The Impact of Chinese Import Penetration on Danish Firms and Workers

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Abstract: The impact of imports from low-wage countries on domestic labor market outcomes has been a hotly debated issue for decades. The recent surge in imports from China has once again reignited this debate. Since the 1980s several developed economies have experienced contemporaneous increases in the volume of imports and in the wage gap between high- and low-skilled workers. However, the literature has not been able to document a strong causal relationship between imports and the wage gap. Instead, past studies have attributed the widening wage gap to skill biased technological change. This paper finds evidence for the direct impact of low wage imports on the wage gap. Using detailed panel data for firms and workers, it measures the effects of Chinese import penetration at the firm level on worker composition and wages in Denmark. Greater exposure to Chinese imports changes the composition of workers within firms. Controlling for these composition effects, an increase in Chinese import penetration results in lower wages for low-skilled employees.

Keywords: Chinese import penetration, wage inequality, firm heterogeneity

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1. Introduction

In the last quarter century, the United States and several other advanced economies have experienced greater income inequality between skilled and unskilled workers. The simultaneous rise in imports from China and other developing countries triggered a lively early debate among trade and labor economists about whether increased trade caused the higher skill premium. One example is the survey by Freeman (1995) entitled "Are your wages set in Beijing?". This study concluded that increased trade contributed to, but was not the primary cause behind the rising wage gap. The skepticism was fueled in part by the fact that, in the mid 1990s, trade still only constituted a small percentage of total consumption in most advanced countries, so the factor contents of trade were only small fractions of the domestic supplies of labor.

Since then, the establishment of the WTO and trade liberalizations enacted during the Uruguay Round has led to a boom in imports from developing countries and from China in particular. This has once again ignited interest in how imports affect workers in advanced countries. For example, Krugman (2008) concludes: "…there has been a dramatic increase in manufactured imports from developing countries since the early 1990s. And it is probably true that this increase has been a force for greater inequality in the United States and other developed countries." However, there is still a lack of studies documenting a causal relationship between increased import competition from low-wage countries and the skill wage gap.

Among low-wage countries, the rise of China has been remarkable. When the Chinese government enacted market reforms in 1978, China was the 11th largest economy in the world, accounting for only 2% of global GDP. Thirty years later, China has overtaken

Japan as the second largest economy in the world, accounting for 10% of global GDP. Its growth rate over these decades have been unmatched by any other nation.[1] Much of this economic success has been driven by international trade. Since opening its borders in 1978, China has grown from a closed economy to the world's largest exporter.[2]

In this paper we use matched worker-firm data from Denmark covering the universe of firms and workers merged with domestic sales by product for the period 1997-2008. We make two main contributions. First, using the domestic sales by product, we document that domestic firms are exposed to Chinese import penetration to very different degrees. For example, in most industries the firm at the 10th percentile is unaffected by Chinese imports while the 90th percentile firm in many cases has a Chinese import penetration measure at least double that of the median firm. This is in line with the literature on heterogeneous firms showing that firms, even within narrow industries, differ with respect to, e.g., size, productivity, capital intensity, wages, exports and imports. In contrast, the traditional approach in the literature has been to use industry-level measures of import penetration.

Second, we show a causal relationship between Chinese import penetration and the rising wage gap. We estimate within job spell wage equations using over time changes in the firm-level Chinese import penetration measure as the source of variation. We instrument for Chinese import penetration using China's world export supply in order to mitigate endogeneity issues. Greater exposure to Chinese imports lowers the share of low-skilled workers within firms, but our within job spell approach has the advantage that changes in the composition of workers is not an issue. We find that the rise in Chinese

[1] IMF http://www.imf.org/external/pubs/ft/weo/2011/02/weodata/index.aspx
[2] http://news.bbc.co.uk/2/hi/8450434.stm

imports increases the wage gap between low and high skilled Danish workers. A low skilled worker loses almost 0.7% of his wage for each percentage point increase in Chinese import penetration, while the wage of high-skilled workers are unaffected.

Our results when using firm-level Chinese import competition measures contrast those of studies using industry-level measures. When measured at the industry level, we find that Chinese import penetration does not have a negative effect on wages. This mirrors to some extent the findings in the earlier literature on trade and wages.[3] These lack of results also mirror those of two contemporary papers: Autor, Dorn and Hanson (2012) and Ebenstein, Harrison, McMillan and Phillips (2011).

Autor, Dorn and Hanson (2012) use local labor markets instead of industries to analyze the effects of imports. They find that increased exposure to import competition from China depresses manufacturing employment, but no wage effects are found in the manufacturing sector. Instead wages fall in the service sector. They attribute the absent manufacturing wage effects to rigid wage setting or compositional changes. Ebenstein, Harrison, McMillan and Phillips (2011) examine the impact of offshoring and import penetration on wages both within the manufacturing sector and across sectors and occupations. They use data on worker-level wages and occupations and find that workers in occupations most exposed to import penetration experience slower wage growth. However, Ebenstein et al (2011) also find negligible within industry effects. Their contribution is to show that workers that leave manufacturing are the ones who experience wage reductions.

[3] e.g. Feenstra and Hanson (1999).

Unlike Autor, Dorn and Hanson (2012) and Ebenstein, Harrison, McMillan and Phillips (2011), this study finds significant wage effects within the manufacturing sector. We do this by exploiting firm-level import penetration measures for a panel of manufacturing firms, while controlling for more aggregate wage effects at the level of industries and local labor markets. Our firm-level measure is more representative of the import competition that firms face and is not attenuated by aggregation, as is the industry level measure.

While Autor, Dorn and Hanson (2012) and Ebenstein, Harrison, McMillan and Phillips (2011) focus on more aggregate labor market outcomes, several recent papers analyze how firms adjust in response to increased import competition. Bernard, Jensen and Schott (2006) show that American plant survival and growth are negatively correlated with industry exposure to imports from low wage countries.[4] Iacovone, Rauch and Winters (2011) find that Chinese import penetration reduces sales of smaller Mexican plants and more marginal products and they are more likely to cease.[5] Bloom, Draca, and van Reenen (2011) use the number of computers, the number of patents, or the expenditure on R&D as measures of innovation and find that Chinese import penetration correlates positively with within-plant innovation in the UK.[6] Finally, using Belgian firm-level data, Mion and Zhu (2011) find that industry-level import competition from China reduces firm employment

[4] Greenaway, Gullstrand, and Kneller (2008) show similar patterns in Swedish firms.
[5] Consistent with this, Liu (2010) finds that import competition leads multi-product US firms to drop peripheral products to refocus on core production.
[6] Two other papers study the relationship between import competition and firm level innovation. Iacovone, Keller and Rauch (2010) examine China's effects on the innovation rates of Mexican firms. They find that an increase in Chinese imports at the six-digit industry level correlates with decreases in the rates of ISO 9000 and Just-in-Time production adoption. Teshima (2010) find Mexican plants increase R&D expenditure in response to tariff reductions.

growth and induce skill upgrading in low-tech manufacturing industries. For a survey of recent firm-level empirical research on trade, see Harrison, McLaren and McMillan (2011).

