore, foreign subsidiaries that are highly efficient might have a strong pro-competitive effect on domestic market. The resulting increase in consumer surplus might be high enough so to offset losses in tariff revenues and domestic producer surplus. Consequently, unlike in Bertrand or Cournot frameworks where the impact of FDI inducing tariffs could easily have adverse social welfare effects, in the case of price flexibility this impact might be positive.

This paper attempts to fill this gap in the literature by studying a North-South trade situation in which market conduct is characterized by "be nice unless it pays to fight" behavior (Boone, 2002). When foreign investors establish subsidiaries in the South, knowledge spill over from Northern to Southern firms. In this context, we analyze the role of tariff in inducing inward FDI and its impact on domestic social welfare. In addition, we study how these relations change when FDI is accompanied with positive, intra-industry R&D spillovers.

We show that unlike in analogues setups with Bertrand or Cournot competition, in the absence of spillovers, a tariff induced FDI enhances or at least preserves the free trade welfare. It does so by inducing an aggressive pricing strategy. When the R&D spillovers

are positive, the main role of tariff protection is to induce, whenever possible, the most competitive conduct. More precisely, when domestic firms are inefficient, and spillovers are small, the socially enhancing policy is to encourage foreign investors to establish subsidiaries in the domestic market that price aggressively and drive the inefficient (local) firms out of the market. When domestic firms are inefficient but spillovers are high, foreign subsidiaries would find fighting entry to be to costly, so they would behave "nice" towards their rivals and charge monopoly prices. Therefore, it becomes socially optimal to set small tariff that still bring some tariff rents but meanwhile, preserve to some extent foreign firms' cost advantage and thus, their incentive to fight the entry of the domestic firms (this time via export). However, when domestic firms are efficient, exports and FDI are equivalent in all respects: domestic and foreign profits, prices, and supplied quantities.

2) The optimal tariff protection level is further studied in second paper entitled: "Tariff Protection, Intellectual Property Rights and North-South Trade with Perfect Price Flexibility". This time we assume that the domestic country is a developed, Northern country. Some markets in these countries are highly concentrated and are characterized by high rates of innovation. However, because firms undervalue the social surplus created by R&D investments and because newly created knowledge and technology can easily spill over into the public domain, firms in these markets tend to undertake lower investment in innovation than is socially optimal. Governments can restore, at least partially, the appropriability of innovation by introducing a strong intellectual property rights (IPR) regulation. However, if foreign firms export their products into the domestic market, domestic IPR protection might be ineffective. Firms originating from countries with a loose IPR regulation, as is often the case with developing, Southern countries, might decipher the technology incorporated in their rivals' product and adopt it without facing any punishment. The Northern governments might then defend their IPR by an appropriate tariff protection in order to restore the R&D appropriability in a North-South trade situation. Thus trade policy acts as a supplement to the IPR protection policy.

In the above paper we study a North-South trade situation in which prices in the Northern market are flexible and knowledge spills over from North to South firms. The market of interest is located in the North. In a partial equilibrium set-up, we analyze the role of tariff in preventing technological leakages and its impact on domestic consumers and producers and on the Southern producers. We show that, unlike in conventional

oligopolistic set-ups, tariff protection preserves or raises consumers' surplus relative to the free trade situation. Moreover, tariff protection keeps foreign firms out of the market, and therefore, R&D becomes appropriable. Even though the level of innovation remains at the same level as under no tariff protection, total industry efficiency increases with respect to the free trade situation.

The fact that the firms from the Southern country are kept out of the Northern market under the tariff regime no matter of the spillover level, indicates that when Northern economies can successfully defend IPR violations, they have strong incentives to set tariff protection levels that are higher than tariffs required to recoup the losses incurred by domestic firms due to IPR infringements. This indicates that if price setting is highly flexible, developing countries might be better off by enforcing a tide IPR regulation. In this case developing countries can avoid the more severe effects that a Northern trade policy might induce.

3) The gradual liberalization of trade between the CEE countries and the EU prior to their accession to the EU structure has been regarded as an important factor in enhancing the productivity and therefore the survival chances of CEE firms in a competitive market as the EU market is. However, little is known about the actual impact of the gradual trade liberalization on firms' productivity and the actual channels through which these changes have occurred (e.g. FDI, exit of less efficient firms, technological change). The third paper will investigate these issues. For the moment we only report in the attached document some descriptive statistics for the data that we have collected up to this moment.

References

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