Journal of Self-Governance and Management Economics
Volume 2(3), 2014, pp. 28–71, ISSN 2329-4175

WAGE DISPERSION AS KEY FACTOR FOR CHANGING PERSONAL INCOME DISTRIBUTION

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ABSTRACT. Market-driven wage dispersion is a central feature of income inequality. While neoclassical authors have typically focused on technological changes and insufficient investment in education to explain increasing wage dispersion, Keynesians have focused on a number of other structural, social, and demand-led causes. Namely, Keynesian theory suggests that wage dispersion is a result of weaker trade union power, a lack of wage bargaining coordination and an erosion of labor market institutions since the beginning of modern globalization and the radical shift towards market-based ideology in the 1970s/1980s. In this paper, the Keynesian perspective on the global trend of rising wage dispersion is elaborated. It is found that the deregulation of financial markets, shareholder value corporate governance systems, extensive outsourcing and the prevalence of deep economic shocks and long-lasting downturns are directly related to the type of globalization that developed during the last several decades. Furthermore, in order to reduce wage dispersion, strengthening of trade unions and wage bargaining institutions are recommended, including extension mechanisms and sufficiently high statutory minimum wages. Additionally, offshoring and outsourcing, as well as the stakeholder corporate governance system, have to be socially controlled. Tax policy can also play an important role by curbing very high wages. Finally, active demand management to guarantee high employment is recommended. All of these show that wage dispersion depends on many economic, social and political factors. In the end, only a new, more regulated, economic model can achieve a market-given wage dispersion compatible with a fair and sustainable society.
JEL codes: E24; J3

Keywords: market-driven wage dispersion; personal income distribution

1. Introduction

The “neoliberal revolution” (Harvey 2005: 29) in the 1970s and 1980s led to structural changes in the capitalist system. Among other things, national and international financial markets, as well as labor markets, were deregulated. One characteristic of the neoliberal revolution over the last decades has been a change in income distribution. The wage share has dropped in most countries and, in many of them, government redistribution policies became weaker, while wage dispersion increased virtually across the board. Changes of wage dispersion are, in many countries, the key factor to explain changes in personal income distribution. In most countries, wages account for more than 60 per cent of income. This means that even relatively small changes in wage dispersion can have big effects on the distribution of disposable income. The OECD calculated that between the mid-1980s and the mid-2000s, over 70 per cent of changes in disposable income distribution in member countries was caused by increasing wage dispersion.[1] Capital income, as a driving force of inequality in disposable income of the working-age population, is still a relatively small contributor to inequality, but its relevance increased steadily (OECD 2011: 236-243).[2] The market income share of the top one per cent in the United States, the most extreme case in the developed world, increased from below 10 per cent in the 1970s to over 20 per cent from the 2000s on. Nearly three quarters of the increase is caused by increasing wages (Piketty 2014: 315).

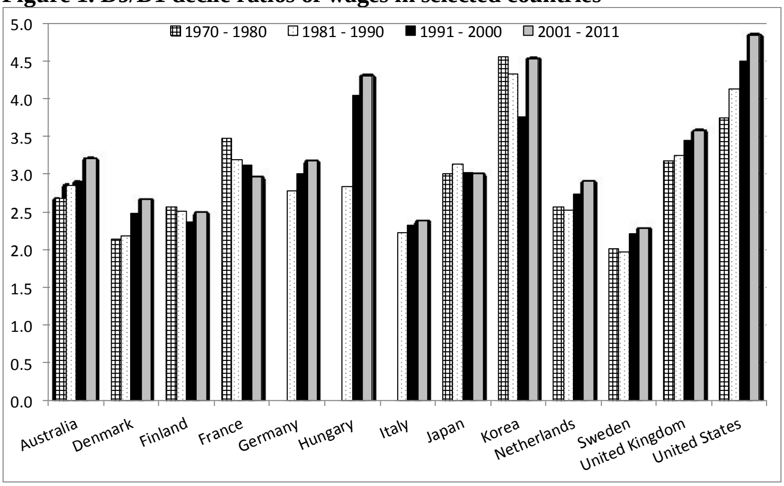
The dominant neoclassical paradigm explains changes in wage dispersion by changes of marginal productivities of the different groups of employees. Technical progress benefitted skilled workers and experts and had negative effects for unskilled workers. Technological advancements and insufficient investment in education to improve the productivity of low-skilled workers, the argument goes, can explain the increasing wage dispersion during the last decades (see for example Goldin and Katz 2010; OECD 2011). The problem with this approach is that in many cases marginal productivities cannot be measured. What is the marginal productivity of an accountant, an engineer in a project team or a cleaning person in an office? Or can the salary of a top manager earning one hundred times more than a simple worker be explained by the superior marginal productivity of the manager?[3] Skilled workers usually earn more than unskilled workers. But the difference does not depend on objective factors like marginal productivities in equilibrium, which cannot be measured. The difference depends on the relative power of the different groups of workers, on institutions and conventions and, of course, also on market forces of demand and supply – but not on marginal productivities. There is no possibility to objectively determine that a skilled worker should earn 1.3 or 4 times the wage of an unskilled worker. In some cases, unskilled workers earn more than skilled workers. For example, staff nurses in Germany earn less than forklift operators. The gender wage gap can be found in conventions and not in objective factors, as well.

We limit this paper on market-given wage dispersion to cover only OECD countries.[4] Also functional income distribution is not discussed. The changing wage dispersion after the 1970s is explained without referring to marginal productivities. A short empirical overview of the development of wage dispersion in OECD countries is given in section 2. Our theoretical explanation of wage dispersion is given in section 3. Section 4 puts forward an interpretation of the historical development of income distribution since the 1970s. In section 5 policy recommendations to reduce wage inequality are given, before concluding in the last chapter.

2. Development of Wage Dispersion

In most OECD countries wage dispersion has been increasing during the past decades. However, wage dispersion and its development differs highly. Figure 1 shows the development of the 9th in relation to the 1st decile (D9/D1) for selected countries from the 1970s until 2011, while average values for each decade are chosen. The ordinate in Figure 1 shows how many times the wage of the ten per cent highest wage earners were higher in comparison with the ten per cent lowest wage earners. Countries like Denmark, Italy, the Netherlands, Finland and Sweden show a relatively low level of wage dispersion with the top ten per cent earning around 2 to 2.5 times more than the ten per cent lowest wage earners.[5]

Figure 1. D9/D1 decile ratios of wages in selected countries

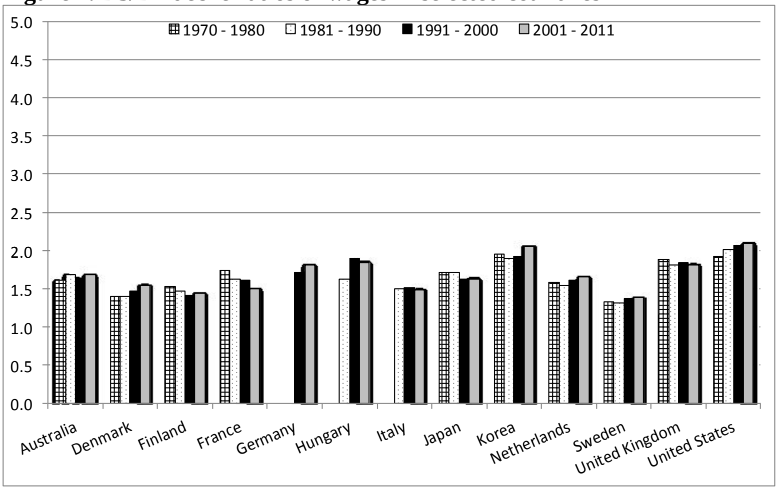


Note: The value for Germany 1981-1990 is taken from OECD (2004), p. 141.
Source: OECD Income Distribution Database (2014a), author's own calculations.

In most of the countries in this group wage dispersion measured in D9/D1 increased. The outliers can be found in the USA, Hungary and South Korea where the top ten per cent earned around four times higher wages than the bottom ten per cent. France, Germany, United Kingdom (UK) and Australia hover around the middle. Except for a few countries like France and Japan, who faced declining wage dispersion, a distinctive overall upward trend of the D9/D1 ratio in most of the OECD countries can be observed**.**

Figure 2 shows ratio data comparing the 5th to the 1st decile (D5/D1) for selected countries. High values of D5 to D1 indicate a large sector with very low-wages. Within this indicator, the USA and South Korea have the highest values around two. The UK and Australia also have high D5/D1 values, albeit smaller than of the US, however, these did not change substantially over the decades. Sweden also increased its D5/D1 values minimally. In Japan and especially France, the lowest ten per cent gained in relation to the middle. In Japan, the D5/D1 ratio decreased over the decades, in France it decreased slightly more.

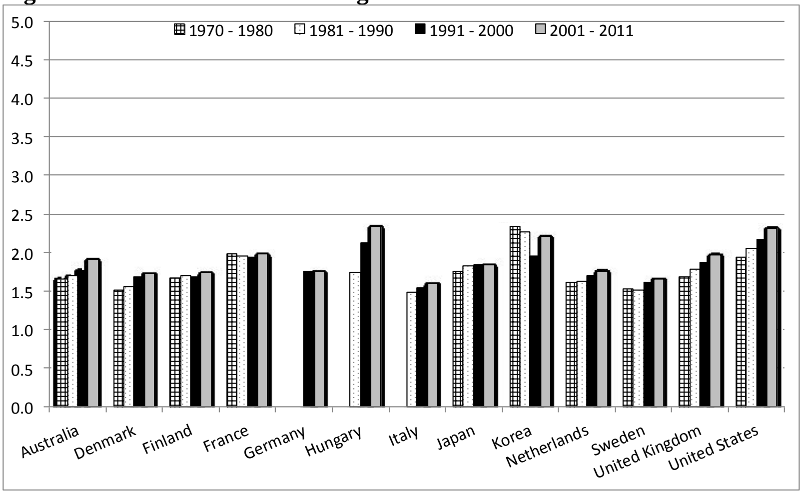
Figure 2. D5/D1 decile ratios of wages in selected countries



Source: OECD Income Distribution Database (2014a), author's calculation.

From Figure 1 and Figure 2 it can be inferred that in many countries, D9/D1 increased much faster than D5/D1. This suggests that in the average OECD country, the middle and lower wage earners lost in comparison to the top wage earners. Figure 3, which compares the top wage earners with middle wage earners, supports this. D5/D1 increased in most countries less than D9/D5. For example, in the USA and South Korea a strong polarization in the wage structure developed with both a substantial low and high wage sector, whereas the middle lost in relation to the higher wage earners (ILO 2012). Also, in the UK and Australia, sharp increases of the D9/D5 ratio can be seen since the 1970s. In these countries, the middle wage earners lost their relative wage position vis-à-vis top earners even more than in the USA. In these countries, the high wage dispersion at the bottom was stable but inequality exploded at the top. In Germany, D9/D5 did not change whereas D5/D1 increased sharply. This implies a "collapsing floor" in the German wage structure. Germany is one of the countries with a very quickly developing low-wage sector (Rhein 2013).[6]

Figure 3. D9/D5 decile ratios of wages in selected countries



Source: OECD Income Distribution Database (2014a), author's calculation.