In summary, there has been a revival in studies looking at firm-level outcomes, but none of these papers focus on wages as the outcome. In this paper we attempt to fill this gap.

The rest of the paper is structured as follows. Section 2 describes the data on firms, workers and Chinese import penetration. Section 3 outlines the worker level wage regression framework. Section 4 presents the results, and section 5 concludes.

2. Data Description

In this section we describe the Danish labor market, our data sources and show that the rise of China in the global economy has reached Denmark. We then define our measure of Chinese import competition that Danish firms face at home. Finally our instrument for Chinese import penetration is described.

2.1 The Danish labor market

Botero, Djankov, La Porta, Lopez-De-Silanes and Shleifer (2004) systematically examine labor market regulations in many countries. They classify the Danish labor market as having one of the most flexible labor markets in the world, comparable to the US. Unlike other continental European labor markets employment protection is relatively weak, so Danish firms may adjust employment with relative ease. As compensation for high job turnover workers receive relatively generous UI benefits when unemployed, but incentives to search for jobs during unemployment are reinforced by active labor market programs, monitoring and sanction. Together these ingredients form what has been called the 'flexicurity' model.

The Danish labor market is strongly unionized even by European standards. More than three quarters of all workers are union members and bargaining agreements are extended to cover most of the labor market. There are three different levels at which wages can be negotiated: the Standard-Rate System, the Minimum-Wage and Minimum Pay System; and Firm-level Bargaining. Under the Standard-Rate System the wages of workers are set by the industry collective agreement and the wages are not modified at the firm level. The Minimum-Wage System and the Minimum-Pay System are two-tiered systems in which wage rates negotiated at the industry level represent a floor which can be supplemented by local firm-level negotiations. Under Firm-Level Bargaining wages are negotiated at the firm level without any centrally bargained wage rates.

The Danish labor market has been undergoing a process of decentralization. Since 1991 less than 20% of the private labor market is covered by the Standard-Rate System and an increasing share of wage contracts are negotiated exclusively at the worker-firm level. As a consequence, wages are more in accordance with individual workers' marginal productivity. Dahl et al. (2012) show that decentralization has increased wage dispersion in the Danish labor market.

2.2 Sources

The microdata in our sample period from 1997 to 2008 are drawn from several databases in Statistics Denmark. We describe each in turn. The "Firm Statistics Register" (FirmStat) covers the universe of Danish firms, each supplied with a unique identifier, and provides us with annual data on firms' activities and characteristics, such as industry affiliation in correspondence with the six-digit NACE classification, total wage bill, employment, output, value added and capital stock. There is also information about the firm's municipality code such that we can classify all firms into local labor markets based on commuting patterns. There are 36 so-called commuting zones defined such that internal commuting is significantly higher than external commuting.

From the "Domestic Sales of Goods"-database we observe domestic sales for each manufacturing firm by ten-digit product codes, which we aggregate to the six-digit Harmonized System (HS) to match the aggregation levels of our trade data and instruments. For each firm-product pair we observe the value measured in Danish Kroner (DKK) and the quantity in some measurement unit. Though the unit of measurement is product dependent, within each product it is consistent over time and across firms, and roughly 90% of the products are measured in either kilograms or in counts (e.g. 5 computers). Firms whose employment level or domestic sales are below time-varying thresholds are not required to report domestic sales, and thus the coverage rate of the value of domestic sales data is less than complete (around 90%) when comparing to official aggregate statistics. Since the firm identifier is the same as the one in FirmStat, we are able to match the domestic sales data to the firm statistics.

Data on the imports and exports of every Danish firm are taken from the "Danish Foreign Trade Statistics"-database. These are compiled in two systems: Extrastat and Intrastat. Extrastat covers all trade with countries outside the European Union and is recorded by customs authorities while Intrastat covers trade with EU countries. Firms are only required to report intra-EU imports and exports if these exceed time-varying thresholds. Hence, when comparing to official aggregate statistics, the coverage rate of Extrastat is nearly complete, whereas the coverage rate of Intrastat is around 90%. For every firm, trade flows are recorded in correspondence with the eight-digit Combined Nomenclature classification, which amasses to roughly 9,000 products a year. We aggregate these to about 5,000 six-digit HS products so that we are able to match with the world export supply data, which we use to create our instruments. From the trade statistics we extract the value measured in DKK and the weight measured in kilograms of every trade flow. As the firm identifier is identical to that used in FirmStat and FIDA, we can match the trade data with our firm data.

The worker data comes from the "Integrated Database for Labor Market Research" (IDA). This database covers the entire Danish population aged 15-74. To match every worker in IDA to every firm in FirmStat we use the "Firm-Integrated Database for Labor Market Research" (FIDA). In the main part of the paper, the dependent variable is the worker's hourly wage rate. This variable is calculated as total labor income plus mandatory pension payments divided by the number of hours worked in the worker's job. Educational attainment is recorded according to the International Standard Classification of Education (ISCED), from which we define high-skilled workers as having a tertiary education corresponding to ISCED categories 5 and 6. All other workers are classified as low-skilled.

2.3 The Rise of China

China's emergence as a global economic heavyweight over the course of the last three decades has been intertwined closely with its rise on the scene of international trade, manifested by its accession to the WTO in 2001. While accounting for a negligible 1% of world exports in 1980, by late 2009 that share had increased to 10%, and on the road there, China has overtaken Germany as the world's largest exporter.

This increase in world exports has been paralleled by in an increasing presence on the Danish market. From 1993 to 2009, China's share of Danish manufacturing imports grew from 2% to almost 7%. Table 1 contains top ten lists of CN8 products imported from China in 1993 and 2009 respectively, while Table 2 shows how Chinese import penetration has hit manufacturing industries very differently. Manufacture of textiles (NACE industry 17-19) and transportation and furniture (35-36) clearly stand out as industries with the highest growth in Chinese import penetration. This expansion creates a natural experiment which we, via firms, can map onto individual workers in the Danish manufacturing sector. This is done by our Chinese import penetration measure, which we discuss in the next section.

