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Was Piketty Right? Empirics of CCC Model: Corporate Power, Consumption, Debt and Inequality

Summary: This paper provides an empirical investigation into the empirics of cumulative and circular causation (CCC) model. Relying on their corporate power, corporations have stimulated the rising consumerism, which has increased both private consumption and debt. On the other hand, increasing debt has enhanced the process of rising inequality due to the lack of funding to invest in education or create savings. Rising inequality has further increased the bargaining power of capital and closed the CCC model. This paper tests the proposed theoretical model on a sample of OECD countries in the period between 1990 and 2013. We show that the growing corporate power causes increased consumption, growing household and public debt, as well as higher inequality. The paper makes several original contributions to the existing literature. First, it is the first empirical investigation of the CCC relationship. Second, it extends the knowledge about the trends of rising corporate power and consumerism at macro level.

Key words: Corporate power, Consumption, Debt, Non-recursive, Cumulative circular causation, Inequality.

JEL: B52, E02, P10.

Do the "evil global corporations" in the interest of capital really cause global impoverishment of people? According to Thomas Piketty (2014), the profit rate was over the long period higher than economic growth rate. This implies that increasing inequality is a direct result of this process, causing the capital owners to further increase their wealth, influence and bargaining power in the distribution of income. This results in an upward spiral, which further increases their dominance. The increasing dominance of capital leads to several other undesirable consequences in addition to increasing inequality. First, capital stimulates consumerist behaviour to secure increasing demand. Increased personal consumption skews the income distribution between consumption and savings (and investment into education, etc.), and causes increasing indebtedness. The latter is again supported by capital through the interest of the financial services' sector. According to Piketty (2014) and Franci Porenta (2017), the government itself could reverse this process, but it is itself a victim of the process of increasing indebtedness and rising corporate power. As a consequence, it has a limited ability to influence the direction of capitalist development. As Porenta (2017) shows in his

theoretical discussion, the increasing corporate power in the situation of limited household and state power leads to a cumulative and circular causality, where rising inequality and limited state power are only enhanced.

The purpose of this paper is to empirically evaluate the validity of the proposed mechanism on a sample of Organization for Economic Co-operation and Development (OECD) countries between 1990 and 2013. We will show that (1) in the OECD economies, the corporate power has increased and financial liberalization has stimulated this process. The study will also reveal that (2) increased corporate power is positively influencing personal consumption, which is in line with the increasing claims of conspicuous consumption, driven by corporate power (marketing and creation of wants). Furthermore, we will provide evidence that the (3) indebtedness has been increasing, again supporting the growing power of corporations and capital. (4) Inequality is shown to increase, which further diminished the bargaining power of workers, i.e. consumers. Finally, we show that (5) the spiral continues in favour of capital. Overall, in the OECD in the period under investigation, the cumulative and circular causation (CCC) circle is confirmed.

This paper is structured as follows. Section 1 discusses the theoretical background of the model. Section 2 presents the data and methodology used in the study. Section 3 describes and discusses the results, while Section 4 concludes.

1. Theoretical Background: The CCC Model

The CCC model describes the socio-economic dynamics with a series of interrelated causations that form a non-equilibrium spiral. The model studies the relationships between the four system components or building blocks in the following sequence: corporate power, consumption, household and public debt, and inequality. Figure 1 summarizes the main idea of the model.
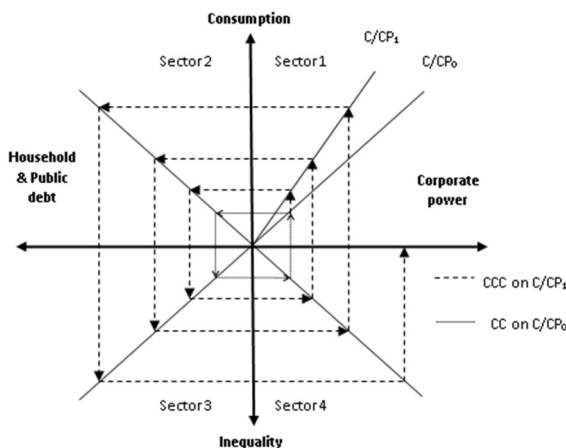
Source: Porenta (2017).

