The effect of financialization on the erosion of collective wage bargaining: a theoretical and empirical analysis

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Industrial relations have changed vastly since the 90s and the collective bargaining coverage has declined strongly in many economies. Parallel to this trend an advanced financialization has happen in the OECD economies. This paper reviews the link between financialization and the erosion of collective wage bargaining in 10 OECD countries from 1995 to 2016.

This paper investigates, both empirical and theoretical, three paths that through financialization would affect labour market institutions: (a) the role of household debt in decreasing workers willingness to bargain and undermine their class consciousness, (b) the increased competition on financial markets and shareholder value orientation as a tool that help the dominance of financial sector over the production sector of the economy and depress the bargaining power of the employees, and (c) the increased financial payments of non-financial firms that give motives to the firms to reduce real wages.

This paper uses a comprehensive set of empirical measures for financialization in order to test these hypotheses with panel data models and several time series regressions for the same set of countries. Specifically, the percentage of collective bargaining coverage of the workers is explained by three financialization indexes: household debt to disposable income, the share turnover ratio that defined as the value of domestic shares traded divided by their market capitalization and the debt to surplus ratio for the non-financial firms. Moreover labor market indicators and a minimum wage indicator (Kaitz index) are used in order to approach the interaction that the labour market institutions have between them.

Using panel data models for 10 OECD countries from 1995 to 2016 the empirical analysis finds evidence that supports the erosion of collective wage bargaining due to financialization and more specifically due to the increased of household debt.

Keywords: labour market institutions, wage bargaining, financialization

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1. Introduction

Industrial relations have undergone profound changes in recent decades. One major change has been the decline of the trade union density and more recently the decline of the collective wage bargaining. The promotion of a more decentralized collective wage bargaining was generally inspired by recommendations from international organizations such as the OECD or the IMF, especially in the aftermath of economic crisis.

Figure 1 shows the average of trade union density and Figure 2 the percentage of wage bargaining coverage of the OECD average 1960-2014. Between 1978 when trade union density peaked at 49,8% of the workers and 2014 there was an 51,3% decline, while the wage bargaining coverage has been declined constantly the same years.

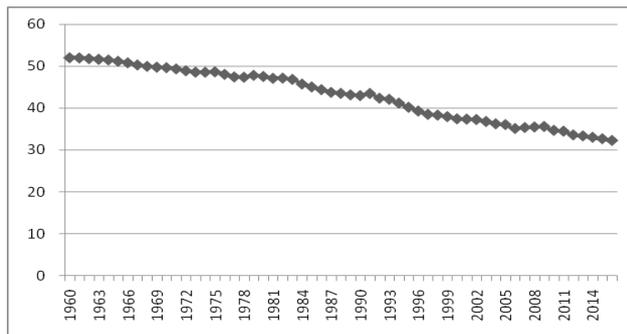Figure 1. Trade union density 1960-2014, OECD average, OECD database

Figure 2. Wage bargaining cverage, 1960-2014 OECD Total, OECD database

It has been quite detailed work in the broader discipline of social sciences regarding the reasons of the erosion of industrial relations. The literature has emphasized on the way that structural economic changes such as technological change, globalization and off shoring have affected the trade unions performance and their functions. However another structural change of the economy has been " the increasing role of financial motives, financial markets, financial actors and financial institutions in the operations of the domestic and international economies" (Eiptein 2005) named as financialization of the economy. Financialization only recently has been connected with the decline of trade unions and the overall erosion of labour market institutions (Mayer 2017; Darcillon 2015).

 In a recent paper Karwowski, Shabani and Stockhammer (2017) have made seven research questions regarding the financialization debate. Their empirical evidence support the hypothesis that financialization i slinked with asset price inflation and a driven demand regime. Moreover financialization is empowered from financial deregulation in financial and household sector .

 While financialization has been motivated from a wide range of phenomena, such as financial deregulation, securitization, shareholder value orientation and increasing household debt, the effect of these phenomena on labour market institutions has not been explained substantially from the relevant literature. In this paper we will focus on the effect that financialization has on labour market institutions both empirical and theoretical.

