



# China's import duty drawback and VAT rebate policies: A general equilibrium analysis<sup>☆</sup>

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Received 5 May 2005; accepted 27 February 2006

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## Abstract

China's duty drawbacks and value-added tax rebates play important roles in promoting exports. Simulations from a CGE model, characterized by a dual production (domestic sales and export processing) and dual import structure (imports used in export processing and for other purposes), confirm our theoretical results on China's exports that (a) such policies are generally export promoting; (b) a small part of the export expansion comes at the expense of a slight decline of the domestic activity through factor reallocation and input substitution, whereas a larger portion of the expansion is attributed to cheaper access to foreign inputs; (c) export processors use more imported inputs and less domestic inputs; and (d) export intensive sectors are positively affected by these policies, whereas traditional agriculture sector is impacted adversely. These policies generate welfare gains for China.

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*JEL classification:* F13; O53; C68

*Keywords:* Duty drawback; Tax rebate; CGE modeling; China

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## 1. Introduction

The policies of import duty drawbacks and value-added tax (VAT) rebates have played important roles in promoting China's exports in the last two decades. Duty drawbacks and VAT rebates are respectively the reductions in tariffs and domestic taxes on imported inputs used for

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<sup>☆</sup> We would like to thank a co-editor and an anonymous referee for helpful comments and suggestions.

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export processing.<sup>1</sup> For example, in 1998, a 17% tariff was imposed on the imports of machinery and an additional 17% domestic tax was levied on its value-added in production. Both taxes are rebated when the machinery is used for export processing.<sup>2</sup> As these two policies discriminate against imported inputs used in goods sold domestically, they certainly create incentives for firms to sell products abroad.

How effective are duty drawbacks and tax rebates in promoting exports? Using China's aggregate data, Chao, Chou and Yu (2001) showed that duty drawbacks expand the exportable and the intermediate-good sectors. However, their study does not provide detailed sectoral responses by products to duty drawbacks. To study this issue, this paper generalizes the model of Chao et al. for theoretical considerations and then modifies a standard computable general-equilibrium (CGE) model for illustrating the quantitative effects of the policies. As duty drawbacks and tax rebates apply to China's processing exports, it is necessary to separate export processing from domestic sales. Utilizing this modified model, we conduct two sets of counterfactual simulations to illustrate the sectoral and economy-wide effects of these two policies for the Chinese economy.

Applications of CGE models on tax and trade issues can be found in Dixon, Parmenter, Sutton and Vincent (1982), Shoven and Whalley (1984), Srinivasan and Whalley (1986) and Robinson (1988). CGE models have also been used in analyzing trade and other issues in China. For example, Wang and Zhai (1998) considered the distributional effects of trade liberalization and tax policies of China. Xu and Chang (2000) studied the employment effect of tariff reductions in China. Wang (2003) evaluated the impact of China's WTO membership and a "Greater China" free trade area on the economic relationship across the Taiwan Strait.

The paper is organized as follows. Section 2 considers theoretical aspects of the tax rebate policy. Section 3 presents a CGE model, while Section 4 carries out policy simulations. Section 5 concludes the paper.

## 2. A theoretical model of tax rebates

Since duty drawbacks and tax rebates are applied to mitigate the effects of the tariffs and taxes on imported intermediates used only for export processing, we need to extend the simple export tax rebate model of Chao et al. (2001) by considering a dual production structure of domestic sales and export processing. We further generalize their model by removing the distortions of fixed wages and the small-country setting so that the model is more descriptive of the current large economy of China.

The home economy produces two final goods, an exportable  $Q_x$  and an importable  $Q_y$ , and one intermediate good  $M_d$ . There are two types of firms in sector  $Q_x$ : type-1 firms focus on domestic sales while type-2 firms are primarily for export processing. Firms of both types employ the same

<sup>1</sup> For imported inputs, the VAT levy is in addition to the import duty. Finished final goods are also subject to the VAT. However, previously paid VAT on its inputs is deducted from the VAT payment on its final goods. When the final goods are exported, the previously paid VAT on imported inputs is rebated to the export processor. See China's Ministry of Finance, [www.mof.gov.cn](http://www.mof.gov.cn), and Ministry of Commerce, [www.mofcom.gov.cn](http://www.mofcom.gov.cn).

<sup>2</sup> In February 1997, China lowered the rebate rates to 3% for agricultural products and coal, 6% for processed products using agricultural inputs and for other products with a 13% applicable value-added tax, and 9% for products with a 17% applicable value-added tax. These rates were raised in 1998 to 17% for machinery, electronics, and transportation equipment, 13% for agricultural machinery, textiles, steels and cements, 11% for chemical and plastic products, 9% for processed products using agricultural inputs, and 5% for agricultural products. In July 1999, the rebate rates were raised and many products enjoyed zero value-added tax rates. See China's Ministry of Finance, [www.mof.gov.cn](http://www.mof.gov.cn).

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