Deciles in many cases hide the extent of inequality; they especially do not show how much of income goes to the different deciles.[7] Thomas Piketty (2014: 267) makes this clear for wage income. In 2010, 35 per cent of total wage income went to the top ten per cent of wage earners, and 12 per cent went to the top one per cent wage earners in the United States. The bottom 50 per cent received a meagre 25 per cent. Piketty believes that in 2030, the top 10 per cent of wage earners may get 45 per cent of total wage income and the bottom half of the population will earn just 20 per cent. In comparison, 25 per cent of the wage sum went to the highest decile in Europe (7 per cent to the top one per cent of earners) and 30 per cent to the lowest 50 per cent. Total income distribution, including income from property, is of course even more unequally distributed.[8]

Inequality of wage dispersion has a gender dimension. Women in the OECD earned 17.6 per cent less than the median wage of men in 2008. Korea, with over 35 per cent, sits atop the gender wage gap in OECD countries, followed by Japan and Germany. New Zealand and Belgium, both with less than 10 per cent, are at the bottom. In 2011 in the European Union (EU), women earned 16.2 per cent less than their male counterparts. Generally, the gender pay gap for part-time jobs, widely held by women and older workers, is larger than for full-time jobs and younger workers (Eurostat 2013).

Summarizing the empirical development of wage dispersion, it appears there are substantial differences between the analyzed countries. In most OECD countries wage dispersion increased. In some countries, a low-wage sector as well as a sector with very high wages developed, while in some other countries, the lower part of the wage structure did not change much, but the sectors with high wages exploded. However, there are also cases with relatively low wage dispersion and cases where wage dispersion even decreased. The OECD summarizes this as follows: “Overall, using available time-series data, wage dispersion increased in a majority (16 out of 23) of OECD countries over this period, at a 5% level of significance. Only two countries (France and Spain) registered a moderate and statistically significant decline in wage inequality, whereas no significant trend was estimated for the other five countries (Korea, Belgium, Finland, Japan and Ireland).” (OECD 2011: 88). In most countries “the distance between the highest 10% earners and those in the middle has been growing faster than the distance between the middle and the lowest wage earners” (OECD 2011: 86). At this point, it is clear that it is difficult to explain the different developments in the countries via objective factors such as technological development, as all of these countries were exposed to similar “objective” tendencies.

3. Theoretical Explanation of Wage Dispersion and Employment Effects of Changing Wage Dispersion

1) The background

The nucleus of Keynesian thinking is found in the separation of a theory of allocation and the theory of the level of output and employment.[9] This is in sharp contrast to the neoclassical school of thought. In the neoclassical paradigm, the theory of allocation and the determination of output and employment are identical. Output and employment solely depend on supply side conditions. The free interaction of markets leads to a structure of relative prices[10] including wages, which guarantees optimal allocation and – given the stock and distribution of resources – a maximum of output and full employment. In this approach, in liberalized markets crises with unemployment simply do not exist. Furthermore, economies cannot suffer from a lack of demand as any supply creates its own demand.[11]

In the Keynesian paradigm, the level of production and employment depends on aggregate demand, which is made up of investment demand, consumption demand, government demand and exports minus imports (including services). Employment depends on the level of output and existing productivity. By definition, the percentage change of employment is given by the percentage change of output minus the percentage change of productivity.[12] Only in the exceptional case of full capacity utilization can additional demand not increase output.

The law of effective demand holds independent of an optimal allocation of resources. If aggregate demand is sufficiently high, even a distorted allocation cannot prevent high employment and, in most cases, economic development.[13] A good example for the Keynesian argument is the development of China during the last three decades: While there have been a number of distortions on the relative prices and inefficiencies on the microeconomic level, dynamic growth, driven mainly by credit-financed high investment, together with export demand, could not prevent high real GDP growth and productivity development in China (Herr 2010).[14]

The nominal wage level is the most important factor to determine the price level (Keynes 1930). When wage costs increase for all companies in an industry, firms will be able to immediately increase prices, independent of the demand situation. It is of no relevance for a cost-push inflation, for example, whether the oil price goes up, the value-added tax increases or if the nominal wage level increases in an industry: firms will increase prices. In all these cases competition does not prevent price increases, as all firms are affected in the same way. International competition can complicate the scenario and may, in certain conditions, prevent the roll-over of higher costs. However this does not change the fundamental argument. Unions only can negotiate nominal wages, but no real wages. Keynes (1936: 12f.), when arguing against the neoclassical recommendations to cut wages to increase employment, was very clear about this: "In assuming that the wage bargain determines the real wage the classical school have slipt in an illicit assumption. […] There may exist no expedient by which labour as a whole can reduce its real wage to a given figure by making revised money bargains with the entrepreneurs." Keynes showed that falling nominal wages lead to deflation. In recent times, Japan is a prime example of this.[15]

The Keynesian approach has some unpleasant consequences for unions. Firstly, in almost all economic constellations, workers as a class cannot change the level of real wages by changing the nominal wage level. However, unions are of key importance to establish a nominal wage anchor to prevent deflationary and inflationary developments. Secondly, in almost all economic constellations, workers cannot change the functional income distribution. Functional income distribution is difficult for unions to change as the profit mark-up is given by the financial system and rent seeking polices of firms. To reduce the power of the financial system, financialization has to be turned back and rent seeking by companies must be reduced. To achieve this, first and foremost, government policies are needed. Unions can play an important role to push for such policies. And of course, unions can play a key role to regulate working conditions and influence wage dispersion.

2) Explanation of wage dispersion

The wage bargaining system as a whole is of paramount importance to determine the wage structure. Keynes believed that the relative power of different fractions of the working class is of key importance for wage dispersion. "In other words, the struggle about money-wages primarily affects the distribution of the aggregate real wage between different labour-groups, and not its average amount per unit of employment, which depends […] on a different set of forces. The effect of combination on the part of a group of workers is to protect their relative real wage. The general level of real wages depends on the other forces of the economic system." Keynes (1936: 14)

If a segment of the labor force organized in unions is able to push for relatively high wages, while other unorganized segments cannot increase theirs, wage dispersion most likely is high. In an uncoordinated wage-bargaining system unions organized in specific sectors or even more organizations of specific professions, may act as pressure groups and push up relative wages for their members. Several dimensions of the wage bargaining system influence the wage structure: the level of negotiations (firm level, sectoral level, national level), the degree of coordination of the wage bargaining process, extension mechanisms, etc. If the union movement in a country as well as employers' associations are weak, and there is no support from government to extend the outcomes of negotiations, firm level negotiations will dominate in segments of the economy, whereas large parts of workers will not be covered by collective bargaining. In such a constellation, wage dispersion is expected to be high. Strong unions combined with vertical and horizontal coordination of wage bargaining and universal extension mechanisms, on the other hand, lead to low wage dispersion. High statutory minimum wages, if they are able to compress the wage structure from below, prevent a large low-wage sector. Of course, many different wage bargaining systems exist with all kinds of combinations of levels of wage negotiations and wage coordination.

Wage dispersion is a key factor to determine relative prices and the structure of production and consumption. Assuming that an increase of statutory minimum wages or wage bargaining compresses the wage structure from below, the following results could be expected: in a first-round effect all labor intensive productions will increase relatively in price and a new structure of relative prices will be created. It thus becomes more costly to employ workers in low skill positions, like hairdressing or the food industry, as in these industries low wages play an important role. There will also be a one-time small increase in the price level (when we assume that the general wage level will not decrease). The living standard of the middle class, including skilled workers will be slightly negatively affected by the increase of wages in the low-wage sector, whereas the living standard of the workers earning low wages will increase. Also, a reduction of the gender pay gap can be expected, as in general more women are working in low-wage sectors.

There are second-round effects: to illustrate, let us assume low-paid workers are important in computer chip production. Thus, costs and prices in the chips industry go up. Chips are used as an input in many industries, however, to a different extent. Therefore, different industries are affected unequally by increasing chip prices and will change prices accordingly. Outputs from these industries are again inputs of other industries, including the chip production. The price of chip production subsequently changes and again affects a collection of other industries. The system of relative prices is swirled around until a new equilibrium structure is found. The changes may become even more complicated as firms, confronted by a different set of relative prices, may change to a more labor or more capital-intensive production technique. In the end, it is not possible to know what kind of price structure will result.

Consumption depends, among many other things, on the structure of relative prices. A changing wage structure leads to a changing structure of relative prices and a changing structure of consumption. Increasing wages in the low-wage sector increases the price of domestic workers employed by private households. If wages of domestic workers increase substantially, middle classes will not be able to employ domestic workers any longer. It becomes clear here, that a certain wage structure leads to a certain type of society with certain social relationships. Changing the wage structure in a fundamental way changes the whole society.[16]

Relative prices and the structure of consumption and production depend not only on wage dispersion but on an array of factors that simultaneously affect these variables, including available technologies, preferences of households, functional income distribution, the integration of a country into the world market and government policies via taxes and subsidies.

To summarize this point: labor market institutions, including wage bargaining institutions and conventions, statutory minimum wages and other government policies are important factors to explain wage dispersion. Of course, market forces can create scarcities in some segments of the labor market and higher-than-average unemployment in others. This was always the case and is part of structural change and economic development. But how this is reflected in relative wage developments depends on institutional factors, the relative power of the different groups in the labor market and government policies (for example, supporting social mobility) and not on objective factors like (marginal) productivities.[17] Additionally, wage dispersion is concerned with the understanding of social justice and fairness. Today, high wages of athletes or managers in the financial system and elsewhere, earning much more than leaders of governments in former times, would have been judged as extremely immoral.