2. Theoretical context and literature about wage bargaining and financialization

2.1 How does financialization affect functional wage bargaining?

   Most advanced economies have experienced a rapidly growth in their financial activities. Financialization brings important changes in the economy in both

macroeconomic and microeconomic level. During the latest thirty years, a high financial regime has existed against the real economy, as a consequence, there is a consistent flow of income from the real sector to the financial sector. This changed the functional distribution of income as the profits rose relative to employee's compensation (Palley 2013). Post-Kaleckian/Post-Keynesian literature found important results in the contribution of financialization to wage stagnation and inequality (Dunhaupt 2016;Kohler *et al.* 2016). Moreover, there has been a shift in the wage share from workers to managers (Appelbaum and Hunter 2004). Also, there were important changes in investment behavior and the firms shifted from the long term investment plans to short-term capital gains. Financialization changed the behavior of consumption since the debt-financed consumption was promoted with the use of various financial instruments such as credit card debt and home equity lending. As a consequence, the household debt-income ratios and the corporate debt-equity ratios was substantially increased (Hein 2013). The ongoing process of financialization has contributed in an indirect way to labor market into labor market reforms. Specifically, the shareholder value orientation and the short-termism investment behavior has weakened the bargaining power of workers. Also, the liberalization and globalization of finance and trade have contributed to the deregulation of labour market and the weakening of trade unions (Hein 2013).

Darcillon (2015) found negative impact of the process of financialization on employment protection legislation and worker's bargaining power. However, Darcillon (2015) emphasized on the role of broader conceptualization of financialization: on the effects of increased employment in the financial sector and the value added of financial intermediation . While, Mayer (2017) has specifically research the impact that equity market development has on trade union and found that equity market development has a negative effect on the strength of trade unions' institutional structure but not on union membership.

The inconclusive of this research question is come from the fact that there is no a single hypothetical mechanism that we can follow for researching the channels of financialization. Since financialization is a multi-faceted phenomenon, we cannot follow a single theoretical tradition for describe each mechanism that affects labour market institutions.

In the next subsections we will analyze how three channels of financialization contribute to the erosion of collective wage bargaining. As main channels of financialization we consider : a) the shareholder value orientation and the increased competition of financial markets, b) the increased financial payments of the non-financial firms, c) the household debt

2.2 The contribution of the increased competition in financial markets, the shareholder value orientation and the exit options of capital in wage bargaining

Financial liberalization that happened in OECD countries since the 80's and 90's leaded to higher capital mobility. Moreover financialization offers a wide exit options of capital with the use of different payment methods like money-market funds (Guttmann 2017).The mobility of investments have been largely rise in both geographically range and as an options of different investment projects and markets, like financial assets, real assets, house markets e.t.c. (Stockhammer 2009).The extended exit options of capital have a negative impact to the bargaining power of the workers. Furthermore financial globalization that measured as foreign assets plus foreign liabilities, has worsening the bargaining power of workers and has contributed to the decline of wage share (ILO 2008).

Literature has emphasized on the effect that the rise of shareholder power has on investment strategies of the firms. Lazonick and Sullivan (2000) argue that the investment behavior has shifted from the "retain and reinvest" to "downsize and distribute". Shareholders have gained power over the workers and firms have changed their focus from the long term investment behavior to short-term capital gains (Stockhammer 2009). Dallery (2009) argued that if the firm is managed on the interests of shareholders then they are interested inincreased cash-flows or share's value maximizing. In the case that shareholders are involved in several firms, are interested in short-term rent and they do not care about long term survival of these firms, but on short term financial performance.

Marxian authors on the other side focused on the reframing of labour and organization of production that happen due to financialization (Bryan *et al.* 2009) .They have argued that the process of securitization and the increased trading of financial assets has affected the internal organization of production (Bryan *et al.* 2009;Sotiropoulos and Lapatsioras 2014).

The negative effect that the shareholder value orientation have on wage bargaining coverage has been shown from Darcillon (2015) with the use of a panel data calculation for 16 OECD countries. However different institutional framework may implemented to the stock market development. There are cases that the tasks that the trade union have to overtake could protect them and their member from the exceed of stock market developmeny. One can argue that the institutional framework of each country could contribute to the effect that financialization has on the collective bargaining agreements for example In the Netherlands and Denmark, unions have an important role in the governance of pension funds. This made the stock market development to have a less negative effect in the labour institutions (Jackson and and Thelen 2015; McCarthy *et al*., 2016). Mayer (2017) use country fixed effects in the panel analysis in order to address these differences between countries and to show the effect of that the stock market development has on trade union in each country, however remain unclear how much the pension funds contribute to the stock market.