Figure 1 The Process of Cumulative and Circular Causation

Moving from the right to the left, consistent with the defined sequence, the movement shows a steady increase in all four parameters (Figure 1). With a static corporate power as C/CP_0, the movement is steady and in circular causation. With the increase in the corporate power as C/CP_1, the curve in Sector 1 shifts upward and therefore generates an increase in all four parameters. There is a clear notion of a cumulative and circular causation of the main identified variables. Growing corporate power is leading to consumption, driven by conspicuous consumption and consumerism, rising public and household debt, economic inequality and unsustainable growth (Porenta 2017). The CCC model suggests that the capitalism allowed corporations to increase their power so that they could influence both consumers and the state, causing the power of capital to increase, deteriorating the inequality and further stimulating the loop.

So far, a wholesome investigation of the data on the problems described has not been done yet. However, several partial analyses that confirm the proposed linkages within the main variables in system exist. The model has four key components, which can be empirically evaluated and tested. Hereafter, each of them is briefly discussed.

1.1 Corporate Power

The first component is the (increasing) corporate power. Although no common or standard measurement of corporate power exists, there are some available metrics. Randy R. Grant (1997) proposed the following: industry concentration ratios, aggregate concentration ratios, corporate interlocks/interlocking directorates, after-tax corporate profits as a percentage of personal or national income, the ratio of the marginal product of labour to the real wage, percentage of total government revenue derived from corporate profits taxes and percentage of the labour force unionized. According to Grant (1997), of those measures, the percentage of total government revenue derived from taxes on corporate profits and the percentage of the labour force unionized appear to hold the most promise, particularly if one is interested in empirically testing hypothesis using time series analysis. Brian Roach (2007) elaborated the following measures: corporate economic statistics, industry concentration ratios, labour union densities and corporate ability to reduce the taxes or acquire government subsidies. In our study, the corporate economic statistics and labour union densities are used.

Relevant corporate economic statistics are derived from transnational corporations (TNCs) since the TNCs are the world's biggest firms. Globalization or internationalization is the main determinant for the TNCs along with them pursue of optimal allocation of resources. Costs are minimized with their search for the countries with low labour costs, whereas the profits are maximized in countries with low taxes, tax evasions, tax avoidances and subsidies. Governments are competing for TNCs' investments by changing their laws regarding the minimum wage, subsidies and taxes. Incentives for new employments make governments even more complied with TNCs' demands. Additionally, they influence the international trade agreements according to their interests. All these factors make TNCs very powerful (Porenta 2017). Nevertheless, the development of big corporations is also positive due to their vast investments and improvements of technologies and other innovations.

United Nations Conference on Trade and Development (UNCTAD 2007) has done an analysis of the evolution of the composition of the world's top 100 largest non-financial TNCs. By using quantitative measures, they showed the indicators of both the growing economic importance of TNCs and their potential in global activities. They found out that between 1990 and 2003, the values of assets of foreign affiliates of the world's TNCs had increased by a factor of five, and sales and employment had multiplied respectively by three and two. At the same time, world gross domestic product (GDP) in current prices increased by 160 per cent. The report further argues that even those figures probably understate the role of TNCs in the global economy both because of measurement difficulties and because firms carry out their transnational activities through a variety of non-equity arrangements, subcontracting, franchising, licensing, strategic alliances etc. These forms of international expansion also occur with little or no foreign direct investment (FDI) and are therefore only partially captured by FDI data or firm-level data defined by equity participation. In 2004, the top 100 TNCs accounted for 11 per cent, 16 per cent and 12 per cent of the estimated foreign assets, sales and employment, respectively, of all TNCs operating in the world, therefore playing a major role in international production and trade.