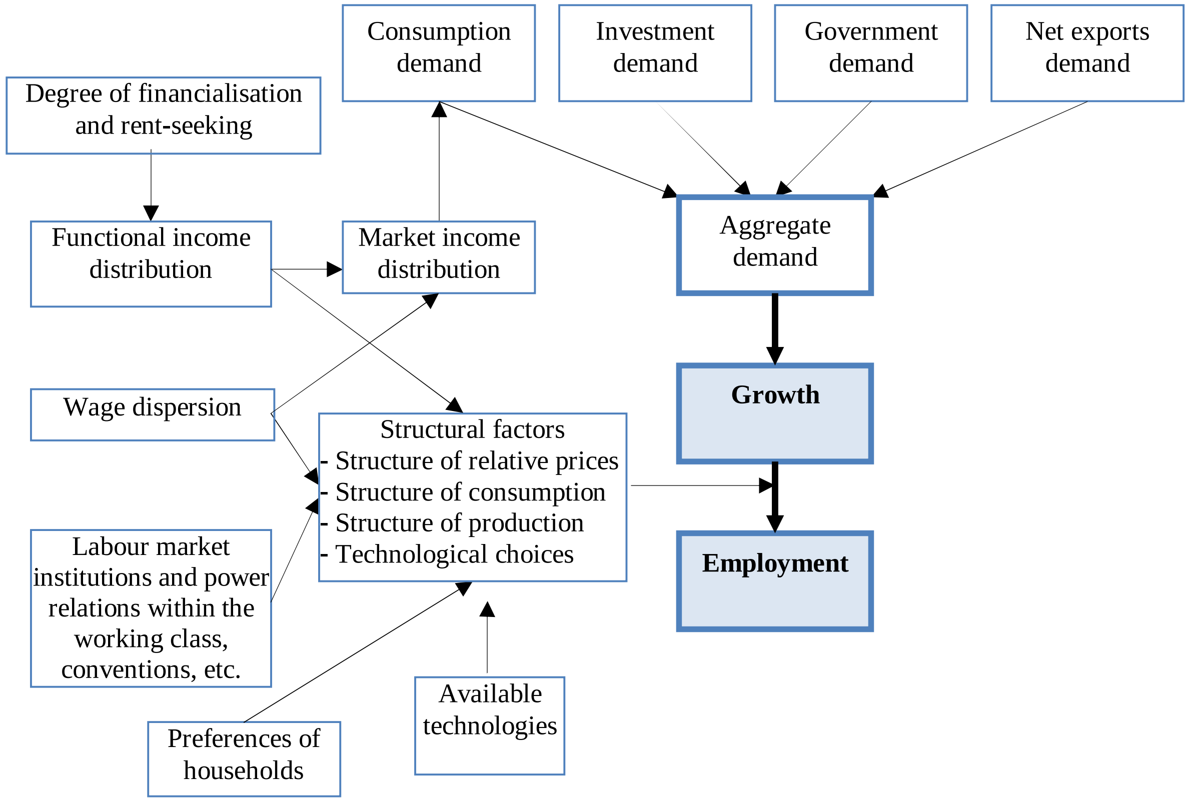
3) Wage dispersion and employment

The independence of allocation, level of production and employment suggests that there is no clear-cut relationship between wage dispersion, GDP growth and employment. There can be countries with both low and high wage dispersion experiencing high GDP growth and high employment; there can be countries with high and low wage dispersion suffering low GDP growth and low employment. This theoretical openness should come as no surprise, as wage dispersion is only one element to explain the structure of prices and the overall economic constellation of a country, which also depends on aggregate demand. However, high wage dispersion, as one of the most important factors for personal income distribution, can become an obstacle for prosperous economic development or even prevent it. Excessively high personal income inequality, and thus also correlatively high wage dispersion, potentially leads to a lack of consumption demand. Consumption demand is the largest component of demand in any country (usually around two third of total demand). Consumption demand, among other factors, depends on income distribution. An unequal income distribution will sooner or later lead to a lack of aggregate demand as consumption demand becomes insufficient. Higher income groups without doubt consume more than lower income groups (in absolute terms), but higher income groups have a lower propensity to consume out of income than lower income groups. This well-known Keynesian argument (Keynes 1936, Book III) implies that a more equal income distribution increases aggregate demand and, in this way, output and employment. Figure 4 summarizes the Keynesian approach. The key argument is that aggregate demand determines output and employment whereas structural factors of different kinds influence the relationship between aggregate demand and output and employment.[18]

Credit-driven consumption demand may help overcome the negative demand effect of an excessively unequal income distribution; or the stimulation of export surpluses or government demand can increase demand. However, credit-driven consumption expansions are not sustainable. Export oriented demand strategies lead to international imbalances and disturbances, and fiscal expansion also has limitations and in the long run. Investment demand is in need of other demand elements; otherwise excess capacities will be created which, in the end, will lead to a stagnation of investment demand. High inequality very likely prevents sustainable economic development as it creates a structural lack of demand.

For unions the Keynesian analysis is good news: wage dispersion can be changed radically without negative employment effects. To compress the wage structure in a situation of high inequality will not only lead to a more equal society; it will also lead to an economic regime characterized by sufficient aggregate demand and economic dynamism.[19]

Figure 4. The structure of wages, prices, output, and employment in the Keynesian paradigm



4. Interpretation of the Developments since the 1970s

1) Uncontrolled globalization

There are two over-arching dimensions of economic globalization during the last decades that are important here: First, increases in often unregulated international trade, and second, a generalized push towards deregulation of international capital flows.

International trade

World trade (exports plus imports of goods and services) in per cent of world GDP, increased from around 24 per cent at the end of the 1960s to over 50 per cent at the early 2010s (Trading Economics 2013). This shows that trade links in the world became much closer.[20] In addition, new, strong players substantially changed the pattern of the international distribution of labor. China and India and other Asian countries integrated quickly into the world market. The same happened with the countries in former times belonging to the block of the Soviet Union. This is also true for Latin America and, more recently, some African countries have increasingly integrated into the world market. This development was pushed both by a neoclassical free trade agenda and the World Trade Organization (before the GATT) in an ideological way, which only argued for the positive effects of free trade.

There is a tendency of low-tech industries, like textile or shoe production, to move to developing countries while jobs in these industries disappear in developed countries. Based on this observation in respect to wage dispersion, the usual argument is the following: unskilled jobs were transferred from the developed world to the countries of the South whereas developed countries concentrated more on high-tech production, which needs skilled labor and experts. The consequence, as per the argument, is a decrease of demand for unskilled labor in developed countries and, at the same time, an increase of the demand for skilled labor and experts in the developed world. As a result, the wages of unskilled workers drop while those for skilled workers and experts increase. In developing countries the opposite effects can be expected.[21]

It cannot be disregarded that in deregulated labor markets such processes can develop. However, these expected results of trade globalization do not coincide with empirical evidence. In almost no developing country has a positive effect on wages of low-skilled workers can be found. In many developed countries, such as the USA, the middle group of workers, the semi-skilled, had to accept a relative decline in wages. Also empirically, it was found that international trade does not play an important direct role for changing wage dispersion (Kierzenkowski and Koske 2012). One possible explanation is that trade between developed and developing countries is not big enough to change wage dispersion in any relevant way.[22] However, there is also a theoretical argument. The structure of wages, which is given by institutional factors, influences the structure of international trade as much as the structure of international trade influences wage dispersion. If labor market institutions do not allow decreasing wages in the low-wage sector an international distribution of labor will result which reflects this wage structure.

Classical trade theory in the spirit of Ricardo assumes trade in different *finished* products, as in the traditional example of Portuguese wine and English cloth. This type of international trade is not the only one. In the present world, trade *within* one industry is even more important. To illustrate, the following example shows the development of cotton processing in a multinational environment: Country A produces cotton, in another one (country B) the process of being spun is undertaken, while in country C it is tailored into the garments using designs or machinery that originate from country D, etc. Trade of intermediate goods represent the dominating international trade pattern today (Feenstra and Hanson 2001).

There is a group of economic models capturing such processes (see especially Feenstra and Hanson 1996). In these models, production within one industry is separated in different tasks. Certain tasks then can be fulfilled in different countries and inputs can be bought abroad. For example, firms in developed countries can buy low-tech intermediate goods from developing countries. Also, the service to develop a marketing concept or architectural services can be bought from a foreign country. A specific type of intra-industry trade is export processing. In such a case, an intermediate product is exported to a foreign country (probably in an export processing zone), then some value adding takes place, and then the product is imported back.

International trade in goods and services can be welfare enhancing for both developed and developing countries and does not necessarily change wage dispersion. However, there is one difference between developed and developing countries. Developing countries have difficulties to develop high-tech industries, which are important for development, as the logic of markets pushes them towards an international distribution of labor concentrating low-tech and labor intensive production in them. As was argued by Friederich List, for successful development, active support and protection of domestic industries, which are important to develop the productive forces in a country, is needed.[23] Finally, in many cases working conditions in developing countries are poor and ecological standards for production less strict than in developed countries. Firms in developing countries will exploit these conditions and will offer products produced under such conditions to exploit relative cost differentials.

It is a common belief that the national wage level and the national wage structure are important for the competiveness of a country.[24] One can delve into the competitiveness of a firm or the international competitiveness of an industry, but what is the international competitiveness of a country? Krugman (1994a: 41) suggests that international competiveness of a country is a “meaningless concept." In fact, all countries are "competitive" if the right exchange rate can be chosen. We know, since David Ricardo, that without net capital flows the current account of a country must be balanced, the structure of relative prices determines the comparative cost advantages between countries whereas the latter determines the structure of trade. Thus a certain wage structure, together with other factors like the productivity of different industries, lead to a certain structure of prices and a certain structure of international trade. Even the complete absence of a low-wage sector or the most luxurious welfare state can be compatible with a balanced current account.[25]

Quick and deep changes in the international distribution of labor are problematic for all economies, and must be considered as shocks stemming from specific industries, but not for all. Firstly, industries can lose international competitiveness "overnight" when exchange rates move quickly. For example, the extreme increase of the external value of the US Dollar from the late 1970s until the mid-1980s destroyed the competitiveness of a number of US industries. In such industries firms, struggle for their survival and push for lower wage increases or wage cuts. It is not very likely that unions in these industries will push for the same wage increases as unions, for example, in the public sector or in industries, which are not affected by the world market. A completely different scenario occurs when an industry slowly disappears and workers and capital slowly move to other industries. In such a case, the government probably supports the structural change via subsidies and mobility support. A good example for such a scenario is the fading out of coal production in Germany in the 1950s and 1960s. Secondly, world market crises can quickly draw export dependent industries into deep crises. For example, the Great Recession led to a deep crisis of export industries via a reduction of world exports in many countries

In the end, international trade does not increase wage dispersion *per se*. However international trade that is characterized by quick and deep shocks because of exchange rate instability and/or crises of the world market, especially in countries with weak labor market institutions and a low level of government interventions, can play a major role in increasing wage dispersion. As a matter of fact, the economic development after the deregulation in the 1970s and 1980s is characterized by huge current account imbalances, currency turbulences and worldwide crises. Flexible exchange rates between the key currency blocks and unregulated international capital flows turned the international monetary system into a shock machine with volatile exchange rate movements. The resulting shocks for firms and industries increased the pressure for more wage flexibility and flexibility in general. Permanent world market shocks make a coordinated nationwide wage development very difficult. They must be seen as one of the factors for increasing wage dispersion.

International capital flows

The deregulation of international capital flows is one of the cornerstones of the neoliberal revolution which started in the 1970s. Capital flows exploded much more than international trade. The stock of global foreign investment assets increased from 10 trillion US dollars in 1990 to 96 trillion in 2010. In comparison, the nominal US GDP in 2010 was around 14.66 trillion US dollar. This shows the extremely fast increase of international capital flows and the resulting stocks of international assets over the last decades. From the 96 trillion, 31 trillion were non-securitized loans, 21 trillion debt securities, 14 trillion equity securities, 21 trillion foreign direct investment and 9 trillion official international reserves (Roxburgh et al. 2011: 31).

International capital flows since the final breakdown of the Bretton Woods system in 1973 have been very volatile and create huge shocks for international trade via exchange rate movements and current account imbalances, which typically quickly adjust in currency crises. International capital flows in the form of foreign direct investment or other forms to optimize international value chains can be used as “threat factor” by management to demand wage concessions. The key mechanism is offshoring. Offshoring of certain tasks in the production chain or even the whole production process can take different forms (Feenstra and Hansen 1996). It can mean buying an input or task in the international product market or to use export processing models (production is taken over by an independent foreign firm, probably only working for the offshoring company). In the most comprehensive type of offshoring tasks or whole productions are shifted to a joint venture or a subsidiary abroad. In the latter case, foreign direct investment, which exploded over the last 15 years, plays a role. Blinder (2006) correctly characterized offshoring as the next industrial revolution. Offshoring gives management a very powerful tool to threaten their employees and trade unions. There is a fundamental asymmetry. Management of big and increasingly of medium-sized companies can go global and can optimize its value chain all over the world whereas unions in almost all cases are organized on a national level and usually do not have the possibility to act on an international level.[26] In many cases, unions in different countries even compete against each other and are not able to respond adequately to the strategies of multinational companies. There is the danger that offshoring triggers an international “race to the bottom,” as Stiglitz (2012: 58ff.) denotes. This means that in all countries the threat of offshoring leads to the erosion of working conditions, ecological standards, low nominal wage increases and the danger of very low inflation or even deflation. And, as employees and unions in different industries and companies can be threatened by management to different degrees depending on the possibilities for offshoring, these processes destroy a coherent wage development in a country and increase wage dispersion.