2.3 The contribution of the increased financial payments of non-financial firms to the bargaining power of workers

Financial payments of non-Financial companies have considerably grown during the years of financialization (Kohler *et. al*. 2016).

Kaleckian theory of competition assumes that firms are operates in oligopolistic environments (Kalecki 1969) and they put their prices regarding the unit cost plus a mark-up. The relevant literature has argued that the non-financial firms have raised their overhead cost due to the increased financial payments. In a permanent increase of dividend payment, in order the real investment to be fund, the entrepreneur have to take decision regarding the level of the mark up and the corresponding price (Hein 2013; Hein and van Treeck 2010). In order to understand how the firm will act and why the workers loose bargaining powers from the increased financial payments we have to analyze the determinants of mark-up.

First, the mark up is served as an index of monopoly power of the firm and is determined by the degree of concentration of each industry and to the price competition in contrast to the other form of competition such as product differentiation. Second, the mark up is negative related with the trade union power.

Trade unions will put pressure on the firms on wage increases if the mark up exceed a level. Of course, in order this process to be effective trade unions should have respectively power. Third the overhead costs, that include the dividend and interest payment, may affect the mark up that the firm charges to unit cost. In the case of permanent increase of overhead costs the firm increase the mark up in order to finance its expences.

Hein (2013) discuss the potential effects of financialization and on functional income distribution via the channels that pass through the decision of mark-up that set the firm. In our case we will focus how the increase of the overhead cost of the firm due to interest and dividend payment could lead to an erosion of collective wage bargaining. In the case that the only determinant of the mark up that change is the increased overhead costs we can thoroughly support that the wage bargaining will be eroded because the firm either will down press the labor cost or will increase the price . But what happened when the other determinants of the mark up are changed as well and the firm has to take decisions taking consideration all the picture. It is obvious that an accurate prediction of the firm policy is out of the interest of this paper, however we can argue that still the increased overhead costs will cause an erosion of labour market institutions. First of all since the trade union density is constantly decreasing from the 80's, in all the OECD countries, it is difficult to support the argument that due to this situation one firm cannot set a higher mark up because the workers will claim higher wages. According to the third determinant of mark up , that refer to the degree of monopoly of the industry we cannot examine the way that will contribute to the rise of mark up, however if the price competition confront the firm to increased the price, then the firm, in order to finance the interest and dividend payments, will either suppress the labour cost or downsize investment projects. Both options will reduce the wage bargaining power of workers. In the case that the firm decides to increase the mark up and thus the price , then the workers will face an increased level of price and as a result an apprehension to poverty. This will reduce their willingness to go through a collective bargaining process.

There have been several empirical works that attempt to show the impact of the increased interest and dividend payments in the income distribution but only few that trying to show the effect of financial payment to wage bargaining. Hein and Schoder (2011) found significant result in Germany and USA from 1963 and 2007 for the impact of interest payments to profit shares. Alvarez (2015) founds negative effects of

the interest payments on the wage. Dunhaupt (2016) is measure the interest payments for non-financial organizations for 13 OECD countries for the period 1986-2007 and finds a negative statistically impact of dividends payments. Devey, and Lin (2011) shows in a panel model in 35-40 industries in USA find that an increased degree of financialization is linked with a fall in the labor income share. Moreover, Dumenil and Levy (2001) have found that the rise in the profit rate in France during 80s was a result of the rise in net real interest payments. These results have been confirmed by Epstein and Power (2003) in a panel data analysis of 29 OECD countries (1960-2000).

2.4 The household debt and the consumption culture

The rising of the household debt has gained the attention of the researchers after the financial crisis. Mainly the literature has argued that as the wage share declines, the workers try to maintenance their consumption level through debt (Barba and Pivetti 2009; Stockhammer 2015).

Bryan et al. (2009) and Barba and Pivetti (2009) argue that working class indebtedness may affect working class power. This view referred to Cultural Political Economy literature and argues that financialization construct new identities and interests of the workers and through this process has been introduced a different culture regarding the labour market institutions (Langley 2007).

Other researchers present the concept of "financial vulnerability", that refers to the inability of the households to cover their basic consumption needs (Anderloni *et al.* 2012). Anderloni *et al.* (2012) link the impact of financial vulnerability with class consciousness and bargaining power and argue that debt makes workers more financially vulnerable and this affect negatively their wage bargaining power.

