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Free trade agreements and privatization policy with an excess burden of taxation[☆]

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ABSTRACT

We introduce the excess burden of taxation into a bilateral trade, two-country and two-mixed market model, in which a state-owned enterprise in each country competes with both domestic and foreign private enterprises. We show that the welfare effect of privatization and free trade agreements (FTAs) depends on the shadow cost of the excess burden of taxation. We also show that privatization without an FTA can reduce social welfare and that privatization with an FTA improves (reduces) social welfare when the shadow cost is low (high). We then examine an FTA-coordination game and show that nationalization is a subgame perfect Nash equilibrium; without an FTA it reduces welfare when the shadow cost is low, and with an FTA it improves welfare when the shadow cost is high. Finally, we show that privatization policy can play the role of commitment device to encourage parties to agree to an FTA and thus, it can improve both domestic and global welfare when the shadow cost is low.

1. Introduction

Since the mid-1990s, many developed and developing countries have sought to embrace bilateral and regional routes for trade liberalization by creating their own free trade agreements (FTA) or joining existing FTAs as a key strategy of trade liberalization and regional integration.[1] One of the objectives of an FTA is to stimulate trade between countries by removing trade barriers such as tariffs and quotas. FTAs are also, to some degree, cascadable in terms of extension to additional countries.[2] For example, if some countries sign an agreement to form an FTA and choose to negotiate an FTA with another country, the new FTA will consist of the parties to the old FTA plus the new country. Hence, in recent decades, an increasing number of countries have negotiated to create or join existing FTAs. Furthermore, FTAs are changing to include not only liberalization and facilitation of trade and foreign investment but also on the implementation of common rules for dispute settlement, labor market mobility, intellectual property, and competition.[3]

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1 According to the 2015 report of World Trade Organization (WTO), regional trade agreements (RTAs), reciprocal agreements on trade between two or more partner countries, are the prominent feature of international trade. For example, of the 406 RTAs in force between 1970 and 2015, 232 are FTAs, i.e., more than half of the countries that are party to an RTA are also party to an FTA. The average annual increase in new FTAs since the 1990s is more than ten percent. As of 2014, 227 FTAs were in force, and more FTAs were in the process of being enacted.

2 Urata (2002) described some characteristics of the growth in FTAs. Some well-known interregional economic cooperation agreements that include FTAs are the European Economic Community (EEC), the North American Free Trade Agreement (NAFTA), the Southern Common Market (MERCOSUR), and the ASEAN Free Trade Area (AFTA).

3 Strategic factors—both external and internal—are behind the expansion, intensification, and diversification of FTAs. External factors include the securing of product markets by eliminating trade barriers between participating countries in order to provide domestic firms with export opportunities. Internal factors include the desire

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However, despite the global trends in trade liberalization and privatization, state-owned enterprises (SOEs) are still highly concentrated in a few strategic sectors and, thus, they still control large portions of the world's resources. According to an OECD report by Kowalski et al. (2013), of the 2000 largest public companies in the world, more than 10% are either SOEs or have significant government ownership; these government-associated companies' sales are equivalent to approximately 6% of worldwide GDP. More than half (in terms of value) of all SOEs in OECD countries are significant players in sectors such as transportation, telecommunications, power generation, electricity, finance, manufacturing, and other energy-related industries. FTAs have inspired foreign firms' entry into these industries; thus, SOEs, domestic private firms, and foreign private firms coexist in mixed markets. Therefore, understanding the strategic interaction of countries' optimal choices with regard to FTAs and privatization in the context of international mixed markets is important.

Fjell and Pal (1996) first proposed an economic model of a mixed oligopoly with foreign competitors and investigated the effect on market price and production allocation of the introduction of foreign private firms. Pal and White (1998) also examined the interaction between privatization and strategic trade policy[4] and found that the welfare is always improved by privatization if only a production subsidy is used. In addition, privatization increases welfare over much of the parameter space if only an import tariff is used. Pal and White (2003) showed that the existence of an SOE lowers the optimal tariff and subsidy but also lowers the total volume of trade between the two countries. The lower volume of trade, however, does not translate into lower levels of welfare for the trading countries. Chang (2005) analyzed a mixed duopoly model in which the foreign firm is more efficient than the domestic firm and showed that the optimal level of privatization depends critically on the strategic substitutability-complementarity assumption. Chao and Yu (2006) found that the optimal tariff is lowered by foreign competition but raised by partial privatization. In addition, Yu and Lee (2011), Han (2012), and Cato and Matsumura (2015) analyzed the optimal degree of privatization and trade policy in a mixed oligopoly and showed that privatization strategy is strongly affected by trade policy.

