



# Export Liberalization, Job Creation, and the Skill Premium: Evidence from the US–Vietnam Bilateral Trade Agreement (BTA)

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**Summary.** — This paper explores how the expansion of labor-intensive manufacturing exports resulting from the 2001 US–Vietnam Bilateral Trade Agreement affected changes in wages in Vietnam through the channel of labor demand. Using the data on panel individuals from the *Vietnam Household Living Standards Surveys* of 2002 and 2004, and addressing the issue of endogeneity, the results confirm the existence of a Stolper–Samuelson type effect, i.e., those provinces more exposed to the increase in exports experienced a relatively larger wage growth for unskilled workers and a decline of (or a smaller increase in) the relative wage of skilled and unskilled workers.

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*Key words* — trade liberalization, skill premium, wage inequality, labor market, Stolper–Samuelson theorem, Vietnam

## 1. INTRODUCTION

Since Vietnam started its transition from a centrally planned to a market oriented economy under its *doi moi* (“renovation”) policy in 1986, Vietnam has been among the fastest growing economies with an average annual growth rate of 6.9%.<sup>1</sup> Vietnam’s trade, measured by its sum of imports and exports, grew even faster than its Gross Domestic Product (GDP), as the share of trade relative to GDP increased from 23.2% in 1986 to 112.5% in 2000, 139.0% in 2004, and 169.6% in 2007 (the World Development Indicators (WDI), the World Bank). However, Vietnam’s industrial employment share initially remained unchanged at around 12% of total employment through the end of the 1990s (WDI), suggesting that expansion of trade does not necessarily lead to industrial job creation. In contrast, since the recent millennium, Vietnam’s industrial employment share in total employment grew substantially, rising from 12.4% in 2000 to 17.4% of total employment in 2004 (WDI). The US–Vietnam Bilateral Trade Agreement (BTA) of 2001, which led to a dramatic expansion of labor-intensive manufacturing exports to the United States, appears to have contributed to the surge.

The standard Heckscher–Ohlin (H–O) theory predicts that, as developing countries are abundant in unskilled labor and scarce in skilled labor, freer trade would lead a developing country to specialize in a sector which uses its unskilled labor intensively, raising labor demand in the latter sector. Its companion theory, the Stolper–Samuelson (S–S) theorem (1941), suggests that the increase in the relative output prices of unskilled-labor-intensive goods relative to skilled-labor-intensive goods would translate into a rise in the relative wages of unskilled labor, narrowing the wage gap between skilled and unskilled workers. However, the validity of the Heckscher–Ohlin–Samuelson (H–O–S) theory has been challenged since, contrary to the prediction of the theory, many developing countries experienced an *increase* rather than a *decrease* in skill premium after episodes of trade liberalization (Goldberg & Pavcnik, 2007; Harrison, McLaren, & McMillan, 2010). Moreover, most of the empirical research finds little evidence that trade reforms induce labor reallocation *across* sectors toward unskilled-labor-intensive sectors in developing countries (Goldberg & Pavcnik, 2007).<sup>2</sup> In their extensive review on the

distributional consequence of globalization, Goldberg and Pavcnik (2007) view that the H–O–S theorem is generally inconsistent with the empirical evidence and conclude that the direction of research on international trade tends to be shifting from the traditional focus on countries and industries to a new focus on firms and products. However, Goldberg and Pavcnik’s (2007) conclusions are mainly drawn from evidence on import liberalization, and little study has been devoted to how export liberalization resulting from policy changes by countries’ trading partner(s) would affect skill premium in developing countries.

The impact of the BTA on Vietnam’s labor market provides an excellent opportunity to remedy this gap in the trade liberalization and wage inequality literature. First, the BTA presents an opportunity to examine, on the export side, how a tariff cut by a country’s trading partner influenced job opportunities and wages of workers with different skill levels. Second, the US tariff cut on Vietnam’s exports was exogenous,<sup>3</sup> sudden, and large. Before the BTA, Vietnam’s access to the US market was quite limited since Vietnam faced the US general tariff rate (at around 35% in simple average) which was much higher than the US Most-Favored-Nation (MFN) tariff rate of around 4.9% (Fukase & Martin, 2000). Immediately after the BTA came into effect on December 10, 2001, the United States granted MFN status to Vietnam lowering the tariff rates across the board. As a result, Vietnam’s exports to the United States, in particular, those of labor-intensive manufacturing goods, expanded dramatically. Starting from a very low level, the United States absorbed 38.3% of Vietnam’s textiles

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exports, 56.9% of apparel, 16.6% of footwear/leather, and 26.2% of furniture and miscellaneous manufacturing exports by the year 2004 (the UN Comtrade System). Finally, unlike most of the cases in the literature, labor reallocation toward more labor-intensive manufacturing appears to have occurred in the aftermath of the BTA.

