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Do industrial and trade policy lead to excess entry and social inefficiency?

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ABSTRACT

This paper analyzes the welfare effects of industrial and trade policy instruments (output subsidies or/and import tariffs) in an international Cournot oligopoly and compares the social efficiency of specific policy instrument or dual policy instruments (output subsidies-cum-import tariffs) with free entry of domestic firms. It first demonstrates that free entry of domestic firms is always socially excessive irrespective of the policy regimes rate in an open economy. It then shows that optimal tariff rate and output subsidy rate under free entry of domestic firms will be lower than the one at regulated entry when the scale of domestic market is moderate; for dual policy regime, the optimal output subsidy rate at free entry is lower than the one at regulated entry, while the optimal tariff rate at free entry is higher than the one at regulated entry. Furthermore, even though the need of dual policy for welfare improvement is degenerate to be suboptimal with the free entry of domestic firms, but it is still superior to the subsidy policy.

1. Introduction

When a developing country transforms its industrial structure, it is concurrently facing the pressure of opening its home market for foreign competitors. The common wisdom suggests that free entry enhances social welfare through increasing total output in a closed economy, while free entry tends to decrease social welfare by contracting the outputs of incumbent firms. This result often called "business stealing effect".[1] In an open economy, we observed that imperfect competition exists between domestic firms and foreign firms, and it has been shown that free entry of domestic firms and/or foreign firms in the home market will influence the coordinated choice of industrial and trade policy.

Why Japan economy is stagnating for the decades? It remains as a "puzzle" for the industry observers and academic researchers. It has been pointed out that the Japanese industrial policy was mainly focused on cost-inefficient agricultural and mining, which do not have international competitiveness. Industrial policy was chosen politically, but it lacks of private initiative which is harmful because it shifts the resource away from the competitive sector. Reviewing the real Japan economy scenario, all the government should be cared about the coordination of industrial, trade and competition policies in an era of globalization. Hence, it is pertinent to seriously consider whether anti-competition entry-regulation policies should be enforced when both import tariff and output subsidy instruments are adopted or either one instrument is used.

From both real-world economy and theoretical concerns, we in this paper mainly analyze the welfare effects of strategic industrial and trade policy instruments (output subsidies or/and import tariffs) in an international Cournot oligopoly and for doing that,

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[1] The business-stealing effect indicates that a new entrant will and can acquire the market share from the incumbents making the incumbents reduce their outputs. See, Mankiw and Whinston (1986); Okuno-Fujiwara and Suzumura (1993); Suzumura and Kiyono (1987); von Weizsäcker (1980) for other works on excessive entry in the presence of scale economies.

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we fist need to compare the social efficiency of specific policy instrument or dual policy instruments (output subsidies-cum-import tariffs) with free entry of domestic firms. We show that free entry of domestic firms is always socially excessive irrespective of the policy regimes rate in an open economy. In particular, even though the need of dual policy for welfare improvement is degenerate to be suboptimal with the free entry of domestic firms, but it is still superior to the subsidy policy.

In the literature of general equilibrium analysis of import tariff and output subsidy, Bhagwati and Ramaswami (1963) explored that a tariff policy is also necessarily inferior to an optimal tax-cum-subsidy policy. They argued that an optimal subsidy (or a tax-cum-subsidy equivalent) is necessarily superior to any tariff when the distortion is domestic. From the strategic trade aspect in the context of oligopolistic competition, Brander and Spencer (1984) showed that government could improve its terms of trade through tariffs in an oligopoly market and take a leading position to transfer a foreign firm's revenue to a domestic firm by using tariff as a strategic instrument. Eaton and Grossman (1986) analyzed the welfare effects of trade and industrial policy under oligopoly, and characterize optimal intervention under a variety of assumptions about market structure and conduct. With domestic consumption, intervention can raise national welfare by reducing the deviation of price from marginal cost. Collie (2006) extended the Brander and Spencer (1985) model of profit-shifting export subsidies to analyze the welfare effects of ad valorem and specific trade policy instruments (import tariffs and output subsidies) and further compared the efficiency of ad valorem with specific instruments.[2]

Is free entry desirable for social efficiency in an open economy? This important question has been studied extensively in a closed economy. In an influential work, Mankiw and Whinston (1986) showed that free entry in oligopolistic markets is socially excessive in the presence of scale economies, thus providing the rationale for anti-competitive entry-regulation in certain markets. This result, which is often referred as "excess-entry theorem" has created significant interest in analyzing the welfare effects of free entry in oligopolistic markets (see, Anderson, de Palma, & Nesterov, 1995; Fudenberg & Tirole, 2000; Okuno-Fujiwara & Suzumura, 1993; Suzumura & Kiyono, 1987, to name a few).[3] From the political-economy angle, Amir and Burr (2015) interestingly investigated the effects of corruption in the entry-certifying process on market structure and social welfare for a Cournot industry with linear demand and costs. They showed that a socially optimal number of firms in the market may be reached by choosing the right number of pre-existing firms or by having exactly two licensing authorities.