On the other hand, as pointed out by Lin et al. (1998) and Lin and Tan (1999), SOEs often implement the government's public policy, such as retaining redundant workers or providing social goods to society, which causes the welfare loss; that is, public funds carry an excess burden of taxation. Laffont and Tirole (1986) incorporated the shadow cost of public funds in determining the optimal subsidy for a public monopolist. Capuano and De Feo (2010) examined the effect of the shadow cost of public funds on privatization in a mixed duopoly. Wang and Chen (2011) investigated subsidy policy with an excess burden of taxation and showed that the degree of efficiency gain sharply affects the comparisons of optimal subsidy, total output, and social welfare between a mixed duopoly and a private duopoly. Matsumura and Tomaru (2013) analyzed an endogenous market structure with optimal tax-subsidy policies in mixed oligopolies and private oligopolies with an excess burden of taxation and found out that privatization affects welfare, which contrasts with literature on the privatization neutrality theorem.[5] Matsumura and Tomaru (2015) examined the relationship between the equilibrium level and the efficient level of product differentiation in a mixed duopoly and showed that privatization improves welfare when the shadow cost is high.

All of those previous studies explored the welfare consequences of privatization policy in a unilateral mixed-market framework, in which the domestic SOE competes with domestic or foreign firms in the domestic market. However, because an FTA inspires foreign competition in the domestic market, the strategic interaction between the two countries in their bilateral trade plays an important role in promoting the expansion of FTAs and the implementation of privatization.

Bárcena-Ruiz and Garzón (2005) considered an integrated market, composed of two countries. Assuming that SOEs are less efficient than are private firms, they concluded that when the SOE's marginal cost is an intermediate value, each country's government wants the other to privatize its SOE. Dadpay and Heywood (2006) showed that two competing SOEs (one domestic and one foreign) play the role of trade barrier and that the strategic interaction of the two countries' governments in a bilateral trade model usually reduces welfare. Han and Ogawa (2008) and Lee et al. (2013) incorporated an import tariff and examined the interaction of the two countries' strategic choices with regard to privatization and the import tariff in a mixed market. They also demonstrated that the equilibrium degree of privatization depends not only on the relative efficiency of the SOE but also on the government's choice of trade policy.

In this paper, we incorporate the excess burden of taxation into a bilateral trade, two-country and two-mixed market model in which the SEOs compete with domestic and foreign private enterprises. We examine the import tariff, the production subsidy, and privatization in the context of the strategic interaction of the two countries' governments in choosing privatization policy and/or whether to join an FTA. The relationship between trade policy and privatization policy has been discussed intensely in the literature on mixed oligopolies. However, the relationship among the three policies—production subsidy, import tariff, and privatization—in a bilateral framework with consideration of public funds' excess burden of taxation rarely has been discussed.

The main findings are as follows. We show that the welfare effect of privatization and a FTA depends on the shadow cost of the excess burden of taxation. Privatization increases the tariff and an FTA decreases the subsidy when the shadow cost is low; conversely, privatization decreases the tariff and an FTA increases the subsidy when the shadow cost is high. We also show that privatization without an FTA can reduce social welfare and that privatization with an FTA improves (reduces) social welfare when the shadow cost is low (high). We then examine an FTA-coordination game and show that nationalization is a subgame perfect Nash equilibrium; without an FTA it reduces welfare when the shadow cost is low, and with an FTA it improves welfare when the shadow cost is high. Finally, we investigate whether the sequence in which FTA policy and privatization policy are decided affects welfare. We show that privatization with an FTA can play the role of commitment device to improve both domestic and global welfare in mixed markets when the shadow cost is low. Therefore, the policy sequence

for increased economic growth, which can be driven by increased efficiency in response to the more intense competition of open markets.

[4] In the strategic trade literature, Brander and Spencer (1984, 1985) first showed that a country's government could improve its terms of trade by using a tariff or subsidy to take a leadership position in transferring revenue from foreign firms to domestic firms. A well-known proposition of trade theory is that in the absence of directly trade-related distortions or policy goals, subsidies are superior to tariffs for achieving any economic objective. See, for example, Eaton and Grossman (1986), Collie (1993), and Van Long and Stähler (2009).

[5] The privatization neutrality theorem states that privatization does not affect welfare, regardless of time structure, competition mode, number of firms, product differentiation, and degree of privatization under the optimal tax-subsidy policy. However, in the presence of foreign competitors, privatization affects welfare even under the optimal tax-subsidy policy. See, for example, Matsumura and Tomaru (2012).