3. Data and stylised facts

3.1 Data

We have compiled a comprehensive database for nine OECD economies drawing on six publicly available international databases for sectoral data which we augmented by country level data.[3]

We measure the wage share as labour compensation over value added with data obtained from the EU KLEMS database. Labour compensation includes the wage of self-employed workers, imputed based on the assumption that their wage is equal to the average hourly wage of the sector. Different concerns have been raised with regard to this imputation, as it is generally said to overestimate the wage share for sectors of predominantly low skilled workers while it underestimates high skilled sectors' wage shares. Indeed we find the wage share to exceed 1 in a total of 588 out of 13796 cases (4.26%) for data at 2 digits and 324 out of 10245 observation (3.16%) for the 1-digit level.[4] However, wage shares exceeding one are not generally a problem and can naturally arise for mainly two reasons which have nothing to do with overestimations of the imputed wages for self-employed workers: First, if a sector incurs heavy losses and second, if a sector receives significant subsidies (EU KLEMS, 2007). The second case arises because value added in KLEMS is calculated as compensation of employees plus operating surplus plus taxes minus subsidies (on labour and capital), i.e. at basic prices, and therefore can fall short of labour compensation if the subsidies exceed operating surplus and taxes in a particular period.[5] Since data from EU KLEMS is only available until 2009 we extrapolate through splicing. More specifically, we link the wage share from KLEMS with the growth rate of the wage share obtained from the OECD Structural Analysis database (OECD STAN).[6] Both series have a correlation of 0.91. We control for violent swings in the wage share by excluding years where the percentage change

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[3] The use of an international database is instructional for making the variables and estimations comparable between countries. See table A3 in the appendix for further information on sector definitions and the skill taxonomy.

[4] This number excludes Agriculture, Fishing and Foresting. These sectors are repeatedly reported to have wage shares bigger than one because of poor data quality and because the imputation for self-employed workers largely overestimates the labour compensation for this low skilled sectors (EU Klems growth and productivity, p. 37).

[5] 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.

[6] 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.

in the wage share exceeds 30% in absolute values, which mostly appear in Denmark, Korea, Mexico, the UK and Sweden, but our results are robust to all these cleaning procedures.

In order to see how our results differ if we use the after-tax wage share we had to obtain measures for implicit tax rates on labour income, indicating the share of taxes paid out of wage income. The series are not readily available for many countries and for long periods; therefore we reconstructed the series using the technique proposed by Carey and Tchilinguirian (2000) with data from several sources of the OECD database.

We obtain measures of capital stock from the KLEMS database. Unfortunately only aggregated capital stock data is available at the 2-digit level.[7] We extrapolate capital stock from KLEMS using the growth rate of the same measure from STAN. At the 1-digit level we are able to disaggregate ICT and non-ICT capital. ICT and non-ICT capital is reported as services (measured as an index) rather than stock in the newer versions of KLEMS. We prefer this measure over capital measured as stock because it is available for a more detailed sectoral disaggregation and more recent years in the newer versions of KLEMS. We do, however, use the stock measure for our descriptive statistics because it is impossible to aggregate indices by skill-groups. All measures enter our analysis as a ratio to GDP.

Our globalisation variables are obtained from the OECD. Import data disaggregated for intermediate import and other imports is from OECD STAN Bilateral Trade Database by Industry and End-Use Category. We calculate the ratio of intermediate and other imports to domestic absorption, i.e. value added plus total exports minus total imports.[8]

FDI is taken from the OECD FDI statistics database and measures FDI positions (stocks) as assets minus liabilities of all parent companies to their affiliates. The measure is organised according to the direction of investment of the reporting country and all "positions of direct investors resident [in the reporting country] are shown under outward investment and all […] positions for direct investment enterprises resident in that economy are shown

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[7] 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.
[8] It would be preferable to differentiate intermediate imports by origin. However, given that a significant part of information on bilateral trade data is withheld for data protection reasons we were not able to meaningfully aggregate this measure by groups of countries. Unfortunately, data for most countries includes re-export and re-imports as most countries do not report these series separately.

under inward investment" (OECD, 2016).[9] We normalise the measure by the numbers of people engaged in the sector, which we consider to have advantage over other forms of normalization for two reasons: First, since we are interested in the effect of FDI on industrial relations, a normalisation by people engaged in the production process seems reasonable. Second, since FDI is measured as a stock it is preferable to normalise it by another stock variable and not a flow variable like value added or output.

Our measure of migration is the stock of foreign labour by nationality taken from the OECD and we splice it with the growth rate of foreign population for the years for which data is not available (in line with IMF, 2007).[10] We include it in our estimations as a ratio to total employment of the country.

Finally, for robustness tests we use an aggregate index of economic globalisation supplied by Dreher (2006) and updated in Dreher, et al. (2008) which combines *de facto* data from trade flows, FDI stocks, Portfolio investment, income payments to foreign nationals with *de jure* measure of hidden import barriers, tariff rates, taxes on international trade and capital account restrictions.

Our only measures for labour market institutions available at the sectoral level is union density supplied by Ebbinghaus and Visser (2000) and Visser (2015). Data is only available on a very aggregated level of sectoral classification and not available for each year. Therefore, we interpolated the series between available years and extrapolated data for service sectors using the growth rate of country-level union density. Similarly, we extrapolated manufacturing sectors using the growth rate of the total manufacturing union density or country-level union density when the latter series was not available. Due to the large amount of data created by extra- or interpolation we have reasons to doubt the reliability of this variable, although this is more relevant for earlier years before 1995 which are included only in a limited number of our estimations. However, it is important to note that such interpolation smooths the data and thereby diminishes its ability to capture short-time adjustment in bargaining variables in reaction to certain political or economic events. Nevertheless, we think the results are indicative and important as this paper is the first

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[9] 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" (FDI Statistics explanatory paper, 2016).

[10] 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.

attempt to analyse the impact of union density on sectoral wage share for several countries. We also check for robustness by using the country level aggregate union density variable supplied by the OECD. Our second measure of bargaining power is adjusted bargaining coverage[11] measuring the number of employees covered by collective (wage) bargaining agreements as a proportion of all wage and salary earners in employment with the right to bargaining (Visser, 2015). This variable is only available at the country level.

Furthermore, we account for social government spending defined as social transfers in kind from government to households measuring expenditure by government on market goods and services provided to households such as health care, housing, recreational and cultural services, education and social protection. This measure excludes social transfers in cash (reflecting welfare benefits), which we add to the previous measure for robustness tests, but unfortunately the latter series is available from 1995 only for most countries. We extrapolate our measure using the growth rate of government consumption for early years. The variable is measured as percentage of GDP and obtained from the OECD National Accounts at a Glance database.

Furthermore we include the Gini-coefficient obtained from the "Standardized World Income Inequality Database" (Solt, 2014), and top 1 percent income shares from the "World Wealth and Income Database" Alvaredo, et al. (2015).

Our country-level financialisation variables include interest and dividend payments and income of nonfinancial corporations as a ratio to total resources of nonfinancial corporations obtained from the OECD Non-financial Accounts by Sectors Database which is part of the Annual Accounts statistics. Furthermore we augment our analysis by a variable measuring household debt as percentage of GDP from the Bank of International Settlements Total Credit Statistics.

3.2 Stylised Facts

While the observed decline in the aggregate country-level labour share is a well-documented fact, there is only limited analysis of dynamics in functional income distribution at the

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[11] 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).