Permanent shocks from international trade combined with offshoring practices changed the world fundamentally during the last 30 years. A large proportion of firms and unions are exposed to almost permanent shocks and threats from the world market. Flexibility even for wages became an important element of management strategies. Higher wage dispersion is the result. International capital flows and especially foreign direct investment and offshoring strengthened capital and weakened unions. In many cases, trade unions act on a national level and cannot fight any longer with capital on the same level as capital acts internationally. Weaker unions have to accept higher wage dispersion.

2) Shareholder value corporate governance

A major mechanism to enforce financial power and its inherent "logic" to the corporate sector is the shareholder-value approach, which was developed in the 1980s. Due to financial deregulation beginning in the 1970s, after the breakdown of the Bretton Woods system, institutional investors such as pension funds or life insurance firms, hedge funds, private equity funds and investment funds of all kinds became more important.[27] Overall, the so called shadow financial system increased sharply. Non-bank financial institutions which are less regulated, short-term oriented, risk loving and, in many cases, focused on speculation, proliferated. Traditional banks adjusted to the behavior of non-bank financial institutions. Looking at banks, we see an expansion of their power, formalization and tightening but reduction of capital requirements, deregulation of deposit accounts, and the liberalization of the rules and policies regarding geographic diversification (Berger et al. 1995: 59). These changes in the financial system led to a new approach of corporate governance, one where shareholders gained and other stakeholders in companies like unions lost power. Shareholders wanted to become the power-centre of corporations, controlling and disciplining management (Lazonick and O'Sullivan 2000; Dünhaupt 2011a). Pioneers for the new corporate governance philosophy were Jack Welch, CEO of General Electric, and Alfred Rappaport (1999). Corporate management frameworks based on shareholder-value aimed to increase return on shareholders' investments and gear management decisions exclusively to this target. In order to create an optimum incentive structure, management was typically rewarded in part by share options and in part by bonus payments based on current profits. The shareholder-value system substituted the stakeholder corporate governance system. In the stakeholder system, management searched for a compromise between the different stakeholders in a company, especially the unions, the owners, the creditors and the local community. Management was controlled by all stakeholders and could not increase salaries beyond the normal increase of incomes. Such a system did not only exist in corporatist Continental European countries, but also in countries like the United States (see Galbraith 1967).[28]

The shareholder-value approach was a declaration of war against unions as it includes a short-term oriented strategy to maximize profits by all means possible, including a more risky management strategy, higher dividend payments and a lower equity base by companies, and a suffering of long-term oriented investment and job creation (see Hein 2012).[29] Higher wage dispersion thus developed through two channels. On the one hand it led to disproportionately high salaries for top management and substantial increases of salaries for the middle management. It pulled up wages of all types of experts, especially in the financial system. On the other hand management used all strategies available to reduce wages for skilled and unskilled workers including offshoring and pushing for precarious jobs as flexibility buffers.

3) Union density, extension mechanisms and wage coordination

In this part we first discuss union density, then the level of wage bargaining and wage coordination, and then the role of extension mechanisms. Finally a short overview about different wage bargaining systems will be given.

Union density

Weaker unions lead to higher wage dispersion. The reason for this is that unions almost always introduce an element of solidarity into wage bargaining processes. This has the tendency to prevent very low and very high wages. As a matter of fact, in empirical analyses there is a great consensus that higher union density is correlated with relatively low wage dispersion.[30]

The figures in Table 1 view wage earners who are organized in trade unions as a share of the total number of wage earners in the selected countries. In the latest year for which data is available, there are countries with very high union density over 60 per cent (Denmark, Finland, Sweden) and countries with very low union density below 15 per cent (France, South Korea, Poland, Mexico, Turkey, the US). Overall union density declined steadily in OECD countries from 32.95 to 16.72 per cent from 1980 to 2013 (see Table 1). Countries losing more than half of their union density since 1980 are Australia, France, South Korea, New Zealand, Portugal, Turkey, the United Kingdom, and the United States.

Table 1. Union density in selected OECD countries

	1980	1985	1990	1995	2000	2005	2010	2013
Australia	48.49	45.46	39.55	32.51	25.72	22.29	18.44	17.04
Austria	56.72	51.60	46.93	41.06	36.64	33.33	28.37	..
Belgium	51.25	49.67	51.10	52.78	49.48	52.87	50.59	..
Canada	34.03	35.29	34.02	33.67	28.20	27.73	27.41	27.18
Denmark	78.61	77.55	74.60	75.86	73.93	70.67	67.57	..
Finland	69.39	69.08	72.55	80.44	74.97	72.43	69.96	..
France	18.28	13.61	9.83	8.71	7.97	7.67	7.85	..

Germany	34.90	34.67	31.22	29.22	24.57	21.68	18.56	..
Greece	38.97	37.51	34.12	31.30	26.51	24.64	25.21	..
Ireland	54.28	51.48	48.53	45.14	37.99	33.96	32.69	29.60
Italy	49.58	42.49	38.81	38.07	34.80	33.59	35.46	..
Japan	31.15	28.79	26.13	24.38	21.54	18.80	18.39	17.78
Korea	14.67	12.39	17.23	12.52	11.43	9.92	9.68	..
Luxembourg	50.77	52.11	46.36	43.51	42.53	41.39	..	..
Mexico	..	..	..	16.58	15.61	16.88	14.38	13.62
Netherlands	34.78	27.72	24.57	25.95	22.93	20.56	18.63	..
New Zealand	69.12	55.98	49.48	27.19	22.35	20.85	20.78	19.39
Norway	58.34	57.49	58.53	57.33	54.39	54.89	54.81	..
Poland	..	..	36.69	20.20	17.20	21.50	14.58	..
Portugal	54.83	44.61	27.97	25.36	21.65	21.25	19.34	..
Spain	..	10.23	12.54	16.33	16.74	14.70	15.56	..
Sweden	78.02	81.28	80.02	83.14	79.08	76.52	68.22	67.73
Switzerland	27.48	24.79	22.52	22.67	20.18	19.31	17.12	..
Turkey	..	..	19.19	13.39	9.94	8.17	5.85	..
United Kingdom	49.66	44.19	38.12	33.06	30.18	28.42	26.36	25.44
United States	22.06	17.45	15.45	14.32	12.91	11.96	11.38	10.81
OECD countries	32.95	29.03	26.11	23.31	20.19	18.80	17.58	16.72

Note: Figures are adjusted for self-employed and non-active trade union members.
Source: OECD (2014a).

Union density decreased as deregulation policies in the labor market created a hostile legal and ideological environment for unions. In OECD countries, industries with traditionally high union density – mining, metal industry, state-owned enterprises etc. – lost importance in relation to industries with traditionally low union density – like the service sector. Firms increasingly outsourced production to union free companies. Finally, sectors with precarious jobs increased.[31] These workers are more difficult to organize than workers in traditional industries (OECD 2012b).

Level of wage bargaining and wage coordination

One dimension of the wage bargaining process is the level at which wage negotiations take place. Calmfors and Driffill (1988) in their seminal article pointed out a hump-shaped relationship between the level of wage bargaining and wage increases. They argued that a high degree of centralization or decentralization lead to moderate wage development whereas negotiations in the middle lead to higher wages increases. A tendency to higher wage increases would result in higher unemployment. Firm unions negotiating on the firm level take into account the well-being of their firms. At the other extreme, unions negotiating on a macroeconomic level understand the negative effects of high wage increases for employment and therefore follow a macroeconomically functional wage policy. Unions negotiating wages on a middle level, or in a worst-case scenario, unions organizing only one profession and negotiating on sectoral level, lack the microeconomic and the macroeconomic incentive for wage constraints. International institutions like the OECD support the Calmfors-Driffill approach, but clearly favor firm-based wage negotiations (see for example OECD 2004). The *Troika*, European Central Bank, International Monetary Fund and EU-Commission, have all also pushed crisis countries in the European Monetary Union (EMU) to more firm based wage negotiations (see Blanchard et al. 2013).

However, the Calmfors-Driffill approach's applicability is questionable for several reasons.

First, the Calmfors-Driffill hypothesis is difficult to back up empirically. Not all countries fit into the hump-shaped framework (see even Driffill 2005).

Second, firm based wage negotiations lead to higher wage dispersion within an industry and society. They tend to take into account only firm based productivity developments and firm based profitability so that "good" firms pay higher wages while "bad" firms pay lower wages. Lower wages in one company compared to other firms within the same industry may reduce the motivation of workers and reduce their effort to work efficiently. Even more importantly, firm specific wage negotiations may support poorly performing companies via relatively low wages. This reduces the innovative power of economies and the expansion of innovative firms. The minimal positive employment effect of saving less productive firms and reduced macroeconomic productivity development does not justify firm specific wage developments.

Third, firm level wage negotiations do not automatically lead to a functional macroeconomic wage development. From a macroeconomic point of view the nominal wage level should increase according to trend productivity development of the total economy[32] plus the target inflation rate of the central bank. Then, nominal unit-labor costs and the price level increase according to the desired inflation rate.[33] This wage norm makes wages development an anchor for a low and stable inflation rate. Firm level wage negotiations can lead to a perverse microeconomic "coordination" towards too high or too low wage increases. It is possible that workers in low-productivity firms in an industry take wage increases in high-productivity firms in the same industry as the standard for their own wage demands. In such a case workers in high-productivity firms may ask for even higher wages, arguing that the firm can afford to pay such wages. The outcome can be overly high nominal wage increases, which lead to a cost-push inflation (Soskice 1990). Nominal wage increases that are too low are also possible when, in a crisis situation, workers are willing to cut firm-level wages to outcompete other firms and to save their own jobs. In Japan, for example, after a long period of low GDP growth after the end of the bubble in the early 1990s, nominal unit-labor costs started to fall as firm unions accepted or even supported nominal wage cuts to outcompete other firms. If all firms follow such a strategy the outcome is deflation (Herr and Kazandziska 2010).

Fourth, Soskice (1990) correctly points out that the level of wage bargaining is not a good indicator to characterize the wage bargaining system of a country. A much more important issue than the level of bargaining is whether wage development in a country is *coordinated* or not. In case of negotiations on the national level there is almost always a coordinated wage bargaining process guaranteed.[34] However, sector level negotiations can also be highly coordinated. For example, sectoral unions can informally coordinate their wage demands, pattern bargaining can lead to wage coordination when one sector in the economy takes lead in the wage round and all other sectors more or less follow the outcome of wage bargaining in the leading sector; in countries with weak unions, the development of statutory minimum wages can lead to wage coordination; even firm based negotiations can lead to a certain macroeconomic coordination if the wage round starts in some big firms and this gives a signal for the whole wage round.

