The Impact of Rising Labor Costs on Commodity Composition of Manufactured Exports: Evidence from China

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(Preliminary and Incomplete)

Abstract: Chinese labor is no longer cheap. Recent studies show that China's comparative advantage is shifting from labor-intensive exports to capital- and skill-intensive ones. The goal of this study is to estimate the impact of rising labor costs on commodity composition of manufactured exports using Manufacturing Firms Survey and Customs Survey matched data collected from 2002 to 2006. It is a large-scale panel data, covering most exporting manufacturing firms above designated size in China and providing rich information on firm's production and exporting behaviors. Our OLS results show that increasing unit labor cost decreases the proportion of exports in labor- and resource-intensive manufactures, but it has little impact on the shares of capital- and skill-intensive products. After controlling for firm's value-added, employment, real fixed assets, technological innovation, foreign direct investment and time effect, ten percent increase in the unit labor cost will reduce the proportions of labor- and resource-intensive exports by 2.0 percent and 1.2 percent, respectively. However, after removing the unobserved firm characteristics which may be correlated with the unit labor cost, such as technical efficient, preference on exporting, historical support from local government and so forth, our fixed-effect estimates indicate that rising unit labor cost will increase the shares of exports in labor- and resource-intensive manufactures. Ten percent increase in the unit labor cost will increase the shares of labor- and resource-intensive exports by 0.6 percent and 0.7 percent, respectively. The share of capital-intensive exports is hardly affected by the unit labor cost. These findings imply that more productive and efficient firms will export more despite of the increasing labor costs.

Keywords: Labor costs; Export shares; Factor intensity; Manufactures; China

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1. Introduction

China's tremendous success is largely attributed to its rapid growth in international trade since economic reform and openness. From 1978 to 2014, the annual rate of growth of real exports was 10.8% percent, higher than that of real GDP at 9.7% per annual.[1] It is well known that China once had large surplus labors and had the relative comparative advantage in cheap labor cost. It generated a fast growth in exports, especially in labor-intensive ones. However, the costs of labor and doing business in China has been increasing since the mid-1990s, when China privatized its large and medium State-owned enterprises and kept on orienting to a market economy.

After China made a great effort to join the World Trade Organization (WTO) in 2000, commodity exports grew even faster. The average real growth rate was 14.6% per annual, much higher than that of world total exports of 4.1% at the same period.[2] However, the export shares of manufactures by factor intensity change over time. During the mid-1990s when Chinese labor was relatively cheap, labor-intensive manufactures dominated the Chinese export markets. The share of capital-intensive exports started to rise early in the mid-1980s, surpassed that of labor-intensive ones in 2003, and kept increasing until recently.

Between 2000 and 2014, real annual wages of urban workers in China also experienced significant growth, averaged at 9.8% per annual. It is an overall increase, which means that wage increases in various educational levels, urban and rural areas, export and non-export firms, and all industries by factor intensity. Average wages in labor-intensive industries grew faster than those in capital-intensive ones when the share of capital-intensive exports exceeded that of labor-intensive ones. It raises the question that does China still have the relative comparative advantage in labor costs? In fact, Li, Li, Wu and Xiong (2012) found that Chinese labor is no longer cheap. However, they also pointed out that though China was losing its labor cost advantage in labor-intensive industries, it still had the advantage in capital-intensive and high-tech industries. It triggers the next question that whether the shift of comparative advantage in labor costs in different industries by factor intensity will change the export structure of manufactures.

[1] GDP deflator is used as the price index.
[2] Data on world international exports in goods and services were collected from the World Development Indicator database.

Some empirical studies document that low labor costs benefit international trade and increase the attractiveness of foreign direct investments, especially in labor-intensive industries such as textile and clothing industry (Havlik, 1998; Edwards and Glou, 2000; Busse, 2002; Batra and Khan, 2005; Sayan, 2005; Tica and Jurčić, 2007; Abraham and Sasikumar, 2011; Rattanakhamfu, 2014). Gan, Hernandez and Ma (2016) use firm-level data collected from 1998 to 2007 in China to estimate the effect of rising minimum wage on firm's export behaviors. They conclude that increasing minimum wage (thus the labor cost) decreases both the probability of exporting and the export values. The negative effects are much stronger in labor-intensive enterprises.

Other studies show that rising labor costs inclines to shift comparative advantages of trade and thus change the export structure in terms of factory intensity. Brecher (1974a, 1974b) documents that increasing minimum wage altered the direction of trade. In capital-intensive countries, rising minimum wage will reduce the exports of capital-intensive products and increase the imports of labor-intensive products. However, in labor-intensive countries, a rise in minimum wage will reduce the exports of labor-intensive products and increase the exports of capital-intensive ones. Mbaye and Golub (2002) calculate the trade-weighted relatively unit labor cost from 1974 to 1996 in Senegal, and find that the unit labor cost before 1994 was very high due to the much lower labor productivity. It resulted in a low growth in exports and unattractiveness of investment on export-oriented manufacturing industries. Stuivenwold and Timmer (2003) also find that the fast growth in labor costs in Korea and Taiwan loses export competitiveness of electronic products. However, those economies also keep the advantages in high-quality and high-tech products. Grabowski (2015) compares the export structures of economies which have rapid growth in agriculture productivity and thus low labor costs such as Taiwan and Indonesia, with those which have low growth in agriculture productivity and higher labor costs like Uganda. They conclude that without significant improvement in productivity, population growth does not necessarily reduce the labor costs in Uganda. Therefore, Uganda have no comparative advantage to develop labor-intensive industries and export labor-intensive products. Instead, it should develop the capital-intensive service.

Most previous studies use cross-sectional data to investigate the correlations between labor cost and export shares of manufactures by factor intensity. Little has been done to identify the causal relationship between the two. In addition, though Chinese labor costs keeps rising and the capita-intensive manufactures have already been dominated export markets instead of labor-intensive ones for more than a decade, little is known about China, exports of which accounted for 14% of world total exports in 2015.

The purpose of this study is to estimate the impact of rising labor costs on export shares of manufactures by factor intensity, using data matched from two massive firm surveys from 2002 to 2006. One of the firm surveys is the Survey of Chinese Industrial Enterprises above Designated Size (SCIEDS) conducted annually by Department of Industrial and Transport Statistics at National Bureau of Statistics of China, and the other is Chinese Customs Trade Statistics (CCTS) conducted annually by General Administration of Customs of China. The matched data is a large-scale panel data, covering most exporting manufacturing firms above designated size in China and providing rich information on firm's production and exporting behaviors. To the purpose of this study, the cross-sectional units are each 2-digit HS code exports of each firm. Therefore, we estimate the effect at firm-product-year level. The unit labor cost is used to measure labor cost, which is the proportion of average wage in labor productivity (which equals to firm's value-added divided by the number of employees in that firm). Export shares are calculated using the export value of each 2-digit HS product at each firm dividing by total export values in that year.

Our OLS results show that increasing unit labor cost decreases the proportion of exports in labor- and resource-intensive goods, but it has little effect on the shares of capital- and skill-intensive goods. After controlling for firm's value-added, employment, real fixed assets, technological innovation, foreign direct investment and time effect, ten percent increase in the unit labor cost will reduce the proportions of labor- and resource-intensive exports by 2.0 percent and 1.2 percent, respectively. However, after removing the unobserved firm characteristics which may be correlated with the unit labor cost, such as technical efficient, preference on exporting, historical support from local government and so forth, our fixed-effect estimates indicate that rising unit labor cost will increase the shares of exports in labor- and resource-

intensive manufactures. Ten percent increase in the unit labor cost will increase the proportions of labor- and resource-intensive exports by 0.6 percent and 0.7 percent, respectively. Unit labor cost still has little impact on capital-intensive manufactures. These findings imply that more productive and efficient firms will export more despite of the increasing labor costs.

We are among the first to examine the impacts of rising labor costs on export shares of industrial manufactures by factor intensity, using massive firm-product level data, in the largest developing country. Our work provides new evidence to the general literature that investigate the causal relationship between labor costs and exports.

The rest of this paper proceeds as follows. Section 2 illustrates the changes in export shares of industries by factor intensity and the trend of increasing labor costs in China. Section 3 presents empirical model and describes the data. Section 4 reports the estimation results. And Section 5 concludes.

