Corporatism and the Labour Income Share

Econometric Investigation into the Impact of Institutions on the Wage Share of Industrialised Nations

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Abstract:

The aim of this paper is to evaluate the changing impact of corporatist arrangements over the period 1960-2010 and across 35 industrialised economies on the development of the labour income share. Also due to data issues this relationship was not extensively analysed in the literature so far. A new time-variant corporatism index developed by Jahn (2016) allows us to fill this gap. Using different panel data techniques, samples and control variables our main results suggest that there is a robust non-linear relationship at work. While the linear effects of both corporatism and the public sector share are positive, the coefficient of the interaction term of these two institutional indicators is negative and hence indicates a negative slope for countries with both a high level of corporatism and a large government share in GDP in explaining the change as well as the level of the adjusted wage share in the long run. To a certain extent the two institutions can be seen as substitutes.

Keywords: Labour income share, corporatism, public sector share

JEL-Classification: D33, E25, E64, H11

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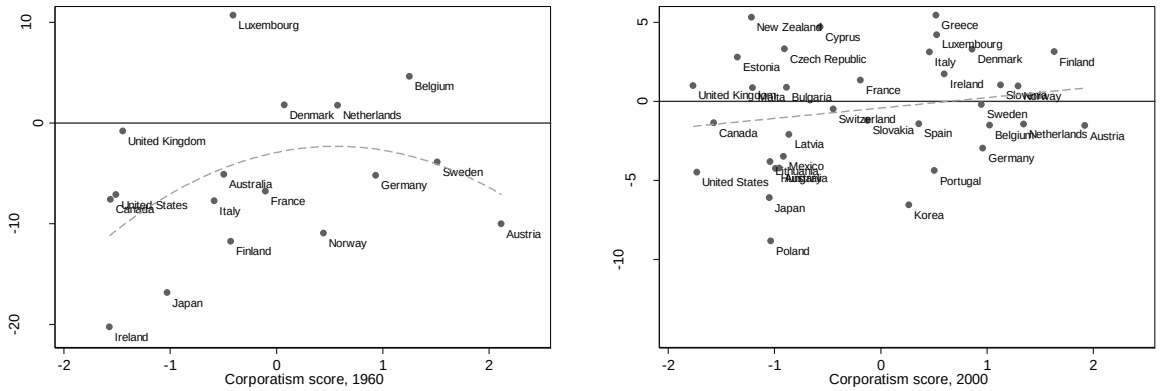
1. Introduction

Over the long run the labour share in aggregate income in developed economies has been on a dramatic decline. The literature tries to explain this phenomenon inter alia with the dynamics in technological change, globalisation and various institutional developments. Though potentially of high importance in this respect, the impact of corporatist arrangements has not been analysed extensively so far. One reason might be that time-variant corporatism indexes are out of date and cover only a small sample of countries. However, most recently Jahn (2016) has developed a new corporatism index for 42 industrialised countries on an annual basis from 1960 to 2010. In his definition of corporatism the respective agreements in industrial relations and economic policy (especially wage bargaining) are classified by structure (degree of hierarchical centralisation), function (degree of concertation with the state) and scope (degree to which agreements encompass broader segments of society).

Figure 1: Corporatism and the labour share in the long run



Source: AMECO, Jahn (2016), own calculations.

The left panel of Figure 1 shows the long run 1960-2010 relationship between the change in the adjusted wage share for a set of (mostly European) countries as provided by the AMECO database and the initial year's corporatism score. While countries lacking institutions of centralised wage bargaining have performed worst, also the traditional corporatist societies such as Austria and Sweden have lost substantial shares of labour income in total national income. Economies in the higher intermediate ranks, such as the Benelux countries, have performed best in stabilising or even expanding the labour share. Interestingly, this relationship flattens out when observing the latest period of the 2000s (Figure 1, right panel). The regression line is now linear and upward sloping. To evaluate the changing impact of the corporatist arrangement over time and across industrialised economies on the development of the labour share is hence the aim of this paper.

Thus, the general research question is the following: What is the long run impact of different degrees of economic corporatism on the share of labour in aggregate income of industrialised economies? In addition, and in order to better understand the underlying channels of influence we will also explore the long run impact on the growth of income and the change in employment. The testable hypotheses, following the implications from both panels of Figure 1, are the following: (i) In the post-WWII period, industrialised economies with a higher intermediate degree of corporatism and hence competing but still well organised stakeholders have managed to keep the labour income share fairly stable; (ii) In the most recent decade around the outbreak of the global financial crisis, countries with a higher degree of corporatism were more capable of stabilising the labour income share due to stronger macroeconomic responsibility of centralised stakeholders. In the paper we will apply a

series of robustness checks, including a number of additional institutional control variables as well as mainstream and synthetic specifications' control variables.

2. Literature review

Occasionally the development of the labour share is being analysed in flagship reports of international organisations, such as the International Monetary Fund (IMF, 2007), the Organisation for Economic Co-operation and Development (OECD, 2012) or the European Commission (EC, 2007). The observed secular decline of the labour share in aggregate income in advanced economies is being explained inter alia by rapid technological change and globalisation. Publications by the International Labour Organization (ILO), such as for instance Dünhaupt (2013a), have a stronger focus on alternative explanations including widespread liberalisation, financialisation and a reduction in workers' bargaining power. An extensive overview about theoretical issues, empirical studies and measurement of the labour share is provided in a series of papers by Giovannoni (2014 a, b, c). Another, briefer review of theory and evidence is given by Schneider (2011a). Seminal papers that have dealt with the proper measurement of the labour income share include Krueger (1999) and Gollin (2002).

The causes of the declining labour share have been analysed empirically at different levels of aggregation. Some authors have employed firm level data (see Hutchinson and Persyn, 2012 or Böckerman and Maliranta, 2012) and stress again mostly globalisation and technological change as prime causes. Another strand of literature uses industry level data (e.g. Bentolila and Saint-Paul, 2003; Karabarbounis and Neiman, 2014; Rodriguez and Jayadev, 2010) and confirms technological change as an important determinant of falling labour shares. In this group Bassanini and Manfredi (2012) and Azmat et al. (2012) as well as Maarek and Orgiazzi (2013) are exceptions as they stress additional factors such as privatisation in the first two cases and currency crises in the latter case.

Also the majority of the macro level studies identify technological change and globalisation as the main drivers of declining labour shares in national income (see Jaumotte and Tytell, 2007; Guscina, 2006; Estrada and Valdeolivas, 2012; Harrison, 2005; Hogrefe and Kappler, 2013). The study conducted by Guerriero and Sen (2012) makes a notable exception. They find that trade openness and technological innovation have a positive and significant effect on the labour share (however, Foreign Direct Investments and mechanisation appear as negative drivers). Only a few papers focus on other issues such as capital account openness (Jayadev, 2007) and financialisation (Dünhaupt, 2013b) and find that both have a negative effect on the labour share.

