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Abstract

Austria is a small open economy that in the last decades underwent two different waves of increasing trade integration: one with Eastern Europe and one with China. This paper studies the effects of increases in trade with China and Eastern Europe on labour market dynamics in Austrian NUTS-4 regions for two ten-year periods between 1995 and 2015. Given the limited data available, the current analysis could not identify significant effects on aggregate labour dynamics neither for rising imports from Eastern Europe or China, nor for rising exports to Eastern Europe. However, there is weak evidence that exports to China have facilitated employment growth, especially in high quality segments. Overall, these results add a cautious perspective to the discussion of import competition.

Keywords: trade, employment, China, Eastern Europe, Austria.
JEL: F16, J13, R11

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Introduction

Over the last two decades, industrialised countries have experienced a strong increase in trade with Asian emerging economies, especially China. At the same time also trade relations between Western and Eastern European countries have grown fast. The possibly adverse effects on economic performance that the emergence of the new competitors may bring about has become the source of grave concerns in Western economies. The literature has been vigorously discussing the potential negative effects of increased imports on industry-level employment, especially from low-wage countries. While early studies, such as Grossman (1982), concluded that trade has only minor impact on employment in the US manufacturing sectors, later literature showed international trade flows can play an important role for domestic labour markets. Bernard et al. found that increasing imports from low-wage countries affected reallocation of manufacturing within and across industries leading to lower employment growth in the US (Bernard, Jensen, and Schott 2006). This negative impact related to imports especially concerned low-skilled workers, while other manufacturing branches could even grow in response to strong international demands for US exports (Sachs et al. 1994).[1]

Another angle to investigate the effects of trade on domestic labour markets is to focus on the impact of trade liberalization, i.e. policy changes. In the US a strong relationship between a decline in manufacturing employment at the beginning of the 2000s and the US conferral of permanent normal trade relations with China that prevents future tariff increases has been found (Pierce and Schott 2016). With respect to liberalization policies, the effects have also been studied on regional labour markets. Again, the results are mixed. Kovak (2013) finds that the trade liberalization that took place in Brazil in the early 1990s negatively affected wages of local labour markets whose workers were concentrated in industries facing the largest tariff cuts, while other regions facing smaller cuts were more positively affected (Kovak 2013). These trade policies also have been shown to negatively affect

[1] How import competition affects domestic firms also depends on the specific firm characteristics, such as firm size. Large European firms are found to be more sensitive to trade shocks from low-cost countries while small firms are more susceptible to increasing trade with other high-income countries (Colantone, Coucke, and Sleuwaegen 2014).

sector employment and have even stronger long-term effects on wages than what was estimated in the short-term (Dix-Carneiro and Kovak 2017).

In the meantime, the rise of China in world trade was the starting point for the profound analysis by Autor, Dorn and Hansen who put the focus back to the impact of trade competition from a low-wage country on regional US labour markets. Since regions differ in terms of specialisation and productivity, the impact of import competition can vary substantially across labour markets. The authors' diagnosis was straightforward: between 1990 and 2007 rising imports from China caused higher unemployment and lower wages in regional labour markets in the US that house import competing manufacturing industries (Autor, Dorn, and Hanson 2013). The effects were larger for labour markets having more workers with less than a college education (Autor, Dorn, and Hanson 2015). Moreover, these trade effects dominate compared to shifts in employment caused by technological change (i.e. automatization and computerization). However, if industries facing high import competition in a local labour market are shrinking, some other industries in the same local labour market might expand and offset the negative employment effects caused by import penetration. For the US, though, no significant job gains in nonexposed industries have been found (Acemoglu et al. 2016; Autor, Dorn, and Hanson 2016). Furthermore, insignificant results were reported for EU-regions by Hoelzl (2021), which however draw on very short time series that are likely to warrant insignificant effects.

In Europe, the surge of manufacturing imports from China is a key driver of international trade. Another key component was the economic integration of Eastern-European countries into the EU. The increases in trade happened at slightly different phases, however. While the rapid export growth of China occurred in the 2000s, the Association Agreements (AA) with Eastern European countries were already in place in the mid-1990s. These led to intensified trade relationships between Eastern Europe and especially industrialised Central European countries. Several analyses on the impact of import competition based on European data largely support the findings for the US. Import penetration resulted in a reduction of manufacturing employment in Norway and in reallocation of

labour from manufacturing to other sectors in Spain (Balsvik, Jensen, and Salvanes 2015; Donoso, Martín, and Minondo 2015). Dauth et al. studied the impact of the increased trade between Germany and `the East', i.e. China and Eastern Europe, on German local labour markets from the late 1980s onwards (Dauth, Findeisen, and Suedekum 2014). The authors conclude that substantial job losses have taken place in German regions specialised in import-exposed industries. In contrast to the US, however, the losses have been more than outweighed by strong employment gains in regions specialised in export-oriented industries driven mostly by the rise of Eastern Europe. These results contrast the findings for the US labour market, where offsetting employment gains in other export-oriented industries have yet to materialize (Autor et al. 2016).

This paper studies Austria, a small open economy which has rather naturally served as docking point to Eastern European countries due to its historical ties and geographical proximity. Its trade relations with Eastern Europe are at least as relevant as trade with China. Eastern Europe is economically integrated with Austria in the Central European "manufacturing core" (Friesenbichler et al. 2018; Stehrer and Stöllinger 2015) in which firms compete on a regulatory level playing field (Böheim and Friesenbichler 2016; Hölscher and Stephan 2009) and labour intensive, lower cost segments have, especially from the late-1990s onwards, moved to Eastern European countries. This led to differences in the competitive positioning.

It is unclear whether Austria's local employment markets have been positively or negatively affected by the increase in trade with Eastern Europe and China remains unclear. This question can only be answered empirically. The aim of this paper is to determine potential gains and losses of increased trade with both (i) China and (ii) the group of Eastern European countries for Austrian labour markets separately. Moreover, analysing trade data we specifically look at different levels of quality. Since vertical differentiation is used as strategic instrument to alleviate competition (Gabszewicz et al. 1981; Shaked and Sutton 1982, 1987), we argue that specialisation patterns play a critical role in the extent of trade competition and its impacts on local labour markets.

Rising trade with Central and Eastern Europe and China

More than the US economy, European countries have been affected by the increase in trade with Central and Eastern European economies, especially in anticipation and after the enlargement of the European Union in 2004, when eight countries (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia) became EU members[2]. For Austria, a small open economy at the boarder of Eastern Europe, trade with Eastern Europe has played a particularly important role in the last decades. Imports to and exports from Eastern Europe have grown exponentially since the end of the 1990s. The increase in trade value between Austria and Eastern Europe over time was by far greater than that of China (see Figure 1 and Figure 2).

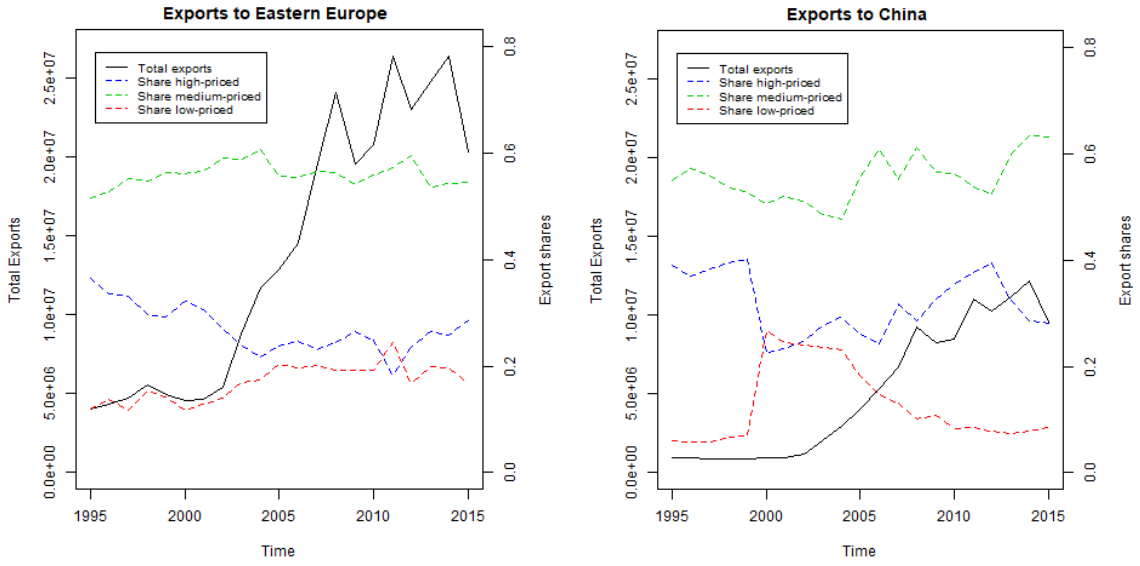
The import values from Eastern Europe to Austria show a differentiated structure in terms of quality measured by prices at the product level (see Figure 1)[3]. By far the highest share (2010-2015: 58%) of imports from the Eastern European countries can be classified as middle-quality, every fourth imported product is low-quality (2010-2015: 26%) and high-quality imports have the lowest share (2010-2015: 15%). However, high- quality imports from the Eastern European countries have been rising noticeably since 2005. In contrast, Austria's share of middle-quality imports (2010-2015: 51%) from China and its share of low-quality imports (2010-2015: 40%) are much more comparable in size. The high-quality products still have a very low share in total imports from China (2010-2015: 9%), though, and this share has hardly increased over time.

[2] In addition, two Mediterranean countries, Malta and Cyprus, joined the EU in 2004.
[3] See section Data for the construction of price segments.

Figure 1: Imports to Austria from Eastern Europe and China between 1995 and 2015 (in tsd. EUR)

Source: BACI, Eurostat price index at Nace-2-digit (2010=100), own calculations. Trade in services not included.

Figure 2: Exports from Austria to Eastern Europe and China between 1995 and 2015 (in tsd. EUR)



Source: BACI, Eurostat price index at Nace-2-digit (2010=100), own calculations. Trade in services not included.