2. Changes in Export Shares and Increasing Labor Costs in China

In this section, we describe the overall changes in exports of manufactures and labor costs over past three decades, using the industrial-level data collected from China Statistical Yearbooks. Industry classification of exports and imports in China follows the Standard International Trade Classification (SITC), while the industry classification of primary, secondary and tertiary sectors follows Chinese GB/T 4754-2011 Standard. A correspondence table of industry classification among various standards is provided in Appendix.

2.1 Changes in Shares of Exports in terms of Factor Intensity

We roughly divide manufacturing industries based on 1-digit SITC code. Manufactures within SITC 0-SITC 4 categories are considered as resource-intensive manufactures, those in SITC 5 and SITC 7 categories are capital-intensive

manufactures, and others in SITC 6 and SITC 8 categories are belong to labor-intensive manufactures. [3]

Figure 1 presents export values of manufactures by different factor intensities since early stage of Chinese economic reform and openness. Firstly, during the early 1980s, China exported resource-intensive manufactures most. Since at that time, China was a resource abundant country and had the relative comparative advantage. Secondly, with the industrial development and the release of huge surplus rural labors, labor costs in industries during mid-1980s were relatively low, implying that China had a comparative advantage in its cheap labor since then. Shown in the Figure 1, the export values of labor-intensive manufactures exceeded those of resource-intensive ones since 1986. Thirdly, later in 1992, the export values of capital-intensive manufactures also surpassed those of resource-intensive ones. Overall, the growth of exports in resource-intensive manufactures is stable and slow.

It is interesting to note that both labor- and capital-intensive manufactures experienced fast growth since the mid-1990s, right after China privatizing its State-owned Enterprises. Moreover, the growth was even rapid since China joined the World Trade Organization (WTO) in 2000. From 2000 to 2008, the export values of labor-intensive manufactures increased from US$180 billion to US$695 billion at an annual growth rate of 18%. Exports in capital-intensive manufactures grew even faster at an annual rate of 27%, from US$ 132 billion to US$874 billion.[4] Deflated by GDP deflator, the real growth rates of exports in labor- and capital-intensive manufactures are 13.4% and 21.2%, respectively, still much higher than the growth rates of real GDP at 10.6% during the same period. There are significant drops in the export values in 2009, largely due to the declining demands of the importing economies which were deeply involved in financial crisis. However, the exports kept increasing during the post-crisis periods.

Figure 2 shows the changes of export shares of each industry by factor intensity. Clearly seen from the figure, exports of capital-intensive manufactures first exceeded those of labor-intensive ones since 2003. Before that, labor-intensive

[3] One difficulty for dividing the industries in terms of their factor intensities is that some 1-digit SITC manufactures include both labor- and capital-intensive products. We examined several different divisions and the qualitative results are the same. Therefore, in this paper, we follow the most common dividing method in China.
[4] They are nominal growth rates. The export price index is not available in China.

manufactures dominated Chinese export markets since the mid-1980s. Since 2005, the export share of capital-intensive manufactures has been accounting for over 50%, despite the decline in shares in recent years. These changes might be related to the changes in relative comparative advantages in labor cost.

2.2 Increasing Industrial Wages in China

Next, we illustrate the trends of increasing labor costs in China. Figure 3 presents annual wages of urban workers deflated by consumer price index (CPI). In 1978 when China opened to the world, the average annual wage of workers was only US$368 (in 2014 prices). It sharply increased to US$10,356 in 2014, which was more than 28 times. The most rapid growth happened after mid-1990s, when the export share of labor-intensive manufactures experienced a quick decline.

Closely looking at the wages of industry workers by factor intensity in Figure 4, they all increased rapidly. By comparison, annual wage of workers in labor-intensive industries grew the fastest and surpassed that in capital-intensive industries in 2005. The gap between them does not appear to be reduced ever then. This finding indicates that labor cost has been rising over the past two decades, especially in labor-intensive industries.

Compared with the labor costs in other economies, Chinese labor cost is also significantly increasing. Figure 5 compares the average annual wages of selected OECD economies. Although the real wage in China is still far less than the wages in most developed countries or new industrialized economies, it has already catched up the wage level in Mexico. Moreover, except for the U.S. and Canada, annual wages in other selected OECD countries seem to be stable recently. However, the wage in China is increasing over time and does not seem to be slow down.

Chinese labor cost also increases faster than other major East Asian countries. As shown in Figure 6, at the very beginning of economic reform, Chinese industrial wage was rather low, only half of that in India and one third of that in Philippines. However, about two decades ago when most East Asian countries experienced declines in industrial wages, Chinese wage has been accelerated and kept rising. By 2008, the wage gap between China and Philippines reduced to 18%. China's wage was 1.2 and 3.3 times those in Thailand and Indonesia, respectively.

The changes of export shares of industries by factor intensity and the rising labor cost imply that China might be losing its relative comparative advantage in labor cost. More specifically, Chinese labor was rather cheaper before the late-1990s compared with neighboring economies. However, since then, labor costs in manufacturing industries grew very fast and the Chinese labor was no longer cheap as before. It is primarily due to the institutional reforms in labor market, the disappearing "demographic dividend" and the slowing of rural-urban migration (Li, Li, Wu and Xiong, 2012).

3. Empirical Approach

3.1 Empirical Model

In this study, we use the following model to estimate the effect of unit labor cost on export shares of various factor-intensive manufactures at firm-product-year level.

$$Share_{ijt} = \beta_0 + \beta_1 \ln ULC_{it} + \beta_2 \ln Y_{it} + \beta_3 \ln L_{it} + \beta_4 \ln K_{it} + \beta_5 Tech_{it} + \beta_6 \ln FDI_{it} + \mu_i + \eta_t + \varepsilon_{ijt}$$

where the dependent variable, *Share*, denotes export share of 2-digit HS product *j* in firm *i* at year *t*. We generate this variable by using export value of each product *j* in firm *i* divided by total export values at year *t*. Since the export share of single product in each firm at each year is rather small, the unit of this variable is one over a billion. ULC_{it} is the unit labor cost of firm *i* at year *t*. Following Li, Li, Wu and Xiong (2012)'s work, the unit labor cost is measured as firm *i*'s average labor cost as a percentage of labor productivity of that firm. Average labor cost is equal to total labor cost (including wages, bonus, pensions, medical insurance expenses, unemployment insurance expenses, and other subsidies) divided by the number of employees. Labor productivity is calculated as firm's real industrial value-added per worker. We first calculate nominal value-added of industry which equals gross industrial output value minus intermediate inputs value and plus value-added tax for each firm. Next, we use producer price index (PPI, 2014=100) as the price deflator to generate the real industrial value-added values in 2014 prices. *Y* and *L* denote real value-added of industry and the number of employees, respectively. *K* is real capital stocks. The nominal capital stocks measured by current prices of fixed-assets were reported by

firm themselves. Price-index of fixed-asset investment is used to generate the real capital stocks in 2014 prices. *Tech* measures firm's technology which is closely related with productivity. Due to the data limit, we use technological inputs as the measurement. Firms were required to report their expenditure on research and development and training courses of employees. We generate a binary variable, which equals 1 if the sum of expenditure on R&D and training activities is larger than zero and zero otherwise. Then next key variable, FDI, denotes foreign direct investment. FDI played an important role in China's rapid growth and had direct and indirect effects on improvement in export structure. We used the price index of fixed-asset investment as the price deflator and obtained real FDI in 2014 prices. μ_i is unobservable and time-invariant characteristics of industrial enterprises such as technical efficiency, preference of top managers on export variety and historical development which may affect the export decisions. η_t denotes time effect, controlling changes in openness policies, tariff reduction, changes in foreign demands for Chinese products and technology changes over all industrial enterprises. The last term is an error term. We are most interested in β_1, the effects of unit labor cost on export structure.

We begin with estimating the equation using the ordinary least square estimates (OLS) to test the correlations among the unit labor costs and export shares of manufactures by different factor-intensity. However, if the unobserved firm's characteristics (μ_i) and time trend (η_t) affect unit labor cost and export shares simultaneously, the OLS estimates will be biased due to the omitted variable problem. Therefore, we further employ fixed-effect estimates to examine the causal links between increasing labor costs and upgrading export structure.

