

conomic significance, the decline in the wage share in Austria is most strongly driven by a deterioration of bargaining power as captured by union density and different measures of financialisation. However, the most relevant institutional variables differ considerably across countries, lending support to our approach of country specific estimations.

Our findings have important policy implications. Rising inequality is not an inevitable outcome of technological change. Tackling income inequality requires a restructuring of the institutional framework in which bargaining takes place and a levelled play-ground where the bargaining power of labour is more in balance with that of capital. The impact of globalisation is likely to be significantly moderated or offset by stronger bargaining power of labour via an improvement in union legislation, increasing the coverage of collective bargaining, increasing the social wage via public goods and social security and international labour standards embedded in a broader strategy of global cooperation for high road labour market policies and macroeconomic policy coordination. Each country would have to address specific issues supporting the strongest positive drivers of the wage share while mitigating factors that reduce workers' bargaining power. Furthermore, our results suggest that a simple attempt to reduce income inequality through skill-upgrading will not work as skill-biased technological change does not seem to be the most relevant factor determining the distribution between labour and capital.

Endnotes

- 1 Atkinson, Piketty and Saez (2011).
- 2 The time period is determined by data availability at a detailed sectoral level.
- 3 More detailed results and discussion on countries other than Austria can be found in Guschanski and Onaran (2016a).
- 4 Stockhammer (2009).
- 5 EC (2009).
- 6 Kaldor (1955).
- 7 Kalecki (1954); Hein (2015).
- 8 Country-level analysis always faces the question as to whether the decline in the wage share captures changes in sectoral composition rather than a simultaneous decline of the wage share in all sectors; therefore, in order to abstract from mere reallocation effect and focus on a distributional analysis it is crucial to isolate the within sector development of the wage share. This can be illustrated simply by writing the aggregate wage share as a function of weighted sectoral wage shares (EC [2009]):

$$WS_t^C = \frac{LC_t^C}{VA_t^C} = \sum_{i=1}^n \frac{VA_{i,t}}{VA_t^C} * \frac{LC_{i,t}}{VA_{i,t}} \quad Eq. (1)$$

where i stands for the sector and t for the year. WS_t^C stands for the aggregate wage share of country C , which is defined by labour compensation LC_t^C as a ratio to total domestic value added (VA_t^C) or GDP, and can be expressed as the sum of within sector wage shares $\frac{LC_{i,t}}{VA_{i,t}}$ weighted by the sectors' contribution to total value added $\frac{VA_{i,t}}{VA_t^C}$. Conse-

quently a change in the aggregate wage share can result from changes in the sectoral composition, referred to as the between component, or changes in the sectoral wage shares, referred to as the within component as distinguished by the first and second product in equation (2):

$$WS_t^C = \sum_{i=1}^n \Delta \left(\frac{VA_{i,t}}{VA_t^C} \right) * \frac{LC_{i,t}}{VA_{i,t}} + \Delta \left(\frac{LC_{i,t}}{VA_{i,t}} \right) * \frac{VA_{i,t}}{VA_t^C} \quad \text{Eq. (2)}$$