Especially Eastern European economies, but also China, have been proven to be an important target market for Austrian firms. Export dynamics to both countries have gathered pace since the early 2000s (see Figure 2). However, differences in the quality of the goods exported to China versus Eastern Europe can be observed. Nearly two out of three products exported from Austrian to Eastern

Europe or China are of medium price level[4]. However, there are differences with respect to the remainder, i.e. either low- or high-quality goods. For China, more than half of the remainder comprises of high-quality goods (2010 – 2015: 33%), while the average share of high-quality exports to Eastern Europe is significantly lower (2010-2015: 24%).

Eastern Europe is a more important trading partner for Austria than China even though trade dynamics with both partners have increased noticeably since the mid-2000s. Most products imported and exported from and to Eastern Europe and China are of medium quality (indicated by medium prices). Austria imports a larger share of high priced-products from the Eastern Europe than from China. Vice versa, compared to Eastern Europe a higher share of exports to China consists of high-quality products. Cognisant of this evidence, we pose the questions whether growing trade with these countries has affected Austrian local labour markets. We also study if, and to what extent, these effects differ by the quality composition of the traded goods.

Empirical Approach and Identification Strategy

To estimate the effects of trade on local labour markets, we first define measures of import and export competition across labour market districts. Following previous literature (Autor et al. 2013; Dauth et al. 2014), our regionalised measures of the change of import and export competition ΔIC_{it}^{EE} and ΔEC_{it}^{EE} are calculated as

$$\Delta IC_{it}^{C} = \sum_{j} \frac{E_{ijt}}{E_{jt}} \frac{\Delta IMP_{jt}^{AT \leftarrow C}}{E_{it}} \qquad (1)$$

$$\Delta EC_{it}^{C} = \sum_{j} \frac{E_{ijt}}{E_{jt}} \frac{\Delta EXP_{jt}^{AT \rightarrow C}}{E_{it}}, \qquad (2)$$

where E_{ijt} is the number of employees in region i, industry j at period t, E_{jt} is the aggregate number of employees in industry j, and analogously E_{it} is the aggregate manufacturing employment in region i at time t. $\Delta IMP_{jt}^{AT \leftarrow C}$ and $\Delta EXP_{jt}^{AT \rightarrow C}$ are the changes in industry-specific Austrian imports

[4] On average, between 2010 and 2015 about 60% of exports to Eastern Europe and 58% of exports to China consist of medium-priced products.

from and exports to countries (C) such as China or Eastern Europe between time periods t and $t+1$. Thus, these measures capture the potential increase in import and export competition of an Austrian labour market district given its initial sectoral employment structure, since it distributes the national change in sectoral imports among the individual regions according to their shares in national sectoral employment.

Our basic regression specification to estimate employment effects at the regional level can be written as

$$\Delta Emp_{it} = \alpha_0 + \beta_1 \Delta IC_{it}^{C} + \beta_2 \Delta EC_{it}^{C} + X_{it}^{'} \beta_3 + \epsilon_{it}, \quad (3)$$

where $t \in \{1995,2005\}$, Δ indicates the change between the two 10-year subperiods 1995-2005 and 2005-2015, and $i \in \{1, \dots, 85\}$ represents the labour market districts in Austria. ΔEmp_{it} is the 10-year change in the share of manufacturing employment in a region's population in percentage points. X_{it}' is a set of start-of-period control variables varying over regions, such as the share of female workers and the share of ICT specialists employed in a given labour market district. ϵ_{it} depicts the error term, that is clustered at the level of labour market districts to account for spatial or serial correlation.

In a next step, we identify possible differences in the effects of import and export competition in terms of the quality levels of the traded products. Instead of solely looking at the total imports from and exports to Eastern Europe and China, we use the high-quality imports and exports to calculate high-quality trade competition measures:

$$\Delta IC_{it}^{C,high} = \sum_{j} \frac{E_{ijt}}{E_{jt}} \frac{\Delta IMP_{high,jt}^{AT \leftarrow C}}{E_{it}} \quad (4)$$

$$\Delta EC_{it}^{C,high} = \sum_{j} \frac{E_{ijt}}{E_{jt}} \frac{\Delta EXP_{high,jt}^{AT \rightarrow C}}{E_{it}}. \quad (5)$$

Our specification changes to

$$\Delta Emp_{it} = \alpha + \beta_1 \Delta IP_{it}^{C,high} + \beta_2 \Delta EP_{it}^{C,high} + X_{it}' \beta_3 + \epsilon_{it}. \quad (6)$$

The same approach is used to estimate the effects of medium- and low-quality imports and export from and to Eastern Europe and China on regional employment in Austria. The effects for trade with China are estimated separately from the effects with Eastern Europe. Trade with Eastern Europe is defined as imports and exports for the country group consisting of Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia, Slovenia, Estonia, Latvia and Lithuania.

Changes in trade volumes could be the result of country- or region-specific demand shocks. Regional employment as well as imports might be positively correlated with unobserved shocks in Austrian product demand. In other words, changes in local labour markets may be the result of other developments but increasing trade with China and Eastern Europe. To identify the causal effect of increasing trade with China and Eastern Europe and account for potential endogeneity of Austrian trade exposure an instrumental variable approach (2SLS) is employed.

Following the approaches used by other papers on import competition (Autor et al. 2013; Bloom et al. 2019; Dauth et al. 2014), we use the composition and growth of Chinese and Eastern European imports from and exports to eight other high-income countries where no significant correlation between demand and supply shocks with Austria is expected. The eight developed non-Euro countries used for the IV approach are Australia, Canada, Japan, Norway, New Zealand, Sweden, Singapore, and the United Kingdom.

Moreover, to avoid issues in terms of measurement errors and reversed causality as a result of anticipated future trade competition we use 5-year lagged sectoral employment shares to calculate the instruments (see equations (7 and (8).

$$\Delta\text{Inst.}\, IC_{it}^{C} = \sum_{j} \frac{E_{ijt-5}}{E_{jt-5}} \frac{\Delta IMP_{jt}^{\text{IV}-\text{Ctry}\leftarrow C}}{E_{it-5}} \qquad (7)$$

$$\Delta\text{Inst.}\, EC_{it}^{C} = \sum_{j} \frac{E_{ijt-5}}{E_{jt-5}} \frac{\Delta EXP_{jt}^{IV-Ctry\rightarrow C}}{E_{it-5}}, \qquad (8)$$

Data

We confine our analysis to the manufacturing sector. In the period analysed, Austria's imports and exports are dominated by goods rather than services (Reinstaller and Friesenbichler 2020). This may explain why manufacturing still is a very important sector in Austria compared to other high-income countries in Europe (Eurostat 2020). The trade data are obtained from BACI, which is a harmonised trade data set containing information on imports and exports (Gaulier and Zignago 2010). BACI provides information on the quantity of each traded product line at the hs92 6-digit level. However, BACI does not contain industry information. To match the trade data with the industry classification (Nace Rev. 2., 4-digit), we recode hs92 6-digit data to hs02, for which a Nace Rev. 1 correspondence table is available, which again can be transformed into Nace Rev. 2 data at the four-digit level. Unit values are obtained by dividing the export values by the corresponding quantities[5]. For each year and each target market, i.e. Nace 4-digit industries in different countries, these unit values are aggregated.

We study the impact of trade on regional labour markets. Unfortunately, trade information at a more disaggregated, regional level is unavailable. Hence we regionalize trade flows according to equations (1) and (2). Against the backdrop of the trade-induced structural change discussion, we further use unit values as a proxy for product quality (Peneder 1999). Especially for trade relations with catching-up economies, product quality is a distinguishing characteristic and a vertical differentiation is a common reaction to competitive dynamics (Hombert and Matray 2018). We use unit values to divide trade flows into high-, medium- and low-quality segments. For instance, the trade flows that belong to the upper 25% of the unit values are classified as high-quality exports. Analogously the lowest 25% of the unit values are classified as low-quality exports. Since sectoral trade flows might be affected by outliers that increase volatility, we use a three-year average (1995-1997, 2004-2006 and 2013-2015)

[5] To exclude measurement errors the unit values are filtered using the filtering method proposed by (Gaulier, Martin, Méjean, & Zignago, 2008) for the price index calculation.

of imports and exports to determine structural differences between the two 10-year periods of interest (1995-2005 and 2005-2015) [6]. The analysis is restricted to trade in manufacturing goods.

The regional employment data are provided by the Federation of Austrian Social Insurance Institutions (`Hauptverband der österreichischen Sozialversicherungsträger') and are available for all industries at Nace Rev.2 4-digit level covering 85 different labour market areas (`Arbeitsmarktbezirk') in Austria.[7] Figure 3 and Figure 4 show the changes of manufacturing employment shares in Austrian labour markets between 1995 and 2005 and between 2005 and 2015. Depending on the labour market and time period, the changes in manufacturing shares vary significantly. The changes in manufacturing shares do not follow a general trend across regions. The data rather show an increase in the manufacturing share in some of Austria's labour market districts, while others experience a decrease.

Over and above trade exposure, technological change may equally affect labour market dynamics. The literature has discussed two interrelated phenomena for which we control: automation of tasks and the rise in ICT. The effects of increasing automation on the labour force are controversially discussed (Arntz, Gregory, and Zierahn 2016; Bowles 2014; Frey and Osborne 2017). According to Frey and Osborne (2017) 47% of jobs in the US are potentially at high risk of automation. Bowles (2014) transferred this approach to EU countries and calculated that in Austria more than half of all jobs could be affected by automation. However, rather than entire occupations, specific job tasks might be replaced, supported or created. Using the task-based approach, an OECD Working Paper (Arntz et al. 2016) found that in Austria 12% of employees work in jobs with a high risk of automation. Manual routine jobs are decreasing, and abstract non-routine jobs are increasing in importance (Hölzl et al. 2019). We therefore control for the share of people employed in jobs mainly characterised by routine tasks at the labour-market district level (Peneder et al. 2016) [8].

[6] We use a price index (2010=100) provided by Eurostat at NACE-2-digit level to gain real trade volumes.
[7] Some NACE 4-digit industries have been excluded from the analysis due to their lack of competition, such as mining support service activities (0900) or the postal activities under universal service obligation (5310).
[8] The shares of manual routine and cognitive routine activities are combined into routine tasks per industry.

The changing task structure of Austrian has been linked to digitalisation (Hölzl et al. 2019). Recent results for Austria show that more ICT intensive economic structures positively affect firm-growth dynamics, which again have been linked to higher employment growth (Friesenbichler and Hölzl 2020). To capture the role of ICT; we apply an taxonomy (Peneder 2020) and compute the number of ICT professionals in different NACE 4-digit industries. We also use the share of regional employment in ICT-intensive industries as another control variable.

