



Wage inequality in Germany – What role does global trade play?

Wage inequality in Germany has increased significantly since the mid-1990s. The intensification of international trade relations is a frequently cited cause for this issue. However, an empirical study revealed that global trade can only directly explain around 15 percent of the increase in wage inequality in Germany. Primarily, the growing heterogeneity among companies in Germany plays a greater role – especially within industries. The decline in collective bargaining is the primary company-specific driver of wage inequality. Nevertheless, protectionist measures would not be effective for achieving greater wage equality.

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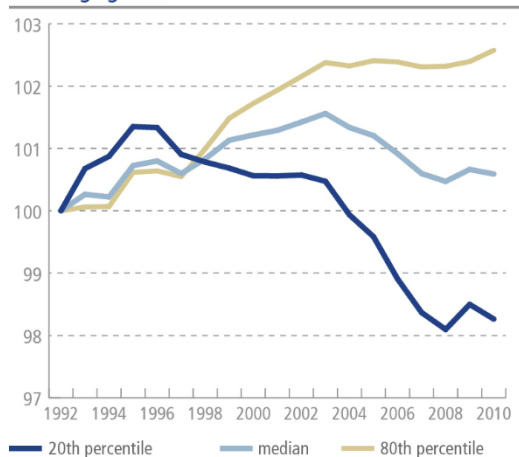
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Focus

Real wage growth



Source: ifo Institut.

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Wage inequality in Germany has been growing since the mid-1990s. For example, the real gross wages of the top 20 percent of earners rose by around 2.5 percent between 1992 in 2010. By contrast, workers in the lower gross income range had to absorb losses in real wages.

The gap between rich and poor has increased steadily over the last three decades in many industrialized nations. Income inequality in particular has risen in nearly every developed society as the Organisation for Economic Co-operation and Development (OECD) confirmed recently in a working paper that it released in Paris in December 2014 (see Cingano 2014). According to the OECD analysis, the richest 10% of the population in OECD countries now earns on average 9.5 times as much as the poorest 10%. 30 years ago, the ratio was 7 to 1. Income inequality has also risen in Germany. In the 1980s, the richest 10% earned 5 times as much as the poorest 10%. Today that number is 7 times as much. Although Germany lies below the OECD average, this trend and the speed of the increase should be alarming because according to OECD analysis, growing inequality has a negative impact on a country's overall economic development. For example, according to the OECD, Germany's economic growth between 1990 and 2010 could have been 6 percentage points higher if the income distribution had remained the same.

What are the reasons, explanations and influencing factors for this trend? The experts disagree. For example, the OECD primarily explains the income trend it identified as a combination of technological progress and globalization that has permanently raised skill requirements for workers. At the same time, machines replaced low-skilled workers. Both developments have resulted in an increased need for highly skilled employees and a reduced demand for low-skilled workers. Hence, wages for highly skilled workers have risen, while wages for low-skilled employees have decreased or risen less than for the highly qualified workers. For that reason, the incomes of highly skilled employees and low-skilled or unskilled workers have drifted apart. Global trade accelerates this

process in developed economies if these economies pursue trade with less developed countries with a large labor force: Goods that can be manufactured by low-skilled workers are then produced in developing nations with abundant workers, which further increases the pressure on wages for low-skilled workers in industrialized countries (see OECD 2011, Pg. 22-40).

However, this explanation – which continues to be common – suffers from two serious weaknesses. First, international trade no longer solely takes place between narrowly defined industries that differentiate themselves through their personnel configuration of highly-skilled and low-skilled workers and other production factors. In actuality, industrialized nations are both exporters as well as importers of very similar goods. Second, empirical studies conclude that different educational and skill levels in highly developed nations such as Germany can only explain around 20 percent of the existing wage inequality. In light of these empirical findings, the question arises: What influence does global or international trade actually have on wage inequality? To answer this question, the development of wage inequality in Germany was examined for the years between 1985 and 2010.

1. Trend: significant increase in German wage inequality since 1996

The development of wage inequality in Germany was studied specifically in regard to the dynamics of inequality in the gross wages of all workers in Germany covered by social security. In our opinion, the selection of this sample size is justified because

gross wages account for about 75 percent of total income and comprise by far the largest share of income in Germany. Also, global trade has the greatest immediate effects on changes to the production structures in this income element.

A look at the development of wage inequality in Germany between 1985 and 2010 (more recent data was not available at the time these calculations were completed) shows that wage inequality remained more or less the same between 1985 and 1995. However, a significant increase in wage inequality can be seen since 1996. This tapered off somewhat in 2009, but in 2010 once again reached the same level of inequality as in 2008. Although wage inequality in Germany lies below the OECD average overall – as shown by the most recently published OECD comparative study – the speed at which it is increasing is considerable and exceeds the trend in countries like the USA and Great Britain.

A differentiated observation reveals that this special dynamic went hand-in-hand with different trends in the upper and lower income groups: While real wages have increased significantly among the top 20 percent of earners (the 80th percentile) since

the mid-1990s, the 20 percent who earn the lowest gross wages in Germany (the 20th percentile) saw losses in real wages (see focus graphic). Thus, this development does not indicate a polarization of wages, meaning a decline in wages in the middle relative to wages at the tails of the distribution.