2.4 Chinese Import Penetration

We want to measure the level of competition that each individual manufacturing firm faces from China. To do so, we characterize all imports by manufacturing firms as intermediate inputs in line with the "broad offshoring" measure of Hummels, Jørgensen, Munch and Xiang (2011). Imports of intermediate inputs constitute roughly a quarter of all manufacturing imports. The remaining three quarters are final goods imported by non-manufacturing firms. Figure 1 shows that China's share of both intermediate and final goods imports have increased over time, most rapidly from 2002 onwards.[7]

[7] We identify manufacturing firms only from 1995 to 2008.

We disregard imports of intermediate inputs and employ only final goods imports in the construction of Chinese import penetration measures. In the literature it is common to use industry measures of import competition, see e.g. Bernard et al. (2006), implying that all firms within an industry faces the same exposure to imports from China. For comparison, we construct import penetration CIP_{lt} for four-digit NACE industry l for year t:

$$CIP_{lt} = \frac{M_{lt}^{CH}}{M_{lt} + D_{lt}},$$

where M_{lt}^{CH} and M_{lt} are the values of final good imports from China and all countries in industry l at time t respectively, and D_{lt} is total domestic sales by Danish firms in industry l.

While CIP_{lt} can describe the variation across industries, our data allows us to measure Chinese import penetration at a finer aggregation. We construct a firm-level Chinese import penetration measure CIP_{jt} for firm j in year t:

$$CIP_{jt} = \sum_{k \in \Omega_j} s_{jk} \frac{M_{kt}^{CH}}{M_{kt} + D_{kt}},$$

where M_{kt}^{CH} and M_{kt} are the values of final good imports from China and all countries for HS6 product k at time t respectively, and D_{kt} is total domestic sales of product k by Danish firms at time t. That is, the import penetration for firm j is defined as the weighted average of the Chinese import penetration in the set of firm j's products, Ω_j. The weights, s_{jk}, are defined as the shares of product k in firm j's total domestic sales over the presample period 1997-2000.[8] This definition keeps constant the product mix in the presample period to measure the extent to which firms subsequently are hit by surges in imports from China.[9]

[8] In defining the presample period there is a trade-off between the length of the sample window (2001-2008) and the range of products sold by domestic firms before the surge in Chinese imports.

[9] This way of defining the import penetration measure is consistent with Autor, Dorn and Hanson (2012). At the level of local labor markets they use initial period employment weights for industries.

Firms may adjust the product mix to increased import competition, but such (endogenous) responses are outcomes we will later investigate.

Table 3 summarizes the changes in CIP_{jt} across the industries in our sample. Several points are worth noting. First, as was the case with the industry-level Chinese import penetration measure in Table 2, our firm-level measure varies greatly across industries with the same industries standing out. Second, the level of the firm-level import penetration measure is generally lower than the industry-level measure. This reflects mainly that a substantial part of the presample product bundle is unaffected by imports from China. Third, and most importantly, Chinese import penetration exhibits substantial variation across firms within industries. For example, in most industries the firm at the 10th percentile is unaffected by Chinese imports while the 90th percentile firm in many cases has a CIP_{jt} at least double that of the median firm.

After merging our worker-firm data with the constructed CIP_{jt} variable we select all full time manufacturing workers aged 20-60 years in the period 2001-2008. As explained above, the wage rate is calculated as labor income divided by hours worked, so to ensure that our results are not influenced by noisy observations, we trim the data by dropping wage rate observations that are deemed to have a low quality by Statistics Denmark. In addition, observations in the upper and lower 0.5 percentiles of the wage distribution are deleted. In total, this eliminates less than 5% of the observations. We also drop all job spells where the import penetration measure is zero throughout as these observations do not contribute to the identification (about 20% of the initial sample). Also, to avoid that extreme values of the firm-level import penetration measure influence the results we drop the top percentile of these values. Finally, accounting statistics are available for firms with

50 employees or more, so we drop those that are smaller on average over the sample period (27% of original sample). Our final sample contains about 1.4 million worker-year observations, and for each year our final sample accounts for about 50% of aggregate manufacturing employment. Summary statistics of the data are displayed in Table 4.

2.5 Instruments

A potential concern in our empirical specification is that unobserved factors such as technology shocks are correlated with both changes in product-level Chinese imports and labor demand. To address this problem, we use Chinese world export supplies as an instrument that is correlated with Danish imports from China but uncorrelated with the firm's wage setting. The instrument I_{jt} for firm j in time t is

$$I_{jt} = \sum_{k \in \Omega_j} s_{jk} \, WES_{kt},$$

where WES_{kt} is China's total supply of product k to the entire world, minus exports to Denmark, in period t. WES_{kt} is weighted by presample shares s_{jk} of product k in firm j's total domestic sales. WES_{kt} measures changes in China's comparative advantage that are exogenous to Danish firms and workers. An increase in WES_{kt} proxies for an increase in China's productivity in producing k or a decrease in transportation costs/tariffs. A salient example of the latter is the expiration of textile tariffs in 2001 and 2005 that led to huge increases in textiles imports seen in Table 2. The causal relationship between WES_{kt} and CIP_{jt} arises from the correlation between Denmark's imports for product k and China's comparative advantage in that product. The exclusion restriction is valid if China's comparative advantage in product k is uncorrelated with wage setting characteristics (besides through CIP_{jt}).

2.6 Firm-level outcomes

Before we proceed to the main outcome of interest, worker-level wages, we show how our import penetration measures correlate with firm outcomes. The first column of Table 5 show results from regressions of a firm-level outcome (value added, employment, wage bill etc.) on the industry-level Chinese import penetration measure, where year dummies and firm fixed effects are included as controls. None of the correlations are significantly different from zero. The second column uses our firm-level import penetration measure. Here we see that firms, that are more exposed to import competition see value added, sales and employment drop. Interestingly, the drop in employment is more pronounced for low-skilled workers than for workers in general. This reduction in the share of low-skilled workers highlights the need to control for compositional changes when analyzing wages.

3. Empirical specification

If labor markets are perfectly competitive, employers who cut wages slightly will see all their workers quit immediately. By contrast, if there are frictions in the labor market, firms will face an upward sloping labor supply curve, and wages are possibly specific to the firm. This, in turn, will leave room for demand shocks due to e.g. changes in import competition to affect wages at the level of the firm.

Frictions in the labor market may arise for a variety of reasons. Search models rely on the assumption that it takes time and effort for workers to change jobs because information about the labor market is imperfect. However, even with full information and no mobility costs firms may have monopsony power if jobs are differentiated due to e.g. commuting distances or non-monetary aspects. Rents in the employment relationship may also arise due to institutions in the labor market such as unions, specific wage setting mechanisms such as efficiency wages or the accumulation of specific human capital. For a recent review of theory and empirics for imperfect labor markets, see Manning (2011).