A coordinated wage bargaining process is of key importance not only for a functional macroeconomic wage development but also for the prevention of unacceptable wage dispersion.[35] Vertical coordination in one industry is important to overcome the shortcomings of firm based negotiations. However, what is also required is a horizontal coordination among different sectors. In case of only vertical coordination there is the tendency that sectoral productivity is taken as one of the yardsticks for sectoral wage development. Then, in industries with high productivity gains wages go up, but in industries with no or low productivity – for example in some parts of the service sector – wages remain low. Or wages in one sector with high profits, say the gold mining sector, pays very high wages whereas other sectors pay very low wages. If horizontal coordination does not exist, it is very likely that large differentials between the wages in different industries exist.[36]

The level of wage bargaining and coordination mechanisms in countries usually changes slowly (Caju et al. 2008), but looking at longer time periods substantial changes can occur. In the United States after World War II, for example, pattern bargaining, led by the automotive industry, dominated and led to a coordinated wage bargaining. Today there is no coordination left in the US (Levy and Temin 2010).

Wage bargaining coverage

There is a potentially big difference between union density and the coverage of workers by wage bargaining. In some countries employers, pay non-union members the same wage as union members, simply to give no incentive to workers to join a union. In other cases there are labor market institutions that extend wage bargaining outcomes to more workers than those organized in unions. In many countries there are legal extension mechanisms. In France, for example, wage bargaining outcomes are almost automatically extended to all workers in an industry by law. In Austria, employers are forced by law to join an employers' association. This means that all firms are covered by wage negotiations.

Although union density has declined substantially, between 1995 and 2006 coverage of wage bargaining in many OECD countries remained relatively high (see Table 2). From the 23 countries in Table 2 the majority of 12 countries showed high wage bargaining coverage (more than 76 per cent of employees covert by wage bargaining) and no important change between 1995 and 2006. In 2006, three countries showed a very low coverage (less than 25 per cent of employees covered), including the United States. In the same year, 7 countries showed a low coverage (less than 50 per cent of employees covered) including the United Kingdom or Hungary (Caju et al. 2008).

Table 2. Wage bargaining coverage in selected countries and years

Total economy			
	1995	**2006**	**2006 vs. 1995**
Austria	High	High	+
Belgium	High	High	0
Cyprus	Moderate	Moderate	+
Czech Republic	Low	Moderate	+
Denmark	High	High	+
Finland	High	High	0
France	High	High	+
Germany (West)	Moderate	Moderate	□
Germany (East)	Moderate	Low	-
Greece	High	High	0
Hungary	Low	Low	-
Italy	High	High	0
Japan	Very low	Very low	0
Lithuania	Very low	Very low	0
The Netherlands	High	High	0
Norway	Moderate	Moderate	0
Poland	Moderate	Low	+
Portugal	High	High	0
Slovenia	High	High	0
Spain	High	High	-
Sweden	High	High	0
United Kingdom	Low	Low	-
United States	Very low	Very low	-

Note: 0% < Very Low < 25%, 26% < Low < 50%, 51% < Moderate < 75%, 76% < High < 100%

1995 refers to 1997 in France, 1994 in Denmark and 1998 in Hungary. 2006 refers to 2004 in West and East Germany, 2005 in Spain, 2004 in France, 2000 in Denmark, 2004 in Hungary, 2001 in Poland. In the right column 0 is filled in if changes are less than 1 per cent or no quantitative value is available.

Source: Adapted from Caju et al. (2008, Table 1).

In Table 2 the effects of the Great Recession and the crisis in the EMU are not covered, which may be an explicit strategy by the *Troika* to push crises countries like Spain, Portugal, Greece, Italy, etc. to more firm based wage negotiations *and* a radical reduction of extension mechanisms. In Greece for example, extension of sectoral collective bargaining was suspended; or in Greece and Portugal the scope for work councils to conclude firm based agreements was increased (see Blanchard et al. 2013). France should also, according to these institutions, go into the same direction.

It can be plainly seen that, over the last decades, save for a few Scandinavian countries, union density has been substantially reduced in throughout the majority of OECD countries. However, in many countries the level of bargaining and, due to extension mechanisms, wage bargaining coverage did not change as much as union density. The character of wage coordination in most countries also changed slowly. The biggest changes happened in Anglo Saxon countries in the 1980s when the "neoliberal revolution" substantially weakened the union movement and at the same time increased the power of finance. Extension mechanisms, in spite of decreasing union density, explain why wage dispersion in a number of countries did not increase. The clearest case here is France. However, in most OECD countries wage bargaining institutions changed in a way that allowed for higher wage dispersion. There is the danger that the long-term period of low growth and high unemployment in many countries will lead to an erosion of extension mechanisms, more wage negotiations on the firm level and higher wage dispersion.

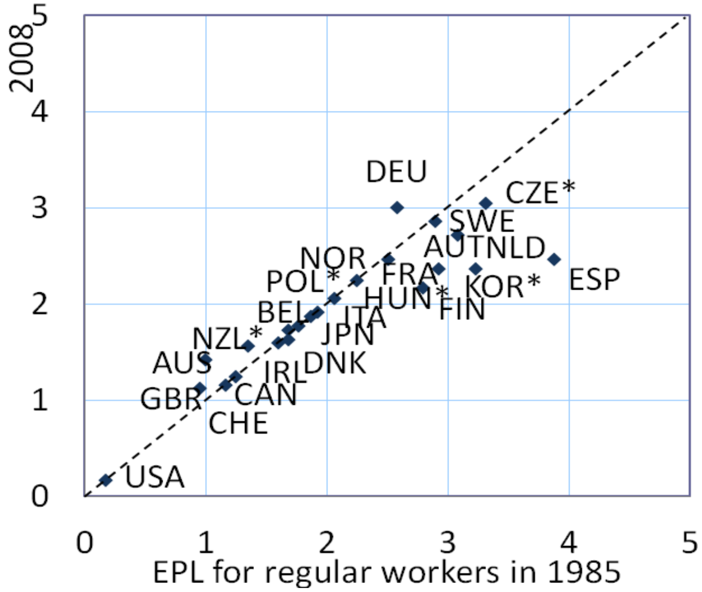
4) Labor market policies

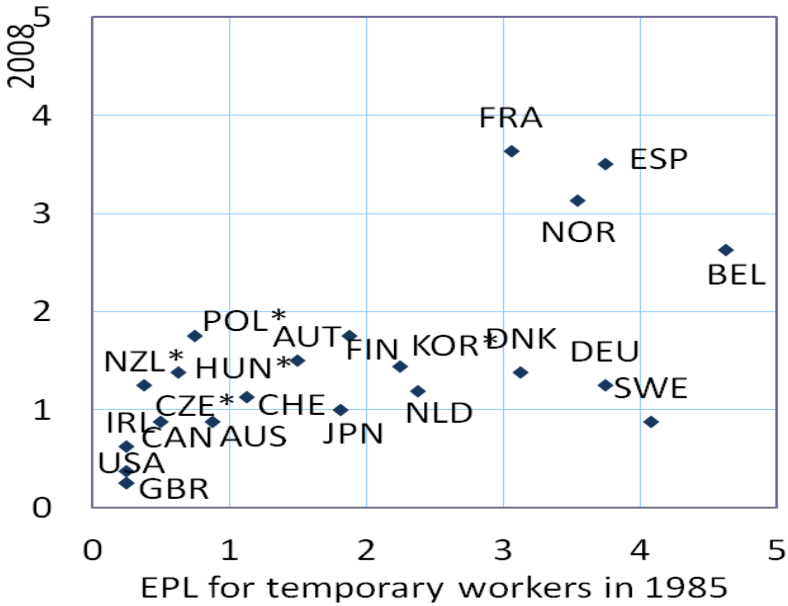
In most OECD countries, government policies substantially contributed to increasing wage dispersion. On the one hand, precarious working conditions were allowed to proliferate while, on the other hand, a low-wage sector was actively created.

Precarious work

The number of workers affected by precarious working conditions increased in OECD countries. Precarious work in the OECD is usually not located in the informal sector, but under legally allowed conditions. Precarious work takes the form of temporary work, fixed-term contracts, part-time work and contract for work labor. These types of work increased over the last decades. The example of temporary work can typify such developments. Policies to protect employment developed differently for temporary and regular workers. While protection of regular workers tended to converge among OECD countries and were relatively stable, protection of temporary workers declined drastically in 11 of 23 countries (OECD 2011: 101). In European countries regular work is defined as permanent employment, i.e. there is not an "objective criterion for the termination of a job or work contract." Temporary work includes "*i)* persons with a seasonal job; *ii)* persons engaged by an employment agency or business and hired out to a third party for the carrying out of a 'work mission;' *iii)* persons with specific training contracts." (OECD 2014b: 11) Definitions are based on the European Labour Force Survey. In other OECD member states definitions may differ (OECD 2014b). The developments from 1985 to 2008 are summarized in Figure 5. The dotted line dividing the figures shows no changes over the period of time. Countries appearing on the left side of this line introduced stricter employment protection, countries on the right side of the dotted line show increasing flexibility, liberalization and deregulation since 1985. The scales show a ranking of Employment Protection Legislation (EPL). A value of 5 indicates very strict regulation, null shows liberalized labor markets. Figure 5 shows that the USA has an almost completely deregulated labor market for regular workers followed by the UK, Switzerland, Canada and Australia. Highly regulated markets for regular workers can be found in Germany (DEU), Austria, Czech Republic or the Netherlands. Germany regulated markets for regular workers even more strictly, whereas Spain and Korea particularly, deregulated markets for regular workers; although there is still a high level of regulation. The regulations for temporary workers show a different picture. In Sweden, Germany, Denmark, Korea, the Netherlands and Japan the market for temporary workers was substantially deregulated creating a two-class system for these types of workers. France is also an exception here, and further regulated the market for temporary work from an already high level.

Figure 5. Employment protection legislation (EPL) in selected countries





Note: A value of 5 indicates very strict regulation, null shows liberalized labor markets. The dotted line indicates no change in employment protection legislation. Countries in the left section increased their employment protection legislation; countries in the right section decreased it.
Series for Hungary, New Zealand, and Poland begin in the mid-1990s.
Source: OECD (2011: 100 f.).

In a number of countries, labor markets for temporary workers and other non-regular workers became substantially unregulated, creating a dual labor market with a quickly growing sector of precarious work and usually poorly paid jobs. Under such conditions regulation arbitrage leads to outsourcing inside the country. In such a scenario, the sectors with precarious jobs grow quickly, at the cost of the better regulated sectors of the economy. This development added substantially to increasing wage dispersion in the countries, which allowed the existence of such dual labor markets.

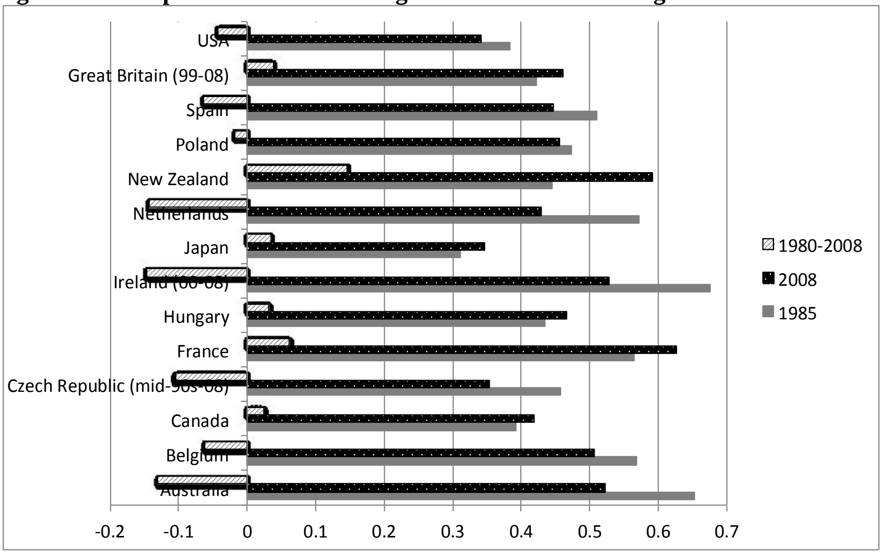
Lower statutory minimum wages

Another feature of the changing labor market institutions were active policies to create low wage sectors (OECD 1994). The idea behind this is that wage and labor market flexibility increase jobs. The marginal productivity of the unskilled workers was seen as so low that only lower wages allowed the employment of this group of workers. Besides the policy to allow the expansion of un-regular jobs, a key policy to reduce wages at the lower end of the wage scale was to keep minimum wages low.