Since *doi moi*, Vietnam has undertaken a number of reforms which introduced market forces in determining wages, including labor market reforms, privatization and rationalization of state owned enterprises (SOEs) and a variety of legal, regulatory, and institutional reforms (Van Arkadie & Mallon, 2003). This paper undertakes a strategy of isolating the effects of the US tariff cut on wages from the impacts of the domestic reforms, following recent literature to explore regional variation in exposure to trade in analyzing consequences of trade reforms (see, for instance, Castilho, Menéndez, & Sztulman, 2011; Chiquiar, 2008; Coello, 2009; Hanson, 2005; McCaig, 2011; Topalova, 2010; Wei & Wu, 2001). A contribution of this paper is to model explicitly the change in labor demand induced by exports as a mechanism through which exports would influence wages. I construct an Export Index at the province level, taking account of Vietnam's provincial industrial composition and its export- and labor-intensities. In order to overcome potential endogeneity, the US tariff cut measure inspired by Topalova (2010) is used as an instrument. Then, using the panel individuals from the *Vietnam Household Living Standards Surveys* (VHLSS) who were interviewed both in 2002 and 2004, I evaluate how the provincial variation in exposure to trade would have influenced the wage levels of skilled and unskilled workers and the skill premium in Vietnam.

Section 2 demonstrates the recent trends of trade and industrial employment in Vietnam. Section 3 specifies and implements a series of regression models which relate changes in the Export Index to changes in wages of skilled and unskilled workers and in the skill premium. Section 4 concludes.

## 2. BACKGROUND

### (a) Trends of Vietnam's trade and the US–Vietnam Bilateral Trade Agreement

The coming into effect of the US–Vietnam BTA in December 2001 and Vietnam's accession to the WTO in January 2007

contributed significantly to the expansion of Vietnam's trade. Figure 1 plots the evolution of Vietnam's exports to the United States. After the United States lifted its embargo in 1994, Vietnam's exports to the United States grew steadily. Prior to the BTA, Vietnam's exports to the United States were mainly concentrated in primary products such as coffee, shrimp, and petroleum whose general tariff rates are zero or close to zero (Fukase & Martin, 2000). However, Vietnam faced almost prohibitive general tariff rates for many manufactured goods.<sup>4</sup> Immediately after the BTA came into force in December 2001, the United States extended normal trade relations and MFN status to Vietnam. As a result, the United States emerged as Vietnam's top export destination in 2002, with Vietnam's exports to the United States more than doubling from \$1066 million in 2001 to \$2453 million in 2002. They have continued to increase, reaching \$11,903 million in 2008.

During the same period, Vietnam's exports to destinations other than the United States also grew rapidly with Vietnam's total exports to the world rising from \$14,483 million in 2000 to \$62,685 million in 2008. Figure 2 plots the share of the United States in Vietnam's total exports. Vietnam's exports to the United States, which accounted for 7.1% of Vietnam's exports in 2001, jumped to 14.7% in 2002, and further increased to 19.6% in 2003; since then, the ratio has remained relatively steady at around 19%. Thus, it would be reasonable to assume that most of the immediate impacts of the US tariff reduction took effect during 2001–2004.

### (b) Composition of trade

Figures 3a–3c show the composition of Vietnam's "industrial" exports to the world (Figure 3a), to the United States (Figure 3b), and to the rest of the world (Figure 3c) for the period 2000–2007.<sup>5</sup> This paper focuses on the "industrial" sector which in turn is defined as mining (categories 10–14 in the Vietnam Standard Industrial Classification (VSIC) which in turn is based on the International Standard Industrial Classification (ISIC)), and manufacturing (VSIC 15–41).<sup>6</sup>

Figure 3a demonstrates the importance of export-oriented, labor-intensive<sup>7</sup> manufacturing, such as apparel/textiles, furniture, and footwear/leather, in Vietnam's export values and growth. Figure 3b demonstrates that Vietnam's exports to the United States are predominantly concentrated in labor-intensive sectors. For instance, starting from a negligible level, the United States absorbed 38.3% of Vietnam's textiles exports

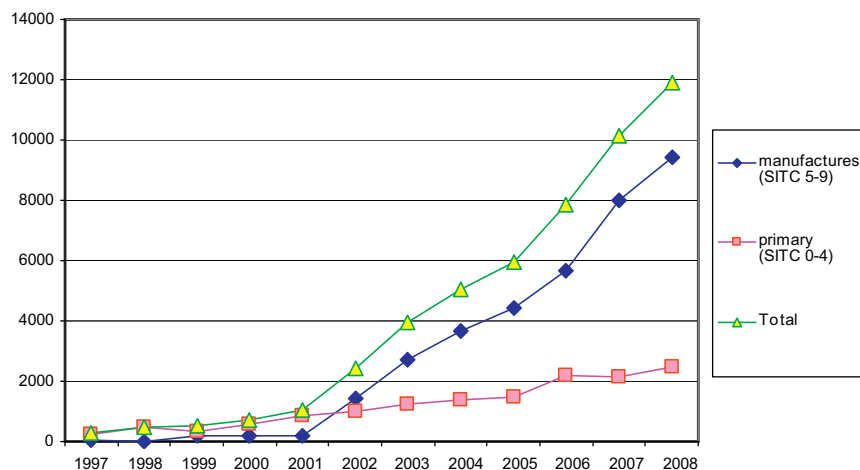


Figure 1. Evolution of Vietnam's exports to the United States (\$ million). Source: the UN Comtrade System.

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