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The Determinants of Inequality on The Portuguese Income Distribution: The Role of Financialisation and Other Factors

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Overview

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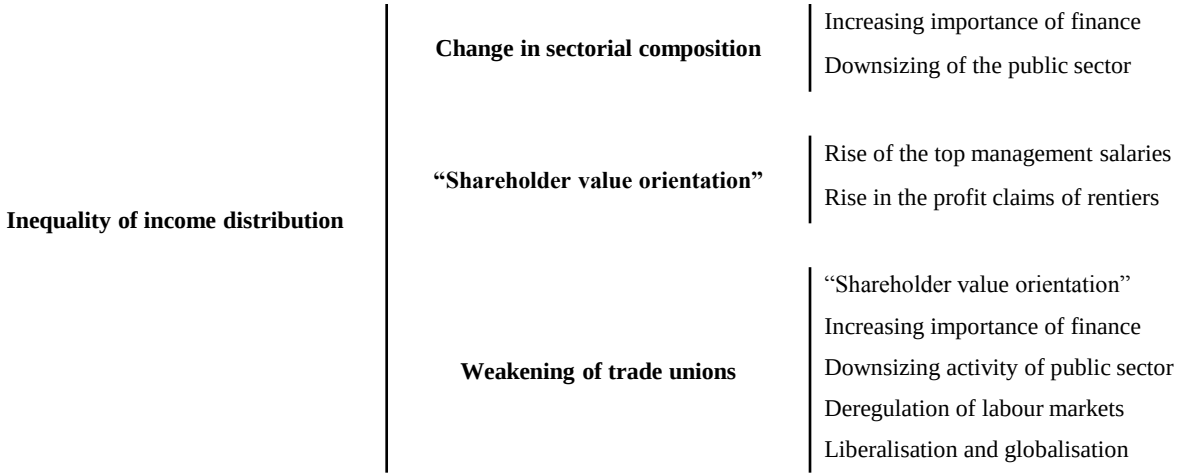
- II. Economic Modelisation
- III. Data
- IV. Methodology
- V. Empirical Results and Discussion
- VI. Conclusion

I. The Relation between Financialisation and Inequality on Functional Income Distribution

- The literature of financialisation typically claims that this phenomenon has led to na increase of inequality of the income distribution, through three different channels (and various sub-channels), as theoretically discussed by Hein (2012, 2013), Hein and Dodig (2014), Hein and Detzer (2014), Michel (2014), among others.



I. The Relation between Financialisation and Inequality on Functional Income Distribution (cont.)

- The main trend in functional income distribution is the growing importance of profit share with the correspondent fall in the labour income share (wages), as noted by Hein (2009) and Tomaskovic-Devey (2013).

- This trend has been transversal to the majority of advanced economies since the early eighties, which tends to potentiate…
  - …the emergence of social strains (Dünhaupt, 2012);
  - …the reduction of the aggregate demand in the medium and long-term, since the economic growth in most OECD countries is characterized by a 'wage-led' model instead of a 'profit-led' model, as referred by Naastepaad and Storm (2007), Hein and Vogel (2008) and Dünhaupt (2013);
  - …the decrease of consumption propensities with negative effects on economic dynamism, as emphasised by Stockhammer (2012).

I. The Relation between Financialisation and Inequality on Functional Income Distribution (cont.)

- Despite the increasing amount of theoretical work on the effects of financialisation on functional income distribution, empirical studies on the impact of that phenomenon are limited (Peralta and Escalonilla (2011) and Dünhaupt (2013)).

- Most of these studies find statistical evidence supporting the theoretical claim that the phenomenon of financialisation has been causing an increase of the inequality on functional income distribution (Karanassou and Sala (2013), Stockhammer(2009), Kristal (2010), Peralta and Escalonilla (2011), Dünhaupt (2013) and Lin and Tomaskovic-Devey (2013)).

- This paper aims to evaluate the impact of financialisation on the Portuguese labour income share, contributing to the literature in three aspects (focusing on Portugal, using a time series analysis and distinguishing the long-term from the short-term effects).