In 2014, 14 out of 23 OECD countries have statutory minimum wages.[37] Traditionally, Scandinavian countries have no statutory minimum wages. High union density and broad coverage of wage bargaining allow excessively high or low wages to be sufficiently fixed sufficiently during the normal wage bargaining process. This is why unions in Scandinavian countries do not want statutory minimum wages. In Germany before the 1990s the situation was similar. However, the declining union density and the increasing share of workers not covered by collective bargaining led to an explosion of a low-wage sector in Germany after the 1990s. After a difficult debate, all German unions successfully campaigned for a general statutory minimum wage to be introduced in 2015.

In Figure 6, the development of statutory minimum wages between 1980 and 2008 in relation to median wages is shown graphically. In some countries statutory minimum wages increased. New Zealand had the highest increase from 44 per cent to 59 per cent of the median wage. Minimum wages increased by about 5 per cent in France and Great Britain from 1985 to 2008. However, eight countries, USA, Spain, Poland, the Netherlands, Ireland, Czech Republic, Belgium, Australia, faced declining shares of minimum wages to median wage. Remarkably high were the negative rates in the Netherlands, Ireland during the 2000s and Australia with more than 10 per cent. The levels of statutory minimum wages with values around or below 40 per cent of median wage are especially low in the USA, Japan and Canada.

Figure 6. Development of minimum wages relative to median wages in selected countries



Note: The bar 1980-2008 shows the change during this period of time.
Source: OECD (2011: 101)

A soft minimum for wages can be set by a so-called reservation wage, which can be fixed by social transfers. Social transfers can set a minimum for wages as normally nobody will work for an income she or he can get without work. If there are no statutory minimum wages and no wage bargaining coverage the lowest wages will be around the level of social transfers. Germany after the erosion of wage bargaining coverage and the non-existence of a statutory minimum wage is a prime example for this. Reservation wages are not a preferable instrument to set minimum wages for developed countries: First, because they work in a very indirect and weak way, and second, because there should be a sufficient gap between social transfers and income from full time work.

There is an extensive debate about employment effects of minimum wages. According to our theoretical approach, there is no theoretical argument for negative employment effects of minimum wage increases (see section 3.2 and 3.3 of this paper; Herr and Kazandziska 2011b). Also, empirical evidence challenges the neoclassical postulate of negative employment effects due to statutory minimum wage increases. Most empirical studies use a supply side and partial analytical approach and do not take into consideration demand effects of changing minimum wages. Even with this unsatisfactory approach the empirical outcome of these studies show no clear picture about employment effects of higher minimum wages. See for most recent studies for example Card and Krüger (2000), Dickens and Draca (2005), and König and Möller (2007). Negative effects of rising minimum wages on employment either are not significant in these studies or do not exist. Some studies find positive effects.

To sum up, statutory minimum wages are the most efficient instrument to set a wage floor when unions are not able to prevent the development of a low-wage sector in some industries. This is at least the case in developed countries with a relatively small informal sector. In most OECD countries over the last decades, minimum wage policy was insufficiently used, adding to the problem of wage dispersion rather than detracting from it.

Regulation arbitrage inside the country

As soon as a less regulated sector in the labor market exists for temporary workers or other non-regular workers, or as soon as certain industries are no longer sufficiently covered by wage bargaining, there is a high incentive to outsource production or certain tasks to the unregulated or low-wage sector in the economy or to substitute irregular workers for regular workers. Privatization processes can play an important role for regulation arbitrage. With privatization, in many cases trade unions are kicked out of companies and/or wage bargaining is weakened. There is a multitude of examples for outsourcing inside a country motivated by regulation arbitrage and not by economies of scale and scope. Cleaning, security services, bookkeeping, etc. is outsourced from firms in the regulated sector with wage bargaining coverage, for example the metal industry, to firms in industries which are not covered by wage bargaining, for example the service industry. In the worst case, companies which take over outsourced productions and tasks work with temporary workers or only other precarious jobs. Even firms in the regulated sector of the economy can substitute “costly” normal jobs with “cheap” precarious jobs, creating a group of privileged core employees and a group of peripheral workers with uncertain and poorly paid jobs. Certain jobs that were originally taken over by employees can also be substituted by self-employed. For example, employed butchers become formally self-employed, doing exactly the same job as before at the same workplace and with the same colleagues. It is obvious that these developments lead to higher wage dispersion and more inequality in general.

The problem of regulation arbitrage is that it leads to an accelerating erosion of the regulated sector of the economy, as firms have an incentive and are driven by competition to use the deregulated sector of the economy to a higher and higher extent. Such deregulated sectors increase the pressures to liberalize more regulated sectors.

5) Development of high wage segments

The development of the last thirty years did not only show the increase of a low-wage sector. In many countries, a polarization of the wage structure took place, with extremely high wages earned by just a small portion of all employees (see the empirical part above).

After the 1970s, wages, including rewards from bonus payments for management in general and top management in particular, drastically increased. This reflects changes in the financial system and its repercussion on corporate governance (see section 4). But not only did management come to earn obscenely high wages, superstars in sports, movie stars, famous pop stars, fashionable designers etc. now earn incomes not imaginable 30 years ago. This development is even more striking when one considers how much better remunerated such superstars are in relation to leaders of government, Nobel Prize laureates or top scientists contributing to human knowledge. There are several factors, which can explain these very high wages.

Top salaries, as the ones for top executives in financial institutions, traditional multinational companies or lawyers in law firms are largely undetermined. This means there is no objective explanation why a top manager should earn 20, 100 or 500 times the wage of the lowest paid in a company. The changes in the corporate governance systems in the 1980s, which led to an increase of performance based salaries, increased the power of management also in the field of wage bargaining and gave room for exorbitant increases in management salaries. Wage dispersion in general depends on wage codes reflecting considerations of fairness. These wage codes eroded in the 1980s especially for top management salaries (Lemieux et al. 2009).

In the 1980s, together with the deregulation of labor and financial markets, marginal income tax rates, which in many countries, such as the United States and United Kingdom, reached 70 per cent or even 90 per cent, were substantially cut. This gave an additional incentive for top management to use its bargaining power to increase their net income. With high tax rates, top corporate executives may have concentrated on the growth of the company or "unproductive" expenses such as kindergartens or recreation facilities in firms to increase their personal utility (Piketty et al. 2011).

In the area of mass communication, there is an additional explanation for very high salaries. Broadcasting a sports event, selling a compact disk or marketing a product in television can reach millions of people. Products promoted by superstars can be sold in such quantities that even very high payments to superstars only marginally increase the price of one product and a company can make profits by selling large quantities.

Rosen (1981) pointed out that even though the number of people making a tremendous amount of money is relatively little, they appear to dominate their profession. He further argued that even small differences in talent lead to the superstar phenomenon. But the argument that talent is the most important base to become a superstar is not convincing (Dew-Becker and Gordon 2005: 51). In many cases it is pure luck or even the artificial creation by clever marketing which makes a person a superstar (see Taleb 2007 or as well Rosen 1981).

High wages for top management and superstars most likely changed the perception of what fair wages and income are. It follows that once the conventions change surrounding how the wage structure should look and what is fair, wage dispersion can be more generally accepted.

5. Recommendations to Reduce Wage Dispersion

A reduction of wage dispersion increases consumption demand, as lower income groups consume more out of their income than higher income groups, but to reduce wage dispersion alone – in spite of positive demand effects – cannot guarantee higher employment. Policies to reduce wage dispersion have to be combined with macroeconomic demand management. Besides the stimulation of consumption demand, investment demand – the only demand increasing production capacities and embodying new technology – is needed alongside effective government demand for example to deliver public goods. In what follows we will discuss the most important policies to reduce wage dispersion.

Union density and wage bargaining systems

The Scandinavian countries and empirical analyses show that a high union density leads to a reduction of wage dispersion. Increasing union density and making the union movement stronger is an important element to reduce wage dispersion.

Even in countries with relatively low union density, the wage bargaining system can help to prevent high wage dispersion. Firm based wage bargaining almost automatically leads to high wage dispersion within one industry and in the whole economy. Theoretically, pattern bargaining can work in a system with firm-based wage negotiations. In such a case the wage round starts in some big companies and the outcome of the bargaining has a signaling effect for the wage development in other companies (as traditionally in Japan or after World War II in the United States). Also, strong employers' organizations can lead to a more equal wage development (see Soskice 1990). But such mechanisms are imperfect and can easily erode times of crisis. To reduce wage dispersion within one industry, sector wage negotiations seem to be the best solution.

Sectoral level negotiations do not automatically lead to low wage dispersion. If some sectors in a country are able to push for relatively high wages and others not, and if there is no horizontal coordination mechanism, wage dispersion can be high. To reduce wage dispersion a horizontal coordination of wage development has to be guaranteed. In case of negotiations on a national level, this is automatically realized. But such systems are rare and difficult to implement in larger countries. Pattern bargaining or intensive debates between top union leaders about the strategy and wage demands before the start of the wage round are possible mechanisms of horizontal coordination. In a coordinated wage bargaining system, macroeconomic productivity development should play the central role in wage negotiations and not sector-specific productivities. A guideline for wage increases should be medium-term macroeconomic productivity developments to take out short-term fluctuations of statistically measured productivity by business-cycle effects. In the case that a macroeconomic productivity development is difficult to measure, the industrial productivity development could become a guideline for wage development in all sectors. In addition to medium-term productivity development the inflation target of the country should be taken into account. Such a wage bargaining system increases – at least in the first round – the relative price of products with low productivity increases (for example, services in health care) in relation to sectors with high productivity increases (for example computers) and guarantees low wage dispersion.

Extension mechanisms

If union density is not sufficiently high and employers' associations are not sufficiently widespread to guarantee an equal wage development in a sector, extension mechanisms of wage bargaining outcomes are needed to prevent high wage dispersion. These need government regulations and actions. A positive example to broaden the wage bargaining mechanism and increase wage bargaining coverage is Austria, which forces all firms to join employers' associations. In most countries with low wage dispersion and relatively low union density, the government declares the outcome of wage negotiations as binding for all firms in a sector. France and some other Continental European countries use this mechanism.

The disadvantage of extension mechanisms is that workers who are not organized in unions can free ride. They benefit from negotiations but do not pay contributions as union members. Such an incentive structure can reduce union membership. A possibility to prevent free riding is a negotiation fee set below union membership contributions, paid by non-unionized workers.