In addition, we control for the share of female employees in manufacturing. Since women working in manufacturing are more likely to have low-wage jobs, ceterus paribus, female workers are expected be more affected by trade shocks than their male colleagues (Autor et al. 2016).

Table 9 presents the summary statistics of all variables used in our regressions. The import and export competition measures are calculated according to equations (1) to (5). The maps in Figure 5 to Figure 8 depict the geographical distribution of the change in imports and exports from and to Eastern Europe and China in relation to employees according to equations (1) to (5) across Austrian regions. The brighter the region the higher the increase in import exposure between 1995 and 2005 or between 2005 and 2015 (Figure 5 and Figure 6). Similarly, the brighter the region the higher the increase in export possibilities over the same periods of time (Figure 7 and Figure 8).

Results

First, **Fehler! Verweisquelle konnte nicht gefunden werden.** shows the estimation results of equation (3 focusing on the effects of import and export competition with Eastern Europe on Austrian labour markets. In columns (1) to (4) the OLS estimates are presented, columns (5) to (8) show the 2-stage-least squares (2SLS) estimates using the instruments discussed above. All regressions are estimated with and without regional dummies. Neither the OLS-regression, nor the IV-estimations hint at any significant relation between the regionalised import and export competition measures and 10-year changes in manufacturing employment in Austrian labour markets between 1995 and 2015. The coefficients of the regional manufacturing share at the starting period are significant and - once controlled for regional fixed-effects - negative indicating that higher starting values of manufacturing shares are related to lower increases in the next ten years. Without

including regional effects, the manufacturing share in the starting period is significant and positive. This indicates that regions with initially high shares of manufacturing also tend to be those that have experienced strong growth over the last 20 years.

The impacts of neither the share of manufacturing jobs dominated by routine tasks in 1995 and 2005 nor the share of ICT-intensive industries in a region are significantly different from zero. However, the results hint at a small negative relationship between the share of female employees and the 10-year change in manufacturing employment which is in line with the results of (Dauth et al. 2014).

In comparison, the regression results for import and export competition with China are reported in Table 2. Again, columns (1) to (4) show the OLS results, while columns (5) to (8) represent the corresponding 2SLS estimates. While there is only a weak correlation between the measure for import competition and a change in regional manufacturing employment in Austria, the coefficients of the export competition measure are significantly positive in four out of eight regressions indicating that the increase in exports to China might have resulted in an increase in the share of manufacturing employment. Similarly to the results for Eastern Europe, the coefficients of the manufacturing share in the starting period are significant and alternate their sign depending on whether regional dummies are included or not. The share of routine jobs and female work force in manufacturing are negatively correlated with the change in regional manufacturing employment, the coefficients are not significant through all regressions, though.

Table 1: Effects of Import and Export Competition with Eastern Europe on Manufacturing Employment in Austrian Labour Markets

	Dependent variable:							
	10-year change manufacturing employment/working age pop. in %-points							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Import competition with Eastern Europe (3 year average)	0.003	-0.003	0.01	-0.02	0.01	0.005	-0.04	0.02
	(0.02)	(0.02)	(0.01)	(0.01)	(0.04)	(0.04)	(0.12)	(0.14)
Export competition with Eastern Europe (3 year average)	-0.005	-0.01	-0.01	-0.01	0.01	0.02	0.09	0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.14)	(0.07)
Share of manufacturing jobs in total employment		0.03**		-0.33***		0.03*		-0.31***
		(0.02)		(0.04)		(0.02)		(0.10)
Share of employment in ICT-intensive industries		0.01		-0.02		0.01		0.003
		(0.01)		(0.02)		(0.01)		(0.10)
Share of routine jobs in manufacturing employment		-0.06		0.09		-0.07		0.03
		(0.04)		(0.09)		(0.05)		(0.21)
Share of female employees in manufacturing employment		-0.03		-0.07**		-0.02		-0.08
		(0.02)		(0.03)		(0.03)		(0.13)
Constant	0.28	2.91	0.44	2.08	-0.06	2.67	-4.06	2.14
	(0.24)	(2.34)	(0.71)	(4.02)	(0.39)	(2.71)	(6.59)	(11.20)
Observations	170	170	170	170	170	170	170	170
Regional effects	No	No	Yes	Yes	No	No	Yes	Yes
Note:	Clustered standard errors in parenthesis; *p<0.1, **p<0.05, ***p<0.01							

Table 2: Effects of Import and Export Competition with China on Manufacturing Employment in Austrian Labour Markets

	Dependent variable:							
	10-year change manufacturing employment/working age pop. in %-points							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Import competition with China (3 year average)	0.02	0.01	-0.03	-0.06*	0.01	0.01	-0.01	-0.11
	(0.03)	(0.03)	(0.03)	(0.03)	(0.11)	(0.12)	(0.22)	(0.16)
Export competition with China (3 year average)	0.03*	0.05**	0.05***	0.01	0.02	0.05*	0.07	0.03
	(0.02)	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.04)	(0.04)
Share of manufacturing jobs in total employment		0.04**		-0.33***		0.04**		-0.33***
		(0.02)		(0.04)		(0.02)		(0.09)
Share of employment in ICT-intensive industries		0.01		0.01		0.01		0.01
		(0.01)		(0.02)		(0.02)		(0.07)
Share of routine jobs in manufacturing employment		-0.08*		0.08		-0.08*		0.06
		(0.04)		(0.08)		(0.04)		(0.17)
Share of female employees in manufacturing employment		-0.03		-0.08**		-0.03		-0.09
		(0.02)		(0.03)		(0.03)		(0.08)
Constant	-0.03	3.11	-1.73**	1.55	0.04	3.09	-2.64	1.09
	(0.21)	(2.27)	(0.86)	(3.86)	(0.35)	(2.52)	(1.80)	(8.04)
Observations	170	170	170	170	170	170	170	170
Regional effects	No	No	Yes	Yes	No	No	Yes	Yes
Note:	Clustered standard errors in parenthesis; *p<0.1, **p<0.05, ***p<0.01							

In a second step we test whether these results depend on the quality of imports from and exports to Eastern Europe and China measured by different price segments (high, medium and low prices). For Eastern Europe, the estimation results of equation (6 are shown in Table 3 to Table 5, while Table 6 to Table 8 display the respective outcome for ChinaTable 8. Again, columns (1) to (4) show OLS estimation results, while columns (5) to (8) show the results based on 2SLS regressions. Starting with Eastern Europe, no significant effects on regional employment of import competition can be observed independent of the price segment. Export competition to Eastern Europe is significantly positive in case of low-quality segment and significantly negative in case of medium-quality segment, but turns insignificant when IV-estimates are used. All other coefficients are similar in size and significance to the general regression results that do not differentiate between price segments.

Looking at China, we find mixed effects of import penetration from China on the regional labour market in terms of high-quality and low-quality segments but none in the middle segment. However, the coefficient turns insignificant when the instrumental approach is used. In contrast, the positive effect of export competition with China on employment prevails in the high- and medium-quality segments independent of using OLS or 2SLS estimation. For IV-estimations the coefficient turns insignificant when controlling for regional fixed effects, though. In contrast, low-quality exports to China have no significant effect on regional employment in Austria. In comparison with the general regression results all other coefficients are stable in terms of sign and size.

Overall, these results suggest that import competition has only played a minor role with respect to labour market changes in Austria between 1995 and 2015. Neither the results from Chinese nor from Eastern European imports allow to deduce serious effects on regional employment in Austria. The effects of export competition seem to be somewhat larger. While no effects of increasing export competition with Eastern Europe can be observed, our results hint at a positive correlation of export competition with China with regional manufacturing employment in Austria. This relationship is primarily due to high- and medium-quality goods exported to China.

Table 3: Effects of Competition in High--quality Imports and Exports from and to Eastern Europe on Manufacturing Employment in Austrian Labour Markets

	Dependent variable:							
	10-year change manufacturing employment/working age pop. in %-points							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Import competition with Eastern Europe (3 year average)	0.05	0.03	-0.02	-0.08	-0.36	-0.50	0.28	0.09
	(0.07)	(0.07)	(0.06)	(0.06)	(0.36)	(0.45)	(0.70)	(0.46)
Export competition with Eastern Europe (3 year average)	0.003	0.02	0.04	0.01	0.17	0.27	-0.18	-0.13
	(0.04)	(0.04)	(0.03)	(0.03)	(0.18)	(0.21)	(0.55)	(0.37)
Share of manufacturing jobs in total employment		0.03**		-0.34***		0.05*		-0.36***
		(0.02)		(0.04)		(0.03)		(0.12)
Share of employment in ICT-intensive industries		0.01		-0.005		0.01		-0.004
		(0.01)		(0.02)		(0.01)		(0.04)
Share of routine jobs in manufacturing employment		-0.07		0.09		-0.06		0.13
		(0.04)		(0.09)		(0.05)		(0.23)
Share of female employees in manufacturing employment		-0.02		-0.08**		-0.04		-0.08
		(0.02)		(0.03)		(0.04)		(0.08)
Constant	0.11	2.76	-0.60	1.61	0.49	2.77	2.56	2.18
	(0.21)	(2.32)	(0.54)	(3.88)	(0.37)	(2.87)	(8.02)	(8.76)
Observations	170	170	170	170	170	170	170	170
Regional effects	No	No	Yes	Yes	No	No	Yes	Yes
Note:	Clustered standard errors in parenthesis; *p<0.1, **p<0.05, ***p<0.01							

Table 4: Effects of Competition in Medium--quality Imports and Exports from and to Eastern Europe on Manufacturing Employment in Austrian Labour Markets

	Dependent variable:
	10-year change manufacturing employment/working age pop. in %-points