However, a number of studies focuses on the impact of labour market institutions on the labour income share. It is mostly the impact of the union density that is being analysed – in time series (Fichtenbaum, 2009; Judzik and Sala, 2013), in industry panels (Young and Zuleta, 2015), in country-industry panels (Schneider, 2011b) as well as in a macro level cross sectional/time series panel data setting (Bengtsson, 2014; Kristal, 2010). Generally there seems to be a positive relationship between bargaining power as proxied by the union density and the labour share. However, these results are not in all cases highly robust. A few studies in this strand of the literature have a slightly different emphasis. For instance Damiani et al. (2012) have analysed the impact of the changes in the employment protection legislation on the labour share. Apparently, extensive use of temporary contracts has led to a decrease of the overall labour share. Hancke (2013) has been employing information on the coordination and the coverage of the wage bargaining process and concludes that

the fall in the wage share in countries with strong trade unions is related to the interaction between conservative central banks and coordinated wage bargaining systems. And more recently, Stockhammer (2015) has found strong negative effects of welfare state retrenchment as proxied by the government consumption share in GDP (i.e. mostly public sector wages) on the private sector adjusted wage share.

Evaluating more than a dozen of the above mentioned studies that are trying to explain the secular decline in the labour income share at the macro level shows that the single most employed explanatory variable is trade openness, followed by GDP per capita (or per worker), union density and government activity. These are also the prime indicators of the most important explanatory variable groups. Most of the more than 50 explanatory variables used in these studies represent the globalisation of trade, productivity and technological change, labour market institutions and government influence. Additional types of explanatory variables include the globalisation of capital and the employment structure. The most commonly used estimators include pooled OLS, FE regressions and IV methods on annual as well as 5-year averages data. Others include also GMM and ECM regressions. For a comprehensive overview of variables and estimators used in the relevant empirical literature see Appendix Table 1.

3. Research strategy

In our own analysis we will draw on the results of previous studies and at the same time develop a research strategy tailor made for the purpose of analysing the changing impact of corporatist arrangements over time and across industrialised economies on the development of the labour income share. In this respect we will inter alia employ data from AMECO, the Penn World Tables 8.1, the World Development Indicators, the Chinn-Ito Financial Openness Index update 2013 as well as the corporatism score from Jahn (2016). This should help us to better understand the distributional impact of different types of industrial power relations and hence to develop relevant policy recommendations. Excursions on the impact of corporatism on income and employment will add to the analysis.

We employ for theoretical and methodological reasons a time-series cross-sections dynamic specification fixed-effects estimator error correction model (ECM) as used in some of the seminal papers of the research field (see e.g. Kristal 2010 or Bengtsson 2014). Although ECMs are not limited to analyses in which cointegration is a problem, such models offer methodological advantages when the possibility of unit root problems cannot be rejected. In our case it is however difficult to have absolute certainty on this issue. The labour income share in most countries and the corporatism indicator in a number of cases show a constant decline over time and this is also visible in scatter plots. However, in the Im-Pesaran-Shin unit root test (demeaned, with up to three lags and a time trend) the null-hypothesis of all panels containing unit roots has to be rejected for the labour income share for the whole panel. Nevertheless, for many single countries a unit root cannot be rejected. In the case of the corporatism indicator the panel unit root test rejects the null-hypothesis only by a hair's breadth, while many country tests reject as well by a small margin only or not at all. Hence we seem to deal with a border line case and thus still want to stick to the ECM as defined in the following way as it also allows to distinguish into short and long run effects:

$$\Delta\, wage\ share_{it} = \alpha + \beta_1\, wage\ share_{it-1} + \beta_2\, \Delta\, corporatism_{it} + \beta_3\, corporatism_{it-1} + \beta_4\, \Delta\, corporatism^2{}_{it} + \beta_5\, corporatism^2{}_{it-1} + country_i + year_t + \varepsilon_{it}, \quad (1)$$

where the dependent variable $\Delta\, wage\ share_{it}$ is the first difference of the adjusted wage share of country i and year t. The independent variables include the lagged level of the dependent variable, the lagged level (long run effect) and the first difference (short run effect) of the $corporatism$ indicator as well as its squared term. The inclusion of the latter should represent the assumed non-linearity as discussed in the first hypothesis to be tested. The right hand side of the equation includes also $country_i$ and $year_t$ fixed effects and an error term ε_{it}. In other specifications which are used as robustness checks we add additional (especially institutional) variables and other non-linearities and try also to explain alternative but related left hand side variables.

4. Data

Data for the adjusted wage share stems from the annual macro-economic database of the European Commission's Directorate General for Economic and Financial Affairs (AMECO). The exact definition is: adjusted wage share of the total economy as percentage of GDP at current factor cost – i.e. compensation per employee as percentage of GDP at factor cost per person employed. It exists for 28 EU economies as well as 5 additional European countries (Macedonia, Iceland, Turkey, Norway, Switzerland) and 7 non-European industrial nations (USA, Japan, Canada, Mexico, Korea, Australia, New Zealand) starting for some countries as early as 1960. This measure is superior to others such as the adjusted wage share at market prices which includes subsidies and indirect taxes in the income concept that are not relevant to the discussion about the distribution between capital and labour. It is also superior to the labour income share as available from the Penn World Table (PWT) mark 9.0 (Feenstra, Inklaar and Timmer, 2015), which in principle covers many more economies and years but has a flat estimate before the 1980s or 1990s for most of the countries. Hence we stick to the aforementioned AMECO variable for our left hand side of the equation. It has to be noted that we do not use data for Romania given the huge amount of outliers which hint at severe problems with the collection of statistics in this country (however, as it turns out its inclusion would not alter the results substantially). From the same source we also get data on alternative dependent variables which represent important factors in the construction of the wage share. These are the average wage per employee (in fact the log of the real 2010 PPS GDP per person employed multiplied by the adjusted wage share) as well as the employment share (i.e. the share of employees in the population between 15 and 64 years of age).

For our prime right hand side variable we employ the recent corporatism index as developed by Jahn (2016) and already mentioned in the introduction above. The index was produced for 42 industrialised countries (the EU 27 as well as Norway and Switzerland, the aforementioned 7 non-European industrial nations and 6 other countries) on an annual basis from 1960 to 2010. In his definition of corporatism the respective agreements in industrial relations and economic policy (especially wage bargaining) are classified by structure (degree of hierarchical centralisation), function (degree of concertation with the state) and scope (degree to which agreements encompass broader segments of society). Specifically, we use the 5-year smooth score as applied in the paper and transform it in a way that the lowest observed value equals to 1.1 and then after taking logs the index becomes compatible with other data that is mostly in percentage points. Moreover this procedure guarantees us non-negative and non-zero values which is also useful for the calculation of interaction terms.