3.2 Data

Data used in this study are derived from matching two massive firm-level surveys in China. The first one is the Survey of Chinese Industrial Enterprises above Designated Size (SCIEDS) conducted annually by Department of Industrial and Transport Statistics at National Bureau of Statistics of China since 1996. [5] All state-owned

[5] There is no official translation of this firm survey. It is translated as "the above-scale manufacturing firm panel data form China's National Bureau of Statistics Surveys" in "Ma, Tang and Zhang (2014)'s and "Annual Survey of Industrial Firms (ASIF)" in Manova and Yu (2016)'s work, respectively.

industrial enterprises and the non-state-owned industrial enterprises with annual revenue from principal business over five million yuan from 1998 to 2006 are included in the survey.[6] This dataset contains basic information of enterprises including number of employees and industry type, detailed information on income statement, labor cost, total outputs, and sales status such as industrial value-added. Industrial enterprises were legally required to complete annual industrial statistics reporting forms which were collected by local bureaus of statistics. [7]

Another survey is Chinese Customs Trade Statistics (CCTS) conducted by General Administration of Customs of China. All enterprises engaging in foreign trade activities (i.e. exporting and importing) were legally required to report their transaction information on time every month. Data submitted to the Customs include business type (i.e. export or import), total amount and value of the imported/exported merchandise, 8-digit HS codes, customs regimes, conveyance modes, customs name and region of trade, departure site, intermediate site, and destination site of imported/exported commodity, and enterprises registration types.

The purpose of this study is to examine the effects of unit labor costs on export shares of different factor-intensive manufactures. The transaction-level data from CCTS provided us export values for each 8-digit HS code product in each enterprise. Specifically, we merged 8-digit HS code products into 2-digit HS code products and then divided them into labor-, capital- and resource-intensive manufactures using the standards provided by United Nations.[8] We further added up monthly export values for each 2-digit HS code product in each firm and obtained annually export values at firm-product-year level.[9]

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[6]The scopes of industrial enterprises above designated size change over time, partly due to the rapid economic development and the requirement for adopting international statistical standard. From 2007 to 2010, industrial enterprises above designated size denotes all industrial enterprises with revenue from principal business over five million yuan. Since 2011, they denote all industrial enterprises with revenue from principal business above 20 million yuan.

7In this survey, the "production of major industrial products" was calculated by the related divisions and companies under the State Council. All other statistics were submitted by the bureau of statistics of provinces.

[8] Appendix III of the UNCTAD Discussion Paper prepared by Mayer, Butkevicius and Kadri (2002) provides definition of product categories by factor intensity and their corresponding SITC Rev. 2 codes. Using correspondence table between the sub headings of the Harmonized Commodity Description and Coding System, fourth edition (HS07), the basic headings of SITC, Rev. 4 (Department of Economic and Social Affairs, Statistics Division, 2006), we can largely divide the export products with HS code in CCTS into product categories by factor intensity. Appendix Table A1 presents the correspondence table.

[9]In our sample, which covered 2002, 2003, 2005 and 2006, only 25.5% firms exported one kind of 2-digit HS product, 22.6% exported two kinds of products, 14.2% exported three kinds, 10% exported four kinds, and the rest firms exported five and more sorts of 2-digit HS products. On average, firms exported 3.8 kinds of products.

Next, we merged the export values to industrial enterprises in SCIEDS dataset. Firms in two surveys do not share the unique identifier. We matched the firms in terms of their names and contact information such as phone numbers. Firms with annual revenue from principal business less than five million yuan in CCTS survey and those only engaging in domestic sales or import activities in SCIEDS survey were deleted. The merged industrial firms account for roughly 40% total export values. [10]

This study employed matched data in four years: 2002, 2003, 2005 and 2006. Firstly, although both firm surveys are conducted each year, we only get access to the survey data from 2002 to 2006.[11] Secondly, in 2004, China conducted the First Economic Census, and thus firms in SCIEDS survey were not required to report their industrial value-added values and other output information. Huge missing values on total products and sales status in the sample of 2004. Due to missing the key variables, we delete all observations appeared in 2004.

The remaining sample is roughly representative. It reflects significant changes in export shares of various factor intensive manufactures. As aforementioned, export share of capital-intensive manufactures exceeded that of labor-intensive manufactures at the first time in 2003 and experienced rapid growth until global financial crisis. Moreover, manufacturing wages increased faster during this period, implying a rapid increase in labor cost. In addition, this sample period also helps rule out possible contaminative impacts of global financial crisis.

Table 1 reports the statistical description of key variables in this study. With complete information, we totally have 179,873 observations at firm-product-year level. During 2002 to 2006, the averaged unit labor cost is 0.38. On average, real value-added and capital stocks of industrial enterprises was 885.6 and 869.7 thousand yuan, respectively, and the number of employees was 644 persons. More than half enterprises invested on R&D activities. The average real FDI was 302.4 thousand yuan.

Table 2 presents changes in unit labor costs during sample period. Shown in column 2, overall unit labor cost gradually increase until 2005 and then inclined to

[10] Firms only conducting international trading rather than production were deleted after the matching. These trading firms usually large SOEs in China.
[11] These firm surveys are not publicly and freely available in China. To the best of our knowledge, there are two more waves available in 2000 and 2001.

slightly decline. We further examine the changes in different factor-intensive industries. Clearly shown in column 4, unit labor costs increased monotonically, implying that labors became relatively more and more expensive in labor-intensive industries. Unit labor costs in capital- and resource-intensive industries also experienced an increase and then a slight decrease at the same period. Moreover, labor-intensive industries faced highest unit labor costs compared with other factor-intensive industries, which again indicating that labors were relatively expensive in the industries intensively employing labors.

We sub-divide capital-intensive industries in terms of skill intensity. Table 3 lists changes in unit labor costs in these sub-divisions. It can be seen that higher skill-intensive industries have advantages in cheaper labors.

4 Empirical Results

In this section, we examine whether changes in unit labor costs affect changes in export shares by factor intensity. Standard errors are robust to heteroscedasticity. We start with OLS estimations to review correlations between unit labor costs and export shares. Then, we employ fixed-effect estimations to control for unobserved firm characteristics, which may be simultaneously correlated with production decisions and export behaviors.

4.1 Results for the Whole Industry

There are primarily two sorts of enterprises engaging in exporting (and importing) commodities in China. One is industrial enterprises, producing and then exporting their products. The other is trading firms, only exporting rather than producing the products. They usually accept export orders, outsource the main or the whole production process to other domestic firms, collect the final products, and then export. The rising labor costs would nearly affect the trading volumes of trading firms. Therefore, we do not include them in this study. However, we do interest in how export shares of industrial enterprises respond to unit labor costs.

Table 4 shows the results for all industrial manufactures. The coefficients of unit labor cost, value-added, number of employees and capital stocks are positive and

significant at the 1% level, indicating that labor cost has a positive effect on export shares conditional on primary production characteristics. However, after we control for FDI which is positive and significant (column 2), the coefficient of unit labor cost turns to be negative, and it is significant at the 1% level. This result implies a positive correlation between unit labor cost and FDI. Industrial enterprises with higher wages relatively to labor productivity are more likely to attract foreign capitals. As aforementioned, labor-intensive enterprises have higher unit labor costs compared with capital- and resource-intensive ones in China, and they also attract most FDI due to their relative comparative advantage in labor cost compared with most economies in the world. We further control for year effects in column 3, the signs of the coefficients are unchanged, although the magnitudes slightly change. The result shows that unit labor cost has a negative effect on export share. Ten percent increase in unit labor cost reduces overall export share by 0.6 percent. The output and other input factors positively affect the export share. Increasing value-added, number of employees and capital stocks will rise the export share by 1.2 percent, 1.5 percent, and 0.6 percent, respectively. The OLS results suggest that large enterprises and firms with low unit labor cost are more likely to have high export share of their products.