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Import competition with Eastern Europe (3 year average)	-0.001	-0.01	0.02	-0.04	0.04	0.05	-0.04	0.38
	(0.02)	(0.02)	(0.02)	(0.02)	(0.09)	(0.09)	(0.33)	(1.47)
Export competition with Eastern Europe (3 year average)	-0.01	-0.02	-0.03***	-0.02*	-0.01	-0.02	0.06	-0.15
	(0.01)	(0.01)	(0.01)	(0.01)	(0.05)	(0.06)	(0.23)	(0.64)
Share of manufacturing jobs in total employment		0.03**		-0.34***		0.03		-0.23
		(0.02)		(0.04)		(0.02)		(0.45)
Share of employment in ICT-intensive industries		0.01		-0.02		0.01		0.17
		(0.01)		(0.02)		(0.01)		(0.71)
Share of routine jobs in manufacturing employment		-0.06		0.09		-0.06		0.16
		(0.04)		(0.09)		(0.05)		(0.50)
Share of female employees in manufacturing employment		-0.03		-0.07*		-0.03		0.23
		(0.02)		(0.04)		(0.03)		(1.21)
Constant	0.34	2.95	0.70	2.32	0.08	2.61	-0.99	-17.86
	(0.24)	(2.34)	(0.80)	(3.94)	(0.31)	(2.74)	(3.21)	(79.97)
Observations	170	170	170	170	170	170	170	170
Regional effects	No	No	Yes	Yes	No	No	Yes	Yes
Note:	Clustered standard errors in parenthesis; *p<0.1, **p<0.05, ***p<0.01							

Table 5: Effects of Competition in Low--quality Imports and Exports from and to Eastern Europe on Manufacturing Employment in Austrian Labour Markets

	Dependent variable:							
	10-year change manufacturing employment/working age pop. in %-points							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

Import competition with Eastern Europe (3 year average)	-0.01	-0.03	-0.02	0.03	0.08	0.05	-0.01	0.12
	(0.05)	(0.05)	(0.02)	(0.02)	(0.11)	(0.11)	(0.19)	(0.24)
Export competition with Eastern Europe (3 year average)	-0.03	-0.03	0.06	0.06**	0.16	0.19	0.38	0.25
	(0.04)	(0.05)	(0.04)	(0.03)	(0.14)	(0.16)	(0.39)	(0.24)
Share of manufacturing jobs in total employment		0.03*		-0.33***		0.04*		-0.34***
		(0.02)		(0.04)		(0.02)		(0.11)
Share of employment in ICT-intensive industries		0.01		0.005		0.004		0.05
		(0.01)		(0.02)		(0.01)		(0.07)
Share of routine jobs in manufacturing employment		-0.07		0.06		-0.07		0.02
		(0.04)		(0.09)		(0.05)		(0.19)
Share of female employees in manufacturing employment		-0.03		-0.08**		-0.02		-0.11
		(0.02)		(0.03)		(0.03)		(0.09)
Constant	0.34*	2.97	-0.41	1.79	-0.28	2.46	-3.11	1.47
	(0.19)	(2.37)	(0.43)	(3.99)	(0.30)	(2.73)	(3.16)	(8.58)
Observations	170	170	170	170	170	170	170	170
Regional effects	No	No	Yes	Yes	No	No	Yes	Yes
Note:	Clustered standard errors in parenthesis; *p<0.1, **p<0.05, ***p<0.01							

Table 6: Effects of Competition in High--quality Imports and Exports from and to China on Manufacturing Employment in Austrian Labour Markets

	Dependent variable:							
	10-year change manufacturing employment/working age pop. in %-points							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Import competition with China (3 year average)	0.26**	0.20*	-0.24	-0.40***	-0.83	-0.59	-1.63	-4.33
	(0.13)	(0.12)	(0.17)	(0.15)	(1.54)	(1.22)	(2.90)	(6.95)

Export competition with China (3 year average)	0.11*	0.16**	0.15***	0.04	0.23	0.26*	0.37	0.58
	(0.07)	(0.07)	(0.05)	(0.04)	(0.17)	(0.14)	(0.44)	(0.85)
Share of manufacturing jobs in total employment		0.04**		-0.34***		0.05**		-0.48**
		(0.02)		(0.04)		(0.02)		(0.24)
Share of employment in ICT-intensive industries		0.01		-0.01		0.01		-0.05
		(0.01)		(0.02)		(0.01)		(0.12)
Share of routine jobs in manufacturing employment		-0.08**		0.10		-0.07		0.29
		(0.04)		(0.08)		(0.04)		(0.40)
Share of female employees in manufacturing employment		-0.02		-0.08**		-0.04		-0.12
		(0.02)		(0.03)		(0.03)		(0.17)
Constant	-0.11	3.17	-0.98**	1.01	0.06	2.74	-2.07	-7.24
	(0.21)	(2.26)	(0.41)	(3.78)	(0.34)	(2.55)	(2.30)	(16.87)
Observations	170	170	170	170	170	170	170	170
Regional effects	No	No	Yes	Yes	No	No	Yes	Yes
Note:	Clustered standard errors in parenthesis; *p<0.1, **p<0.05, ***p<0.01							

Table 7: Effects of Competition in Medium--quality Imports and Exports from and to China on Manufacturing Employment in Austrian Labour Markets

	Dependent variable:							
	10-year change manufacturing employment/working age pop. in %-points							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Import competition with China (3 year average)	0.04	0.02	-0.04	-0.07	-0.08	-0.26	-52.45	-0.68
	(0.05)	(0.06)	(0.06)	(0.06)	(0.53)	(0.62)	(8,601.88)	(1.48)
Export competition with China (3 year average)	0.05**	0.08***	0.08***	0.03*	0.05	0.10**	4.33	0.04

	(0.03)	(0.03)	(0.02)	(0.01)	(0.04)	(0.05)	(695.25)	(0.20)
Share of manufacturing jobs in total employment		0.04***		-0.32***		0.05**		-0.38**
		(0.02)		(0.04)		(0.02)		(0.17)
Share of employment in ICT-intensive industries		0.005		-0.0002		0.02		0.10
		(0.01)		(0.02)		(0.03)		(0.24)
Share of routine jobs in manufacturing employment		-0.08**		0.06		-0.05		0.13
		(0.04)		(0.08)		(0.08)		(0.25)
Share of female employees in manufacturing employment		-0.03		-0.07**		-0.04		-0.20
		(0.02)		(0.03)		(0.03)		(0.27)
Constant	-0.03	3.17	-1.59**	1.70	0.19	1.94	10.53	0.16
	(0.20)	(2.25)	(0.64)	(3.88)	(0.84)	(3.53)	(2,041.82)	(11.20)
Observations	170	170	170	170	170	170	170	170
Regional effects	No	No	Yes	Yes	No	No	Yes	Yes
Note:	Clustered standard errors in parenthesis; *p<0.1, **p<0.05, ***p<0.01							

Table 8: Effects of Competition in Low--quality Imports and Exports from and to China on Manufacturing Employment in Austrian Labour Markets

	Dependent variable:							
	10-year change manufacturing employment/working age pop. in %-points							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Import competition with China (3 year average)	0.02	-0.04	-0.09	-0.16**	0.20	0.24	0.44	0.16
	(0.08)	(0.07)	(0.07)	(0.07)	(0.21)	(0.27)	(0.47)	(0.42)
Export competition with China (3 year average)	-0.03	-0.01	-0.05	-0.01	0.002	0.03	0.04	0.03
	(0.05)	(0.05)	(0.06)	(0.03)	(0.04)	(0.04)	(0.07)	(0.04)

Share of manufacturing jobs in total employment		0.03**		-0.33***		0.03*		-0.32***
		(0.02)		(0.04)		(0.02)		(0.10)
Share of employment in ICT-intensive industries		0.01		0.01		0.002		-0.02
		(0.01)		(0.02)		(0.02)		(0.06)
Share of routine jobs in manufacturing employment		-0.06		0.07		-0.07		0.08
		(0.04)		(0.09)		(0.05)		(0.19)
Share of female employees in manufacturing employment		-0.03		-0.08***		-0.02		-0.05
		(0.02)		(0.03)		(0.03)		(0.09)
Constant	0.24	2.82	0.88	2.36	-0.004	2.90	-1.15	0.99
	(0.17)	(2.34)	(1.18)	(3.90)	(0.28)	(2.68)	(1.40)	(8.76)
Observations	170	170	170	170	170	170	170	170
Regional effects	No	No	Yes	Yes	No	No	Yes	Yes
Note:	Clustered standard errors in parenthesis; *p<0.1, **p<0.05, ***p<0.01							

Data Limitations

The employment data are provided by the Federation of Austrian Social Insurance Institutions. The dataset contains information on employers and the number of employees in the private sector in Austria (i.e. NACE Rev. 2 sectors A to N.), but the analysis is limited to the manufacturing sector. Self-employed and public-sector workers are not covered. At the firm level, the data rely on social security numbers, contain the number of employees and the industry affiliation. Using administrative data is to be preferred over surveys, because in a highly developed country like Austria the data quality can be assumed to is higher in official records. The number of employees is a figure reported to the social security authority instead of relying on recall information. The employment dataset used starts in 1974, but we restrict the sample to the period from 1995 through 2015 to maintain data comparability. Changes in the sector classifications and data coverage make it difficult to use data from before the mid-1990s. We construct a data set that reports yearly employment stocks for all private sector firms with at least one employee at a given reporting date[9]. 85 different labour market areas (`Arbeitsmarktbezirk') are covered. The analysis is based on the labour market definition used by the Federation of Austrian Social Insurance Institutions and the Public Employment Service Austria (AMS).

This approach is connected with some disadvantages. First, in case that effects of increasing trade with Eastern Europe on regional labour markets already happened before 1995 these are not covered in the analysis. Second, looking at the period between 1995 and 2015 implies that due to the introduction of the new industry classification (NACE Rev.2) in 2008/11 the transition from NACE Rev.1 to NACE Rev. 2 took place in the middle of the observation period. We use correspondence tables between NACE Rev.2 and Rev.1 to smooth the data, but for some industries differences in trade between 2005 and 2015 might be due to the NACE transition and, thus, the results might be distorted. Third, a disadvantage of these administrative data is that they do not provide information on whether entities are enterprises or establishments. The anonymous firm identifiers in the social

[9] The reporting date is 31 December each year.

security files are administrative accounts. It is left at the discretion of the firm whether it chooses to report at the enterprise or the establishment level. A series of plausibility checks has been used to ensure that business units are properly defined. Most observations are small firms, which are likely to be at the enterprise level, because having one account reduces administrative burdens when reporting social security contributions (Stiglbauer et al. 2003). Moreover, the analysis is limited to manufacturing sector. While we know that the inconsistent use of enterprises and establishments in this dataset is a huge problem in industries such as retail or financial services, we are confident that it is a minor problem in the manufacturing sector. Despite the issues associated with the use of these employment data, there is no alternative for Austria that would provide both the length of time and the possibility of regionalisation.