In a trade context several papers with heterogeneous firms and imperfections in the labor market have recently emerged. The imperfections modeled include rent sharing (Amiti and Davis 2012), efficiency wages (Davis and Harrigan 2011), fair wages (Egger and Kreickemeier 2009) and search costs (Davidson, Matusz and Shevchenko 2008 and Helpman, Istkhoki and Redding 2010). We remain ambivalent as to the exact cause behind imperfections in the labor market, as it is outside the scope of the paper to investigate this issue. Instead, we simply point to the ample evidence (reviewed in e.g. Manning 2011) for the existence of rents in the employment relationship and proceed with a reduced form approach allowing wages to differ across firm for identical workers.

To examine the effect of Chinese import penetration on wages, we regress log wages on Chinese import penetration as defined in section 2.4. We adopt a standard worker-level Mincer wage equation framework of the form

$$\log w_{ijt} = \gamma CIP_{jt} + x_{it}\beta_1 + z_{jt}\beta_2 + \alpha_{ij} + \varphi_t + \epsilon_{ijt}\,, \qquad (1)$$

where w_{ijt} is the wage rate of worker i employed by firm j at time t. We are ultimately interested in the effect of firm-level Chinese import penetration, CIP_{jt}, on worker wages as indicated by the sign and magnitude of γ. x_{it} are observed time varying worker characteristics (experience, experience squared and indicators for marriage and union membership) and z_{jt} are observed time varying firm controls (log output, log size, log capital-labor ratio, share of high skilled workers and import and export intensities).

The term α_{ij} is a worker-firm match fixed effect that controls for time invariant unobserved characteristics specific to the worker-firm job spell. In the literature on wages using matched worker-firm datasets pioneered by Abowd, Kramarz and Margolis (1999) it is common to estimate worker and firm fixed effects separately. Such a specification relies on the assumption of conditional exogenous worker mobility, implying that, conditional on time-varying worker and firm characteristics and worker and firm fixed effects, workers are assigned randomly to firms. In our context it is likely that increased import penetration affects the mobility of workers through unobserved worker-firm match quality, thus violating the assumption of exogenous worker mobility.[10] We therefore include worker-firm match fixed effects to control for endogenous worker mobility.

We also include time dummies φ_t to capture general macroeconomic trends in wages, but in some specifications these are replaced by industry × time and region × time dummies to capture time varying shocks to industries or local labor markets that affect wages. Notice, this also absorbs effects of Chinese import penetration working at the level of industries as in the traditional approach in the literature on trade and wages or at the level of local labor markets as in Autor, Dorn and Hanson (2012).

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[10] Krishna, Poole and Senses (2011) study the impact of trade liberalization in Brazil using matched worker-firm data. They reject the assumption of exogenous worker mobility by applying the test developed by Abowd, McKinney and Schmutte (2010). Once they control for worker-firm match fixed effects, they find no effect of trade reform on wages.

Chinese import penetration may affect high-skilled and low-skilled workers differently, so we also estimate a variant of the regression model in (1) where we add a term interacting CIP_{jt} interacted with a high skill indicator dummy, H_{it}:

$$\log w_{ijt} = \gamma CIP_{jt} + \gamma_H CIP_{jt} * H_{it} + x_{it}\beta_1 + z_{jt}\beta_2 + \alpha_{ij} + \varphi_t + \epsilon_{ijt} , \qquad (2)$$

The high skill indicator, H_{it}, takes the value 1 for workers with a college degree and 0 otherwise. Thus γ_H measures the increase in the wage gap between high and low skilled workers in response to a percentage point increase in Chinese import penetration.

4. Results

To begin, we examine how industry level measures of Chinese Import Penetration affects workers' wages without correcting for endogeneity. Previous studies (e.g. Bernard, Jensen and Schott 2006) use industry level import penetration measures, and we follow this approach by replacing CIP_{jt} in equations (1) and (2) with the industry level measure CIP_{lt}. The results are presented in the first two columns of Table 6. We find no significant negative relationship between industry measures of Chinese import penetration and wages of low-skilled workers. This is in line with other studies (e.g., Autor, Dorn and Hanson 2012, Ebenstein, Harrison, McMillan and Phillips 2011) that find negligible effects of industry level import penetration measures on workers in that industry. In fact, we find a positive effect of industry-level Chinese import penetration on the wages of high-skilled workers indicating an increased wage gap.

One advantage of our data is that we can construct firm level measures of import penetration CIP_{jt} using product-shares of domestic sales. Results from the estimations of Equation (1) and (2) are presented in Columns (3) and (4) of Table 6. Unlike the industry level measures, the firm-level measures are highly correlated with the wages of low-skilled workers. A percentage point increase in Chinese import penetration for a firm reduces hourly wages at that firm by 0.134%. This reduction is concentrated in the wages for low-skilled workers, who experience a drop of 0.180% per percentage point increase in CIP_{jt}. On the other hand, high-skilled workers benefit from Chinese Import Penetration. The wage gap between high and low skilled workers increases by 0.340% for each percentage point increase in CIP_{jt}, resulting in a net gain of 0.160% for high skilled workers.

These wage reductions could be coming from channels that operate at the industry or region level. For example, Bernard, Jensen, and Schott (2006) find that firms in industries exposed to imports grow slower than firms in other industries. Therefore, workers in these exposed industries would experience slower wage growth. Likewise local labor markets may trend differently due to unobserved shocks to labor demand. To control for such industry and region effects, we replace the time fixed effects with industry-time and region-time fixed effects. In addition, any effects of import penetration working at the level of industries of local labor markets are absorbed, so the estimated effects of firm-level import penetration are exclusively attributable to over-time changes within the firm. Results for these specifications are presented in Columns (5) and (6) of Table 6. The results are very similar to those of Equations (3) and (4), and so we conclude that most of the wage reductions are occurring within firms.

4.1 Instrumental variable analysis

In both equations (1) and (2), the error term, ϵ_{ijt}, may contain unobserved shocks that affect both Chinese import penetration and the workers' wages. An example would be a positive shock to firm j's productivity that increases its domestic sales, which mechanically lowers CIP_{jt}. The productivity shock simultaneously increases wages for workers at firm j. To identify the causal effect of Chinese import penetration on wages, we instrument CIP_{jt} with Chinese world export supply. Insofar as Chinese world export supply proxies for Chinese comparative advantage, it should affect wages only through CIP_{jt}.