- ⁹ Jayadev (2007); Stockhammer (2015).
¹⁰ Onaran (2011, 2012).
¹¹ Stockhammer (2015).
¹² Kristal (2012); Argitis and Pitelis (2001).
¹³ Choi (2001).
¹⁴ Nunziata (2005).
¹⁵ Although some economists argued that stronger unions can lead to higher unemployment there is very little econometric evidence for this hypothesis (OECD [2006]; Jaumotte and Buitron [2015]).
¹⁶ OECD (2006).
¹⁷ E.g. Harrison (2002); Jayadev (2007); Onaran (2009); Stockhammer (2015).
¹⁸ Stockhammer (2015).
¹⁹ Jayadev (2007).
²⁰ Lazonick and O'Sullivan (2000).
²¹ Langley (2007).
²² Stockhammer (2009, 2015).
²³ Jayadev (2007).
²⁴ Hein and Schoder (2011); Dühaupt (2013).
²⁵ The use of an international database is instructional for making the variables and estimations comparable between countries. See Guschanski and Onaran (2016a, 2016b) for further information on sector definitions and the skill taxonomy.
²⁶ It would be preferable to use value added at factor cost for the calculation of the wage share. Unfortunately, there are no long series on taxes minus subsidies on production in EU KLEMS.
²⁷ Since self-employed are not included in the measure of labour compensation in OECD STAN we impute their wages by applying the same technique as in EU KLEMS. We exclude observations where the number of self-employed suddenly falls to zero, assuming that it must be related to a measurement error.
²⁸ We refer to our data as "at the 2-digit level" if we use manufacturing sectors at 2-digits. Most service sectors are always used at the 1-digit level.
²⁹ Unfortunately, data for most countries includes re-export and re-imports as most countries do not report these series separately.
³⁰ Given the asset/liability principle of the measure negative FDI positions can result "when the loans from the affiliate to its parent exceed the loans and equity capital given by the parent to the affiliate" (OECD, 2016).
³¹ Since data for foreign labour and population by nationality is not available for the US we use foreign labour and population differentiated by country of birth for the US only.
³² The variable is adjusted for the possibility that some sectors or occupations are excluded from the right to bargain (removing such groups from the employment count before dividing the number of covered employees by the total number of dependent workers in employment).
³³ Visser (2015).
³⁴ Solt (2014).
³⁵ Alvaredo et al. (2015).

- ³⁶ This is not a true isolation of the employment effect since the level of employment has an impact on the bargaining power of worker and is itself a function of economic activity measure by value added. However, this calculation allows us to see how much of the decline in the wage share is a mere effect of a change in the number of people employed and how much of it is due to changes in bargaining power between employers and workers, which is, among other factors, determined by the level of (un)employment.
- ³⁷ See Guschanski and Onaran (2016b) for a more detailed discussion.
- ³⁸ EC (2009).
- ³⁹ We focus on the analysis of manufacturing sectors for intermediate imports because the only service sector for which we have data is Recycling.
- ⁴⁰ Since this can be attributed to a period of recovery after oppressed labour unions after Franco, we regard it as a special case.
- ⁴¹ Onaran and Bösch (2014).
- ⁴² Onaran (2011).
- ⁴³ Grossman and Rossi-Hansberg (2006); Onaran (2011).
- ⁴⁴ Onaran (2012).
- ⁴⁵ Results available upon request.
- ⁴⁶ IMF (2007).
- ⁴⁷ Visser (2006: 39).
- ⁴⁸ Hein (2015).
- ⁴⁹ Lazonick and O'Sullivan (2000); Stockhammer (2004); Dallery (2009).
- ⁵⁰ Anderloni, Bacchiocchi and Vadone (2012); Barba and Pivetti (2009); Kohler, Guschanski and Stockhammer (2016).
- ⁵¹ FDI is the only variable for which we found ambiguous results with regard to its stationarity in levels. Furthermore, we conducted robustness tests where we include a constant for the first difference estimations, which is equivalent to including a trend in our level estimations. Our results are robust to the inclusion of a constant and the constant appears to be insignificant in most specifications.
- ⁵² Wooldridge (2002).
- ⁵³ We do not report a version of specifications (7) and (8) including intermediate imports, given that it would limit our sample size from 20 to 11 cross sections and effectively eliminate all service sectors. However, our results are largely robust to the inclusion of import penetration in specifications (7) and (8).
- ⁵⁴ Onaran (2012).
- ⁵⁵ EC (2009); Bassanini and Manfredi (2012).
- ⁵⁶ See Guschanski and Onaran (2016a) for more detailed results.
- ⁵⁷ We experimented with specifications (7) and (8) including union density, which mostly rendered an insignificant or negative coefficient. However, the result was very sensitive to robustness checks so that we concluded that the insignificant or negative sign was mainly driven by multicollinearity between our explanatory variables. For this reason we exclude union density from specifications (7) and (8).
- ⁵⁸ The estimation results are available upon request.
- ⁵⁹ We limit the analysis to the pool including manufacturing and service sectors (Table 1), but calculations for sub-pools are available upon request. Furthermore, we exclude the crisis years from the calculations by using the absolute change and standard deviation of our variables from the beginning of the sample (1996) until 2007. The reason for this adjustment is the atypical behaviour of most of our variable during the Great Recession which strongly alter their pre-crisis trend. However, the relative size of the economic significance is not altered if we use the full sample.
- ⁶⁰ We also apply an alternative method to calculate economic significance by standardising the estimation coefficients, which is equivalent to performing estimations with vari-