Discussion

Previous results are largely available for countries like the US or Germany. However, Austrian regions are more homogenous in terms of their economic development and industry structure than German regions or regions in the United States. The differences in the regional industrial specialisation (e.g., the performance differences between German states in the "East" and "West" which continue to exist after the German reunification or the "rust belt" as opposed to ICT-intensive coastal areas in the US) constitute other preconditions than in a small and rather homogeneous country such as Austria. Thus, the regional analysis of Austria is based on a lower number of less heterogeneous observations than in the case of the US or Germany. Moreover, as a small country in the centre of the European Union Austria's trade integration is deep and some of its major industries like the manufacturing of machinery and transport equipment are important suppliers for industries in Germany and other countries. However, indirect effects of changes in import competition in these customer countries are not covered by the present analysis.

When interpreting the result for Austria, one should also consider some notable institutional differences. The Austrian labour market is more rigid than the US labour market (Lithuania Free Market Institute 2019). The Austrian system of `economic and social partnership' is characterised by a high degree of corporatism and involves economic chambers and trade unions in collective

wage-bargaining and the parts of the content of labour market policies. These factors combined might therefore explain why no large effects of trade competition compared to Germany or the US can be observed at the regional level.

Moreover, the Austrian industry has been characterized by a high share of (very) small firms. According to literature small and medium firms are less sensitive to trade shocks from low-cost countries than large firms (Colantone, Coucke, and Sleuwaegen 2014). Furthermore, small firms tend to compete in more protected niche markets (Porter 1980; Spanos, Zaralis, and Lioukas 2004). In other words, replacement effects that underlie the argument may not be present. The imported products from Eastern Europe are often complementary products in regional value chains (Friesenbichler et al. 2018; Stehrer and Stöllinger 2015). It is possible that Chinese products might be aimed at broad global markets rather than small niche markets. Thus, though in the same industry class, the products might address different demand groups.

Peneder (1999) demonstrates that Austria's industrial pattern is most unusual compared to other high-performing countries. While the US and Germany have been characterised by high shares of technology-driven industries, Austria has a high share of mainstream manufacturing combined with a low share of technology-driven industries. However, compared to other countries these `traditional' industries in Austria are rather innovative in terms of patents and R&D. Within mainstream manufacturing Austria clearly outperformed countries with comparably high manufacturing shares: `The fact that in 1997, the labour productivity of total manufacturing in Austria was 46 percent above that of Spain and 69 percent above that of Portugal illustrates that similar patterns of specialization can still comprise very different kinds of activities' (Peneder 1999:244). This might explain the differences of the impact of trade competition with China on local labour markets between countries with comparable industry structure, such as the labour intensive economy of Spain (Donoso et al. 2015). Also, the insignificant effects of trade competition from Eastern Europe and China on regional Austrian labour markets could stem from specialization in different market segments within NACE 4-digit industry classes that is not constrained to vertical differentiation and thus not covered by using unit values to identify different quality segments. In

other words, the level of industry aggregation (NACE 4-digit) might be still too high to identify any significant effects of import competition on local labour markets.

In addition, the exposure of employment intensive industries to trade has been rather small. The descriptive statistics show that imports from Eastern Europe and China tend to be in NACE 4-digit industries that are rather small in terms of employment shares. Figure 9 and Figure 10 show the NACE 4-digit sectors having the largest increases in imports from Eastern Europe between 1995, 2005 and 2015[10]. While the growth of imports in these industries is noteworthy, the respective Austrian employment shares are fairly small in 1995 and 2005. The same holds for the industries with the highest growth rates of imports from China between 1995 and 2015 (Figure 11 and Figure 12)[11]. Except for sawing and planing (NACE 1610: employment share of 1.6% in 1995) and the manufacturing of beer (NACE 1105: employment share of 0.75% in 2005), all industries showed shares in manufacturing employment significantly below 0.5% in 1995 and 2005 (the average employment share of a sector was about 0.5% in both years; see Figure 15). Another noteworthy exception is the `Production of meat and poultry meat products' (1013): in 2005 about 2.2% of all employees in manufacturing worked in this industry. At the same time, between 2005 and 2015 this industry had the fourth highest change in imports from Eastern Europe and also its imports from China have grown drastically. However, in 2015 still 2.14% of manufacturing employees worked in the production of meat and poultry meat product. Similarly, the employment share of sawing and planing was in 2015 at the same level (1.6%) as in 1995. Only employment in the manufacturing of beer show a relative decrease from 0.9% in 1995 to 0.4% of total manufacturing employment in 2015.

[10] The growth of imports from Eastern Europe was the largest in `Manufacture of watches and clocks' (2652), `Manufacture of imitation jewellery and related article' (3213) and `Precious metals production' (2441) between 1995 and 2005, and in `Manufacture of cider and other fruit wine' (1103), `Precious metals production' (2441) and `Manufacture of ice cream' (1052) between 2005 and 2015.

[11] Between 1995 and 2005 import growth from China was the highest in `Sawmilling and planing of wood' (1610), `Manufacture of musical instrument' (3220) and `Manufacture of jewellery and related article' (3212). From 2005 to 2015 the highest increases were observed in `Manufacture of homogenised food preparations and dietetic food' (1086), `Manufacture of beer' (1105) and `Manufacture of knitted and crocheted hosiery' (1431).

In contrast, looking at the largest industries in terms of manufacturing employment in Austria shows that in these industries the increase in imports was significantly lower. It has been ranging between -22% to +483% for imports from Eastern Europe and between -1% and +299% for imports from China (Figure 13 and Figure 14)[12]. Given that the median change in imports between 1995 and 2005 from Eastern Europe is at 125% (2005-2015: 31%) and from China at 530% (2005-2015: 217%), the increases in imports in the largest Austrian manufacturing industries, particularly from China, are rather low. Even after eliminating the most extreme outliers (which are all characterised by extremely high import growth rates in very small industries), the relation between import growth rates and employment shares is negative, though mostly not statistically significant (Figure 18 and Figure 19). Especially in case of Chinese imports between 1995 and 2005 there is a significant negative correlation between manufacturing employment shares and import growth, suggesting that the most pronounced Chinese import growth took place mostly in Austrian industries that were already very small in 1995.

Using US data Greenland et al. find that internal migration is affected by changes in import competition from China (Greenland, Lopresti, and McHenry 2019). Due to increasing trade with China population adjustments appear especially dynamic in local labour markets that are most exposed to import competition from China. A reduction in regional population growth materialises mostly seven to ten years after the trade increasing policy change occurred. It affects mainly young and low-educated individuals. Our dependent variable, ΔEmp_{it}, is calculated as the 10-year change in the share of manufacturing employment in a region's population in percentage points. Thus, our LHS variable might be affected by a trade induced change in population growth and causal identification of the effects is confounded. `Failing to account for compositional changes in the labour force may thus result in biased estimates of the effects of trade on average CZ-level outcomes

[12] In 1995, the largest Austrian manufacturing sectors having a share in manufacturing employment above 3% were `Manufacture of other furniture' (31.09), `Manufacture of bread; manufacture of fresh pastry goods and cake' (1071) and `Manufacture of basic iron and steel and of ferro-alloy' (2410). In 2005, besides `Manufacture of other furniture' (31.09), and `Manufacture of bread; manufacture of fresh pastry goods and cake' (1071), `Manufacture of motor vehicle' (29.10) had a share of more than 3% of all employees in manufacturing.

such as wages, unemployment rates, or health' (Greenland et al. 2019:49). This bias is most likely negative in the sense that previous studies might underestimate the effects of import competition from China on US labour markets. Indeed, if regional population growth in Austria was similarly or even more affected by trade competition from Eastern Europe and/or China this might explain the lack of significant effects of import competition on regional employment to some extent.

Conclusions

Austria exemplifies the characteristics of a small open economy in Central Europe that in the last decades underwent two waves economic integration: one with Eastern Europe and one with China. This paper asked if imports from and exports to both China and Eastern Europe have affected regional (NUTS-4) labour markets in two ten-year periods: one between 1995 and 2005 and one between 2005 and 2015.

Given the limited data, neither increases in imports from nor exports to Eastern Europe have had a significant effect on aggregate labour dynamics. Austria seems to have benefited from the emerging "manufacturing core" in Central and Eastern Europe from the 1990 onwards (Stehrer and Stöllinger 2015) and fears of employment losses are - at least in aggregate dynamics - not visible. The data show no significant impact of the rising imports from China, either. However, there is weak evidence that exports to China facilitate employment growth, especially in high quality segments.

Yet, pressures from especially competition with Chinese products may follow a stage model in which the aggregate effects on the labour market occur last. Before aggregate effects are visible, there are firm-level effect such as decline in firms' competitiveness or firm exit in industries that compete with China (Branstetter et al. 2019). Prior to firm-level changes in employment stocks firms react in their strategic behaviour. Austrian firms have been shown to adjust their decisions with respect to their product portfolio and the choice of the geographical target market when facing import competition in their respective export markets (Friesenbichler and Reinstaller 2021). Assuming a continuation of Chinese growth, pressures from Chinese import competition might eventually become visible in labour market figures as well.

Nevertheless, these results put the current discussion about import competition into perspective. Neither wider internationalization with China nor the European economic integration with Eastern Europe has (negatively) affected Austrian labour markets to an extent that would become visible in aggregate terms. This also holds for the control variables. Certainly, there were labour market dynamics with respect to the demand for tasks and manual, routine tasks have become rarer. Yet, this had not affected the aggregate outcomes.