Additional explanatory variables used in the robustness checks comprise institutional data from the Comparative Political Data Set (CPDS) for 1960-2014 as described in Armingeon et al. (2016). These

include inter alia: the relative power position of left as well as right wing parties in government based on their seat share in parliament, measured in percentage of the total parliamentary seat share of all governing parties, weighted by the number of days in office in a given year; the total outlays (disbursements) of the general government as a percentage of GDP; union density defined as the net union membership (i.e. gross minus independent workers, students, unemployed or retired members) as a proportion of wage and salary earners in employment; (1.1 and log transformed) employment protection strictness of regulation of individual dismissal of employees on regular/indefinite contracts as well as of regulation on the use of fixed-term and temporary work agency contracts. The interpretation of these institutional variables appears (at first sight) to be straightforward.

Additional robustness checks include the implementation of the corporatism indicator in a mainstream specification (Hogrefe and Kappler, 2013) and in a more synthetic specification (Stockhammer, 2015). For the first one PWT data on the capital-output ratio (i.e. the estimate of the capital stock in output-side GDP), trade openness (i.e. merchandise exports and imports in GDP) and total factor productivity (in percent of the US level) is used. Under the assumptions that firms produce under constant returns to scale, labour and capital are the sole inputs, labour markets are perfectly competitive and technological progress is not capital augmenting, the labour share can be expressed as a function of the capital-output ratio. If one allows for the possibility of capital augmenting technological change an index of total factor productivity (TFP) can be used as a proxy in the equation. Finally, as a non-competitive feature in the labour market trade openness can be seen as an important indicator of relative bargaining power between employees and employers.

For the second specification we take from the PWT database the log of real GDP (output-side) per worker in PPP as well as its growth rate, the trade openness as above as well as the government consumption share in GDP. In addition we take the (1.1 and log transformed) Chinn-Ito Financial Openness Index as described in Chinn and Ito (2006). Finally, from the CPDS database we use the civilian employment in agriculture and industry share. For Stockhammer these variables are part of a synthetic equation that incorporates the key arguments of the debate. The choice is based on a Political Economy approach, but encompasses also the neoclassical approach. Technological change is here proxied by GDP per worker and additionally by the agricultural share and the industrial employment share. Welfare state retrenchment (proxied by government consumption) as well as globalization (trade openness) and financialisation (financial openness indicator) affect the bargaining power of capital and labour. The GDP growth variable controls for the business cycle. It has to be mentioned that for practical reasons and for the sake of comparability across the specifications the source and particular calculation of the variables used in both alternative specifications are not necessarily exactly the same as in the original contributions.

5. Results

The estimation of our baseline specification as described in equation 1) yields pretty sobering results. The outcome for a regression on data for 35 industrialised economies over varying time periods of 13 to 50 years and more than 1200 observations brings about statistically insignificant coefficients for both the long run level effect of corporatism as well as corporatism squared in explaining the change in the wage share. If anything, the relationship appears to be u-shaped as the corporatism coefficient is negative and the squared term positive. However, this is only ‘significant’ at the 20% level. Here we do not report on the estimated constant, the lagged dependent and the first differences of the

independent variables. Table 1 displays the estimation results of equation 1) as well as two alternative specifications which aim at estimating the effect of corporatism on factors which by construction influence the wage share (potentially in different ways): the change in the average wage per worker as well as the change in the employment rate. Again, both coefficients of interest are statistically insignificant.

Table 1: Baseline model of corporatism and the labour income share in the long run

VARIABLES	(1) change in wage share	(2) change in average wage	(3) change in employment rate
log corporatism index (lag)	-1.646	-0.017	-1.186
	(1.110)	(0.027)	(1.112)
log corporatism index squared (lag)	0.736	0.018	0.863
	(0.534)	(0.014)	(0.656)
Observations	1,207	1,207	1,216
R-squared	0.245	0.267	0.291
Number of id	35	35	35
Country FE	YES	YES	YES
Year FE	YES	YES	YES

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: The constant and the coefficients of the lagged dependent as well as the first differenced independent variables are not shown.
Source: AMECO, Jahn (2016), own calculations.

Under the assumption that the wage share is primarily driven by institutional factors in a broad sense we add instead of the squared corporatism term additionally an institutional variable and as an interaction term the product of the additional institutional variable and the corporatism indicator in order to check for potential complementarity or substitutability. First we run a number of regressions on the change in the adjusted wage share. As can be seen from Table 2 the corporatism indicator has again no long run impact in neither of the specifications and only one of the interaction terms' coefficients proves to be statistically significant. Interestingly enough this is the product of corporatism and the share of general government outlays in GDP, whereby countries with both large government and strong corporatism followed a negative slope in the change of the adjusted wage share.

The main countries at the corporatism extremes are inter alia Austria and Sweden on the one side and Canada and the UK on the other side of the spectrum. As can be also seen from Figure 1 (left panel) the former two have lost on average a larger labour income share than the latter. What could be the potential reasons for this? In highly corporatist systems wage restraint as an outcome of centralised wage bargaining with an aim of maintaining macroeconomic and structural stability might be acceptable in combination with a lot of state organised redistribution of national income, which however does not show up in the primary distribution of income between labour and capital. Conversely, free market based Anglo-Saxon type economies might have experienced a stronger restructuring of the economy towards a higher share in finance and business services where extremely high manager wages and boni blur the picture of the wage share as these remunerations have certain similarities to capital income. Hence it might be inter alia these special cases that give the impression of non-linearity in the long run wage-share-corporatism relationship of Figure 1 (left panel). Government activity in societies without a corporatist system tends to increase the wage share.

Table 2: Institutions and the labour income share in the long run

VARIABLES	(4) change in wage share	(5) change in wage share	(6) change in wage share	(7) change in wage share	(8) change in wage share	(9) change in wage share
log corporatism index (lag)	-0.535	-0.156	1.746	-0.390	0.990	-0.261
	(0.668)	(0.618)	(1.086)	(0.796)	(1.794)	(0.751)
corporatism & left gov. (lag)	0.003					
	(0.007)					
left gov.parties' seat share (lag)	-0.002					
	(0.009)					
corporatism & right gov. (lag)		-0.005				
		(0.006)				
right gov.parties' seat share (lag)		0.005				
		(0.007)				
corporatism & gov.outlays (lag)			-0.062***			
			(0.020)			
gen.gov.outlays in GDP (lag)			0.083**			
			(0.033)			
corporatism & union density (lag)				-0.008		
				(0.018)		
union density (lag)				0.010		
				(0.026)		
corporatism & empl.prot.reg. (lag)					-1.237	
					(2.053)	
log reg.empl.prot.index (lag)					3.954	
					(2.637)	
corporatism & empl.prot.temp. (lag)						0.045
						(0.879)
log temp.empl.prot.index (lag)						0.015
						(1.217)
Observations	1,121	1,121	1,024	1,030	560	560
R-squared	0.270	0.263	0.346	0.290	0.287	0.273
Number of id	32	32	32	32	27	27
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: The constant and the coefficients of the lagged dependent as well as the first differenced independent variables are not shown.
Source: AMECO, Jahn (2016), CPDS, own calculations.