However, larger enterprises may also have higher technical efficiency, better entrepreneurship or more effective management which could hardly be measured in estimation. Moreover, these unobserved characteristics are also related with average labor cost relative to labor productivity. Failing to control these unobserved variables may bias our OLS estimates. Therefore, we further employ fixed-effect to largely eliminate the unobservables. Shown in column 4, after we control for the unobserved characteristics of enterprises, the coefficient of unit labor cost becomes positive and it is significant at the 5% level. It indicates that unit labor cost has a positive effect on export share. Raising average labor cost faster than the labor productivity facilitates an increase in export share of 2-digit HS products. The change in this coefficient also implies a negative correlation between unit labor cost and unobserved variables. The more productive and efficient enterprises have lower unit labor cost. It is probably due to that the more productive enterprises usually have higher labor productivity relative to the average labor costs such as wages, bonus, and subsidies. Moreover, FDI has little effect on the export share, suggesting that it is the technical efficient or

productivity rather FDI itself facilitates to increase export share, since the more efficient enterprises incline to attract more FDI.

4.2 Results for Labor-intensive Industries

It is interesting to divide the whole industry by factor intensity. China is well-known for its competitive advantages in cheap labor embedded in export commodities, especially the manufactures which intensively employ labors. Therefore, in this subsection, we investigate the role of unit labor cost in export share of labor-intensive manufactures.

Reported in Table5, the OLS estimates of unit labor cost show that increasing unit labor cost will reduce the export share of labor-intensive manufactures. This result is robust when we control for FDI and time effect. On average, 10 percent increase in unit labor cost decreases export share of labor-intensive manufactures by 2.0 percent, nearly triples the average reduction for the whole manufactures. The fixed-effect estimate again indicate a positive causal relationship between unit labor cost and export share.

Interestingly, value-added shows strong negative effect on export share in OLS estimations. Most enterprises producing labor-intensive manufactures engage in processing trade, they import the raw materials or intermediate inputs and export finished products after processing or assembly. Therefore, although these enterprises account for a large proportion of exports, their value-added is rather low. Moreover, these enterprises usually have low productivity. After considering the productivity in fixed-effect estimation, the positive and significant coefficient of value-added variable suggests that firms with higher value-added do have higher export shares. Together with the positive effects of the number of employees and capital stocks, the results show that other things equal, larger firms do export more.

4.3 Results for Capital-intensive Industries

Comparing the results presented in the first two columns of Table 6, we also find a positive correlation between unit labor cost and FDI, which again suggests that FDI tends to be concentrated in the enterprises with relatively abundant low- and medium

skilled workers (with relatively low labor productivity). [12]We further control for time effect in the next column and obtain almost the same results. Unit labor cost does not seem to affect export share of capital-intensive manufactures. More FDI tends to increase the export share. The scale of the enterprises matters. Contrary to the negative effect of value-added in labor-intensive industries, value-added seems to positively affect export share of capital-intensive manufactures. Since most capital-intensive enterprises engage in ordinary trade, which are less depended on intermediate inputs.

Next, we largely remove the effects of unobservables which probably cause the bias in OLS estimations. Shown in Column 4, unit labor cost still has little effect on export share. The positive effect of FDI also disappears. However, the effect of scale still holds. These results imply that the share of capital-intensive exports is primarily determined by firm scale. Enterprises with higher value-added, more employees and more capital accumulations will export more. The export share would not be affected by the labor competitiveness.

4.4 Results for Resource-intensive Industries

OLS results shown in Table 7 suggest that higher unit labor cost inclines to reduce export share of resource-intensive manufactures. This negative effect is slightly less than that on labor-intensive manufactures. Although value-added and number of employees are positively correlated with export share, capital stocks show negative association. It might be due to some historical factors. Resource-intensive manufactures used to account for nearly half of total exports in China at the very beginning of economic reforms. Enterprises exported resource-intensive products were generally large ones and owned by the State, which implies that they might have relatively high capital accumulation. However, these enterprises are not necessarily as efficient as smaller ones which are more likely to be privately owned. [13] Therefore, more capital stocks in resource-intensive enterprises might be associated with less efficient and thus lower share of exports. It can also be partly explained by comparing these results with the fixed-effect estimate. After eliminating the unobserved firm

[12]This argument is consistent with the estimates shown in Table A2. Following the categories provided by Mayer, Butkevicius and Kadri (2002), we further divide capital-intensive manufactures in terms of skill intensities.
[13] Unfortunately, we are failed to control for firm ownership in current study. We will further examine this hypothesis later.

characteristics, the coefficient of capital stocks turns to positive and becomes insignificant, indicating a negative association of unobservables such as technical efficiency with capital stocks. Enterprises with higher technical efficiency are more likely to have lower capital stocks.

Same as the result for labor-intensive industry, unit labor cost also shows a positive effect on export share in resource-intensive industry, controlling for the effects of unobserved variables. Ten percent increase in unit labor cost will raise the share of resource-intensive exports by 0.7 percent, marginally higher than that for labor-intensive exports. In addition, value-added also matters.

5. Conclusion

This paper estimates the impact of rising labor costs on commodity composition of manufactured exports using Manufacturing Firms Survey and Customs Survey matched data collected from 2002 to 2006, and finds that more productive and efficient firms will export more despite of the increasing labor costs.

Data description on the changes in shares of exports by factor intensity and the trend of increasing real wages show that labor costs in China has been increasing since its openness to the world. Real wages in labor-intensive industries grew faster than that in capital-intensive ones in the past decade and the gap between the two keeps increasing. During the same period, the share of capital-intensive exports surpassed that of labor-intensive ones. These results indicate that China might be losing its comparative advantage in labor costs.

Increasing wages does not necessarily imply more expensive labors. If the growth of wages is lower than that of labor productivity, then labors are effectively becoming cheaper per unit of product. Therefore, we employ unit labor cost to measure the labor costs in econometric analyses. Our OLS results show that increasing unit labor cost decreases the proportion of exports in labor- and resource-intensive goods, but it has little effect on the shares of capital- and skill-intensive goods. After controlling for firm's value-added, employment, real fixed assets, technological innovation, foreign direct investment and time effect, ten percent increase in the unit labor cost will reduce the proportions of labor- and resource-intensive exports by 2.0 percent and 1.2 percent, respectively. However, after

removing the unobserved firm characteristics which may be correlated with the unit labor cost, such as technical efficient, preference on exporting, historical support from local government and so forth, our fixed-effect estimates indicate that rising unit labor cost will increase the shares of exports in labor- and resource-intensive manufactures. Ten percent increase in the unit labor cost will increase the proportions of labor- and resource-intensive exports by 0.6 percent and 0.7 percent, respectively. Unit labor cost still has little impact on capital-intensive manufactures. These findings imply that more productive and efficient firms will export more despite of the increasing labor costs.

Results in this study for now are very preliminary. We will further examine the heterogeneous impacts of labor costs on export shares in terms of firm's ownerships, business types (exporting or importing or both), mode of trade (processing trade, ordinary trade, etc.), and the demands of exporting destinations.

Reference

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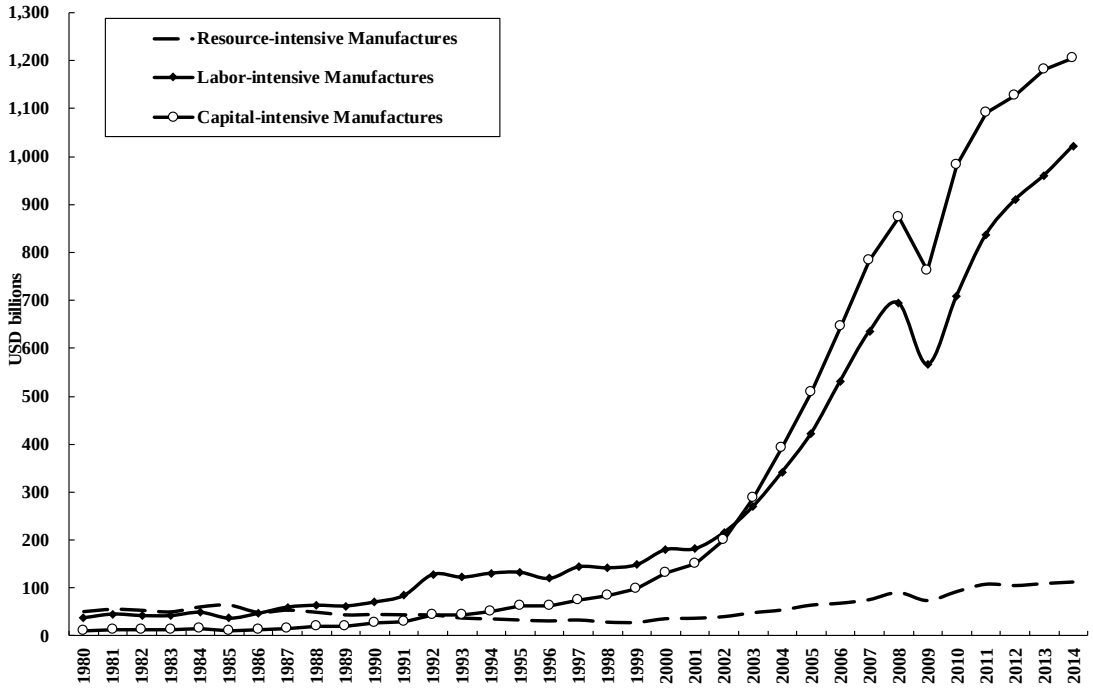