We address the endogeneity of CIP_{jt} in a two stage estimation procedure. In the first stage, CIP_{jt} is regressed on the instrument and the other controls. The results of the first-stage regressions are shown in Table 7. In all cases the instruments are strong and have the expected signs. Employing predicted values from the first stage, we estimate the models in equations (1) and (2) in the second stage. The two first columns of Table 8 display the results for the industry-level measure of Chinese import competition. Again, we find no significant impact for low-skilled workers, but a positive effect for high-skilled. This contrasts the findings for our firm-level import penetration measure in columns (3)-(6). Here the IV results have the same signs as in the OLS regression, but they are magnified by about a factor 3. In the specification with industry-year and region-year fixed effects wages for low skilled workers fall by 0.661% for each percentage point increase in Chinese import penetration, and the wage skill gap now significantly rise by 0.664% per percentage point.

These results of course cover the vast variation in import competition changes faced by firms across and within industries. For example, consider the furniture industry (two-digit NACE industry 36), which employ roughly 5% of all Danish manufacturing workers. The firm at the 25 percentile experienced a 0 percentage point increase in the firm-level import penetration measure over the 2001-2008 period, while the firm at the 75 percentile experienced a 7.8 percentage point increase. Low-skilled workers in the most exposed firm then saw their wages drop by 5% more than low-skilled workers in least exposed firm over this eight year period.

4.2 Occupational characteristics and wages

We observe the occupations of the workers in our sample and merge this with data on occupational characteristics from O*NET version 13, 2008. Following Autor, Levy, and Murname (2003) we consider routine and non-routine characteristics, choosing O*NET characteristics that are closest to the ones employed by Autor, Levy, and Murname (2003). We compute the principal component, which we then normalize to have mean 0 and standard deviation 1.

Table 9 holds the results. Low-skilled workers with average routineness scores (OCC = 0) are now not very much affected by Chinese import penetration while high-skilled workers with average routines scores experienced a 0.636% decrease in wages. This is consistent with the previous results as educational attainment is negatively correlated (the correlation coefficient is –0.54) with routineness. Workers whose occupations are characterized by routineness (OCC > 0) experience greater wage losses. On the other hand, occupations that are characterized by non-routine tasks are affected positively by Chinese import penetration.

To better understand how education affects wages, we consider the other main components of college education (communication, social sciences, and natural sciences). Social sciences and communication interact positively with Chinese import penetration while natural sciences interact negatively. Finally, hazardous working conditions affect wages negatively.

4.3 Is China special?

As a robustness check this section compares the effects of import competition from China to imports from other origin countries using the full model specification from column (6) in Table 8. Over the period 2001-2008 imports from the Central and Eastern European Countries (CEEC) have also increased but not to the same extent as the more dramatic rise in imports from China. The first column of Table 10 show that the effect of imports from China and CEEC combined is negative for low-skilled workers, but the point estimate is somewhat closer to zero. In column (2) Chinese imports are lumped together with imports from other low-income countries.[11] Here the results for low-skilled workers are similar to those of Table 8 while high-skilled workers also seem to be hurt. This suggests that Chinese import penetration is special amongst low-wage countries in that it does not affect the wages of high-skilled workers. Finally, in column (3) we estimate the impact of import penetration from high-income countries defined as EU-15 plus USA and Japan. Here the coefficients are much smaller in magnitude, but the sign has now changed for high-skilled workers such that they see their wages drop in response to increasing imports from these countries. This is in line with a Stolper-Samuelson interpretation, since the factor content of trade here presumably is more skill-intensive. Note, however, that none of the import penetration coefficients in the high-income regressions are now significant.

4.4 Other Robustness Checks

For robustness, the last two columns of Table 10 report regressions results using the specification in column 6 of Table 8, but for different samples. The first of these shows

[11] We use the World Bank definition in 1989 to classify countries as being low-income.

the impact of including job spells that face zero Chinese import penetration throughout the spell, which increases our sample to 1,765,483 worker-year observations. Though the estimates are smaller in magnitude, the results are remarkably robust to adding zero CIP spells.

The last column shows the results of adding firms with less than 50 employees on average over the sample period. The estimates are somewhat smaller in magnitude, but retain their signs.

5. Conclusion

The economic rise of China has cascading effects on the rest of the world. Rising comparative advantages in particular products has made China the largest exporter in the world. Domestic firms must now compete with Chinese product in their own local markets. This has pronounced effects on firms' production structure and the wages of its workers.

In this paper, we have documented this process for Danish firms. Imports from China has increased dramatically, increasing from around 2% in 1997 to almost 7% in 2009. These increases are concentrated in a handful of industries, notably textiles and furniture. Within an industry, these increases are concentrated in a few firms. For example, in most industries the firm at the 10^{th} percentile is unaffected by Chinese imports while the 90^{th} percentile firm in many cases has a Chinese import penetration measure at least double that of the median firm.

Most importantly, we show that the increases in Chinese imports increases the wage gap between low and high skilled Danish workers. Low skilled workers loses almost .8% of his wage for each percentage point increase in Chinese import penetration, while the wage of high-skilled workers rise by .1% per percentage point.

Exactly how Chinese imports widen the wage gap is still undocumented. In a future revision, we plan to investigate the different margins (e.g., product level price and quantity, product entry and exit) through which Chinese import penetration affects domestic sales.

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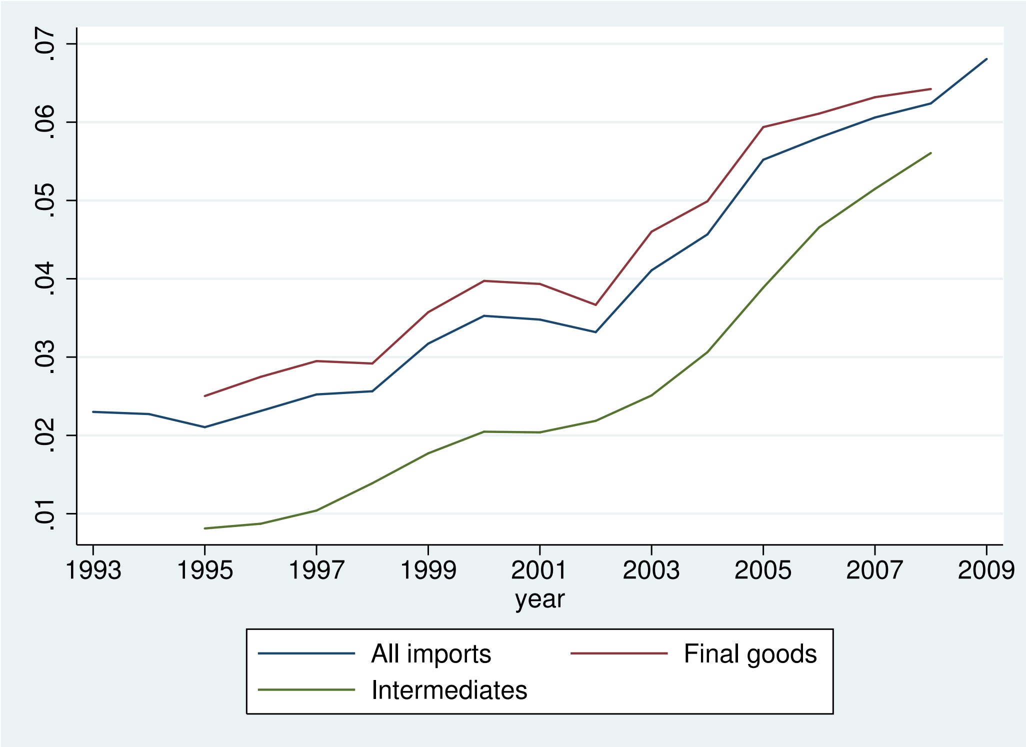