Table 3: Institutions and the average wage in the long run

VARIABLES	(10) change in average wage	(11) change in average wage	(12) change in average wage	(13) change in average wage	(14) change in average wage	(15) change in average wage
log corporatism index (lag)	0.014	0.014	0.022	-0.013	0.031	0.023***
	(0.010)	(0.012)	(0.024)	(0.016)	(0.023)	(0.008)
corporatism & left gov. (lag)	0.000					
	(0.000)					
left gov.parties' seat share (lag)	-0.000					
	(0.000)					
corporatism & right gov. (lag)		0.000				
		(0.000)				
right gov.parties' seat share (lag)		0.000				
		(0.000)				
corporatism & gov.outlays (lag)			-0.000			
			(0.001)			
gen.gov.outlays in GDP (lag)			-0.000			
			(0.001)			
corporatism & union density (lag)				0.001		
				(0.000)		
union density (lag)				-0.001		
				(0.000)		
corporatism & empl.prot.reg. (lag)					-0.023	
					(0.029)	
log reg.empl.prot.index (lag)					0.065*	
					(0.033)	
corporatism & empl.prot.temp. (lag)						-0.026**
						(0.012)
log temp.empl.prot.index (lag)						0.035**
						(0.013)
Observations	1,121	1,121	1,024	1,030	560	560
R-squared	0.280	0.275	0.278	0.328	0.155	0.156
Number of id	32	32	32	32	27	27
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: The constant and the coefficients of the lagged dependent as well as the first differenced independent variables are not shown.
Source: AMECO, Jahn (2016), CPDS, own calculations.

Table 4: Institutions and the employment rate in the long run

VARIABLES	(16) change in employment rate	(17) change in employment rate	(18) change in employment rate	(19) change in employment rate	(20) change in employment rate	(21) change in employment rate
log corporatism index (lag)	-0.137	0.707**	-0.665	-0.916	-2.634**	0.216
	(0.289)	(0.337)	(0.852)	(0.608)	(1.141)	(0.708)
corporatism & left gov. (lag)	0.012***					
	(0.003)					
left gov.parties' seat share (lag)	-0.012***					
	(0.003)					
corporatism & right gov. (lag)		-0.010***				
		(0.003)				
right gov.parties' seat share (lag)		0.007**				
		(0.003)				
corporatism & gov.outlays (lag)			0.018			
			(0.021)			
gen.gov.outlays in GDP (lag)			-0.073***			
			(0.026)			
corporatism & union density (lag)				0.030**		
				(0.013)		
union density (lag)				-0.055***		
				(0.018)		
corporatism & empl.prot.reg. (lag)					3.404**	
					(1.260)	
log reg.empl.prot.index (lag)					-5.492***	
					(1.682)	
corporatism & empl.prot.temp. (lag)						0.343
						(0.785)
log temp.empl.prot.index (lag)						-0.137
						(0.832)
Observations	1,128	1,128	1,024	1,037	561	561
R-squared	0.320	0.318	0.411	0.380	0.420	0.411
Number of id	32	32	32	32	27	27
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: The constant and the coefficients of the lagged dependent as well as the first differenced independent variables are not shown.
Source: AMECO, Jahn (2016), CPDS, own calculations.

Turning to the same set of regressions explaining the change in average wage per worker (Table 3) leaves again only one specification with statistically significant results. This time it is a stricter employment protection regulation on the use of fixed-term and temporary work agency contracts which acts as a substitute to a strong corporatist system. The extreme cases of corporatism without temporary employment protection and vices versa show positive and significant coefficients. However, the results are only partly comparable as the employment protection index only exists for a smaller set of countries since the mid-1980s, which leaves us with about half of the observations as compared to the other regressions.

Finally in Table 4 the results for the estimations of the change in the employment rate are presented. Here almost all the specifications yield significant results. The interaction term of corporatism and the relative power position of left wing parties in government indicates complementarity (specification 16) while the interaction term of corporatism and the relative power position of right wing parties in government indicates substitutability (specification 17). Both the interaction with union density (specification 19) and employment protection strictness of regulation of individual dismissal of employees on regular/indefinite contracts (specification 20) hint at some complementarity with the corporatism indicator.

In addition to the above institutional variables that at least showed to be significant in explaining either the change in the wage share, the average wage or the employment rate, we have also tested a number of other institutional variables, which however have not shown to be significant at all. These include: the relative power position of centre parties in government; an indicator for the 'ideological gap' between new and old cabinets; general government social security transfers per capita; an index of strike activity; an index of electoral fractionalization of the party system; an index of legislative fractionalization of the party system; a proxy for the so-called Lijphart's first dimension 'parties-executives' variable as well as its sub-category proxies for institutions and behaviour. The last group of indicators deals with the question of how easy it is for a single party to take complete control of the government.

In the three regressions of Table 5 we pooled all the earlier corporatism related non-linearities explaining the changes in the wage share, the average wage and the employment rate except the corporatism interactions with the two employment protection indicators in order not to lose halve of the observations. The government outlays and corporatism interaction remained the only one significant in the wage share regression and the corporatism interactions with left governments and union density in the employment share regression. The signs of the coefficients remained the same as in the simple regressions of Tables 2 and 4.

These three interactions we would like to test also in other specifications with additional control variables as robustness checks and in order to relate our findings to the literature. In a mainstream specification we add as control variables the capital-output ratio, total factor productivity and trade openness as in Hogrefe and Kappler (2013). They use only AMECO data and restrict their analysis on a balanced sample of only 19 countries for a maximum of 49 years. Hence comparability is somewhat limited. However, the resulting coefficients (Table 6) and significance patterns of the three control variables are very similar to their results. Both the capital-output share and TFP have a negative and significant coefficient. Hogrefe and Kappler believe that this reveals technological progress to be capital augmenting and this process to reduce the labour income share in the long run. Otherwise the corporatism and government outlays combination remains significant in the wage share specification. Again, in the average wage regression nothing is significant while in the employment rate estimation again the left government and the union density interaction remain significant and all coefficients with the same signs as before.