Minimum wages

Statutory minimum wages can directly compress wage dispersion from below. In most countries statutory minimum wages are between 40 and 60 per cent of median (or if not available average) wages. Minimum wages below 40 per cent of median wages must be considered unexceptionally low. The best way to fix minimum wages is for them to be negotiated on a national level by a tripartite body with unions' representatives, employers' representatives and government appointed persons. A possible model is the British Low-Wage Commission with unions' and employers' representatives and independent experts where each group has one third of the members in the commission. It recommends a certain increase of minimum wages; however, the government has the last word. The Low-Wage Commission also carries out research about the low wage sector and sharpens the awareness of such a sector. One centrally fixed national minimum wage for all employees seems to be preferable. In large countries with different regional conditions, minimum wages set according to such differences should be possible. The number of minimum wages in a country should be as small as possible; the adjustment should be yearly; the minimum wage should not be automatically linked to pensions and social transfers to avoid budgetary problems of higher minimum wages; a percentage of medium wage seems to be a better way to define the minimum wage than a basket of goods, which can never be sufficiently defined. Most important, however, is that statutory minimum wages are enforced (see Benassi 2011).

Minimum wages should increase at least according to the wage norm (trend productivity plus target inflation rate) to prevent an inflation rate below the target inflation rate or even deflationary developments. If median (average) wages increase faster than the wage norm minimum wages should increase at least according to the increase of median (average) wages to prevent the development of a low-wage sector (Herr and Kazandziska (2011b).

In some countries minimum wage development takes over the function of macroeconomic wage coordination. The changes in statutory minimum wages then give a signal for wage development in the whole economy. This means workers above the minimum also get an increase according to the increase of the minimum. In some countries minimum wages are given even for specific occupations regionally differentiated.[38] For countries with weak unions such a model can be functional, but it is not preferable. Statutory minimum wages should fix a wage floor for all, especially in sectors where unions are relatively weak. Wage bargaining could then bring wages above the minimum wage.

Reducing the informal sector

Work in the informal sector is purely market based and is characterized by all the negative effects of an unfettered labor market. Un- or underemployment, the lack of government regulations, and the lack of sufficient union organization in the informal sector, make living conditions poor and uncertain for most people. Preventing the development of an informal sector and, if it exists, reducing its size and integrating workers into the formal sector is of key importance to reduce wage dispersion and income inequality in general.[39]

Offshoring and outsourcing

Outsourcing inside the country or offshoring in foreign countries creates a situation that strengthens capital and weakens workers and can be a "threat factor" that can lead to wage cuts in certain firms and sectors to prevent outsourcing. Two strategies seem to be of key importance to control outsourcing in an acceptable way. Firstly, unions should become involved in investment decisions, including decisions about outsourcing. A stakeholder model of corporate governance, which gives unions a real influence in all decisions by a firm, is desirable. Secondly, offshoring is not negative as such, and can – as international trade – increase the welfare of nations while being beneficial for workers, even if the workers belong to the outsourcing company. Outsourcing, for example, can increase the competitiveness of a firm. This can allow an expansion of production and employment. What is needed is a socially "managed" offshoring. This can be achieved by a stakeholder-corporate-governance approach, by increasing the costs of offshoring through strict dismissal protection and other legal obstacles. Foreign companies taking over offshoring functions must respect decent working conditions and internationally recognized ecological standards.

Outsourcing within a country can be beneficial when economies of scale and scope can be exploited. What has to be prevented is outsourcing based on regulation arbitrage. Outsourcing inside countries can best be fought against by having as many employees as possible covered by collective bargaining and a horizontally coordinated wage bargaining process which allows a relatively equal wage level in all industries. In addition, in the case of domestic outsourcing of key activities of a company, the companies which take over outsourced tasks should have to pay the same wages as in the company outsourcing. Such rules can become part of wage negotiations or even law.

Stakeholder-value corporate governance system

The abolishment of the shareholder-value corporate governance system is needed for a multitude of reasons – to avoid a one-sided focus on the interest of owners, to limit short-sightedness and overly risky management behavior which reduces long-term growth and productivity, and to reign in the tendency to distribute too much profit to shareholders or weaken equity by buying back own shares, etc. One important reason to abolish the shareholder value system is also to reduce wage dispersion (and at the same time increase the quality of corporate governance). Firstly, in a stakeholder system, management's strategy to push for a low wage segment in the company with precarious jobs is most likely limited, as soon as strong unions have influence on management decisions. Secondly, in a stakeholder system, unions also control management, and the obscenely high salaries and bonus payments for management will not be able to prevail. One has to learn from the management systems which dominated after World War II – the so-called miracle years of the Golden Age – when, even in liberal market countries like the USA, management had to search for a compromise between the different stakeholders and was not able to remunerate itself in the way it does under the finance dominated version of capitalism which developed after the 1970s.

Reducing macroeconomic shocks

A coordinated wage bargaining system with low wage dispersion comes under pressure as soon as single companies or whole economic sectors suffer by economic shocks caused by either deep economic crises or quick and substantial exchange rate movements. For a working income policy with low wage dispersion, stable economic development characterized by high employment is of key importance. To achieve this, a regulated type of capitalism and a comprehensive macroeconomic demand management is needed (see Dullien et al. 2011). The exchange rate has to be relatively stable; also "exogenous" prices such as oil and food prices should develop steadily – even if they increase in the long-run – and should not show the volatility of last years, which is at least partly caused by speculation in future markets. To avoid mega exchange rate movements, a mechanism has to be created which keeps current account imbalances stable and leads to early adjustments of exchange rates in case current imbalances become too high (Herr 2011). Speculation in food and natural resources also has to be reduced to achieve the aim of more smooth food prices and natural resource price developments. Controls of international capital flows are needed to reach these aims. However, a lot can be done to reduce wage dispersion even in economies affected by world market shocks; for example, many jobs in the low-wage sector produce non-tradables (security services, services in restaurants, services domestic workers deliver, etc.). For these jobs low wages cannot be caused by world market shocks.

Additional remarks on tax policy

While this paper has focused mainly on market-given wage dispersion and the necessary institutions to prevent its growth, it should be mentioned that tax policy can also be a very effective and comprehensive way alter market-given income distribution. A truly progressive tax system can reduce the burden on low-wage earners while increasing the amount paid by those with the means of doing so. In such a system all kinds of bonus payments, share options etc. have to be taxed as income. Bonus payments for management, share options and the like, should no longer be allowed to be itemized as costs in tax accounting books, but as profits, which, in substance, they are.

6. Conclusion

The aim of this paper was to explain market given wage dispersion and the effects of changing wage dispersion on employment. During the last decades, market given wage dispersion substantially increased in most OECD countries and was one of the main reasons for a more unequal personal income distribution. However, there are also countries showing a reduction in wage dispersion. This strongly suggests that there are no objective factors responsible for increasing wage dispersion, like marginal productivities, but institutional, social and political factors.

High wage dispersion is not only a problem of justice and fair participation of all in society; it is a central economic problem because wage dispersion that is too high leads to a lack of consumption demand, which is financed out of income. We conclude that in most OECD countries (and even more in countries beyond the OECD) wage dispersion has to be reduced. It is not possible to scientifically define which level of wage dispersion is optimal or welfare maximizing. There are no macroeconomic utility functions. Distribution questions are normative in nature and depend on consideration of fairness and power relationships in societies. They have to be decided politically.

Labor market institutions, and rules and regulations in general, play a role in explaining wage dispersion. This implies that many different policies have to be used to bring wage dispersion back to an acceptable level. A summary of the main problem areas and policies to reduce wage dispersion is given in Table 3.

Table 3. Problem areas and recommendations to reduce wage dispersion

Problem area	Recommendation
Increase union density	
Union density decreased in many countries.	Policies to increase union membership (strategies of mobilization, also the Ghent system in Scandinavian countries, under which employees need to be union members in order to receive unemployment benefits, for example).
Strengthen wage bargaining In many countries there are tendencies towards decentralized wage bargaining systems and a lack of coordination.	Sectoral wage negotiation (not firm level negotiation) respectively vertical coordination in an industry.
	Horizontal coordination (e.g. central wage bargaining, informal or formal coordination of sectoral unions, pattern bargaining).
	Medium-term macroeconomic productivity development plus target inflation rate as guideline for wage development in all economic sectors.
Extension mechanisms In many countries unions are too weak to guarantee sufficient wage bargaining coverage and extension mechanisms eroded.	Wage bargaining outcomes have to be followed by all firms in a sector (all firms have to join employers' organization, extension of wage bargaining outcomes by law, etc.). Negotiation fee paid by non-unionized workers.
Sufficiently high statutory minimum wages	
Increases of statutory minimum wages were not sufficient in many countries.	Statutory minimum wages of at least 40 per cent (higher would be better) of the median (or average) wage annually negotiated in tripartite commission on a national level.
	One centrally fixed minimum wage or a small number of minimum wages. No link to pensions and social transfers.
	Minimum wages should increase at least according the wage norm (trend productivity plus target inflation rate) to prevent deflationary development.
Offshoring and outsourcing	
In many countries offshoring and outsourcing weakens unions and is used as a threat factor against unions.	Trade union involvement in management decisions including investment (stakeholder corporate governance). Socially managed outsourcing (e.g. increase costs of outsourcing by strict dismissal protection, control of decent working conditions and ecological standards in case of outsourcing to other countries). No regulation arbitrage within a country (i.e. no sector without wage bargaining, horizontal

	wage coordination to reduce wage differentials between sectors, wages in firms taking over outsourcing functions within the country should be same as in the outsourcing company).
Stakeholder corporate governance The existing shareholder value governance system is harmful for sustainable economic development and weakens unions.	Establish a stakeholder model of corporate governance with important role of unions to influence investment decisions and outsourcing, to develop a new wage code with lower wage dispersion and lower income for top management and management in general, reduce the importance of bonus systems, etc.
Tax policy Marginal income tax became substantially lower, tax havens became more important.	Progressive income tax system for higher income, stock options as part of income, etc., fight tax havens and strategies of tax evasion.
Reduce macroeconomic shocks Exchange rate shocks and economic crises burden wage coordination	Relatively stable exchange rates and the absence of deep economic crises support vertical and horizontal wage coordination.
	To stabilize exchange rates, capital controls and a new international governance system is needed. Stable developments of exogenous prices (oil and food prices) can be supported by reducing speculation in these markets.
	Macroeconomic management, institutions and regulation can avoids deep crises.
Prevention and reduction of informal sector	
There are tendencies also in developed countries for an increasing informal sector with unacceptable working conditions and high uncertainty for employees.	Give small enterprises incentives to formalize (e.g. tax exemptions, subsidies and access to formal credit).
	Provide access to formal social security system as soon as workers are integrated in formal sector.
	Increasing government enforcement of the rule of law.

The list of measures in Table 3 may look like a shopping list full of unrealistic demands. The purpose of summing all the desired reforms is to make clear that a package of measures is needed to reduce wage dispersion. Significant improvements can be achieved through unions. However, government policies are also needed. There is a lot of room to change wage dispersion on a national level, even in an environment of radical market globalization. Some recommended policies, however, imply a different type of economic development model which requires a much more regulated type of capitalism.

Changing wage dispersion is not a technical problem. It depends on the value system of a society and on the notion and definition of fairness. Wage dispersion also depends on the solidarity and power relations within the working class. Not all fractions of the working class are automatically in favor of a compression of the wage structure. A higher increase of wages in the low-wage sector than in the remaining wage sectors reduces the real income of workers with higher wages or, more realistically, slows down the increase of real wages of these groups. It would be an illusion to increase low wages faster than higher wages and finance such wage increases by biting into profits. Employees in the high wage segment like top managers, sports and movie stars may show limited willingness for wage compression from above. Existing power imbalances will not change without a hard-fought political battle. Voter and worker mobilization is needed to reduce wage dispersion and achieve a much fairer society that benefits the majority over a select few (Gallas et al. 2014).