The role of TNCs in the global economy is probably understated since TNCs are interlinked in a very complex way. There is also a lack of transparency, informal agreements are not revealed, and in reality, TNCs are even more connected due to various business agreements, owning of each other's shares or contracted associations. Stefania Vitali, James B. Glattfelder, and Stefano Battiston (2011) have shown in a study of complex systems that there is a core of 1,318 companies with interlocking ownerships, where each of them has on average 20 connections to other companies. Possessing 20 per cent of global operating revenues, they own the majority of the world's large blue chip and manufacturing firms through their shares, adding thus further 60 per cent of global revenues. They also found a super-core of 147 even more tightly knit companies, where all of their ownership is held by other members of the super-entity, which controls 40 per cent of the total wealth in the network. In fact, less than 1 per cent of the companies are able to control 40 per cent of the entire network.

Such concentration and centralization of capital and corporate power is actually evolving from the properties of capitalism and its contradictions, namely, monopolies or oligopolies. The capitalist system has the tendency to concentration and centralization of capital, which is particularly typical of the 20th century, with the prevalence of the TNCs in global economy. The consequence is an exclusion of the effective price competition, which resumes in line with the productivity increase and the production costs decrease. This is also done at the expense of stagnation of real wages. As a consequence, a large and growing investment surplus emerges and encounters reduced investment markets (Paul A. Baran and Paul M. Sweezy 1966; John Bellamy Foster and Fred Magdoff 2009). Investment markets are reduced partly due to the maturity of the economies and partly because of the increase in the economic inequality, which in turn has a negative impact on consumption. For the investment of their surpluses, corporate power has also invented new financial instruments, liberalization, globalization and other leverages of influence. Indoctrination of the consumer, with very sophisticated marketing techniques is one of the main business activities of corporations.

Advertising induces the emulation and conspicuous consumption by the consumers, thus reinforcing the excessive consumerism with the social norm "keeping up with the Joneses" (Porenta 2017). Additional leverage is also the influence on public opinion, exercised by "opinion leaders" and "neutral" experts who advocate corporate interests in a very sophisticated way. On the other hand, the power of corporations is also enhanced by the weakening of the state. The bargaining power of the state and its reform priorities have been shown to be influenced by capital, either "officially" through lobbying or in less developed countries claims of corruption are common (e.g. Yadong Luo (2001) studies the impact of TNCs on host-countries governments).

Along with these contradictions of the properties of capitalism, big corporations also take advantages over the competition because of better organization and management, higher efficiency and productiveness, technological edge, and economies of scale and scope. Nevertheless, with the rise in big corporations and their power, the market shifts more and more towards imperfect competition. As a consequence, we do not have competitive markets with a large number of firms with sovereign consumers, but rather non-competitive markets with large firms that control the markets (John Kenneth Galbraith 1952, 1967). However, as Steven Pressman (2007) argues, firms cannot take the chance that after undertaking expensive investment there will be no demand for their goods. They are eliminating the uncertainty of market forces by controlling it through vertical integration, developing diverse products, dealing with the consumer taste changes and long-term contracts between producers and suppliers, and probably most importantly, by spending money on advertising, firms can actually control consumer tastes.

Hereafter, the following hypothesis will be tested; *H1: In the OECD economies, the corporate power has been increasing*.

1.2 Consumption

The second component relates to consumption. The most common is the relationship between consumption and income, and modelled with the *consumption function*. There are three main existing theories, based on the income dependent consumption expenditure function pointed by Keynes: (i) James S. Duesenberry (1949) relative income theory (RIH), where consumption decisions are motivated by "relative" consumption concerns or "keeping up with the Joneses"; (ii) Franco Modigliani and Richard Brumberg (1954) life-cycle theory, which assumes that household members choose their current expenditures optimally, taking account of their spending needs and future income over the remainder of their lifetimes; and (iii) Milton Friedman (1957) permanent income hypothesis (PIH), a simplified version of Modigliani model and a criticism of the Keynes. PIH supposes that a person's consumption at a point in time is determined not just by their current income but also by their expected income in future years, their permanent income. It states that, rather than changes in temporary income, changes in permanent income are those that drive the changes in a consumer's consumption patterns (Costas Meghir 2004). It predicts a consumption smoothing as a stable path of consumption and, if needed, savings and borrowing. PIH was then further tested by Robert E. Hall (1978), Hall and Frederic S. Mishkin (1982), and others.