Table 5: Institutions and corporatism in the long run

VARIABLES	(22) change in wage share	(23) change in average wage	(24) change in employment rate
log corporatism index (lag)	1.65631	-0.00785	-1.80098
	(0.99803)	(0.04645)	(1.39328)
log corporatism index squared (lag)	0.57659	0.00851	0.01085
	(0.58092)	(0.02075)	(0.64471)
left gov.parties' seat share (lag)	0.00503	0.00003	-0.00873**
	(0.00893)	(0.00015)	(0.00397)
corporatism & left gov. (lag)	-0.00006	0.00003	0.00779**
	(0.00654)	(0.00011)	(0.00340)
right gov.parties' seat share (lag)	0.00564	-0.00002	0.00284
	(0.00360)	(0.00008)	(0.00251)
corporatism & right gov. (lag)	-0.00053	0.00008	-0.00468*
	(0.00364)	(0.00009)	(0.00263)
gen.gov.outlays in GDP (lag)	0.08818***	0.00039	-0.06205***
	(0.03125)	(0.00075)	(0.01728)
corporatism & gov.outlays (lag)	-0.07088***	-0.00048	0.01335
	(0.01437)	(0.00052)	(0.01570)
union density (lag)	0.01923	-0.00065	-0.05611***
	(0.02367)	(0.00051)	(0.01852)
corporatism & union density (lag)	-0.01923	0.00044	0.03577**
	(0.01512)	(0.00033)	(0.01374)
Observations	957	957	957
R-squared	0.38049	0.32655	0.47464
Number of id	32	32	32
Country FE	YES	YES	YES
Year FE	YES	YES	YES

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: The constant and the coefficients of the lagged dependent as well as the first differenced independent variables are not shown.
Source: AMECO, Jahn (2016), CPDS, own calculations.

Finally we test our interactions also in a synthetic specification following the approach of Stockhammer (2015) where the choice of the control variables is based on a Political Economy approach, but encompasses also the neoclassical approach. GDP per worker, the agricultural and the industrial employment share represent technological change. Welfare state retrenchment (proxied by government consumption) as well as globalization (trade openness) and financialisation (financial openness indicator) affect the bargaining power of capital and labour. The GDP growth variable controls for the business cycle. Here we also follow a different estimation strategy as suggested by Stockhammer who uses country fixed effects only and just contemporaneous levels of the variables under the assumption that unit roots are not a problem. The results for the controls are slightly different (Table 7) as compared to the original ones. However, also the samples are not exactly the same. Stockhammer uses ILO data on the adjusted private sector wage share for up to 71 countries over the period 1970-2007. GDP per worker indeed has a negative significant coefficient while it is

insignificant in Stockhammer (2015). Trade openness has a positive significant coefficient, contrary to Stockhammer (2015). Other controls are only significant in the employment rate regression. As in earlier regressions too, wage share specification (28) leaves only the corporatism and government outlays interaction significant. This time in the employment rate estimation none of the interactions show any significance but in the average wage regression the corporatism and union density interaction is statistically significant.

Table 6: Corporatism and other institutions in long-run mainstream specifications

VARIABLES	(25) change in wage share	(26) change in average wage	(27) change in employment rate
log corporatism index (lag)	2.50966**	0.00967	-1.70910*
	(1.12270)	(0.02613)	(0.88314)
left gov.parties' seat share (lag)	-0.00071	-0.00000	-0.00909***
	(0.00820)	(0.00011)	(0.00301)
corporatism & left gov. (lag)	0.00162	0.00001	0.00901***
	(0.00664)	(0.00008)	(0.00267)
gen.gov.outlays in GDP (lag)	0.08823**	0.00042	-0.03676**
	(0.03693)	(0.00072)	(0.01544)
corporatism & gov.outlays (lag)	-0.07252***	-0.00057	0.00304
	(0.02205)	(0.00052)	(0.01392)
union density (lag)	0.00250	-0.00081	-0.06703***
	(0.02487)	(0.00060)	(0.02031)
corporatism & union density (lag)	-0.00701	0.00061	0.04048***
	(0.01419)	(0.00041)	(0.01449)
capital-output ratio (lag)	-0.00519**	0.00000	-0.00396**
	(0.00236)	(0.00006)	(0.00164)
trade openness (lag)	0.00183	0.00007	0.00298
	(0.00301)	(0.00007)	(0.00257)
total factor productivity (lag)	-0.03747***	-0.00005	-0.00611
	(0.00628)	(0.00020)	(0.00671)
Observations	957	957	957
R-squared	0.45629	0.34033	0.50152
Number of id	32	32	32
Country FE	YES	YES	YES
Year FE	YES	YES	YES

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The constant and the coefficients of the lagged dependent as well as the first differenced independent variables are not shown.

Source: AMECO, Jahn (2016), CPDS, PWT, own calculations.

Hence the only consistently robust result over a number of specifications is acquired for the combination of the log of the corporatism indicator, the general government outlay share in GDP and their interaction term in explaining both the change of the adjusted wage share in GDP (mainstream result) as well as its level (synthetic result). The repeating pattern is positive signs for the lower order coefficient estimates and a negative sign for the interaction. One has to bear in mind that all effects in an interaction model are conditional, and with continuous variables there exists an infinite number of conditional effects (Afshartous and Preston, 2011). Moreover, it is important to notice that the interaction term does not really assess the combined effect of high levels of corporatism and government outlays but only provides slope change information.

Thus it makes sense to graphically present the results for different cases of combinations of the level of corporatism and government outlays with regard to (the change in) the wage share (Figure 2). We present the outcomes for countries with low, medium and high levels of corporatism and low, medium and high levels of government outlays in GDP. With the help of alternative values of the intercept the effects were calibrated as to let the case of a country with an intermediate level of corporatism and an average level of government outlays in GDP to have average changes or levels of

the wage share. The left hand panel of Figure 2 shows the results of this exercise for the change in the wage share from the mainstream specification and the right hand panel the results for the level of the wage share from the synthetic specification.

Table 7: Corporatism and other institutions in synthetic level specifications

VARIABLES	(28) wage share	(29) average wage	(30) employment rate
log corporatism index	8.865*	-0.057	1.539
	(4.846)	(0.156)	(8.343)
left gov.parties' seat share	0.027	-0.000	-0.001
	(0.020)	(0.000)	(0.015)
corporatism & left gov.	-0.021	-0.000	0.000
	(0.018)	(0.000)	(0.011)
gen.gov.outlays in GDP	0.413***	0.009**	-0.315*
	(0.088)	(0.003)	(0.167)
corporatism & gov.outlays	-0.197**	-0.003	-0.038
	(0.077)	(0.003)	(0.151)
union density	0.047	-0.008***	-0.070
	(0.098)	(0.002)	(0.144)
corporatism & union density	-0.023	0.006***	0.052
	(0.086)	(0.002)	(0.110)
log real GDP per worker in PPP	-7.616***	0.344***	6.922**
	(2.044)	(0.074)	(2.953)
growth of real GDP per worker	-0.105***	-0.003***	-0.036
	(0.029)	(0.001)	(0.035)
trade openness	0.024**	0.001***	-0.029
	(0.011)	(0.000)	(0.021)
government consumption share	-0.040	-0.005	0.516***
	(0.141)	(0.003)	(0.180)
log financial openness index	0.228	0.017	-2.459**
	(1.035)	(0.038)	(1.175)
agricultural employment share	0.290*	-0.002	-0.529**
	(0.165)	(0.004)	(0.208)
industrial employment share	0.189*	-0.003	-0.090
	(0.093)	(0.003)	(0.134)
Observations	822	822	822
R-squared	0.658	0.891	0.543
Number of id	26	26	26
Country FE	YES	YES	YES