2. Influencing factors: Demographic variables less decisive than growing heterogeneity among companies

A variety of national and international studies have considered the causes of increasing wage inequality. One key finding of these studies: Demographic variables such as age, education, gender, and (in Germany’s case) regional association with East or West Germany can only explain a small percentage of wage inequality. For Germany, these factors help to explain only 20 percent for the period from 1985 to 2010.

The relatively low significance of differing

Fig. 1: Variance decomposition of wage inequality in Germany

	2000	Share of variance (in %)	2010	Share of variance (in %)	Change	Share of change (in %)
Total variance	0.232		0.301		0.069	
Between skill groups	0.044	19	0.070	23	0.026	37
Within skill groups	0.187	81	0.231	77	0.043	63
Between occupational groups	0.081	35	0.112	37	0.031	45
Within occupational groups	0.151	65	0.189	63	0.038	55
Between companies	0.141	61	0.192	64	0.051	74
Within companies	0.090	39	0.108	36	0.018	26

Source: ifo Institute.

skill levels for the structure and development of wage inequality in Germany also emerges in the variance decomposition of gross wages (variance decomposition, for details on methodology, see Bertelsmann Stiftung 2015, Pg. 21). Figure 1 shows that only 19 percent of wage inequality in the year 2000 could be linked to different wages between the various skill groups (2010: 23 percent), while 81 percent of this inequality occurred within skill groups (2010: 77 percent). A similar picture emerges for wage inequality between different occupations and within occupational groups. A different picture is seen in regard to the importance of companies: More than 60 percent of wage inequality occurred between companies in the year 2000 as well as in 2010. Furthermore, almost three-quarters of the rise in wage inequality between 2000 and 2010 took place between companies (74 percent). This clearly shows that companies and the growing differences between companies within industries – rather than between various industries – play a key role in Germany’s growing wage inequality.

3. Which company characteristics are relevant?

In search for company factors that play a role for the inequality of gross wages, this study considers two factors: the importance of collective bargaining agreements and companies’ participation in international trade through exports.

Regarding collective bargaining agreements, it is found have determined that collective bargaining has declined sharply in Germany between 1996 and 2010. While 60 percent of companies were bound by an industry or company-specific bargaining agreement in 1996, in 2010 the share of

companies with such agreements had dropped to 35 percent. Hence, the percentage of employees covered by a collective bargaining agreement shrank from 82 percent in 1996 to 62 percent in 2010. This is meaningful for rising wage inequality because employees who are covered by a collective bargaining agreement earn higher wages than those without one. In 1999, a worker with a collective bargaining agreement in place earned on average of 8 percent more than a worker not covered by such an agreement. This wage premium has increased since then, reaching 19 percent in 2010. Moreover, wage inequality among the group of covered establishments is lower than among the group of uncovered companies.

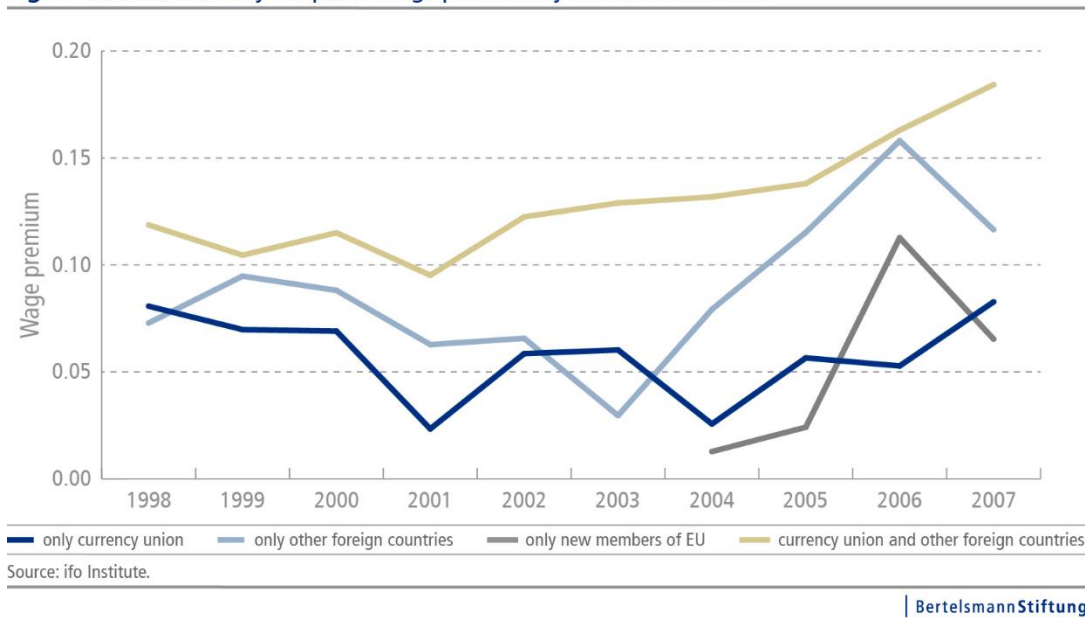
With regard to export activities, there is a series of international studies which all concluded that exporting companies pay higher wages than non-exporting companies. For example, wage differences of 4.5 to 6.4 percent were determined for Great Britain. In the USA, the difference lies between 4 and 9 percent, while studies on Taiwan find a wage premium of 14 to 30 percent (see Bertelsmann Stiftung 2015, Pg. 28).