Some of recent researches are based on Duesenberry's contemporary behavioural models, like behavioural foundations for the Keynesian consumption function (Fabio D'Orlando and Eleonora Sanfilippo 2010), an overlapping-generations economy with heterogeneous wealth levels (Francisco Alvarez-Cuadrado and Ngo V. Long 2011) and RIH as a synthetic Keynes-Duesenberry-Friedman model (Thomas I. Palley 2010). The latter suggests that consumption decisions are motivated by "relative" consumption concerns or "keeping up with the Joneses". A second claim is that consumption patterns are subject to habit and are slow to fall in face of income reductions. Redistributing income to lower income households is likely to have a net positive effect on aggregate demand owing to "keeping up with the Joneses" behaviour. The model suggests that policy that constrains emulation behaviour can improve social welfare. In effect, households are partially engaged in a form of consumption "arms race". The rich try to increase relative consumption, while lower income households try to keep up with the Joneses.

In our model, household final consumption expenditure was rising by 2.59 per cent on average in the period from 1990 to 2013 (OECD countries), moderately outpacing the GDP growth of 2.17 per cent in the same period. Given the fact that in the same period, the median household income growth was lower than the GDP growth, the consequence is growing household indebtedness. The literature suggests that corporate power leads to consumption driven by conspicuous consumption and evolving consumerism. The multicausal approach starts can be dated back to Thorstein Veblen (1899) and Galbraith (1967). Veblen (1899) constructed the term conspicuous consumption, which is based on evolutionary principles that are driven by the human instincts, mainly by emulation and predation, where people are trying to impress others, gain advantage and signal their status. Galbraith (1967) used the conspicuous consumption when explaining the dependence effect. He argues that corporations become so strong that they eventually take control over the competitors, workers and the market. They spread control and influence into politics, government, and public opinion. The worker who is at the same time a consumer becomes indoctrinated by privately owned media and corporate marketing, buying many things that he or she does not really need. The result is a huge production of unnecessary and unproductive private goods, whereas, on the other hand, there is a lack of public goods. Consumerist consumption becomes the foundation of economic growth. However, the problem is that real wages are stagnant and in a sharp contrast with the rising productivity and profits (Thomas A. Kochan 2013; Lawrence Mishel and Heidi Shierholz 2013; Robert H. Scott III and Pressman 2015), so the workers, who are at the same time the consumers, need to borrow money in order to maintain the standard and social status demanded by the society, the media and marketing.

Nowadays, conspicuous consumption is more a socio-economic behaviour, which is also common in poor social classes, where a person seeks a superior social status or the possibility to at least maintain the existing one and eliminate the stigma of being poor or the deterioration of one's social status (Kerwin Kofi Charles, Erik Hurst, and Nikolai Roussanov 2007). Additionally, evolutionary psychology also explains conspicuous consumption as a costly signal or a handicap principle, demonstrating a person's good socio-economic quality and his or her intention to attract economic

coalition partners or sexual mates, with the aim to improve one's own status and obtain the chance of reproduction (Amots Zahavi and Avishag Zahavi 1999; Geoffrey Miller 2009; Wendy Iredale and Mark van Vugt 2012), thus illustrating how marketing has exploited our inherited instincts to display social status for reproductive advantage.