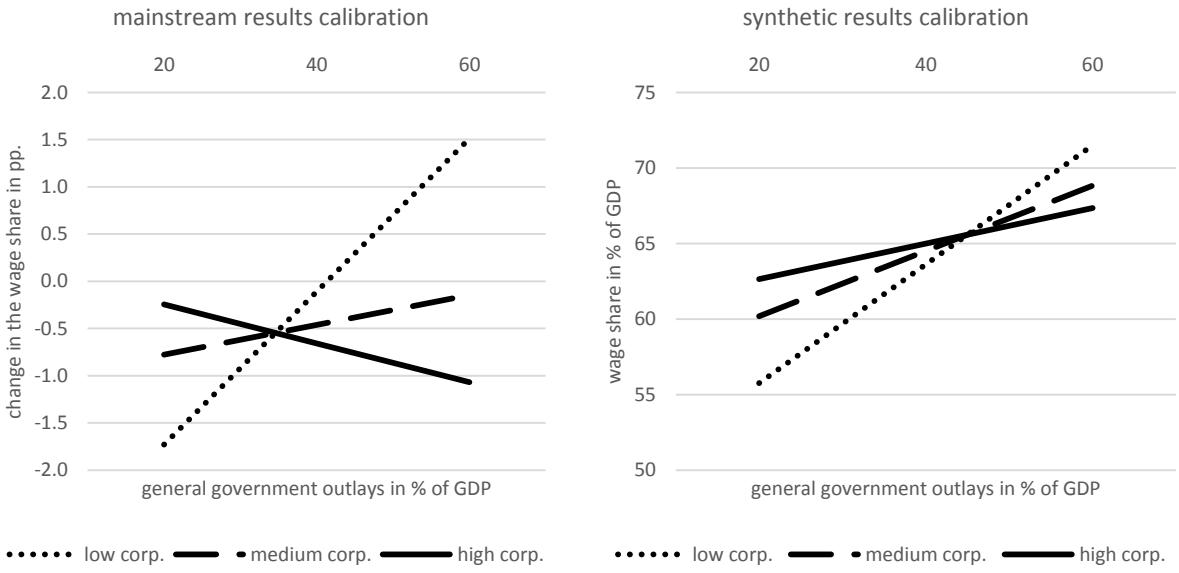
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: The constant is not shown.
Source: AMECO, Jahn (2016), CPDS, PWT, Chinn and Ito (2006) own calculations.

Looking at the change in the wage share (and disregarding other effects) we can observe that countries with a strong corporatist structure experienced (ceteris paribus) a downward shift in the

wage share (given the way these relationships were calibrated), especially where the state sector was large. Countries with a low level of corporatism and a small state had a much stronger fall in the wage share, though. On the other hand, countries with a low level of corporatism but a large state sector have managed to increase their wage share quite strongly. However, when looking at the data hardly any observations with a high outlays share and a low level of corporatism can be identified: maybe Ireland in the 1980s and Canada in the 1990s. Least corporatist countries with an average share of public activity are the UK, Canada and Ireland for various years. Nations with an intermediate level of corporatism experienced a fall in the wage share similar to the strongly corporatist countries. However less so in the cases with a high public sector share.

Figure 2: Corporatism, government and the wage share



Source: own calculations.

Hence, probably our earlier attempt to speculate on the explanation of the non-linearity in Table 2 and the left panel of Figure 1 remains relevant. Highly corporatist countries that also have a large public expenditure share aiming at macroeconomic stability and providing for state organised redistribution have accepted a drop in the (primary distribution) wage share. Countries with almost no corporatism such as the UK and Canada had a stronger structural change to business services where a lot of otherwise capital type of income entered the labour income share via high salaries and boni for top managers. Also their relatively large state sector might be organised in a way that it influences more strongly the primary distribution of income. Ireland is for instance known for one of the highest positive wage gaps in the public sector in the EU (de Castro et al., 2013).

This interpretation obviously does not come from our empirical research but is an ad hoc interpretation and needs further in-depth analysis. In addition it might also be interesting to re-check in this respect the findings of Hancke (2013) who argues that the fall in the wage share in countries with strong trade unions is related to the interaction between conservative central banks and coordinated wage bargaining systems. However, the construction of Hancke's prime indicators as well as the estimation strategy raise several questions which make a replication difficult. Moreover he uses only data between the mid-1970s and the late-1990s, hence before the establishment of the euro area which however covers a large chunk of our dataset. The inclusion of the later years would drastically reduce the variation in Hancke's monetary non-accommodation index. Further research needs also to tackle this issue. Also, following Stockhammer (2015), the adjusted private sector wage share could be used as an alternative left hand side variable, excluding the public sector in order to

reduce endogeneity. A control variable for the development of the financial and business services sector development would be important as well. Also, additional interactions with the mainstream and synthetic control variables could be revealing.

Switching the focus to the partial corporatism/outlays results of the synthetic regression on levels (Figure 2, right panel) yields the following. Over more than halve of the government outlays distribution countries with a high level of corporatism have also the highest level of the wage share in GDP. It is only for countries with a very high public sector share that low and medium corporatist societies have a clearly higher wage share in GDP than the highly corporatist societies. It seems that these level results do not necessarily contradict the previous results on the first differences of the wage share. Also our ad hoc explanation might apply here as well. So for instance Sweden, that has both a high public sector share as well as a high level of corporatism has only a below average level of the labour income share, while especially Ireland in the 1980s had a large state with a low level of corporatism together with a high wage share in total income. It is by the way interesting to note that Ireland has developed into a country with an above average level of corporatism and a larger government share while having a small labour income share. Indeed Irish Social Partnership was initiated in 1987, following a period of high inflation and weak economic growth (Baccaro and Simoni, 2004). However, it has to be mentioned that the results are insensitive to the exclusion of Ireland from the sample.

In view of testing the second hypothesis we have also analysed the latest period of 2000-2010 around the outbreak of the global financial crisis using the same specifications as before. However, there are hardly any statistically significant results to be reported. The exception being trade openness which has now a statistically significant coefficient with a negative sign in both the mainstream and the synthetic regression explaining the (change in the) wage share.