3. Variables, Data Sources and econometric methods

3.1 Regression equation, variable definition and data sources

We stress the previous presenting arguments according to financialization and wage bargaining with the estimation of the following equation:

$$Barg_{it} = c_i + b_1 TUR_{i,t} + b_2 HODE_{i,t} + b_3 NFFD_{i,t} + b_4 MIN_{i,t} + \varepsilon_{i,t}$$

where i stands the cross section, c_i presents each country specific constant and $\varepsilon_{i,t}$ the error term. The wage bargaining is explained by three financialization variables that describe the competition in the share market, the household debt, the financial payment of non-financial firms. Moreover we add the minimum to average wage as an indicator of the interaction of labour market institutions. For the indexes regarding financialization we followed Kohler *et.al.* (2016).

The dependent variable of the estimated equation is represented by the collective wage coverage as the percentage of all wage earners. The data was taken from OECD database. The financialization indexes are choosen as the best description of the involved mechanism. The household debt to disposable income in order to describe the impact that the debt has to workers' bargaining power, taken from the OECD database. The turnover share ratio that indicates the total shares traded in one period divided by the average market capitalization of this period, to account for the competition on the capital markets, provided by the IMF database. Regarding to account the financial payments of the non-financial firms we use non- financial firms debt to surplus ratio. This ratio indicates indirectly the financial liabilities of a non-financial firm. The variable is taken from the OECD database. We also use the MIN_t, the minimum to average wage (Kaitz index) to account for the interaction of the labour market institutions, also taken from the OECD database. We expect that the financialization indexes have negative impact on wage bargaining coverage and will have negative sign in the equation. On the other side the Kaitz index is expected to have positive sign since the labour market institutions are interacted positive each to each other.

3.2 Model Selection

The data set that we used are consist of 10 countries on the time range from 1995-2016. The panel approach is preferred in order more cases to be tested. The data set consists of this countries: U.S.A, Canada, Netherlands, Germany, U.K., Spain, Greece, Portugal, Hungary, Czech Republic. These countries were selected not only due to data limited but also because their labor market have been through significant changes due to financialization the recent years. Moreover the data are represent different types of labour market from more liberalized to coordinated. However, the

data set is unbalanced and irregular spaced and this cause problems and restrictions in the estimation procedure.

The panel is a typical macroeconomic panel because it has a small ids number, N=10 and a bigger T=21. For this reason we have to test if our panel has autocorrelation problem. We report different models that address this problem and are used in macroeconomic panel. Our baseline model is an OLS regression with country fixed effects (FE) because it is account for country heterogeneity. First we conduct unit root tests in our variables and we are concern for the existence of unit root especially in our dependent variable. Moreover, we conduct Durbin-Watson test for autocorrelation to our baseline model and we found the evidence of consistent autocorrelation.

For this reason we develop other model to address this issue. First of all we estimate our variables in the first differences. This improve the problem of autocorellation but made the t-statistics insignificant. The third model that we estimate is one with only the dependent variable in the first difference. This model give more significant result and at the same time it has no autocorellation according to Durbin-Watson statistic. However the relevant literature has report the present of the Nickell bias. We make the same specifications using linear regression with absorbing indicator, the effect of each country.

Since our panel data are unbalanced and suffer from autocorrelation and heteroscedasticity we estimate a dynamic panel-data estimation (PCSE) with two lags in our depended variable . Moreover we employ a fit-population average model, because this type of models allows you to specify for the type of correlation in the data set, so we specify an autoregration model (AR1), in order to stress the autocorellation problem in our panel. Moreover, we employ a Prais-Winsten estimation that is a linear model that address a serial correlation of AR1. Moreover we perform various cointegration tests.

4. Econometric results

The results from the estimated models are summarized in Table 1 and 2. We could see that in our baseline model, except from the problem of autocorrelation, the explanatory variables are statistically insignificant. Therefore we proceed with the

specification (2) which is the baseline model but with our variables in first differences. However, the variables are continue to be statistically insignificant. Therefore in the (3) model the indicator for the household debt has the expected sign and is statistical significant, but may suffer from the Nickel bias. In the (4) specification a model of absorbing indicators is used, and in (5) specification we use the absorbing indicators model but the dependent variable on the first differences. In (4) specification the variable of household debt is statistically significant, while in (5) specification the non financial payments of non financial firms is statistically significant. In all the cases we have selected the robust estimators because we have addressed heteroskedasticity in our data (A3).