ables transformed to a mean of zero and a standard deviation of one. While the previous method is intuitively straight forward, it can be misleading if variables do not exhibit a trend (e.g. growth). In this case calculating standardised coefficients is more reliable. The results confirm our findings for the first method.

⁶¹ See Guschanski and Onaran (2016b) for detailed results on a selected group of OECD countries.

References

- Alvaredo, F.; Atkinson, A. B.; Piketty, T.; Saez, E.; Zucman, G., *The World Wealth and Income Database* (2015); online: <http://www.wid.world>.
- Alvarez, I., Financialization, non-financial corporations and income inequality: the case of France, in: *Socio-Economic Review* 13 (2015) 449-475.
- Anderloni, L.; Bacchiocchi, E.; Vadone, D., Household financial vulnerability: an empirical assessment, in: *Research in Economics* 66 (2012) 284-296.
- Argitis, G.; Pitelis, C., Monetary Policy and the Distribution of Income: Evidence for the United States and the United Kingdom, in: *Journal of Post Keynesian Economics* 23 (2001) 617-638.
- Atkinson, A.; Piketty, T.; Saez, E.; Top incomes in the long run of history, in: *Journal of Economic Literature* 49/1 (2011) 3-71.
- Barba, A.; Pivetti, M.; Rising household debt: Its causes and macroeconomic implications – a long-period analysis, in: *Cambridge Journal of Economics* 33 (2009) 113-137.
- Bassanini, A.; Manfredi, T., Capital's Grabbing Hand? A Cross-country/Cross-industry Analysis of the Decline of the Labour Share, in: *OECD Social, Employment and Migration Working Papers* 133 (2012).
- Carey, D.; Tchilinguirian, H., Average Effective Tax Rates on Capital, Labour and Consumption (= OECD Economics Department Working Paper 258, Paris 2000).
- Choi, M., Threat Effect of Foreign Direct Investment on Labour Union Wage Premium (= PERI Working Paper Series 27, Amherst, MA, 2001).
- Dallery, T., Post-Keynesian theories of the firm under financialization, in: *Review of Radical Political Economics* 41 (2009) 492-515.
- Dreher, A., Does Globalization Affect Growth? Empirical Evidence from a New Index, in: *Applied Economics* 38/10 (2006) 1091-1110.
- Dreher, A.; Gaston, N.; Martens, P., *Measuring Globalization – Gauging its Consequence* (New York 2008).
- Driscoll, J.; Kraay, A., Consistent covariance matrix estimation with spatially dependent data, in: *The Review of Economics and Statistics* 80/4 (1998) 549-560.
- Dühaupt, P., The effect of financialization on labor's share of income (= Berlin School of Economics and Law Working Paper Series, Berlin 2013).
- Ebbinghaus, B.; Visser, J., *The Societies of Europe – Trade Unions in Western Europe since 1945* (London 2000).
- European Commission, *The labour income share in the European Union*, in: *European Commission, Employment in Europe* (Brüssel 2007) 237-272.
- EU KLEMS, *EU KLEMS Methodology* (2007); online: http://www.euklems.net/data/EUKLEMS_Growth_and_Productivity_Accounts_Part_I_Methodology.pdf.
- European Commission, *Understanding Labour Income Share Dynamics in Europe*, in: *Economic Papers* 379 (2009).
- Grossman, G. M.; Rossi-Hansberg, E., Trading tasks: a simple theory of offshoring (= NBER Working Paper, Washington, D. C., 2006).
- Guschanski, A.; Onaran, Ö., *The Political Economy of Income Distribution: Industry Level*