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Appendix

Figure 3: Changes of manufacturing employment shares in Austrian labour markets (`Arbeitsmarktbezirke') between 1995 and 2005 (in %)

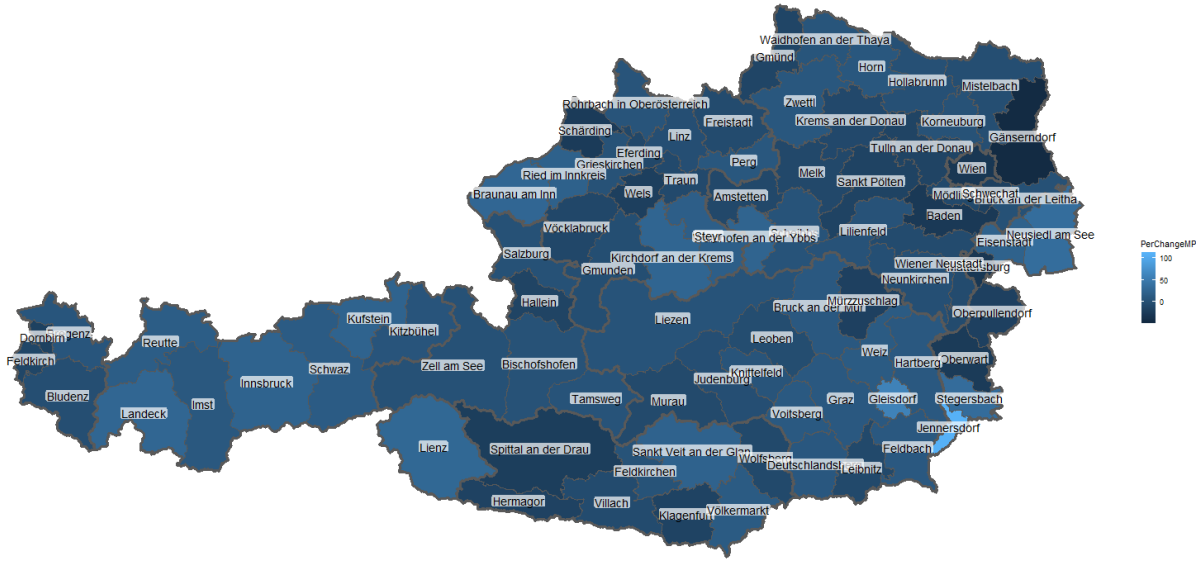

Figure 4: Changes of manufacturing employment shares in Austrian labour markets (`Arbeitsmarktbezirke') between 2005 and 2015 (in %)

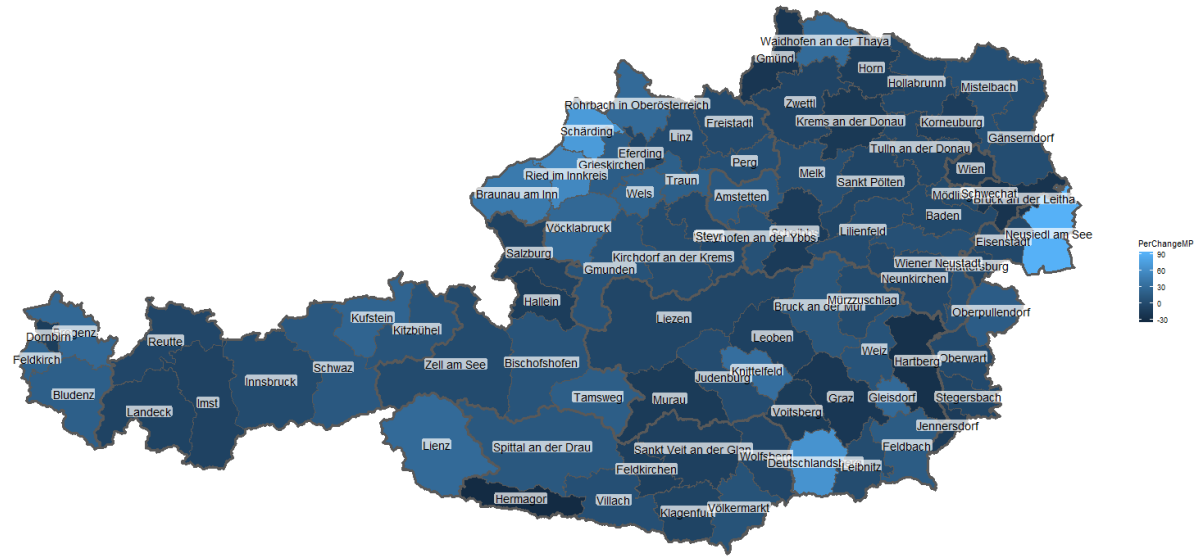

Table 9: Summary statistics

	N	Mean	St.Dev.	Min	Max
Change of Manufacting employment shares in percentage points (population based)	170	0.25	1.95	-3.91	7.29
Import competition with Eastern Europe (3 year average)	170	10.69	9.03	-18.18	49.77
Export competition with Eastern Europe (3 year average)	170	13.78	12.09	-31.33	88.70
High-quality import competition with Eastern Europe (3 year average)	170	2.44	2.47	-2.37	13.37
High-quality export competition with Eastern Europe (3 year average)	170	3.86	4.12	-0.46	34.98
Medium-quality import competition with Eastern Europe (3 year average)	170	6.29	6.17	-12.31	40.50
Medium-quality export competition with Eastern Europe (3 year average)	170	7.66	8.43	-44.24	57.31
Low-quality import competition with Eastern Europe (3 year average)	170	1.95	3.39	-6.74	15.25
Low-quality export competition with Eastern Europe (3 year average)	170	2.26	2.70	-6.39	20.65
Import competition with China (3 year average)	170	3.49	4.28	-22.89	20.67
Export competition with China (3 year average)	170	6.86	7.85	-15.15	73.91
High-quality import competition with China (3 year average)	170	0.41	0.82	-1.15	9.57
High-quality export competition with China (3 year average)	170	2.28	2.32	-1.60	11.74
Medium-quality import competition with China (3 year average)	170	1.77	2.46	-13.47	14.54
Medium-quality export competition with China (3 year average)	170	4.02	4.90	-11.20	35.92
Low-quality import competition with China (3 year average)	170	1.31	1.62	-8.26	9.85
Low-quality export competition with China (3 year average)	170	0.56	2.18	-3.33	26.25
Share of manufacturing jobs in total employment	170	27.18	9.89	9.10	58.15
Share of ICT-intensive industries in manufacturing employment	170	27.90	15.05	1.27	68.20
Share of routine jobs in manufacturing employment	170	47.82	3.22	38.77	56.47
Share of female employees in manufacturing employment	170	27.24	6.48	13.05	59.65

Figure 5: Change in regionalized import competition with Eastern Europe in 1995-2005 (left) and 2005-2015 (right)

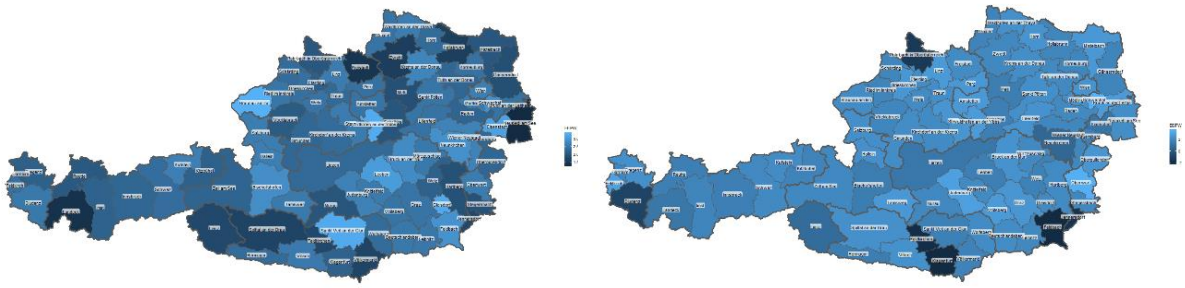

Figure 6: Change in regionalized import competition with China in 1995-2005 (left) and 2005-2015 (right)

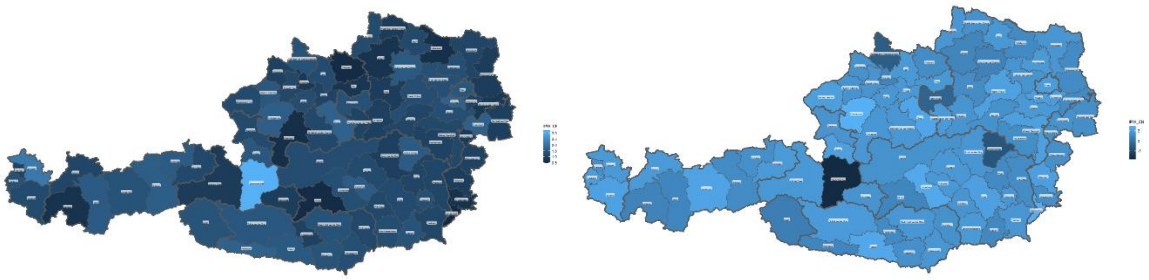

Figure 7: Change in regionalized export competition with Eastern Europe in 1995-2005 (left) and 2005-2015 (right)

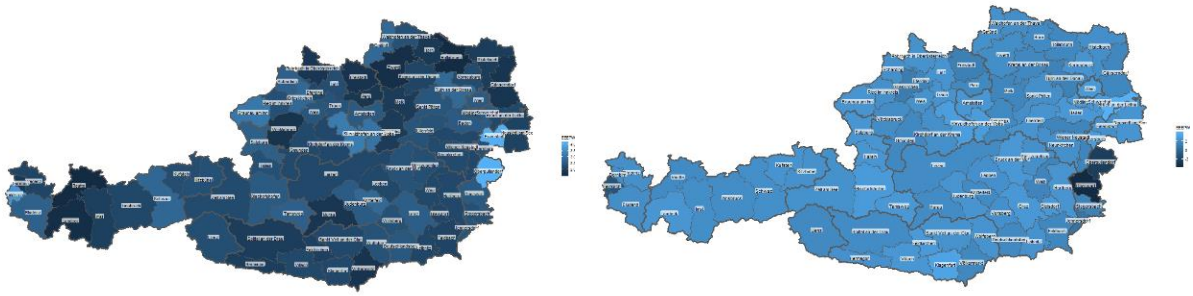

Figure 8: : Change in regionalized export competition with China in 1995-2005 (left) and 2005-2015 (right)