In Table 2 we present the estimations of specific models that address for the problem of autocorrelation and heteroskedasticity. First we use the Prais- Winsten model with the Cochrance-Orcutt specification model for an AR(1) process. This model allow us to detect the autocorellation and heteroscedasticity problems. We also developed a GEE population-averaged (7) with specified the correlation as an AR(1) process.

Moreover we did a pooled OLS/WLS with fixed effects regression model with Driscoll and Kraay standard errors. We transform our data on first difference since we have detected that our data are not stationary. In the model (8) the most variables are statistically insignificant. However the financialization indicator for the household debt is statistically significant with negative sign.

Finally we develop a dynamic panel data model (9) and we use the dependent variable as instrument. The use of instrument variables is a common practice when we have the problem of autocorellation in the model. In the model (9) from the financialization variables again only the variable of the household debt is statistically significant with the expected sign.

Overall even if our results are in the most cases statistically insignificant we could argue that in the most models that we presented, the explanatory variable of household debt is statistically significant with the expected sign. However, we have to test for the present of cointegration in our model. Unfortunately, because our panel data is unbalanced we cannot perform Granger causality test. For this reason we perform Pedroni test for cointegration (Table 3) and Westerlund test for cointegration

(Table 4) . In both tests the indication of cointegration is present because the most of the tests are statistically significant.

Table 1										
Specification sample	Baseline 1995-2016		(2) 1995-2016		(3) 1995-2016		(4) 1995-2016		(5)1995-2016	
Est. Method Variable	FE	t-value	FE First dif.	t-value	FE First Dif. Dep. only	t-value	Absorb. Indic.	t-value	Absorb. Indic. First Dif.Dep. only	t-value
C	63.63	10.7	-0.231	-0.97	-9.5	-1.44	63.63*	0.00	-9.5	-1.37
TUR	0,006	0.75	-0.01	-0.41	0.001	0.28	0.06	0.93	0.001	0.22
HODE	-0.05	-1.04	-0.08	-1.52	0.003	0.21	-0.05***	-1.83	0.003	0.17
NFFD	0.44	0.62	-0.85	-1.13	-0.61***	-2.06	0.44	0.68	-0.61	-0.99
MIN	-20.06	26.0	26.4	0.49	35.19**	2.43	-20	-0.89	35.1**	2.27
Adj.R^2	0.11		0.03		0.05		0.94		0.02	

Table 2								
Specification sample	(6) 1995-2016		(7)1995-2016		(8)1995-2016		(9)1995-2016	
Est. Method Variable	Prais-Winsten-Cochrance-Orcutt AR(1)	t-value	GEE population-averaged AR(1)	z-value	Driscoll-Kraay First Dif.	t-value	Dynamic panel data with dependent variable as instrument	z-value
C	-	-	-	-	-	-		
TUR	-0.0006	-0.07	0.003	0.5	0.001	-0.14	-0.001	-0.2
HODE	-0.099***	-1.72	-0.97***	-1.74	-0.1***	-1.97	-0.11***	-1.77
NFFD	-0.598	-0.64	-0.25	-0.23	-0.6	-0.89	-0.46	-0.51
MIN	24.5	0.9	10.5	0.23	24.5	0.66	15.5	0.56
L1. Barg							0.79	8.45*
L2. Barg							0.05	0.50
Adj.R^2	0.0003				0.04			

Table 3. Pedroni test for cointegration		
	Statistics	p-value
Modified Phillips-Perron t	0.0762	0.4696
Phillips-Perron t	-8.8042	0.0000
Augmented Dickey-Fuller t	-12.755	0.0000

Table 4.Westerlund test for cointegration		
	Statistics	p-value
Variance ratio	-1.5831	0.0567

5. Conclusion

The objective of this paper is to theoretically discuss and empirically address the linkage between three financialization channels with the labour market institutions. This paper provides evidences about the connection between wage bargaining, an important labour market institution and finacialization. Financialization is understood as the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies (Eipstein 2005). From the theoretical analysis we examine three channels through that financialization is interpret to wage bargaining. Moreover, we conduct an empirical analysis with the use of panel data for 10 OECD countries for the time period from 1995 until 2016. Our data are limited and unbalanced. However, our evidence supports the Cultural Political Economy approach regarding the OECD economies and the changes that the debt-financed consumption has on the behavior of the workers. Moreover, there are some limited evidence that the increased financial payments of the Non-Financial Firms have negative results on the wage bargaining. However, these test should be done again with the use of the dividend interest payments. Moreover, the financialization index for the increased competition in financial markets that we use , fail to be statistically significant and to have the desired sign almost all the model that we developed. This may reflect the peculiar financialization development of the stock markets or we have not choose the right index to describe the process of financial competition in the stock markets.