Empirical work by Jess Benhabib and Alberto Bisin (2002, 2011) shows that advertising directly affects the consumer's preferences. Corporations exploit their power through advertising in order to create new consumers' needs. These needs are false. Individual's preferences, which are in part a social phenomenon, are influenced by advertising. The effectiveness of corporate advertising in enhancing the demand is also supported by Demetrios Vakratsas and Tim Ambler (1999) and Kyle Bagwell (2005). In turn, the advertising has a relevant impact on aggregate consumption (Benedetto Molinari and Francesco Turino 2013) and thus on other macroeconomic aggregates.

Dependence effect and revised sequence have shown to be the most powerful corporate tools in today's economy, as Porenta (2017) suggests. Corporations control workers, competitors, markets, governments, public opinion and consumers. They succeed to reverse the classical view of consumer-production relationship, namely that the consumer is the one who controls the producer. Such a revised sequence cannot be attained without the dependence effect. It is this dependence effect with its passive and active aspects that drive the revised sequence and the success of corporate advertising. The roots of dependence effect are both in conspicuous consumption and handicap principle. The latter actually drives the conspicuous consumption, the dependence effect and the corporate power. Corporations are keen to exploit one of the most powerful human instincts of the reproduction and display of the social status, thus fostering the consumerism as a marketing dominated culture. Consumers who are at the same time also workers with stagnant real wages as a result of increasing corporate power and increasing economic inequality are eager to maintain or obtain their social status. In many cases, they do not even strive to improve their social status, but merely maintain the existing standard or hide their impoverishment.

Hereafter, the following hypothesis will be tested; *H2: The increased corporate power caused increased consumption*.

1.3 Debt

The third component of the model relates to household and public debt. An important factor to consider is the consequence of stagnation of mature economies, where corporations are forced to seek new markets to invest their surpluses, and where even the new technologies markets are insufficient. As a result, Porenta (2017) argues, the financial liberalization and globalization have been imposed, and the financial sector has strongly overgrown the real sector, which results in many problems for economy and society. Financial sector also gladly credits the consumerist consumption to maintain demand and economic growth. Due to stagnant wages, this consumption is largely driven by borrowing. The debt is mostly consumptive and therefore not self-liquidating. It is not an investment expecting some future cash inflow and liquidating itself with future revenues. Governments also decrease taxes for top incomes and corporate revenues and consequently worsen their balance of payments (Duane Swank 2002;

Piketty, Emmanuel Saez, and Stefanie Stantcheva 2011; Thomas L. Hungerford 2012; Andrew Fieldhouse 2013; Kevin Farnsworth and Gary Fooks 2015). Because of rising inequality and macroeconomic instability, public and household debts also rise to maintain the consumption growth. This leads to boom-bust credit cycles and eventually to a chronic weakness of economic demand. The consequences of rising public debt, which also rises due to socializing private bubble busts, are less effective countercyclical policies. Expansionary fiscal policy is constrained because of the rising public debt, so it cannot spend more on infrastructure, education, human capital and health care. Expansionary monetary policy with lower interest rate and quantitative easing, on the other hand, even reinforces inequality because of lower returns to the savers, whereas at the same time, lower costs of borrowing increase profits for corporations and stock market investors.

Growing income inequality also leads to workers' inability to adapt to technological changes, including skill biased and capital biased changes that result in additional unemployment. Higher household debt causes that people cannot invest in their education or increase their savings and, consequently, their wealth and financial independence. On the other hand, higher public debt constrains the government to invest in education, health care, social transfers and another infrastructure. Excessive consumerism accounts for overprovided private goods and underprovided public goods, which reinforces inequality and impoverishment. The effect is a state of private wealth and public impoverishment, where the poverty is a cumulative and a self-driving circular causation. The poor are living in a deprived community without proper education, health care and other public services. They are unable to improve their skills, economic and political positions or their social mobility, thus they stay trapped in vicious circle of poverty for generations (Galbraith 1958; Stephen P. Dunn and Pressman 2005).