6. Conclusion

The aim of this paper was to evaluate the changing impact of corporatist arrangements over time and across industrialised economies on the development of the labour income share. Though potentially of high importance in this respect, the impact of corporatist arrangements has not been analysed extensively in the literature. It was rather tried to explain the falling labour income share inter alia with the dynamics in technological change, globalisation and various other institutional developments. One reason might be that time-variant corporatism indices are mostly out of date and cover only a small sample of countries. However, most recently Jahn (2016) has developed a new corporatism index for 42 industrialised economies on an annual basis from 1960 to 2010, where the respective agreements in industrial relations and economic policy (especially wage bargaining) are classified by structure (degree of hierarchical centralisation), function (degree of concertation with the state) and scope (degree to which agreements encompass broader segments of society).

Based on a first graphical analysis we tried to evaluate whether there is an inverted u-shaped relationship between the change in the adjusted wage share and the level of corporatism in a dynamic country and time fixed-effects estimator error correction model panel setting as well as whether in the 2000s there was a positive linear relationship using the same estimator. Both based on the assumption that in strongly corporatist arrangements macroeconomic and structural stability is being taken very serious, which in the long run causes a certain amount of wage restraint but which in boom and bust periods keeps the wage share from plummeting. However, none of these

hypotheses could have been empirically confirmed. Instead we have further analysed the impact of the corporatism indicator on the change in the labour income share with the help of a number of interactions with other institutional variables, under the assumption that the wage share is primarily driven by institutional factors in a broad sense.

Apart from a number of other results on alternative dependent variables related to the wage share (average wage per worker and the employment rate) the only interaction that remained consistently statistically significant in explaining the change in the wage share was the combination of our corporatism indicator and the share of government outlays in GDP. This was also confirmed after the amendment of additional control variables from both a mainstream specification as well as a synthetic specification following in broad lines the approaches of Hogrefe and Kappler (2013) and Stockhammer (2015). In the latter one also the estimator was changed to a country fixed effects level estimation of the wage share. Again, the corporatism and government outlays interaction proved to be robust to the addition of various control variables, different sample sizes and estimators.

However, the interpretation of interaction results is also in this case not trivial. In a calibrated graphical analysis we tried to typify hypothetical countries with high, medium and low levels of corporatism and large, average and small public sectors as well as the respective outcomes in terms of both change and level of the adjusted wage share. While especially in small government outlays share cases the high corporatism country has less of a decline in the wage share and a higher level of the labour income share than medium and low corporatist systems, this relationship is being reverted in cases where the public sector share is very large. Thus to a certain extent the relationship appears to be one of substitutes. Nevertheless, in the data there are only few examples of countries that had a low level of corporatism and at the same time a large government sector. These are mainly some of the Anglo-Saxon countries for certain periods in time. Among the countries with a high level of corporatism and a large state we find especially some of the Nordic nations.

A speculative ad hoc explanation of this relationship argues that the free-market based Anglo-Saxon countries without almost any corporatist arrangement have structurally changed a lot more than countries with strong corporatist institutions. This structural change has brought about a shift to financial and business services where extremely high salaries and boni for the management distort the wage share statistics. In countries with strong corporatist institutions and a large public sector it might be the case that social partners keep wages depressed in order to support macroeconomic and structural stability while the state intervenes in the secondary re-distribution of incomes.

References

Afshartous D. and R.A. Preston (2011), 'Key Results of Interaction Models With Centering', Journal of Statistics Education, Vol. 19, No. 3, pp. 1-24.

Armingeon, K., C. Isler, L. Knöpfel, D. Weisstanner and S. Engler (2016), ‚Comparative Political Data Set 1960-2014', Bern: Institute of Political Science, University of Berne, mimeo.

Azmat, G., A. Manning and J. Van Reenen (2012), 'Privatization and the Decline of Labour's Share: International Evidence from Network Industries', *Economica*, Vol. 79, pp. 470–492.

Baccaro L. and M. Simoni (2004), 'The Irish social partnership and the "celtic tiger" phenomenon', ILO-IILS Discussion Paper, No. 154.

Bassanini, A. and T. Manfredi (2012), 'Capital's Grabbing Hand? A Cross-Country/Cross-Industry Analysis of the Decline of the Labour Share', OECD Social, Employment and Migration Working Papers, No. 133.

Bengtsson, E. (2014), 'Do unions redistribute income from capital to labour? Union density and wage shares since 1960', *Industrial Relations Journal*, Vol. 45, No. 5, pp. 389–408.

Bentolila S. and G. Saint-Paul (2003), 'Explaining Movements in the Labor Share', *Contributions to Macroeconomics*, Vol. 3, No. 1, Article 9.

Böckerman, P. and M. Maliranta (2012), 'Globalization, creative destruction, and labour share change: evidence on the determinants and mechanisms from longitudinal plant-level data', *Oxford Economic Papers*, Vol. 64, pp. 259–280.

Chinn, M.D. and H. Ito (2006), 'What Matters for Financial Development? Capital Controls, Institutions, and Interactions', *Journal of Development Economics*, Vol. 81, No. 1, pp. 163-192.

Damiani, M., Pompei, F. and A. Ricci (2012), 'Labour share and employment protection in European economies', MPRA Paper, No. 43058.

de Castro, F., M. Salto and H. Steiner (2013), 'The gap between public and private wages: new evidence for the EU', European Economy Economic Papers, No. 508.

Dünhaupt, P. (2013a), 'Determinants of functional income distribution – Theory and empirical evidence', ILO GLU Working Paper, No. 18.

Dünhaupt, P. (2013b), 'The effect of financialization on labor's share of income', Institute for International Political Economy Berlin, Working Paper, No. 17/2013.

EC (2007), 'The Labour Income Share in the European Union', Employment in Europe, Chapter 5, pp. 237-272.

Estrada A. and E. Valdeolivas (2012), 'The Fall of the Labour Income Share in Advanced Economies', Banco de Espana Documentos Ocasionales, No. 1209.

Feenstra, R.C., R. Inklaar and M.P. Timmer (2015), 'The Next Generation of the Penn World Table', *American Economic Review*, Vol. 105, No. 10, pp. 3150-3182.

Fichtenbaum, R. (2009), 'The Impact of Unions on Labor's Share of Income: A Time-Series Analysis', Review of Political Economy, Vol. 21, No. 4, pp. 567–588.

Giovannoni, O. (2014a), 'What Do We Know About the Labor Share and the Profit Share? Part I: Theories', Levy Economics Institute Working Paper, No. 803.

Giovannoni, O. (2014b), 'What Do We Know About the Labor Share and the Profit Share? Part II: Empirical Studies', Levy Economics Institute Working Paper, No. 804.

Giovannoni, O. (2014c), 'What Do We Know About the Labor Share and the Profit Share? Part III: Measures and Structural Factors', Levy Economics Institute Working Paper, No. 805.

Gollin, D. (2002), 'Getting Income Shares Right', *Journal of Political Economy*, Vol. 110, No. 2, pp. 458-474.

Guerriero M. and K. Sen (2012), 'What Determines the Share of Labour in National Income? A Cross-Country Analysis', IZA Discussion Paper, No. 6643.