References

Alvarez, I. (2015) 'Financialization, Non-Financial Corporations and Income Inequality: The Case of France', Socio-Economic Review, 13, 449–475.

Anderloni, L., Bacchiocchi, E. and Vadone, D. (2012) 'Household Financial Vulnerability: An Empirical Assessment', Research in Economics, 66, 284–296.

Appelbaum, E., & Hunter, L. W. (2004). Union participation in strategic decisions of corporations. In *Emerging Labor Market Institutions for the Twenty-First Century*. University of Chicago Press.265-292

Barba, A. and Pivetti, M. (2009) 'Rising Household Debt: Its Causes and Macroeconomic Implications- A Long-Period Analysis', Cambridge Journal of Economics, 33, 113–137.

Bryan, D., Martin, R. and Rafferty, M. (2009) 'Financialization and Marx: Giving Labor and Capital a Financial Makeover', Review of Radical Political Economics, 41, 458–472.

Dallery, Th. (2009) 'Post-Keynesian Theories of the Firm under Financialization', Review of Radical Political Economics, 41, 492–515.

Darcillon, T. (2015) 'How Does Finance Affect Labor Market Institutions? An Empirical Analysis in 16 OECD Countries', Socio-Economic Review, 13, 477–504.

Dünhaupt, P. (2016). Determinants of labour's income share in the era of financialisation. *Cambridge Journal of economics*, *41*(1), 283-306.

Duménil, G., & Lévy, D. (2001). Costs and benefits of neoliberalism. A class analysis. *Review of International Political Economy*, *8*(4), 578-607.

Epstein, G. A. (Ed.). (2005). *Financialization and the world economy*. Edward Elgar Publishing.

Epstein, G., & Power, D. (2003). Rentier incomes and financial crises: an empirical examination of trends and cycles in some OECD countries. *Canadian Journal of Development Studies/Revue canadienne d'études du développement*, *24*(2), 229-248

Guttmann, R. (2017). Financialization revisited: the rise and fall of finance-led capitalism. *Economia e Sociedade*, *26*(SPE), 857-877.

Hein, E. and Schoder Ch. (2011) 'Interest Rates, Distribution and Capital Accumulation – A post- Kaleckian Perspective on the US and Germany', International Review of Applied Economics, 25, 693–723.

Hein, E., & Van Treeck, T. (2010). Financialisation and rising shareholder power in Kaleckian/Post-Kaleckian models of distribution and growth. *Review of Political Economy*, *22*(2), 205-233

Hein, Eckhard. "Finance-dominated capitalism and re-distribution of income: a Kaleckian perspective." *Cambridge journal of economics* 39.3 (2013): 907-934.

Jackson, G., & Thelen, K. A. (2015). Stability and change in CMEs: Corporate governance and industrial relations in Germany and Denmark. In *The politics of advanced capitalism* (pp. 305-329). Cambridge University Press.

ILO (2008) World of Work Report. Income Inequalities in the Age of Financial Globalization, Geneva, International Labour Organization.

Kalecki, M. (1969) Theory of Economic Dynamics, New York, Monthly Review Press.

Karwowski, E., Shabani, M., & Stockhammer, E. (2017). Financialization: Dimensions and determinants. *A Cross-Country Study. Kingston University London Discussion Paper*

Köhler, K., Guschanski, A., & Stockhammer, E. (2016). How does financialization affect functional income distribution? A theoretical clarification and empirical assessment. *Socio-Economic Review*..

Langley, P. (2007) 'Uncertain Subjects of Anglo-American Financialization', Cultural Critique, 65,67–91.

Lazonick, W. and O'Sullivan, M. (2000) 'Maximizing Shareholder Value: A New Ideology for Corporate Governance', Economy and Society, 29, 13–35.