Figure 1. Export Values of Manufactures by Factor Intensities, 1980-2014

Source: China Statistical Yearbook 2015.

Notes: Resource-intensive manufactures denote the exports with SITC 0 – SITC 4; Labor-intensive manufactures denote the exports with SITC 6 and SITC 8; Capital-intensive manufactures denote the exports with SITC 5 and SITC 7.

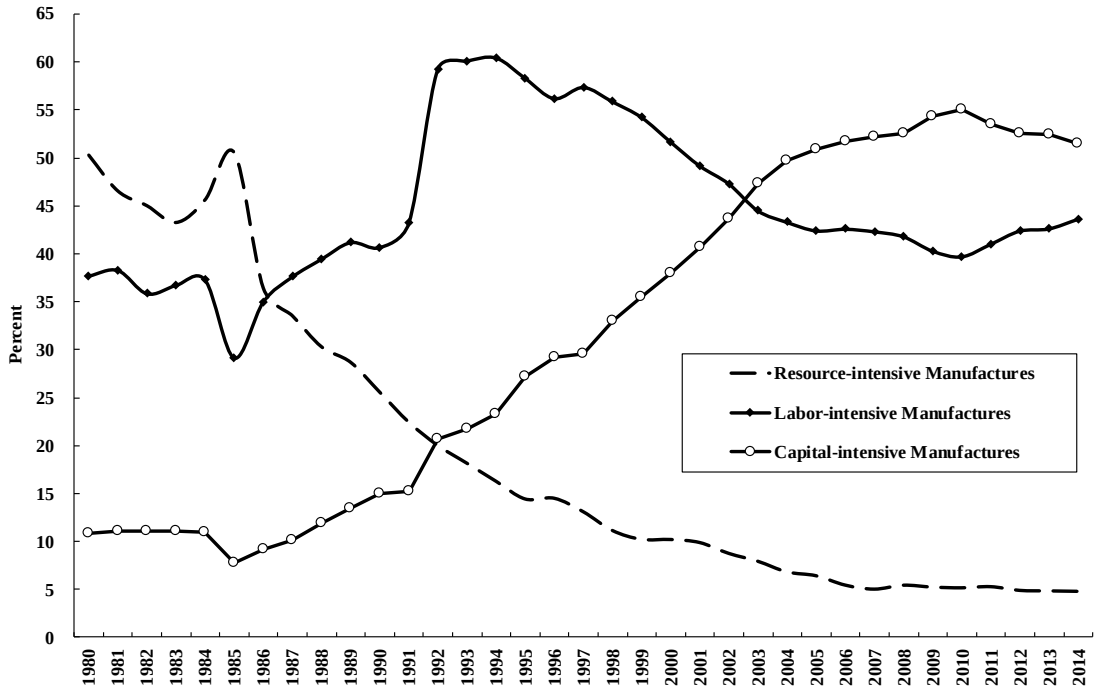

Figure 2. Export Shares of Manufactures by Factor Intensities, 1980-2014

Source: China Statistical Yearbook 2015.

Notes: Resource-intensive manufactures denote the exports with SITC 0 – SITC 4; Labor-intensive manufactures denote the exports with SITC 6 and SITC 8; Capital-intensive manufactures denote the exports with SITC 5 and SITC 7.

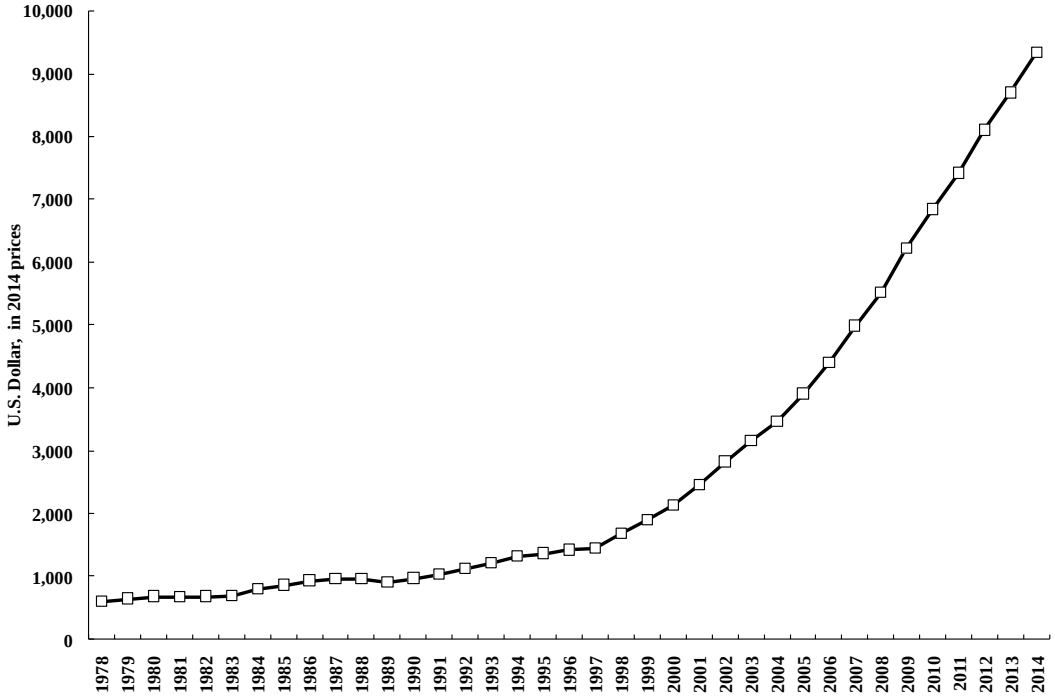

Figure 3. Real Annual Wages of Urban Workers, 1978-2014, in 2014 prices, USD

Source: China Statistical Yearbook 2015.

Notes: Nominal average annual wages are deflated by Consumer Price Index.