Figure 1 – Chinese Import Shares

Table 1 – **Top 10 Imports From China**

Rank	Year	CN8	Product	Value (bio. DKK)	China's share
1	1993	61091000	T-shirts, singlets and other vests, knitted or crocheted	12.6	0.20
2	1993	62112000	Ski suits	10.4	0.79
3	1993	95039031	Tricycles, scooters... [other toys]	8.48	0.42
4	1993	62052000	Men's shirts – of cotton	6.23	0.22
5	1993	62064000	Women's blouses, shirts and shirt-blouses	5.09	0.17
6	1993	39269099	Other articles of plastics	4.66	0.07
7	1993	62034235	Trousers, bib and brace overalls, breeches and shorts	4.61	0.34
8	1993	61101091	Jerseys, pullovers, cardigans, waistcoats and similar articles of cotton	4.54	0.27
9	1993	61046210	Trousers, bib and brace overalls, breeches and shorts	4.37	0.28
10	1993	42029291	Traveling-bags, toilet bags, rucksacks and sports bags	4.31	0.47
1	2009	89012010	Tankers – Seagoing	176	0.47
2	2009	84713000	Portable automatic data-processing machines	58.5	0.15
3	2009	61103099	Jerseys, pullovers, cardigans, waistcoats and similar articles of man made fibers, women's	45.8	0.63
4	2009	62046239	Women's trousers, bib and brace overalls, breeches and shorts of cotton	42.6	0.54
5	2009	62029300	Women's overcoats, car coats, capes, cloaks [and similar] of man made fibers	33.9	0.80
6	2009	61102099	Jerseys, pullovers, cardigans, waistcoats and similar articles of cotton, women's	31.6	0.47
7	2009	61102091	Jerseys, pullovers, cardigans, waistcoats and similar articles of cotton, men's	27.1	0.40
8	2009	62046231	Women's trousers, bib and brace overalls, breeches and shorts of denim	25.5	0.31
9	2009	94016100	Seats of cane, osier, bamboo or similar materials – Upholstered	24.6	0.22
10	2009	73089099	Structures and parts of structures (for example, bridges [...])	24.5	0.10

Table 2 – Dispersion in Industry-Level Chinese Import Penetration

Industry	Name	CIP 2001	CIP 2008	Δ CIP	Employment share 2001
15	Food and drinks	0.002	0.003	0.001	0.169
16	Tobacco	0.000	0.000	0.000	0.002
17	Textiles	0.051	0.159	0.108	0.012
18	Clothing	0.209	0.307	0.097	0.000
19	Leather	0.116	0.204	0.089	0.000
20	Wood	0.008	0.021	0.013	0.035
21	Paper	0.002	0.009	0.007	0.016
22	Graphics	0.001	0.004	0.002	0.044
23	Mineral oil	0.000	0.000	-0.000	0.002
24	Chemistry	0.003	0.005	0.001	0.128
25	Rubber and plastics	0.014	0.024	0.010	0.059
26	Stone, clay, and glass	0.009	0.017	0.008	0.045
27	Metals	0.001	0.008	0.008	0.018
28	Iron and metal	0.017	0.028	0.011	0.080
29	Machinery	0.006	0.015	0.009	0.192
30	Office and IT	0.020	0.040	0.020	0.002
31	Other elect. machinery	0.012	0.023	0.011	0.045
32	Tele industry	0.020	0.048	0.029	0.012
33	Medical equip., clocks, etc.	0.013	0.018	0.006	0.045
34	Car	0.001	0.005	0.004	0.021
35	Other transportation	0.047	0.093	0.046	0.022
36	Furniture and other manuf.	0.036	0.095	0.059	0.049
37	Recycling	0.000	0.000	0.000	0.001
Total		0.027	0.051	0.024	1.000

Table 3 – Dispersion in Firm-Level Chinese Import Penetration, 2008

Industry	Mean	sd	p10	p25	p50	p75	p90
15	0.001	0.004	0.000	0.000	0.000	0.000	0.002
16	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17	0.071	0.137	0.000	0.000	0.002	0.083	0.275
18	0.184	0.137	0.000	0.008	0.197	0.302	0.349
19	0.050	0.037	0.023	0.023	0.036	0.092	0.092
20	0.006	0.031	0.000	0.000	0.000	0.002	0.005
21	0.007	0.008	0.000	0.000	0.008	0.012	0.020
22	0.001	0.008	0.000	0.000	0.000	0.001	0.002
23	0.000	.	0.000	0.000	0.000	0.000	0.000
24	0.002	0.004	0.000	0.000	0.000	0.001	0.005
25	0.015	0.024	0.000	0.000	0.003	0.027	0.029
26	0.009	0.029	0.000	0.000	0.000	0.001	0.016
27	0.009	0.012	0.000	0.000	0.004	0.013	0.029
28	0.010	0.028	0.000	0.000	0.000	0.008	0.022
29	0.006	0.014	0.000	0.000	0.001	0.006	0.017
30	0.028	0.042	0.000	0.000	0.000	0.075	0.078
31	0.016	0.035	0.000	0.000	0.000	0.011	0.065
32	0.009	0.017	0.000	0.000	0.000	0.017	0.028
33	0.006	0.018	0.000	0.000	0.000	0.003	0.015
34	0.005	0.011	0.000	0.000	0.000	0.001	0.019
35	0.009	0.016	0.000	0.000	0.000	0.015	0.027
36	0.039	0.051	0.000	0.000	0.003	0.078	0.133
37	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	0.013	0.041	0.000	0.000	0.000	0.006	0.029

Table 4 – **Descriptive Statistics**

	Mean	Std.Dev.	P25	Median	P75
Log Wage	5.249	0.306	5.045	5.219	5.417
Log Output	20.525	1.790	19.121	20.231	21.950
Log Size	6.395	1.569	5.142	6.127	7.694
Log Cap./Lab.	12.649	0.947	12.195	12.689	13.175
Shr. High Skill	0.230	0.157	0.115	0.186	0.303
Export Intensity	0.572	0.327	0.296	0.677	0.852
Import Intensity	0.184	0.150	0.063	0.155	0.280
Experience	19.018	9.636	11.154	18.915	26.589
Experience^2	454.522	385.667	124.412	357.777	706.975
Married	0.586	0.493	0	1	1
Union	0.865	0.341	1	1	1

Number of observations is 1398939.