McCarthy, M. A., Sorsa, V. P., & van der Zwan, N. (2016). Investment preferences and patient capital: financing, governance, and regulation in pension fund capitalism. *Socio-Economic Review*, *14*(4), 751-769.

Meyer, B. (2017). Financialization, technological change, and trade union decline. *Socio-Economic Review*.

Palley, Thomas I. (2013) "Financialization: what it is and why it matters." *Financialization*. Palgrave Macmillan, London. 17-40.

Sotiropoulos, D. P., & Lapatsioras, S. (2014). Financialization and Marx: some reflections on Bryan's, Martin's and Rafferty's argumentation. *Review of Radical Political Economics*, *46*(1), 87-101.

Stockhammer, E. (2009) Determinants of Functional Income Distribution in OECD Countries, IMK Studies 5/2009, Dusseldorf, Institut fur Makrookonomie und Konjunkturforschung

Stockhammer, E. (2015). Rising inequality as a cause of the present crisis. *Cambridge Journal of Economics*, *39*(3), 935-958.

Appendix

A1.Unit root tests

Fisher type unit root test for Barg

Based on Phillips-Peron tests

		Statistic	p-value
Inverse chi-sq	P	31.91	0.0788
Inverse normal	Z	-0.4801	0.3156
Inverse logit	L	-0.7087	0.2408
Modified inv. chi-squared	Pm	1.4954	0.0674

Fisher type unit root test for Barg

Based on Augmented Dickey-Fuller tests

		Statistic	p-value
Inverse chi-sq	P	48.8269	0.008
Inverse normal	Z	-2.2280	0.0129
Inverse logit	L	-2.5377	0.0070
Modified inv. chi-squared	Pm	4.0443	0.0000

Fisher type unit root for HOPE

Based on Augmented Dickey-Fuller tests

		Statistic	p-value
Inverse chi-sq	P	19.89	0.5894
Inverse normal	Z	1.155	0.8760
Inverse logit	L	-0.3168	0.6243
Modified inv. chi-squared	Pm	7.32	0.0000

Fisher type Unit root test for HODE

Based on Phillips-Peron tests

		Statistic	p-value
Inverse chi-sq	P	70.55	0.0000
Inverse normal	Z	-4.91	0.0000
Inverse logit	L	-5.47	0.0000
Modified inv. chi-squared	Pm	7.32	0.0000

Fisher type Unit root test for NFFP

Based on Augmented Dickey-Fuller tests

		Statistic	p-value
Inverse chi-sq	P	54.90	0.0001
Inverse normal	Z	-4.40	0.0000
Inverse logit	L	-4.36	0.0000
Modified inv. chi-squared	Pm	4.96	0.0000

Fisher type unit root test for NFFP based on Phillips-Peron tests

		Statistic	p-value
Inverse chi-sq	P	16.57	0.7863
Inverse normal	Z	0.3597	0.6405
Inverse logit	L	0.3426	0.6335
Modified inv. chi-squared	Pm	-0.8176	0.7932

Fisher type unit root test for MIN based on Augmented Dickey-Fuller test

		Statistic	p-value
Inverse chi-sq	P	68.60	0.0001
Inverse normal	Z	-4.6177	0.0000
Inverse logit	L	-5.1134	0.0000
Modified inv. chi-squared	Pm	8.4348	0.0000

Fisher type unit root test for MIN based on Phillips-Peron test

		Statistic	p-value
Inverse chi-sq	P	8.75	0.9652
Inverse normal	Z	1.8791	0.9699
Inverse logit	L	2.0800	0.9786
Modified inv. chi-squared	Pm	-1.5416	0.9384

Fisher type unit root test for TUR based on Augmented Dickey-Fuller test

		Statistic	p-value
Inverse chi-sq	P	25.67	0.2658
Inverse normal	Z	-0.3161	0.3760
Inverse logit	L	-02355	0.4073
Modified inv. chi-squared	Pm	0.5543	0.2897

Fisher type unit root test for TUR based on Phillips-Peron test

		Statistic	p-value
Inverse chi-sq	P	49.24	0.0007
Inverse normal	Z	-3.248	0.0006

Inverse logit	L	-3.4343	0.0005
Modified inv. chi-squared	Pm	4.1071	0.0000

A2. Modified Wald test for groupwise heteroskedasticity in fixed effect regression model

H0: sigma(i)^2 =sigma^2 for all i

chi2(10) =1.1e+05

Prob>chi2 =0.0000