ACKNOWLEDGEMENTS
We are grateful to Alexander Gallas, Petra Dünhaupt, and Thomas Obst for very helpful comments. The usual disclaimer applies.

NOTES

1. OECD (2011: 240) includes in its analysis Australia, Canada, Finland, Germany, Israel, the Netherlands, Norway, Sweden, Switzerland, Great Britain, and the USA.

2. According to the OECD, 88 per cent of changes of disposable income distribution between the mid-1980s and mid-2000s is caused by changes in wages and changes in self-employment income. The remaining part is explained by changes in capital income (OECD 2011: 238).

3. In addition capital on a macroeconomic level cannot be measured in a satisfying way. Changes in market income distribution change the structure of relative prices and value of the capital stock. The latter has to be known to define the marginal productivity of labor (see Sraffa 1960; Samuelson 1966; Heine and Herr 2013).

4. Arguments easily can be transferred to developing countries.

5. The calculations are based on full-time earnings.

6. For the year 2010 Rhein (2013) investigated that low wage earners in Germany particularly were part-time working women. Only Lithuania had a higher level of low wage workers than Germany with a low wage sector in 2010 of 27.1 per cent of total employment (low wages measured as wages below 2/3 of median wages). Denmark, Finland, Belgium, and Italy show the smallest sizes of around 10 per cent.

7. D9, for example, shows that at a certain income level 90 per cent of employees earn less than the income level at D9. It does not show how much income goes to the top 10 per cent.

8. In the USA for example, the top 1 per cent income share (including capital gains) more than doubled since the 1970s and reached 24 per cent of total income in 2007. In 2008 and 2009 the top 1 per cent income share declined to about 19 per

cent but began to rise again to more than 20 per cent in 2010. “Over the period 1980 to 2007, when the top 1 percent share rose by some 135 percent in the United States and the United Kingdom, it rose by some 105 percent in Australia and 76 percent in Canada” (Alvaredo et al. 2013: 5). In France, Germany, Japan, and Sweden the estimated top 1 per cent income share (including capital gains) has been ranging between the highest share of about 15 per cent in Germany in the 1960s and mid-2000s, and the lowest share of around 5 per cent in Sweden in the 1980s (Alvaredo et al. 2013).

9. When we speak about Keynesian thinking it should be clear that different Keynesian schools exist. Our argument is based on Keynes original work, especially Keynes (1930) and (1936) and the Post-Keynesian model which developed in this tradition. Fundamentally different is the Neoclassical Synthesis (the Keynesian model dominating economic thinking after World War II) and New-Keynesianism (which now is the dominant Keynesian school in mainstream thinking) (see Heine and Herr 2013 for an overview).

10. For example the price of a car in relation to services like care for elderly.

11. This is the essence of Say’s law.

12. An increase of real GDP in a country by five per cent and an increase of productivity by three per cent increase employment by two per cent.

13. “If the Treasury were to fill old bottles with banknotes, bury them at suitable depths in disused coalmines which are then filled up to the surface with town rubbish, and leave it to private enterprise on well-tried principles of laissez-faire to dig the notes up again (the right to do so being obtained, of course, by tendering for leases of the note-bearing territory), there need be no more unemployment and, with the help of the repercussions, the real income of the community, and its capital wealth also, would probably become a good deal greater than it actually is. It would, indeed, be more sensible to build houses and the like; but if there are political and practical difficulties in the way of this, the above would be better than nothing.” (Keynes 1936: 129)

14. A passion in economic policy to concentrate on optimal allocation leads a government in the wrong direction. Schumpeter and Marx both argued that the process of capitalist development is a process of permanent creative destruction disturbing optimal allocation. Economic dynamic is created by sufficient aggregate demand and entrepreneurship whereas entrepreneurship must be understood in a very broad sense including policy makers, managers in state institutions and union leaders (Schumpeter 1942).

15. See the case study in Herr and Kazandziska (2011a).

16. Brazil under the Lula government is a good example for this (Baltar et al. 2010). Higher minimum wages burdened middle classes in Brazil, which could not afford as many domestic workers as before.

17. For such an argument see also Levy and Temin (2010).

18. Taxes, government expenditure and transfers also influence relative prices and the structure and volume of demand. However, this lies, as mentioned, beyond the scope of this paper.

19. For an overall reform option, see Dullien et al. (2011).

20. However, trade shares in some countries did not increase significantly (USA, Germany, Italy, France, Sweden) or even has not reached the level before World War I (United Kingdom, Japan, Australia, Denmark) (Feenstra 1998).

21. The neoclassical model argues in this way, however, sees technological changes as a more important factor to explain changing wage dispersion (see Kierzenkowski and Koske 2012; Schettkat 2006).

22. See for example Feenstra and Hanson (2001), Slaughter (2000) and Krugman (1994a).

23. The theoretical argument is that for certain investments social return is much higher than private return. Investment in a new industry, for example, is too risky and too big and too long-term oriented for private capital. For a debate about selective protection and economic development, see Chang (2003), Stiglitz (2006) and Herr and Priewe (2006).

24. Countries with an own exchange rate are assumed. For regions in a currency union different economic processes apply. Thus, for example, the following analysis cannot be applied for the European Monetary Union.

25. Let us illustrate the argument assuming no international capital flows and flexible exchange rates. We also assume that the USA produces shoes for the home market, but China now enters the market and offers much cheaper shoes (measured in US Dollar). The US American shoe market loses competitiveness and Americans will buy shoes in China. Assuming no capital flows, the only way for Americans can get Renminbi to buy the Chinese shoes is either by Chinese buying more products from the US or the US buying less of other goods from China. Indeed, higher demand for the Renminbi because of cheaper Chinese shoes leads to depreciation of the US dollar respectively an appreciation of the Renminbi. Chinese now start to buy more US goods, let us say clothes, or the US buys less Chinese goods, let us say cameras. Now more clothes from the US are exchanged for shoes from China and/or Americans buy less Chinese cameras. What if the USA now increases minimum wages in such a radical way that the low-wage sector disappears? Certain American goods would become more expensive due to the wage increases, US exports would decrease and US imports increase. Demand for US dollars decreases and supply increases. The dollar then depreciates and, as a result, demands for certain US goods will rise and America will import less. The US current account will still be balanced. The same would happen if a luxurious welfare state would be introduced.

26. Econometric analyses show that globalization has small effects on wage dispersion (see Kierzenkowski and Koske 2012). However, such investigations do not capture “threat” effects.

27. Financialization began in the USA, other countries followed. Germany as a latecomer, for example, introduced deregulatory policies like tax reliefs for wealthy and private equity funds, subsidies for private old age pension schemes, allowing hedge funds, etc. since the early 1990s (Detzer et al. 2013; Dünhaupt 2011b).

28. Paul Krugman (2002) quotes John K. Galbraith who exactly stresses this argument: “Consider the description of executive behavior offered by John K. Galbraith in his 1967 book, *The New Industrial State*: ‘Management does not go out ruthlessly to reward itself – a sound management is expected to exercise restraint.’ Managerial self-dealing was a thing of the past: ‘With the power of decision goes opportunity for making money. […] Were everyone to seek to do so […] the cor-

poration would be a chaos of competitive avarice. But these are not the sort of thing that a good company man does; a remarkably effective code bans such behavior. Group decision-making insures, moreover, that almost everyone's actions and even thoughts are known to others. This acts to enforce the code and, more than incidentally, a high standard of personal honesty as well."

29. Even Rappaport (2005) criticized the short-sightedness of management strategy and pointed out that he did not recommend to link bonus payments to the general share price development but only to a more than average increase of share prices.

30. See from the many studies the seminal work by Freeman (1980); Bound and Johnson 1992; DiNardo et al. 1996; Gordon and Slemrod 1998; Lee 1999; Card et al. 2003; Saez 2004; Autor et al. 2005; Burniaux et al. (2006) and Koeniger et al. (2007). For an overview see Kierzenkowski and Koske (2012).

31. Rhein (2013), for example, finds, based on EU-SILC data, precarious jobs especially increased in retail trade, hotel and catering industry, and personal services. Eichengreen and Gupta (2009) e.g. find two waves of increasing service sectors. The first starting in the 1950s with traditional services such as housecleaning or lodging, the second increasing sharply in the 1990s with financial services (banking, insurance etc.) and technical services, such as communication and computing.

32. If productivity increases are difficult to measure real GDP growth can be taken as indicator for productivity development.

33. If the nominal wage level follows this norm nominal unit-labor costs increase according to the desired inflation rate. Then nominal wages become a nominal anchor for the desired (low) inflation rate and deflationary and inflationary processes are prevented – at least the ones which are based on nominal wage development. For a debate of this point, see Keynes (1930), Herr (2009), Herr and Kazandziska (2011a), Herr and Horn (2012).

34. Blau and Kahn (1996) found out that a higher degree of centralization of the wage bargaining system has a positive effect on equality. In their study more centralized wage setting arrangements have Norway, Sweden, Italy, Austria, Australia and Germany, less centralized are the United States, United Kingdom and Switzerland.

35. Checchi and García-Peñalosa (2008, 2010); Pontusson et al. (2002) and Koeniger et al. (2007) found that wage coordination reduces the 90/50 percentile ratio but not the 50/10 percentile ratio.

36. Freeman (1980) and Katz and Murphy (1992) for the United States or Card, Lemieux and Riddell (2003) for the USA, Canada and the United Kingdom or the OECD Employment Outlook (2004: Chapter 3) find positive effects on equality within the organized industries but rising inequality between organized and the non-organized industries. In a cross-country study based on household data of 32 countries, Fournier and Koske (2012) find increasing wage dispersion within sectors with typically low union density and wage coordination. In "agriculture/hunting/forestry/fishing," "hotel/restaurants," "other community, social and personal service activities/others" earnings at the lower end of the earnings distribution decreased. In "financial intermediation" earnings gain are concentrated at the higher end of the earnings distribution.

37. In 2008 statutory minimum wages in OECD countries do have the United States of America, Great Britain, Spain, Poland, New Zealand, the Netherlands, Japan, Ireland, Hungary, France, Canada, Belgium, Czech Republic, and Australia.

Austria, Denmark, Finland, Germany, Italy, Korea, Norway, Sweden, and Switzerland do not have statutory minimum wages. Germany joins in 2015.

38. In several African countries (for example Ghana or Tanzania) but also in some of the Central and Eastern European countries statutory minimum wages play an important role in wage coordination. In India, thousands of statutory minimum wages exist differentiated according to professions and regions.

39. In the last years Brazil had some success to reduce the informal sector by giving small enterprises incentives to formalize via tax exemptions, subsidies and access to formal credit, which is cheaper than credits from moneylenders. An important incentive to reduce the informal sector is to allow workers and small entrepreneurs access to the formal social security system as soon as they become part of the formal sector. Last but not least increasing government enforcement of the rule of law reduced the informal sector (Baltar et al. 2010). Of course, reducing the informal sector and creating a formal precarious sector is not sufficient to reduce wage dispersion. The formal sector must be regulated in a way, which improves the living conditions of persons switching from the informal to the formal sector.

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