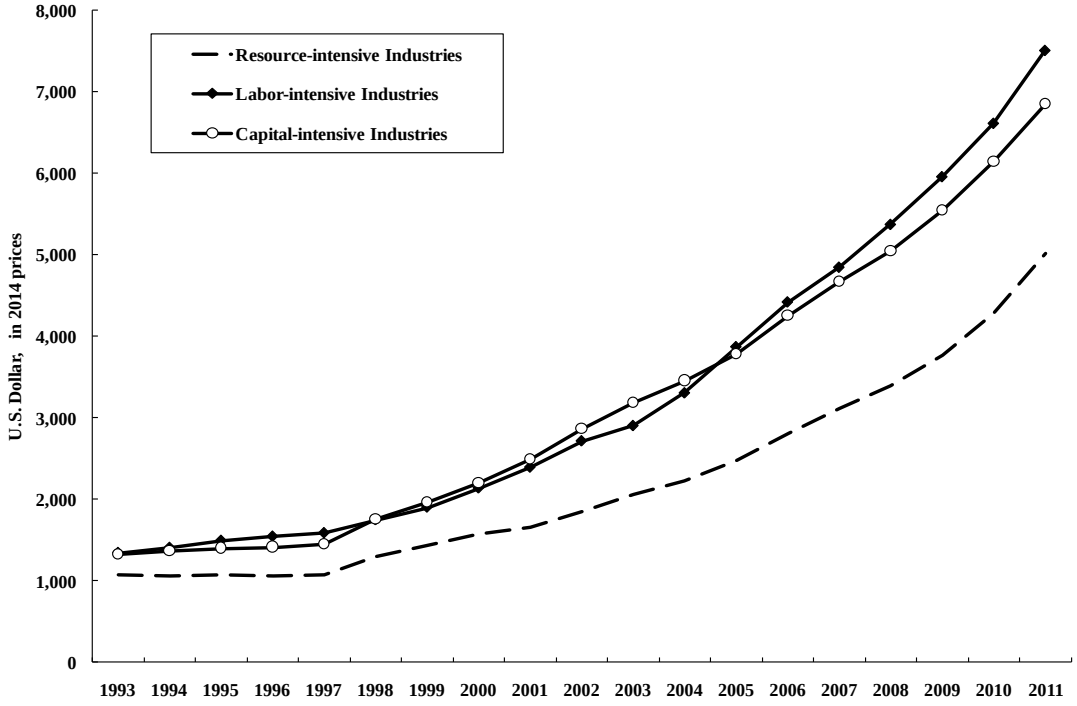

Figure 4. Real Annual Wages of Industrial Workers, 1993-2011, in 2014 prices, USD

Source: China Statistical Yearbook 2015.

Notes: Resource-intensive manufactures denote the exports with SITC 0 – SITC 4; Labor-intensive manufactures denote the exports with SITC 6 and SITC 8; Capital-intensive manufactures denote the exports with SITC 5 and SITC 7.

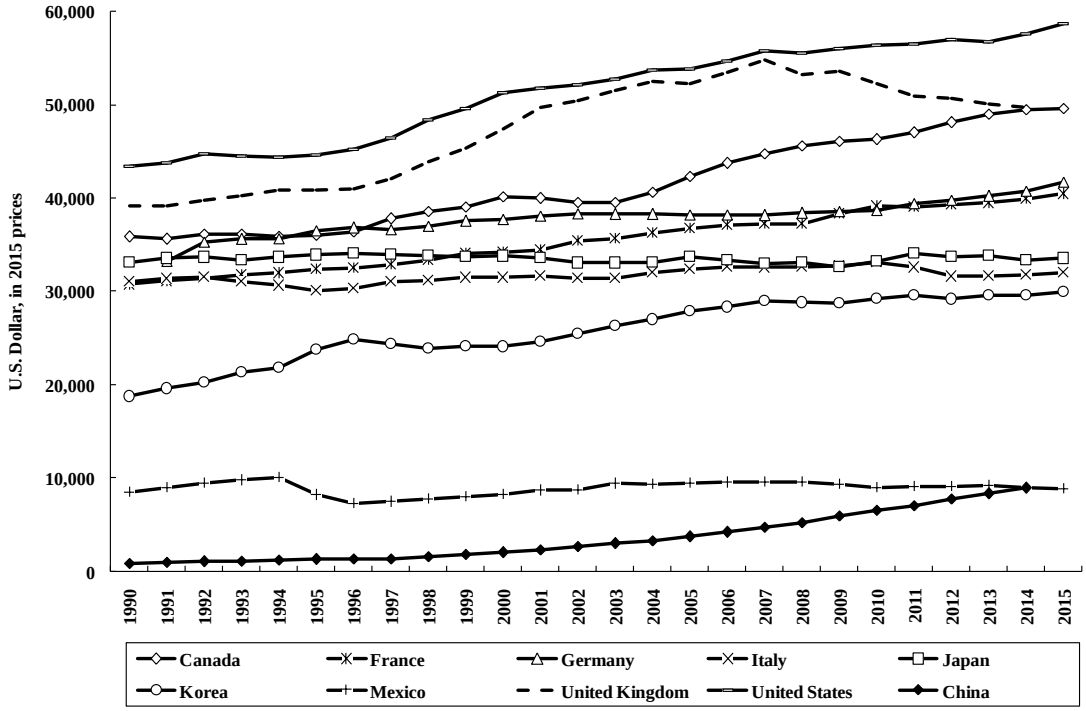

Figure 5. Average Annual Wages of Selected OECD Economies, 1990-2015, in 2015 prices, USD

Source: OECD.Stat, http://stats.oecd.org/# ,and China Statistical Yearbook 2015

Notes: Data in this figure are annual wages per full-time and full-year equivalent employee in the total economy. For China, they are annual wages of urban industrial workers.

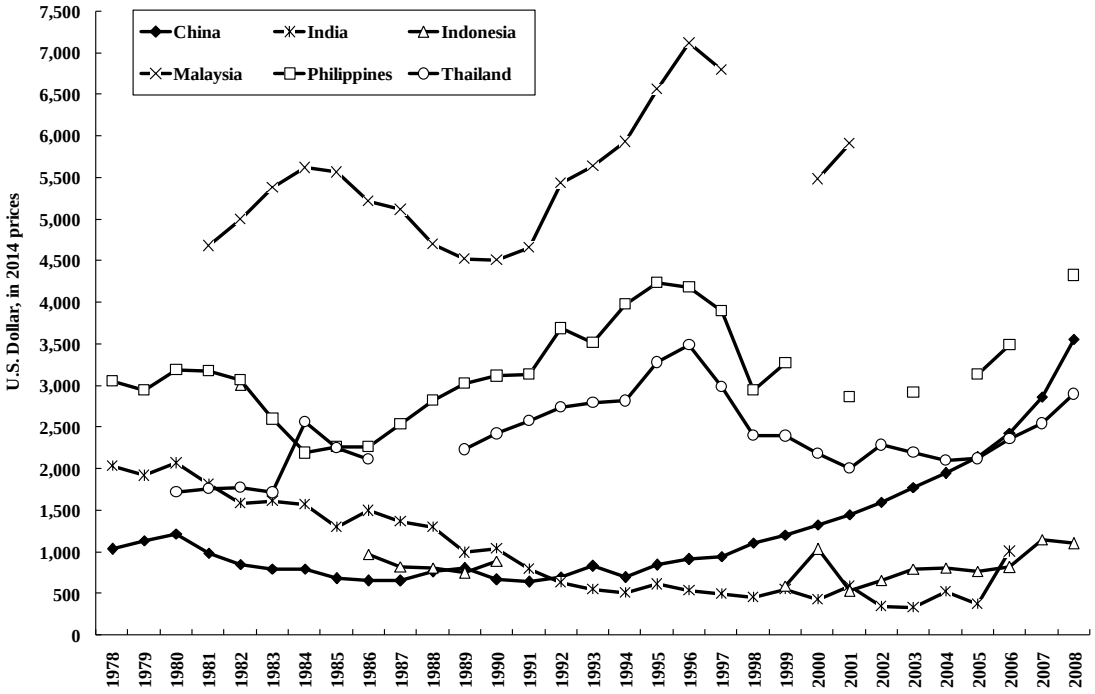

Figure 6. Average Annual Wages of Industrial Workers in Selected East Asian Economies, 1978-2008, in 2014 prices, USD

Source: LABORSTA and China Statistical Yearbook 2015

Table 1. Statistical Description

Variables	Obs.	Mean	Std. Dev.	Min	Max
Export shares (one over a billion)	179,837	107,072	512,943	0.001	1.930E+07
Ln Export shares	179,837	6.950	3.593	-6.881	16.778
Unit labor cost	179,837	0.380	0.237	3.960E-05	1.000
Ln Unit labor cost	179,837	-1.225	0.819	-10.137	0.000
Real value-added (thousand yuan, in 2014 prices)	179,837	885.630	13,906.990	0.431	1,434,741.000
Ln Real value-added	179,837	5.103	1.409	-0.841	14.176
Number of employees (persons)	179,837	644.282	2,387.140	8.000	131,864.000
Ln Number of employees	179,837	5.606	1.168	2.079	11.790
Real capital stocks (thousand yuan, in 2014 prices)	179,837	869.680	11,390.910	10.000	862,830.100
Ln Real capital stocks	179,837	4.943	1.544	2.303	13.668
Engaging in R&D activities	179,837	0.527	0.499	0	1
Real FDI (thousand yuan, in 2014 prices)	179,837	302.399	1,498.525	0	73,297.740
Ln Real FDI	179,837	3.031	2.609	-4.622	11.202
Capital/labor ratios	179,837	1.178	39.716	0.007	12,813.300
2002	179,837	0.158	0.365	0	1
2003	179,837	0.201	0.401	0	1
2005	179,837	0.319	0.466	0	1
2006	179,837	0.322	0.467	0	1