Table 5 – **Firm-Level Effects of Chinese Import Penetration**

	Firm FE	
	4-Digit Industry CIP	HS6 FirmCIP
log...		
profits	-0.178	-0.932
value added	-0.144	-1.247***
domestic sales	-0.019	-1.033***
exports	-0.493	-2.284***
imports	-0.085	-1.090*
employment	0.133	-0.715***
low skill employment	-0.026	-0.857***
wage bill	-0.041	-0.871***
capital/labor	-0.518	-0.607
Year dummies	Yes	Yes

Notes:
*** p< 0.01, ** p< 0.05, * p< 0.10.
Standard errors adjusted for clustering at the firm level.
Both columns are from regressions of each firm outcome variable on a single Chinese Import Penetration variable.

Table 6 – **Fixed Effects**

	Industry CIP		Firm CIP			
	(1)	(2)	(3)	(4)	(5)	(6)
CIP	-0.057	-0.109	-0.134***	-0.180***	-0.154**	-0.202***
	(0.11)	(0.12)	(0.05)	(0.06)	(0.06)	(0.07)
CIP * High Skill		0.347***		0.340***		0.344***
		(0.12)		(0.08)		(0.08)
Log Output	0.026***	0.026***	0.026***	0.026***	0.025***	0.025***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log Size	0.004	0.004	0.004	0.004	0.003	0.003
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log Cap./Lab.	0.003**	0.003**	0.002*	0.002*	0.002	0.002
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Shr. High Skill	0.017	0.016	0.018	0.018	0.002	0.002
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Import Intensity	0.013	0.013	0.011	0.011	0.011	0.010
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Export Intensity	0.004	0.004	0.005	0.005	0.009	0.009
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Experience	0.008***	0.008***	0.008***	0.008***	0.008***	0.008***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Experience^2	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Married	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Union	0.018***	0.019***	0.018***	0.019***	0.019***	0.019***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
R-squared (within)	0.126	0.126	0.126	0.126	0.134	0.134
Observations	1398939	1398939	1398939	1398939	1398939	1398939
Year dummies	Yes	Yes	Yes	Yes	No	No
Region-year FE	No	No	No	No	Yes	Yes
Industry-year FE	No	No	No	No	Yes	Yes

Notes:
*** p< 0.01, ** p< 0.05, * p< 0.10.
Standard errors in parentheses. In columns (1)-(2) standard errors are clustered at industry-year levels. In columns (3)-(6) standard errors are clustered at firm-year levels.

Table 7 – **Fixed Effects IV: First Stage**

	Industry CIP			Firm CIP					
	(1)	(2a)	(2b)	(3)	(4a)	(4b)	(5)	(6a)	(6b)
CIP WES	0.199***	0.205***	0.000	0.120***	0.124***	-0.001	0.127***	0.128***	-0.001
	(0.02)	(0.02)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)
CIP WES * High Skill		-0.029***	0.182***		-0.019**	0.106***		-0.008	0.108***
		(0.01)	(0.02)		(0.01)	(0.01)		(0.01)	(0.01)
Log Output	0.000	0.000	-0.000	-0.001	-0.001	-0.000	-0.000	-0.000	-0.000**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log Size	-0.001	-0.001	-0.000	-0.001	-0.001	-0.000	-0.001*	-0.001*	0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log Cap./Lab.	0.001**	0.001**	0.000**	0.000	0.000	0.000	-0.000	-0.000	0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Shr. High Skill	-0.017**	-0.017**	-0.001	0.001	0.001	-0.000	0.000	0.000	-0.000
	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Import Intensity	0.024**	0.023**	0.003*	-0.004	-0.004	-0.001	-0.001	-0.001	-0.000
	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Export Intensity	-0.006*	-0.006*	-0.001	-0.001	-0.001	-0.000	-0.002*	-0.002*	-0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Experience	0.000	0.000	0.000**	0.000	0.000	0.000*	0.000	0.000	0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Experience^2	-0.000	-0.000**	0.000	-0.000	-0.000	-0.000***	0.000	-0.000	-0.000***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Married	-0.000	0.000	-0.000	-0.000*	-0.000*	0.000	-0.000	-0.000	0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Union	0.000***	0.000***	0.000	0.000***	0.000***	0.000	0.000	0.000	0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
R-squared (within)	0.290	0.291	0.273	0.186	0.187	0.183	0.494	0.494	0.228
Observations	1398939	1398939	1398939	1398939	1398939	1398939	1398939	1398939	1398939
F-stat. for instr.	96	49	54	94	50	45	206	145	121
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Region-year FE	No	No	No	No	No	No	Yes	Yes	Yes
Industry-year FE	No	No	No	No	No	No	Yes	Yes	Yes

Notes:
*** $p< 0.01$, ** $p< 0.05$, * $p< 0.10$.
Standard errors in parentheses. In columns (1)-(3) standard errors are clustered at industry-year levels. In columns (4)-(9) standard errors are clustered at firm-year levels.