II. Economic Modelisation

- We propose to estimate an equation where labour income share is a function of the traditional variables (technological progress, globalisation, education and business cycle) and four further variables related to financialisation (financial activity, government activity, shareholder orientation and trade union density):

$$LS_t = \beta_0 + \beta_1 TP_t + \beta_2 GL_t + \beta_3 ED_t + \beta_4 BC_t + \beta_5 FA_t + \beta_6 GA_t + \beta_7 SO_t + \beta_8 TU_t + \eta_t$$

$$\beta_1 < 0, \beta_2 < 0, \beta_3 > 0, \beta_4 < 0, \beta_5 < 0, \beta_6 > 0, \beta_7 < 0, \beta_8 > 0$$

III. Data

- Annual data between 1978 and 2012, constituting a total sample with 35 observations (this is the period and the frequency for which all data are available);

- The phenomenon of financialisation became more preponderant in Portugal during the 1990s (Lagoa *et al.* (2013));

- The fall of the labour income share is a long-term structural phenomenon of the economies, so annual data is likely to capture better the determinants of the decline of the labour income share than higher frequency data.

III. Data (cont.)

- We collect annual data for the following nine variables:
  - Adjusted labour income share;
  - Total factor productivity;
  - Exports and Imports;
  - Schooling rate of upper-secondary education;
  - Output gap;
  - Gross value added of financial sector;
  - Total expenditures of general government;
  - Interest and dividends payments of non-financial corporations;
  - Trade union density.

IV. Methodology

- Our methodology involves five stages:
  - Unit root tests (ADF and PP tests);
  - ARDL estimation;
  - Bounds test of cointegration;
  - Diagnostic tests (Autocorrelation, Ramsey's RESET, Normality Heteroscedasticity and CUSUM tests);
  - ARDL results.

V. Empirical Results and Discussion

1. Unit root tests

- Unit root tests (ADF and PP tests, respectively) provide mixed results, constituting a justification to adopt ARDL models.

Variable	Level			First Difference		
	Intercept	*Trend and Intercept*	*None*	*Intercept*	*Trend and Intercept*	*None*
LS	0,032*	0,147	0,049	0,001	0,836	0,000*
TP	0,002	0,003*	0,006	0,000	0,000	0,000*
GL	0,068	0,049*	0,935	0,000	0,013	0,000*
ED	0,833	0,593*	0,861	0,151	0,385	0,070*
BC	0,182	0,999	0,020*	0,002	0,004*	0,001
FA	0,195*	0,408	0,641	0,000	0,000	0,000*
GA	0,276*	0,988	0,600	0,000*	0,001	0,000
SO	0,356*	0,884	0,738	0,005	0,000*	0,000
TU	0,001	0,020*	0,066	0,294	0,089*	0,037

Variable	Level			First Difference		
	Intercept	*Trend and Intercept*	*None*	*Intercept*	*Trend and Intercept*	*None*
LS	0,001*	0,027	0,049	0,001	0,004	0,000*
TP	0,002	0,004*	0,000	0,000	0,000	0,000*
GL	0,069	0,051*	0,969	0,000	0,000	0,000*
ED	0,826*	0,814	0,989	0,000*	0,002	0,000
BC	0,169	0,604	0,020*	0,003	0,014	0,000*
FA	0,185*	0,354	0,681	0,000	0,000	0,000*
GA	0,588	0,990*	0,666	0,074	0,144	0,006*
SO	0,352*	0,595	0,558	0,008	0,037	0,000*
TU	0,001*	0,940	0,000	0,002	0,000*	0,004

V. Empirical Results and Discussion (cont.)

2. ARDL estimation

- Hence, we run an ARDL considering the number two as a maximum order to our ARDL, in accordance with the majority of information criteria.