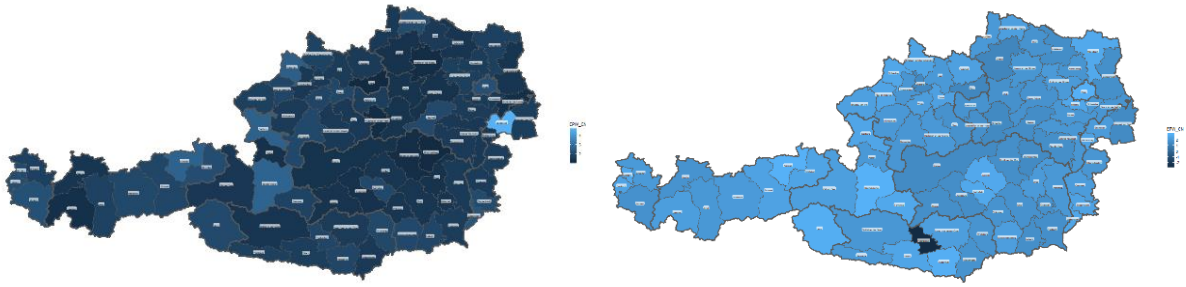

Figure 9: Top10 import growth rates from Eastern Europe between 1995 and 2005 (left) and sectoral employment shares in 1995 (right), in %

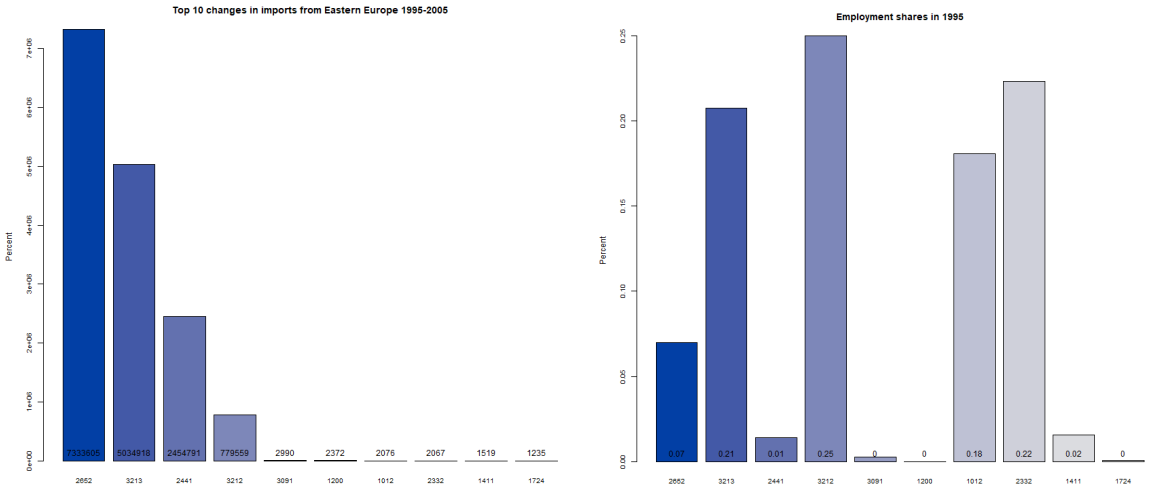

Figure 10:Top10 import growth rates from Eastern Europe between 2005 and 2015 (left) and sectoral employment shares in 2005 (right), in %

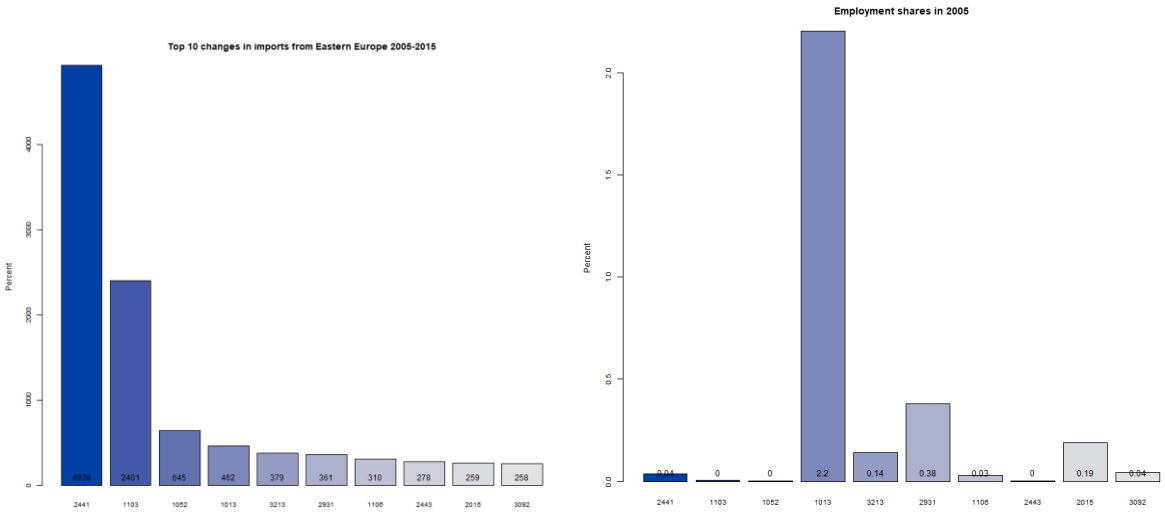

Figure 11: Top10 import growth rates from China between 1995 and 2005 (left) and sectoral employment shares in 1995 (right), in %

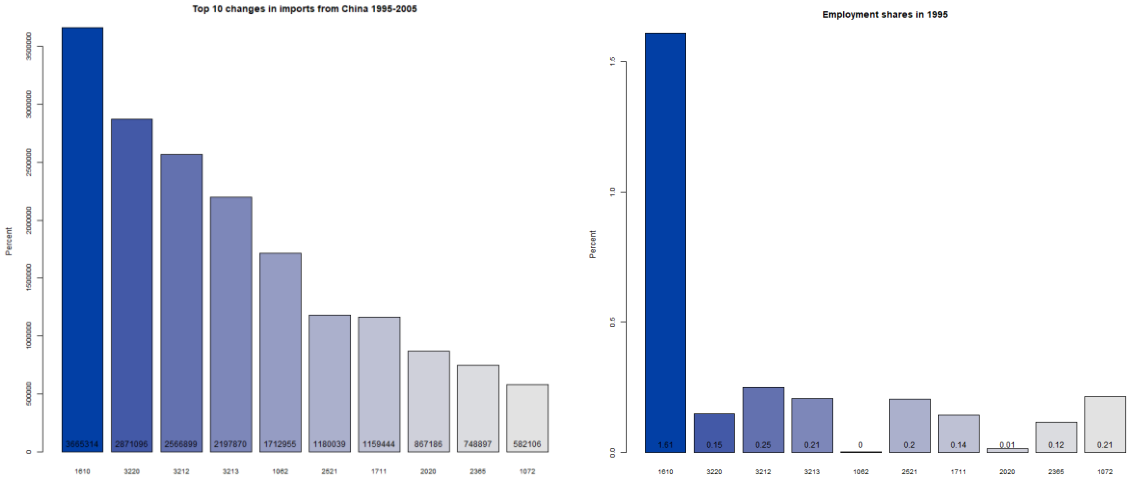

Figure 12: Top10 import growth rates from China between 2005 and 2015 (left) and sectoral employment shares in 2005 (right), in %

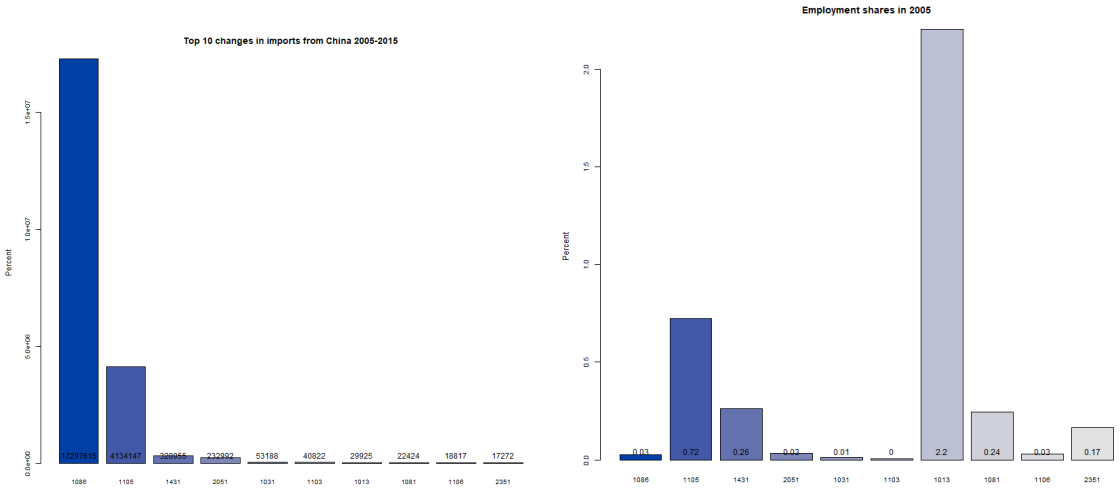

Figure 13: Top10 largest industries in 1995 (left) and their changes in imports to Eastern Europe 1995-2005 (right), in %

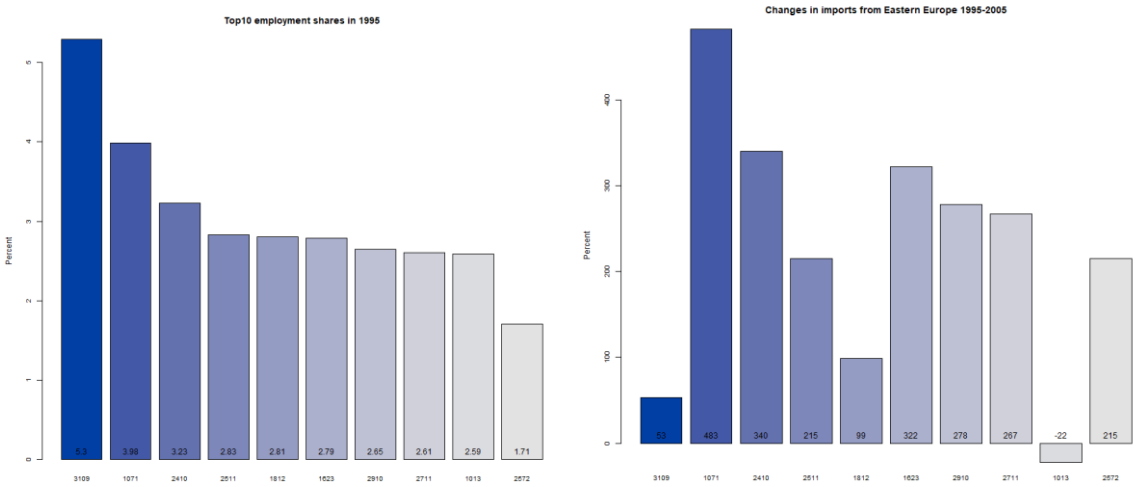

Figure 14: Top10 largest industries in 2005 (left) and their changes in imports to Eastern Europe 2005-2015 (right), in %