Table 8 – **Fixed Effects IV**

	Industry CIP		Firm CIP			
	(1)	(2)	(3)	(4)	(5)	(6)
CIP	0.166	-0.052	-0.670**	-0.754**	-0.564***	-0.661***
	(0.19)	(0.19)	(0.34)	(0.30)	(0.21)	(0.20)
CIP * High Skill		1.191***		0.523		0.664**
		(0.17)		(0.41)		(0.28)
Log Output	0.025***	0.025***	0.026***	0.026***	0.025***	0.025***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log Size	0.004	0.004	0.003	0.003	0.003	0.002
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log Cap./Lab.	0.002*	0.002*	0.002*	0.002*	0.001	0.001
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Shr. High Skill	0.023	0.019	0.017	0.017	0.002	0.001
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Import Intensity	0.008	0.010	0.010	0.010	0.011*	0.011*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Export Intensity	0.006	0.005	0.005	0.005	0.008	0.008
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Experience	0.008***	0.008***	0.008***	0.008***	0.008***	0.008***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
$Experience^2$	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Married	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Union	0.018***	0.019***	0.019***	0.019***	0.019***	0.019***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
R-squared (within)	0.126	0.126	0.126	0.126	0.134	0.134
Observations	1398939	1398939	1398939	1398939	1398939	1398939
Year dummies	Yes	Yes	Yes	Yes	No	No
Region-year FE	No	No	No	No	Yes	Yes
Industry-year FE	No	No	No	No	Yes	Yes

Notes:
*** p< 0.01, ** p< 0.05, * p< 0.10.
Standard errors in parentheses. In columns (1)-(2) standard errors are clustered at industry-year levels. In columns (3)-(6) standard errors are clustered at firm-year levels.

Table 9 – **Fixed Effects IV: Occupation-Specific Wage Effects: Second Stage**

OCC	Routine			Non-Routine			Social Sciences		
	Industry	Firm	Firm	Industry	Firm	Firm	Industry	Firm	Firm
CIP	0.627***	-0.196	-0.031	0.413**	-0.287	-0.111	0.928***	0.163	0.351
	(0.18)	(0.42)	(0.25)	(0.18)	(0.40)	(0.25)	(0.19)	(0.48)	(0.29)
CIP * High Skill	-0.316**	-0.671***	-0.636***	-0.232	-0.597***	-0.545***	-0.007	-0.566**	-0.504***
	(0.13)	(0.19)	(0.16)	(0.16)	(0.21)	(0.16)	(0.13)	(0.23)	(0.18)
CIP * OCC	-0.687***	-0.576***	-0.644***	0.672***	0.501***	0.555***	0.497***	0.441***	0.481***
	(0.06)	(0.16)	(0.11)	(0.06)	(0.14)	(0.11)	(0.04)	(0.11)	(0.08)
R-squared (within)	0.129	0.127	0.135	0.128	0.127	0.135	0.129	0.127	0.135
Observations	1380169	1380169	1380169	1380169	1380169	1380169	1380169	1380169	1380169
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Region-year FE	No	No	Yes	No	No	Yes	No	No	Yes
Industry-year FE	No	No	Yes	No	No	Yes	No	No	Yes

OCC	Natural Sciences			Hazardous			Communication		
	Industry	Firm	Firm	Industry	Firm	Firm	Industry	Firm	Firm
CIP	0.014	-0.699**	-0.620***	0.324*	-0.417	-0.309	0.788***	0.026	0.198
	(0.18)	(0.30)	(0.19)	(0.18)	(0.32)	(0.21)	(0.18)	(0.43)	(0.28)
CIP * High Skill	1.262***	0.655	0.792**	0.431***	-0.449	-0.340	-0.159	-0.639***	-0.565***
	(0.17)	(0.43)	(0.31)	(0.14)	(0.34)	(0.21)	(0.14)	(0.23)	(0.16)
CIP * OCC	-0.102***	-0.184***	-0.190***	-0.305***	-0.446***	-0.471***	0.334***	0.274***	0.293***
	(0.02)	(0.07)	(0.05)	(0.04)	(0.11)	(0.07)	(0.03)	(0.06)	(0.05)
R-squared (within)	0.127	0.127	0.135	0.128	0.127	0.135	0.129	0.127	0.135
Observations	1380169	1380169	1380169	1380169	1380169	1380169	1380169	1380169	1380169
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Region-year FE	No	No	Yes	No	No	Yes	No	No	Yes
Industry-year FE	No	No	Yes	No	No	Yes	No	No	Yes

Notes:
*** $p< 0.01$, ** $p< 0.05$, * $p< 0.10$.
Standard errors in parentheses. The standard errors in the columns labeled "Industry" are clustered at industry-year levels, while those labeled "Firm" are clustered at firm-year levels.
Other controls are log firm output, log firm size, log firm cap./lab., share high skill workers in firm, import intensity, export intensity, experience experience^2, married dummy, and union membership dummy.

Table 10 – **Fixed Effects IV: Robustness Checks**

	China + CEEC	China + Poor Countries	Rich Countries	Include Zero CIP Spells	Include Small Firms
IP	-0.443***	-0.589**	-0.034	-0.597***	-0.504***
	(0.13)	(0.27)	(0.02)	(0.20)	(0.16)
IP * High Skill	0.411**	0.217	-0.051	0.599**	0.473**
	(0.18)	(0.45)	(0.03)	(0.30)	(0.23)
Log Output	0.025***	0.025***	0.025***	0.018***	0.030***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log Size	0.002	0.002	0.004	0.006*	0.003
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log Cap./Lab.	0.001	0.001	0.001	0.004***	0.002**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Shr. High Skill	0.002	0.001	0.009	0.005	-0.000
	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)
Import Intensity	0.013*	0.011*	0.012*	0.001	0.007
	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)
Export Intensity	0.008	0.008	0.009	0.005	0.009*
	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)
Experience	0.008***	0.008***	0.008***	0.008***	0.009***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Experience^2	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Married	0.003***	0.003***	0.003***	0.002***	0.002***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Union	0.019***	0.019***	0.019***	0.018***	0.021***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
R-squared (within)	0.134	0.134	0.134	0.129	0.131
Observations	1398939	1398939	1398939	1765483	1645525
F-stat IP	111	49	105	145	242
Fstat IP*H	87	45	98	118	186
Region-year FE	Yes	Yes	Yes	Yes	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes

Notes:
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.
Standard errors clustered at firm-year levels in parantheses.
CEEC: Cyprus, Estonia, Lithuania, Latvia, Malta, Poland, Czech Republic, Slovakia, Slovenia, Hungary, Romania, Bulgaria.
Poor countries: Afghanistan, Albania, Angola, Armenia, Azerbaijan, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Burma, Cambodia, Central African Republic, Chad, Comoros, Republic of the Congo, Equatorial Guinea, Eritrea, Ethiopia, The Gambia, Georgia, Ghana, Guinea, Guinea-Bissau, Guyana, Haiti, India, Kenya, Laos, Lesotho, Madagascar, Maldives, Mali, Malawi, Mauritania, Moldova, Mozambique, Nepal, Niger, Pakistan, Rwanda, Saint Vincent and the Grenadines, Samoa, Sao Tome and Principe, Sierra Leone, Somalia, Sri Lanka, Sudan, Togo, Uganda, Vietnam, Yemen.
Rich countries: EU15, United States, Japan.