Table 2. Changes in Unit Labor Costs in Different Factor-intensive Industries

	Total Manufactures		Labor-intensive Manufactures		Capital-intensive Manufactures		Resource-intensive Manufactures	
	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean
	(1)	(2)	(3	(4)	(5)	(6)	(7)	(8)
2002	28,373	0.365	12,907	0.386	13,158	0.362	2,305	0.264
2003	36,197	0.371	15,979	0.397	17,547	0.364	2,664	0.265
2005	57,298	0.388	24,919	0.408	28,575	0.385	3,792	0.277
2006	57,969	0.387	25,087	0.410	29,136	0.382	3,736	0.270

Table 3. Changes in Unit Labor Costs in Capital-intensive Industries

	Capital-intensive Manufactures		Low skill- and Capital-intensive Manufactures		Medium skill- and Capital-intensive Manufactures		High skill- and Capital-intensive Manufactures	
	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean
2002	13,158	0.362	6,375	0.371	3,066	0.357	3,717	0.349
2003	17,547	0.364	8,344	0.369	4,569	0.367	4,634	0.352
2005	28,575	0.385	14,122	0.390	7,524	0.397	6,929	0.360
2006	29,136	0.382	14,427	0.385	7,724	0.399	6,985	0.356

Table 4. OLS and Fixed-effect Estimates: All Industrial Manufactures

	Dependent Variable: Ln Export Shares			
	OLS			FE
	(1)	(2)	(3)	(4)
Ln Unit labor cost	0.0438***	-0.0763***	-0.0604***	0.0420**
	(0.016)	(0.016)	(0.016)	(0.018)
Ln Real value-added	0.189***	0.0727***	0.117***	0.259***
	(0.015)	(0.015)	(0.016)	(0.020)
Ln Number of employees	0.0531***	0.166***	0.153***	0.188***
	(0.015)	(0.015)	(0.015)	(0.023)
Ln Real capital stocks	0.129***	0.0677***	0.0630***	0.120***
	(0.009)	(0.009)	(0.009)	(0.017)
Engaging in R&D activities	-0.223***	-0.112***	-0.111***	0.00967
	(0.018)	(0.018)	(0.017)	(0.018)
Ln Real FDI		0.121***	0.126***	-0.002
		(0.004)	(0.003)	(0.008)
2003			-0.255***	-0.170***
			(0.022)	(0.011)
2005			1.939***	2.122***
			(0.025)	(0.020)
2006			-0.811***	-0.721***
			(0.021)	(0.018)
Observations	179,837	179,837	179,837	179,837
Number of 2-digit HS products	72,274	72,274	72,274	72,274
R-squared	0.017	0.023	0.126	0.339

Notes: Standard errors in parentheses are robust to heteroscedasticity.

*** significance at the 1% level; ** significant at the 5% level; * significance at the 10% level.

Table 5. OLS and Fixed-effect Estimates:LABOR-intensive Industrial Manufactures

	Dependent Variable: LnExport Shares			
	OLS			FE
	(1)	(2)	(3)	(4)
Ln Unit labor cost	-0.124***	-0.236***	-0.198***	0.0647**
	(0.024)	(0.025)	(0.025)	(0.027)
Ln Real value-added	-0.175***	-0.281***	-0.224***	0.290***
	(0.024)	(0.024)	(0.025)	(0.030)
Ln Number of employees	0.356***	0.453***	0.428***	0.151***
	(0.023)	(0.024)	(0.024)	(0.035)
Ln Real capital stocks	0.118***	0.0673***	0.0650***	0.0919***
	(0.013)	(0.013)	(0.012)	(0.025)
Engaging in R&D activities	-0.306***	-0.215***	-0.233***	-0.0147
	(0.026)	(0.026)	(0.025)	(0.027)
Ln Real FDI		0.106***	0.109***	-0.012
		(0.005)	(0.005)	(0.013)
2003			-0.319***	-0.166***
			(0.034)	(0.016)
2005			1.724***	1.889***
			(0.037)	(0.029)
2006			-0.847***	-0.811***
			(0.032)	(0.026)
Observations	78,892	78,892	78,892	78,892
Number of 2-digit HS products	31,860	31,860	31,860	31,860
R-squared	0.009	0.015	0.108	0.324

Notes: Standard errors in parentheses are robust to heteroscedasticity.

*** significance at the 1% level; ** significant at the 5% level; * significance at the 10% level.

Table 6. OLS and Fixed-effect Estimates: CAPITAL-intensive Industrial Manufactures

	Dependent Variable: LnExport Shares			
	OLS			FE
	(1)	(2)	(3)	(4)
Ln Unit labor cost	0.121***	-0.0195	-0.0243	0.0353
	(0.024)	(0.024)	(0.023)	(0.027)
Ln Real value-added	0.347***	0.206***	0.239***	0.249***
	(0.022)	(0.023)	(0.022)	(0.030)
Ln Number of employees	-0.0417*	0.0986***	0.102***	0.253***
	(0.022)	(0.022)	(0.022)	(0.036)
Ln Real capital stocks	0.131***	0.0549***	0.0468***	0.137***
	(0.014)	(0.014)	(0.013)	(0.025)
Engaging in R&D activities	-0.216***	-0.0700***	-0.0451*	0.0409
	(0.026)	(0.027)	(0.025)	(0.027)
Ln Real FDI		0.141***	0.151***	0.00466
		(0.005)	(0.005)	(0.013)
2003			-0.199***	-0.159***
			(0.032)	(0.016)
2005			2.322***	2.533***
			(0.036)	(0.030)
2006			-0.724***	-0.600***
			(0.030)	(0.027)
Observations	88,416	88,416	88,416	88,416
Number of 2-digit HS products	35,565	35,565	35,565	35,565
R-squared	0.026	0.034	0.155	0.374

Notes: Standard errors in parentheses are robust to heteroscedasticity.

*** significance at the 1% level; ** significant at the 5% level; * significance at the 10% level.

Table 7. OLS and Fixed-effect Estimates: RESOURCE-intensive Industrial Manufactures

	Dependent Variable: LnExport Shares			
	OLS			FE
	(1)	(2)	(3)	(4)
Ln Unit labor cost	-0.101***	-0.155***	-0.115***	0.0727*
	(0.038)	(0.039)	(0.040)	(0.040)
Ln Real value-added	0.159***	0.113***	0.174***	0.268***
	(0.039)	(0.040)	(0.041)	(0.049)
Ln Number of employees	0.163***	0.224***	0.174***	0.005
	(0.039)	(0.040)	(0.041)	(0.055)
Ln Real capital stocks	-0.043	-0.0865***	-0.0909***	0.038
	(0.027)	(0.027)	(0.027)	(0.043)
Engaging in R&D activities	-0.161***	-0.130***	-0.130***	0.041
	(0.049)	(0.049)	(0.048)	(0.052)
Ln Real FDI		0.0746***	0.0709***	0.016
		(0.010)	(0.010)	(0.021)
2003			-0.195***	-0.160***
			(0.068)	(0.034)
2005			0.825***	0.746***
			(0.069)	(0.054)
2006			-0.750***	-0.894***
			(0.066)	(0.053)
Observations	12,497	12,497	12,497	12,497
Number of 2-digit HS products	4,835	4,835	4,835	4,835
R-squared	0.019	0.023	0.078	0.215

Notes: Standard errors in parentheses are robust to heteroscedasticity.