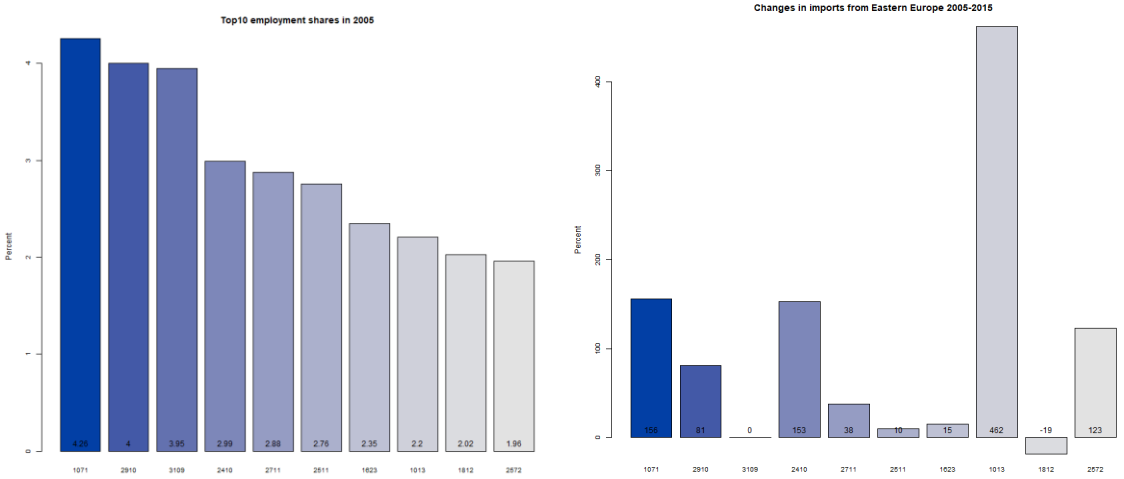

Figure 15: Histogram of manufacturing employment shares in 1995 (left) and in 2005 (right)

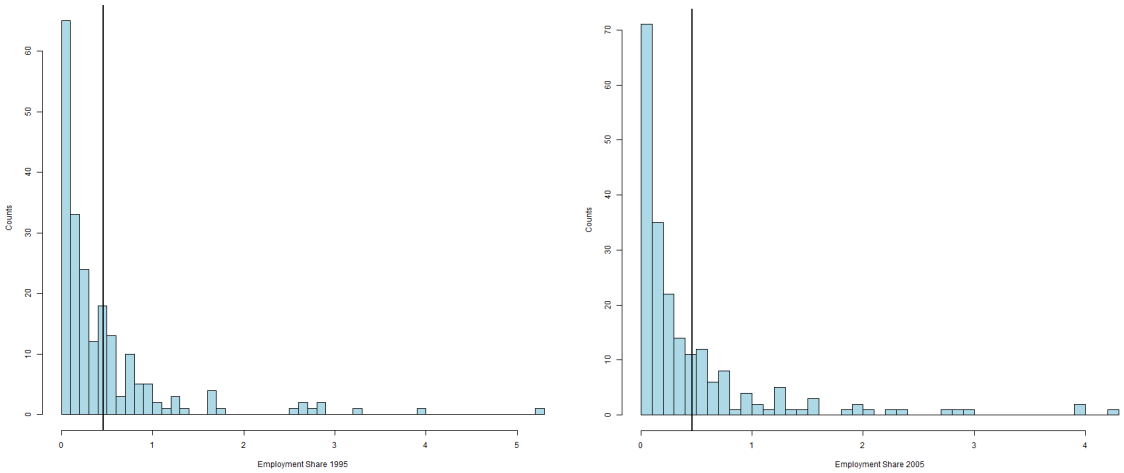

Figure 16: Boxplot of percentage change in sectoral imports from Eastern Europe(left) and China (right)

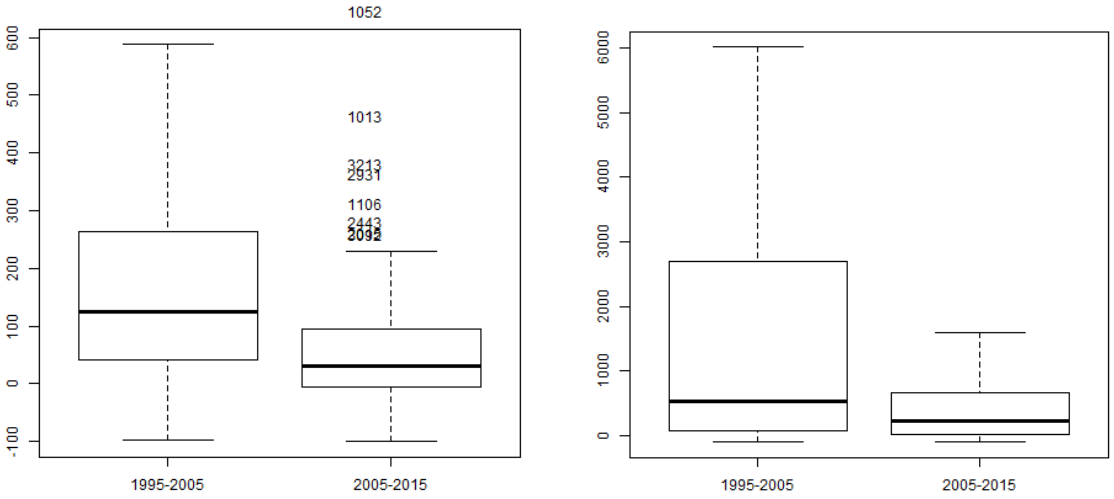

Figure 17: Boxplot of percentage change in sectoral exports to Eastern Europe(left) and China (right)

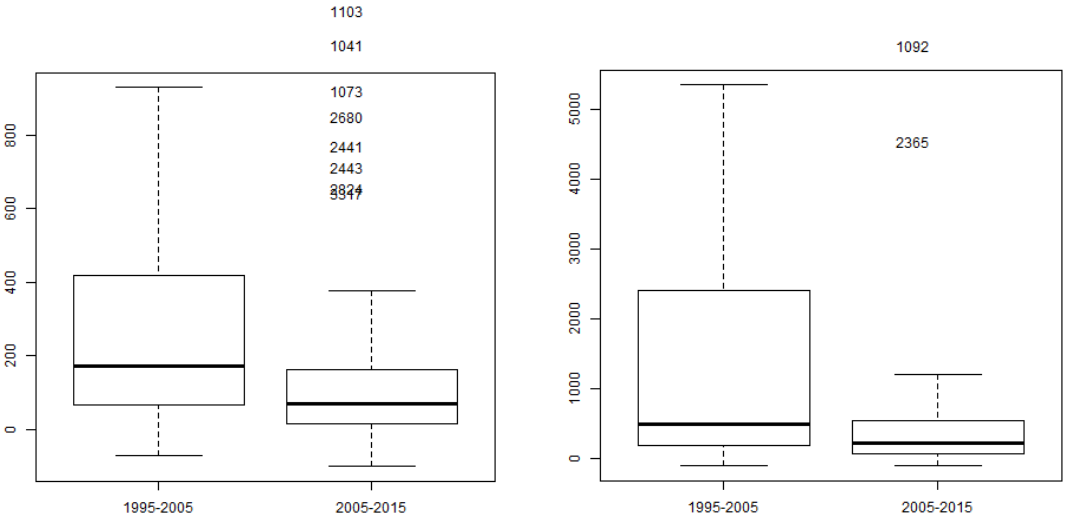

Figure 18: Correlation between manufacturing employment shares and changes in imports from Easter Europe between 1995-2005 and 2005-2015, in %

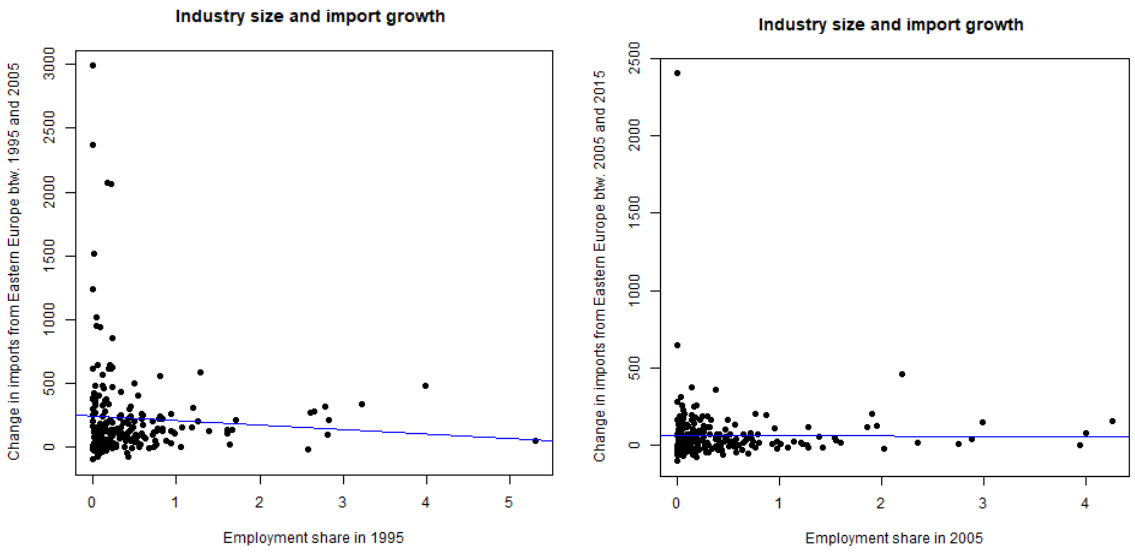

Figure 19: Correlation between manufacturing employment shares and changes in imports from China between 1995-2005 and 2005-2015, in %