Lag	LR	FPE	AIC	SC	HQ
0	n. a.	1,47e-29	-40,8	-40,4	-40,7
1	383,0	1,40e-34	-52,6	-48,5*	-51,2
2	118,4*	1,43e-35*	-56,1*	-48,4	--53,5*

Note: * indicates the optimal lag order selected by the respective criteria

- In addition, we used the information criteria AIC in order to define the optimal number of lags to be incorporated in each variable in the estimation of our ARDL of order two, taking into account that AIC are a better choice than the others criteria in the case of small sample sizes (sixty observations and below), as stressed by Liew (2004).

V. Empirical Results and Discussion (cont.)

3. Bounds test of cointegration

- Then, we apply the methodology developed by Pesaran *et al.* (2001), in order to assess if there is a cointegration relationship between our nine variables.

F-statistic	Critical Value	Lower Bound Value	Upper Bound Value
4,892	1%	2,716	3,989
	5%	2,163	3,349
	10%	1,899	2,964

Note: Critical value bounds of the F-statistic were obtained in Pesaran and Pesaran (2009), considering intercept and no trend and for a number of variables equal to nine

- The computed F-statistic of 4,892 is higher than the upper bound critical values, which means that the null hypothesis of no cointegration can be rejected at the traditional significance levels. Therefore, there is evidence supporting the existence of a cointegration relationship between these variables.

V. Empirical Results and Discussion (cont.)

4. Diagnostic tests

- After that, we conduct a set of diagnostic tests, in order to assess if the model is adequate.

Test	Chi-square	*P-value*	F-statistic	*P-value*
Autocorrelation	1,887	0,170	0,607	0,454
Ramsey's RESET	7,477	0,006	2,930	0,118
Normality	1,566	0,457	n. a.	n. a.
Heteroscedasticity	1,058	0,304	1,027	0,319

- The estimated ARDL passes in all tests and does not suffer from any econometric problem, which confirms that the model is well designed.

V. Empirical Results and Discussion (cont.)

5. ARDL results

- Finally, we present the long-term estimations of our labour income share….

Variable	Coefficient	*Standard Error*	T-statistic
TP_t	0,161	0,214	0,754
GL_t	-0,304***	0,047	-6,499
ED_t	0,224***	0,032	6,948
BC_t	0,665***	0,133	4,997
FA_t	0,589	0,484	1,219
GA_t	0,598***	0,191	3,128
SO_t	-0,007	0,042	-0,174
TU_t	0,722***	0,065	11,135
β_0	0,190**	0,083	2,284

Note: *** indicates statistically significance at 1% level and ** indicates statistically significance at 5% level

V. Empirical Results and Discussion (cont.)

6. ARDL results (cont.)

- …and the respective short-term estimations…

Variable	Coefficient	*Standard Error*	T-statistic
ΔTP_{t-1}	0,263	0,357	0,736
ΔGL_{t-1}	-0,347***	0,091	-3,800
ΔGL_{t-2}	-0,074	0,083	-0,889
ΔED_{t-1}	0,147	0,091	1,623
ΔBC_{t-1}	0,378	0,443	0,852
ΔBC_{t-2}	-0,277	0,179	-1,550
ΔFA_{t-1}	1,908***	0,606	3,150
ΔFA_{t-2}	1,200	0,743	1,615
ΔGA_{t-1}	0,651**	0,266	2,450
ΔGA_{t-2}	-0,560*	0,284	-1,973
ΔSO_{t-1}	0,173*	0,087	1,994
ΔSO_{t-2}	0,137*	0,075	1,836
ΔTU_{t-1}	0,546**	0,257	2,123
EC_{t-1}	-1,630***	0,271	-6,007

Note: Δ is the operator of the first differences, *** indicates statistically significance at 1% level, ** indicates statistically significance at 5% level and * indicates statistically significance at 1% level

VI. Conclusion

- We estimated an equation to describe the Portuguese labour income share, using macroeconomic data.

- After concluding that we have a mixture of variables that are integrated of order zero and one, we found statistical evidence supporting the existence of a cointegration relationship between our nine variables.