*** significance at the 1% level; ** significant at the 5% level; * significance at the 10% level.

Table A1. Correspondence Table of Industry Classification among Various Standards

Chinese Industry classification GB/T 4754-2011 Standard	Harmonized Commodity Description and Coding System (HS)	Standard International Trade Classification (SITC)	Product Categories by Factor Intensity
Mining and washing of coal	27	321、322	Resource-intensive manufactures
Extraction of petroleum and natural gas	27	333、342、343	Resource-intensive manufactures
Mining and processing of ferrous metal ores	26、27	281、282	Resource-intensive manufactures
Mining and processing of non-ferrous metal ores	26、74、75、76、78、79、80	283、284、285、287、288、289	Resource-intensive manufactures
Mining and processing of nonmetal ores	25、26、27、31、71	272、273、274、277、278	Resource-intensive manufactures
Mining of other ores			
Logging and transp. of timber and bamboo	44、45	244、245、246、247、248	Resource-intensive manufactures
Processing of food from agric. products	2、3、4、8、9、10、11、12、15、16、17、18、19、20、21、23、35	011、012、016、017、022、023、024、025、034、035、037、042、045、046、047、048、054、056、058、059、061、062、071、073、075、081、091、098、411、421、422、431	Resource-intensive manufactures
Manufacture of foods			
Manufacture of alcohol, beverages, and refined tea	9、22	074、111、112	Resource-intensive manufactures
Manufacture of tobacco	24	122	Resource-intensive manufactures

Notes: Refer to the correspondence tables provided by United Nations and Mayer, Butkevicius and Kadri (2002).

Table A1. Correspondence Table of Industry Classification among Various Standards (continued)

Chinese Industry classification GB/T 4754-2011 Standard	Harmonized Commodity Description and Coding System	Standard International Trade Classification	Product Categories by Factor Intensity
Manufacture of textiles	50、51、52、53、54、55、56、57、58、59、60、63、65、70	269、651、652、653、654、655、656、657、658、659	Labor-intensive manufactures
Garments and other fiber products	39、40、42、43、61、62、65	841、842、843、844、845、846、848	Labor-intensive manufactures
Manufacture of leather, fur, feather, and related products; footwear industry	41、42、43、64	611、612、613、831、851	Labor-intensive manufactures
Processing of timber, manufacture of wood, bamboo, rattan, palm, and straw products	44、45	633、634、635	Labor-intensive manufactures
Manufacture of furniture	94	821	Labor-intensive manufactures
Manufacture of paper and paper prod.	47、48	251、641、642	Labor-intensive manufactures
Printing and recorded media	49	892	High skill- and capital-intensive manufactures
Manufacture of articles for culture, education, art, sports, and entertainment	32、42、83、85、92、95、96、97	894、895、898	High skill-, Medium skill, low skill- and capital-intensive manufactures
Processing of petroleum, coking, processing of nuclear fuel	27	325、334、335	Resource-intensive manufactures

Notes: Refer to the correspondence tables provided by United Nations and Mayer, Butkevicius and Kadri (2002).

Table A1. Correspondence Table of Industry Classification among Various Standards (continued)

Chinese Industry classification GB/T 4754-2011 Standard	Harmonized Commodity Description and Coding System	Standard International Trade Classification	Product Categories by Factor Intensity
Manufacture of chemical raw materials and chemical products	11、15、28、29、31、32、33、34、35、36、38、39、40	232、511、512、513、514、515、516、522、523、524、525、531、532、533、551、553、554、562、571、572、573、574、575、579、591、592、593、597、598	High skill- and capital-intensive manufactures
Manufacture of medicines	29、30	541、542	High skill- and capital-intensive manufactures
Manufacture of chemical fibers	55	266、267	Resource-intensive manufactures
Manufacture of rubber	40	621、625、629	Medium skill- and capital-intensive manufacture
Manufacture of plastics	39	581、582、583、893	High skill- and capital-intensive manufactures
Manuf. of non-metallic mineral products	25、68、69、70、71	661、662、663、664、665、666、667	Labor-intensive manufactures
Smelting and processing of ferrous metals	72、73	671、672、673、674、675、676、677、678、679	Low skill- and capital-intensive manufactures
Smelting and processing of non-ferrous metals	71、74、75、76、78、79、80、81	681、682、683、684、685、686、687、689	Resource-intensive manufactures
Manufacture of metal products	69、73、74、75、76、81、82、83、84、94	691、692、693、694、695、696、699、811、812	Low skill- and capital-intensive manufactures

Notes: Refer to the correspondence tables provided by United Nations and Mayer, Butkevicius and Kadri (2002).

Table A1. Correspondence Table of Industry Classification among Various Standards (continued)

Chinese Industry classification GB/T 4754-2011 Standard	Harmonized Commodity Description and Coding System	Standard International Trade Classification	Product Categories by Factor Intensity
Manufacture of general purpose machinery	73、84、85、87	711、712、713、714、716、718、731、733、735、737、741、742、743、744、745、746、747、748、749	Medium skill- and capital-intensive manufacture
Manufacture of special purpose machinery	37、84、87、90	721、722、723、724、725、726、727、728、744、872、881、882、883	Medium skill- and capital-intensive manufacture
Manufacture of transport equipment	86、87、88、89	781、782、783、784、785、786、791、792、793	Medium skill-, low skill- and capital-intensive manufacture
Manufacture of electrical machinery and equipment	84、85、94	771、772、773、775、776、778、813	Medium skill- and capital-intensive manufacture
Manufacture of computers, communication, and other electronic equipment	84、85	752、761、762、763、764	High skill- and capital-intensive manufactures
Manufacture of measuring instruments	84、90、91	751、759、871、873、874、884、885	High skill- and capital-intensive manufactures
Other manufacturing	36、46、66、67、71、90、93、96、97	891、896、897、899、931	High skill- and capital-intensive manufactures
Production and distribution of electric power and heat power	27	351	
Production and distribution of gas	27	344	Resource-intensive manufactures
Production and distribution of tap water			

Notes: Refer to the correspondence tables provided by United Nations and Mayer, Butkevicius and Kadri (2002).

Table A2. OLS and Fixed-effect Estimates: Low Skill-, Medium Skill-, High Skill- and Capital-intensive Manufactures

	Dependent Variable: Ln Export Shares					
	Low skill- and capital-intensive		Medium skill- and capital-intensive		High skill- and capital-intensive	
	OLS	FE	OLS	FE	OLS	FE
	(1)	(2)	(3)	(4)	(5)	(6)
Ln Unit labor cost	0.048	0.055	-0.063	0.071	-0.165***	0.002
	(0.034)	(0.042)	(0.045)	(0.055)	(0.042)	(0.044)
Ln Real value-added	0.321***	0.287***	0.307***	0.302***	-0.011	0.184***
	(0.033)	(0.046)	(0.040)	(0.061)	(0.041)	(0.049)
Ln Number of employees	-0.125***	0.212***	0.482***	0.279***	-0.049	0.198***
	(0.032)	(0.054)	(0.040)	(0.075)	(0.038)	(0.060)
Ln Real capital stocks	0.148***	0.136***	-0.230***	0.130***	0.199***	0.107**
	(0.019)	(0.037)	(0.024)	(0.050)	(0.025)	(0.044)
Engaging in R&D activities	-0.051	0.051	-0.154***	0.066	-0.050	0.008
	(0.035)	(0.040)	(0.047)	(0.056)	(0.049)	(0.046)
Ln Real FDI	0.111***	0.025	0.280***	-0.0409*	0.007	0.014
	(0.007)	(0.019)	(0.009)	(0.024)	(0.010)	(0.022)
2003	-0.242***	-0.137***	-0.091	-0.162***	-0.325***	-0.142***
	(0.044)	(0.024)	(0.059)	(0.033)	(0.064)	(0.028)
2005	2.257***	2.546***	3.442***	3.543***	1.099***	1.484***
	(0.051)	(0.045)	(0.069)	(0.062)	(0.068)	(0.049)
2006	-0.749***	-0.531***	-0.573***	-0.570***	-0.990***	-0.700***
	(0.042)	(0.041)	(0.056)	(0.055)	(0.061)	(0.044)
Observations	43,268	43,268	22,883	22,883	22,265	22,265
Number of 2-digit HS products	17,502	17,502	9,156	9,156	8,907	8,907
R-squared	0.154	0.361	0.287	0.495	0.067	0.272

Notes: Standard errors in parentheses are robust to heteroscedasticity.

*** significance at the 1% level; ** significant at the 5% level; * significance at the 10% level.