During the time period between 1996 and 2010, the exporter wage premium in Germany was 8 to 16 percent. In that regard, the wage premium for exporting companies was around 11 percent between 1996 and 2004 (with a slight decline to 8 percent in 2001 that can be traced back to the bursting of the dot-com bubble), and thereafter increased significantly to 16 percent in 2007. The economic downturn following the Lehman Brothers bankruptcy reduced the exporter wage premium in the years 2008 and 2009 somewhat, but since then wage premiums for exporting companies have bounced back again and reached

around 15 percent by 2010. It is worth noting here that companies which export exclusively to members of the European Currency Union pay a smaller exporter wage premium than companies that export to countries further away (see Fig. 2).

shares of employment (“composition effect,” for details on methodology, see Bertelsmann Stiftung 2015, Pg. 34). Corresponding calculations show that the individual factors have a different impact in some cases on the different income groups. Figure 3 shows the key findings.

Fig. 2: Trend of Germany’s exporter wage premium by destination market



4. Fundamental drivers of wage inequality

After examining the individual causes of Germany’s rising wage inequality in isolation, we performed a comprehensive analysis in a final step to quantify the contributions of each cause. The influence of five explanatory factors was studied for the period from 1996 to 2010: education, age, economic sector, collective wage agreement and export status. The changes in wage inequality are broken down into two effects: Consequences for the development of wage inequality arise both from changes in the wage structure (“wage structure effect”) and from the shift in the proportional

5. Economic policy implications

Although the current wage inequality in Germany is still below average for industrialized nations overall, its increase since the mid-1990s is still considerable, especially when compared to Anglo-Saxon economies. Since recent studies have found that rising income inequality can put the brakes on long-term economic growth, it is important to analyze this trend and better understand its underlying reasons and influencing factors in order to derive suitable economic policy measures.

This study was able to demonstrate that individual demographic variables such as

Fig. 3: Central results of the decomposition analysis

Composition effect	The share of jobs not covered by collective bargaining is rising, which increases inequality. This affects the lower range of wage distribution.
	The share of highly skilled and older employees is rising. Since the wage differential within both of these groups is high, the effect is to increase inequality. This affects the upper range of wage distribution.
Wage structure effect	Changes in wages have an influence that promotes inequality. However, this only occurs during the first subperiod (1996-2003). This affects the lower range of wage distribution.
	The return on education for the highly skilled relative to the medium-skilled has increased. Moreover, the wage gap within the highly skilled group has increased. They both have the effect of increasing inequality. This affects the upper range of wage distribution.
	The exporter wage structure effect promotes inequality in the second subperiod (2003-2015).

Source: Own representation.

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age, education, gender, and (in Germany's case) regional association with East or West Germany can only explain a small percentage of wage inequality. Demographic variables only explain about 20 percent of gross wage inequality in Germany. At around 15 percent, the immediate, direct influence of global trade is likewise rather small, although it is conceivable that increased international economic integration and the accompanying escalation in competitive pressure may have an indirect effect on rising income inequality.

Growing company heterogeneity in Germany is a key aspect of the rising inequality – primarily within industries. Three-quarters of the rise in wage inequality between 2000 and 2010 (74 percent) took place between companies. Consequently, wage inequality has become an intra-industry phenomenon.

If we take a look at the company-specific aspects, there is another important factor resulting from the decline of collective bargaining. It plays an especially large role in rising wage inequality in the lower income range. Of course we should not conclude that strengthening collective bargaining

will automatically lead to greater income equality. After all, while inequality has risen over the last 20 years, the unemployment rate in Germany dropped over the same period from 11% to below 8%. And it is quite possible that wage flexibility measures have played an important role in this decrease. It would be more expedient to counter the consequences of the departure from collective bargaining agreements via minimum wages or generally binding clauses. Distribution policy instruments would also be preferable here.

Limiting international trade would be just as unsuitable because it would not help to increase income equality by very much and would also waste growth potential. Indeed, if many companies are already engaged in foreign trade and pay an exporter wage premium – as is the case in Germany – further increasing the number of exporting companies can reduce wage inequality. In this context, increasing the export opportunities for small and mid-sized businesses is especially promising.

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Policy Brief 2014/01: Who profits most from globalization?

Globalization, understood as the economic, political and social interconnection of countries, leads to increased economic growth. On average, the more a country proceeds its interconnection with the rest of the world, the greater its economic growth will be. If real per capita gross domestic product (GDP) is chosen as the reference index for the economic benefits of globalization, Finland can point to the largest gain from globalization from 1990 to 2011. Ranked according to this perspective, Germany holds fourth place out of a total of 42 economies evaluated.

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