As it can be observed from the data in our model, increased household consumption expenditure outpaced disposable income, causing a drop-in household savings as a percentage of household disposable income. The reasons for the decline in the personal savings rate are increased personal consumption and higher mandatory transfers, such as income taxes and security programmes. On the other hand, bottom 90 per cent income share declined from around 70 per cent to 53 per cent in the period from 1975 to 2014, whereas top 1 per cent income share grew from around 7 per cent to 13 per cent. Increased consumption and stagnated or stalled income lead into borrowing. As a consequence of people's indebtedness, more people need social help. Rising social transfers lead to a further rise in already increasing public debt due to the consequences of financial liberalization and the bailouts of private capital (Eduardo Lora and Mauricio Olivera 2007; Marina Azzimonti, Eva de Francisco, and Vincenzo Quadrini 2014). As elaborated by Hyunseung Oh and Ricardo Reis (2012), government expenditures increased rapidly across the OECD countries from 2007 to 2009, where the median share of transfers accounts for 64 per cent of the increase in spending. In the US, transfers account for 75 per cent of the fiscal expenditure increase, or 3.4 per cent of GDP, whereas social transfers account for 2.72 per cent of GDP. Social transfers have four categories: (a) retirement and disabilities; (b) medical; (c) unemployment insurance; and (d) income assistance and others. There has been a large

compositional shift away from US government purchases and towards transfers, which more than tripled as a ratio of GDP over the past 50 years, and by 2007 accounted for 39 per cent of the total budget.

Empirical evidence has shown that the increasing household debt is significantly affected by positive changes in consumer price index, gross domestic product and household consumption (Christelle Meniago et al. 2013). Prior to the Great Recession, US households had record high debt levels and record low savings rates. Highly leveraged consumption boosted economic growth. However, large debt burdens have led many families to deleverage, but deleveraging has been insufficient. Debt levels, especially for home mortgages, remain high by historical standards (Scott III and Pressman 2015). Next, the debt dynamics equation analysis shows that the rapid rise in the ratio of household debt to disposable income is attributable not only to the increase in household asset purchases but also to the dampened growth in disposable income and the reduced savings rate (Hyun Jeong Kim et al. 2014). The decision to raise debt related to average income in the own residential area indicates that conspicuous consumption is partly financed by debt (Michael Berlemann and Jan Salland 2016), which leads to the study by Marcelo Vinhal Nepomuceno and Michel Laroche (2015). They argue that the happiness dimension of materialism correlates positively with personal debt and negatively with account balances.

Hereafter, the following hypothesis will be tested; *H3: Increased consumption caused higher household and public debt*.

1.4 Inequality

The fourth component of the model relates to inequality. The study by Azzimonti, De Francisco, and Quadrini (2014) shows that rising public debt, financial liberalization and increased income inequality are highly correlated. It also reveals that trade liberalization and economic globalization increase economic inequality (Andreas Bergh and Therese Nilsson 2010). The index of financial liberalization, constructed by Abdul Abiad, Enrica Detragiache, and Thierry Tressel (2010), confirms that the world's financial markets have become less regulated since the early 1980s. Financial liberalization and innovation have also facilitated the borrowers' access to credit that was previously denied, as well as relaxed financing constraints on the first-time homebuyers. According to OECD (2006) report, the household debt rose to historical levels in a number of countries. It has been driven by a combination of favourable financial conditions and buoyant housing markets. There have also been a number of supply-side innovations in credit markets that have eased the access to credit for lower-income borrowers and reduced financial constraints for the first-time homebuyers. As OECD (2013) reports, households remain highly indebted in a large number of OECD economies.