In an open economy, Ghosh et al. (2010) and Marjit and Mukherjee (2013) showed that free entry can be socially insufficient in the presence of foreign competition even though it is in a slightly different framework.[4] Hence, the anti-competitive entry-regulation policy may not be justified in an industry facing foreign competition, and it may depend on the transportation cost, the marginal cost difference between the firms and the domestic labor market structure. Wang et al. (2014) examined privatization policy and entry regulation in a mixed oligopoly market with foreign competitors and free entry of private firms. They demonstrated that if the number of domestic private firms is small, an import subsidy may be chosen and the optimal privatization policy is full privatization. However, if the number of domestic private firms is large, an import tariff is imposed and the optimal privatization policy is partial privatization. Furthermore, as long as the entry cost is relatively lower, domestic free entry is socially excessive whether it is free trade or the domestic government imposes the tariff policy.[5] Hence, whether free entry is socially insufficient or excessive in an open economy hinges on the types of domestic distortion and the presence of domestic public firm, in particular.

In the literature, many works have already pointed out that welfare implications of public policies in free entry markets are in sharp contrast with those in entry-regulated markets.[6] From the paper reviewed above, no paper seems explored the dual policy instrument of output subsidy and import tariff, and the welfare effects under free entry of domestic firms. In this paper, it first shows that free entry of domestic firms is always socially excessive irrespective of the policy regimes rate in an open economy. It then demonstrates that both optimal import tariff rate and output subsidy rate under free entry of domestic firms is lower than the one at regulated entry when the scale of domestic market is moderate; for dual policy regime, the optimal output subsidy rate at free entry equilibrium is lower than the one at regulated entry, while the optimal tariff rate at free entry equilibrium is higher than the one at regulated entry. Even though the need of dual policy for welfare improvement is degenerate to be suboptimal with the free entry of domestic firms, but it is still superior to the subsidy policy. Accordingly, anti-competitive regulation policy is justified coupled with import tariff and output subsidy.[7]

The remainder of this paper is organized as follows. Basic modeling is provided in Section 2. Section 3 contains the analysis of import tariffs, output subsidies and dual policy under free entry vs. regulated entry of firms. Section 4 explores policy regimes and its welfare comparisons. Section 5 concludes the paper.

[2] It is a well-established proposition of trade theory that in the absence of directly trade-related distortions or policy goals, subsidies are superior to tariffs for achieving any economic or noneconomic objective. Rodrik (1986) showed that once the endogeneity of the distortion or noneconomic distortions is allowed for, the welfare-ranking of various policies can be reversed.

[3] In a closed economy, for example, Ghosh and Morita (2007a,b); Matsumura and Okamura (2006); Mukherjee and Mukherjee (2008), and Mukherjee (2012) showed that free entry can be insufficient in an oligopolistic market. These works pointed out that along with business stealing effects, free entry creates further effects by either affecting the input prices, technologies, increasing the elasticity of demand or market leadership.

[4] For example, Tanaka (1991) used the Nash bargaining approach to analyze the negotiation of tariffs between two countries in free-entry oligopolies under integrated markets. Tanaka (1992) further examined the welfare effects of tariffs in international free-entry oligopolies under integrated markets in a two-country world model.

[5] Please see the works on privatization neutrality theorem (PNT) that discussed free entry and multiply policy tools (Cato & Matsumura, 2013) and that discussed international competition (Matsumura & Tomaru, 2012)

[6] See for example, Matsumura and Okumura (2014).

[7] Fisman and Allende (2010) studied the distortions of industrial organization caused by entry regulation. They found that the effect of entry regulation on industry share is not related to differences in natural barriers. Regarding industry dynamics, they found that in countries with high entry regulation, industries respond to growth opportunities through the expansion of existing firms, while in countries with low entry regulation, growth opportunities lead to the creation of new firms.