- In the long-term, we are able to identify that the government activity and trade union density exerts a positive impact on the Portuguese labour income share, in accordance with the literature on financialisation.

VI. Conclusion (cont.)

- Moreover, the traditional explanations regarding the process of globalisation, the level of education and the business cycle seem to be also determinants of the evolution of the Portuguese labour income share in the long-term.

- On the short-term, the trade union density continues to be positively related with the Portuguese labour income share. .

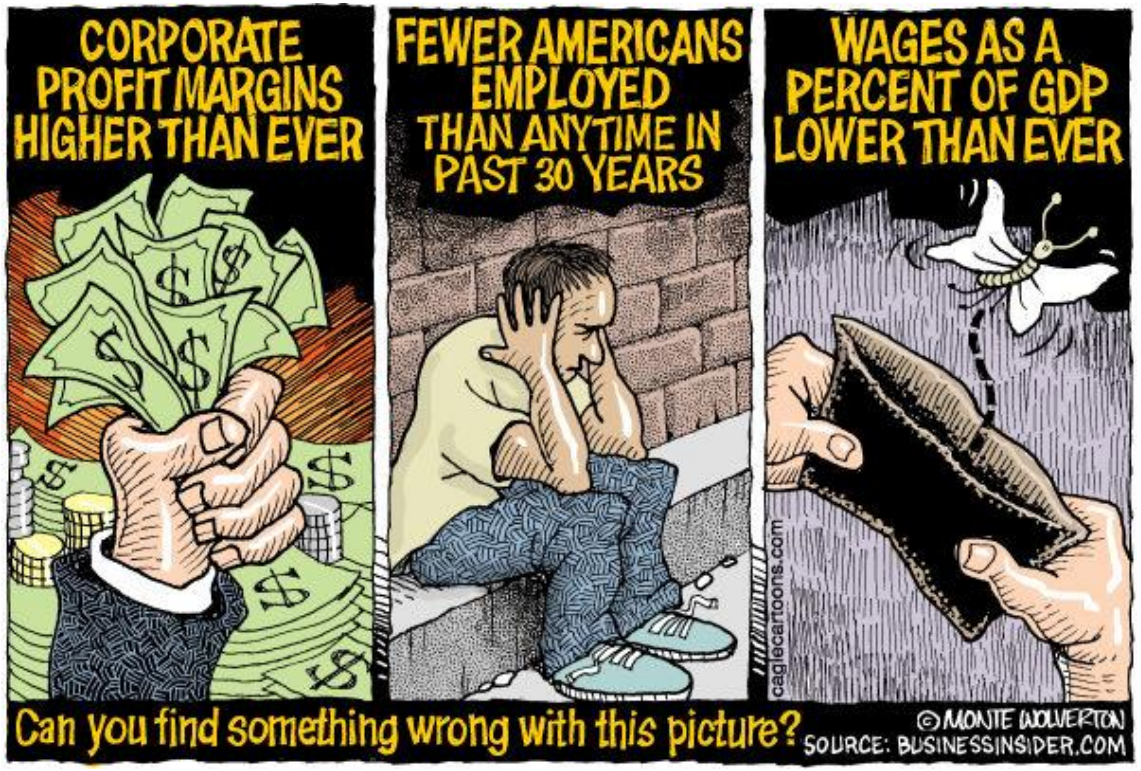
- Therefore, the negative effects of the process of financialisation on the labour income share are not na exclusive phenomenon of the most developed and financialised economies, like US and UK.

VI. Conclusion (cont.)

- Against this backdrop, the Portuguese policy makers should pay particular attention to the downsizing of government activity and continue to promote the increase on the level of education of the workforce, as well as take into account the decline of the bargaining power of trade unions in order to contain the fall of the respective labour income share.

- Finally, we would like to propose some extentions of this work to future research regarding this field:
  - Analyse the effects of financialisation on the inequality from a personal point of view;
  - Analyse the statistical relevance of these channels using data at a corporation-level or at an industry-level.

Thank you!



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