Guscina, A. (2006), 'Effects of Globalization on Labor's Share in National Income', IMF Working Paper, 06/294.

Hancke, B. (2013), 'Where Have All the Wage Shares Gone? Trade Unions, Central Banks and Wage Setting in the OECD', CEACS Working Paper, No. 2013/276.

Harrison, A.E. (2005), 'Has Globalization Eroded Labor's Share? Some Cross-Country Evidence', MPRA Paper, No. 39649.

Hogrefe J. and M. Kappler (2013), 'The labour share of income: heterogeneous causes for parallel movements?', *Journal of Economic Inequality*, Vol. 11, pp. 303–319.

Hutchinson, J. and D. Persyn (2012), 'Globalisation, concentration and footloose firms: in search of the main cause of the declining labour share', *Review of World Economics*, Vol. 148, pp. 17–44.

IMF (2007), 'The Globalization of Labor', IMF World Economic Outlook, April, Chapter 5, pp. 161-192.

Jahn, D. (2016), 'Changing of the guard: trends in corporatist arrangements in 42 highly industrialized societies from 1960 to 2010', *Socio-Economic Review*, Vol. 14, No. 1, pp. 47–71.

Jaumotte, F. and I. Tytell (2007), 'How Has The Globalization of Labor Affected the Labor Income Share in Advanced Countries?', IMF Working Paper, No. 07/298.

Jayadev, A. (2007), 'Capital account openness and the labour share of income', *Cambridge Journal of Economics*, Vol. 31, No. 3, pp. 423-443.

Judzik D. and H. Sala (2013), 'Productivity, deunionization and trade: Wage effects and labour share implications', *International Labour Review*, Vol. 152, No. 2, pp. 205-236.

Karabarbounis L. and B. Neiman (2014), 'The Global Decline of the Labour Share', *The Quarterly Journal of Economics*, Vol. 129, No.1, pp. 61–103.

Kristal, T. (2010), 'Good Times, Bad Times: Postwar Labor's Share of National Income in Capitalist Democracies', *American Sociological Review*, Vol. 75, No. 5, pp. 729–763.

Krueger, A.B. (1999), 'Measuring Labor's Share', *AEA Papers and Proceedings*, Vol. 89, No. 2, pp. 45-51.

Maarek P. and E. Orgiazzi (2013), 'Currency Crises and the Labour Share', *Economica*, Vol. 80, pp. 566–588.

OECD (2012), 'Labour Losing to Capital: What Explains the Declining Labour Share?', OECD Employment Outlook, Chapter 3, pp. 109-161.

Rodriguez F. and A. Jayadev (2010), 'The Declining Labor Share of Income', UNDP HDR Research Paper, No. 2010/36.

Schneider, D. (2011a), 'The Labor Share: A Review of Theory and Evidence', SFB 649 Discussion Paper, No. 2011-069.

Schneider, D. (2011b), 'Bargaining, Openness, and the Labor Share', SFB 649 Discussion Paper, No. 2011-068.

Stockhammer, E. (2015), 'Determinants of theWage Share: A Panel Analysis of Advanced and Developing Economies', *British Journal of Industrial Relations*, early view.

Young A.T. and H. Zuleta (2015), 'Do Unions Increase Labor Shares? Evidence from US Industry-Level Data', mimeo available at SSRN.

Appendix

Appendix Table 1: Overview of variables and estimators used in the relevant empirical literature

Estimators	FE (annual, 3y, 5y av.)	FE, PMG, MG	OLS, IV (annual, 5y av., cross section)	OLS, FE, GMM	OLS, FE (5y av.)	OLS, IV, SUR, 3SLS	PCSE, FGLS	FE, IV, 2SLS (annual, 5y av.)	OLS, FE, GMM (annual, 5y av.)	RE (3y av.)	FE, ECM, IV	OLS, FE, LMM, LDV, ECM (annual, 5y av.)	FE, IV	
Variables	Guerriero and Sen 2012	Hogrefe Kappler 2013	Harrison 2005	Estrada Valdeoliva s 2012	Guscina 2006	Jaumotte Tytell 2007	Dün-haupt 2013	Jayadev 2007	Stock-hammer 2015	Hancke 2013	Kristal 2010	Bengts-son 2014	EC 2007	TOTAL
Trade openness (southern imp)	1	1	1		1		1	1	1	1	1	1	1	11
GDP per capita (or worker)	1		1		1			1	1		1	1		7
Union density						1	1			1	1	1	1	6
Government activity							1	1	1		1	1		5
Employment protection	1				1	1							1	4
Unemployment rate							1			1	1	1		4
FDI inward			1				1				1			3
GDP growth			1						1	1				3
L/K ratio			1			1							1	3
Left cabinet share										1	1	1		3
Agricultural employment share									1			1		2
Capital controls			1					1						2
Capital intensity		1		1										2
Crisis			1					1						2
FDI outward			1				1							2
ICT capital/use						1							1	2
Immigration						1					1			2
Industrial employment share									1			1		2
Inflation			1								1			2
Product market regulation						1							1	2
Relative import prices						1	1							2
Replacement ratio				1								1		2
Strike intensity							1				1			2
Tax wedge						1							1	2
TFP		1		1										2
Unemployment benefits						1							1	2

Appendix Table 1 continued: Overview of variables and estimators used in the relevant empirical literature

Estimators	FE (annual, 3y, 5y av.)	FE, PMG, MG	OLS, IV (annual, 5y av., cross section)	OLS, FE, GMM	OLS, FE (5y av.)	OLS, IV, SUR, 3SLS	PCSE, FGLS	FE, IV, 2SLS (annual, 5y av.)	OLS, FE, GMM (annual, 5y av.)	RE (3y av.)	FE, ECM, IV	OLS, FE, LMM, LDV, ECM (annual, 5y av.)	FE, IV	
Variables	Guerriero and Sen 2012	Hogrefe Kappler 2013	Harrison 2005	Estrada Valdeolivas 2012	Guscina 2006	Jaumotte Tytell 2007	Dün-haupt 2013	Jayadev 2007	Stock-hammer 2015	Hancke 2013	Kristal 2010	Bengts-son 2014	EC 2007	TOTAL
Budget deficit								1						1
Capital-skilled				1										1
Coordination index										1				1
Final imports prices				1										1
Financial globalisation (ext.A+L)									1					1
Intermediate import prices				1										1
Investment share	1													1
NAIRU-gap				1										1
Net dividend payments							1							1
Net interest payments							1							1
Non-accomodation index										1				1
Offshoring (share of interm.)						1								1
Patents	1													1
Population	1													1
Real interest rate								1						1
Relative export prices						1								1
Remittances inward			1											1
Remittances outward			1											1
Schooling	1													1
Skilled-unskilled				1										1
Social expenditures												1		1
Trade taxes to trade								1						1
Minimum wage													1	1
Active labour market policy													1	1
Output gap													1	1