Decreased union density and workers' bargaining power, along with indebted households, can be seen in income distribution. The latter clearly indicates that income inequality is increasing. Due to the high economic power of corporations or capital, their bargaining power in the division of the pie increased, which undermines the position of the workers in the society and increases inequality between capital owners and workers. Hence, a more equal distribution of income is needed (Nuno Crespo,

Sandrina B. Moreira, and Nadia Simoes 2015; Philip Arestis and Ana Rosa Gonzalez-Martinez 2016). Empirical studies have shown that there is a long period of flat or stagnant wages (Mishel and Shierholz 2013), which only reinforces economic inequality. Inequality is further increasing due to a decrease in taxes (Fieldhouse 2013) and there has been a strong correlation between the cuts in top tax rates and the increases in top 1 per cent income shares since 1975 in 18 OECD countries; however, the top income share increases have not been translated into a higher economic growth (Piketty, Saez, and Stantcheva 2011). Another sharp distinction is the wealth and assets owned, with the bottom half of the global population owning less than 1 per cent of the total wealth. On the other hand, the richest 10 per cent hold 86 per cent of the world's wealth, and the top 1 per cent alone account for 46 per cent of global assets (Credit Suisse Research Institute 2013). As the study by James B. Davies et al. (2008) has shown, wealth is globally even more concentrated than income both on an individual and national basis.

Piketty and Saez (2003) have also shown that, in the US, the share of total pre-tax income accruing to the top 1 per cent has more than doubled since the 1970s. Similarly, OECD (2016)[1] also shows increasing inequality, as well as increasing private and public indebtedness. While the latter is a normal consequence of the developing financial system, a side-effect is also an increased dependency of debtors on the financial system (again capital). Since empirical studies also show that high inequality slows down economic growth (Jonathan D. Ostry, Andrew Berg, and Charalambos G. Tsangarides 2014) and increases political instability (Isabel Ortiz and Matthew Cummins 2011) and unemployment (James K. Galbraith 2012), this circular motion endangers the long-term sustainability of the existing socio-economic model.

The recent crisis raised the criticism and demanded a change. In this aspect, it is interesting how democracy is related to redistribution and inequality. The usual model of democracy presumes that median voters employ their voting rights in a democratic system to reallocate funds from the wealthier towards themselves. However, Daron Acemoglu et al. (2013) and Kosta Josifidis et al. (2016) have shown that there is a limited effect of democracy on inequality, thus not confirming this standard model. Inequality tends to increase after the democratization. The reason for that can be that democracy may be captured or constrained. Although democracy changes, the distribution of "*de jure*" power in society, policy outcomes and inequality also depend on the "*de facto*" distribution of power. Powerful elites who see their *de jure* power eroded by democratization may increase their investments in *de facto* power, implemented in controlling the local or state law enforcement, lobbying, or influencing the party system and politicians.

Increased income inequality, along with the vicious circle of impoverishment, also leads towards social inequality and the accompanying deterioration of their health and mental condition, not to mention the stress and bad quality of life (Porenta 2017). The study by Richard Wilkinson and Kate Pickett (2011) has shown that there are pernicious effects of inequality on societies: eroding trust, increasing anxiety and illness, and excessive consumption. The societies which do best for their citizens are

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[1] **Organization for Economic Co-operation and Development (OECD).** 2016. OECD.Stat. http://stats.oecd.org/# (accessed June 03, 2016).

those with the smallest income inequality, whereas the most unequal societies, such as the US, the UK and Portugal, do worst. Thus, the status and income differences have social and health consequences. Bergh and Christian Bjørnskov (2014) studied the correlation between social trust and income equality, where trust may influence equality through an increase in the welfare state. The results show that although trust enables welfare state policies, i.e. redistribution to decrease net inequality, this reduction in inequality does not increase trust.

The consequences of rising corporate power are increasing income and wealth inequality. Corporate power influences workers, markets, politics, government and society, and is imposing such distribution and redistribution of income that favours companies and rich individuals. Increased corporate power causes financial liberalization and reduced taxes, budget deficits as well as reduced social transfers, fewer investments in education and human capital, less social mobility and, consequently, a vicious circle of poverty entrapment. The rising corporate power leads to increased consumerism and consumption, which, in turn, results in increased household debt due to the stagnant real wages. These increasing inequalities have an immense impact on individuals, people and society. People's life becomes worse, their indebtedness is on the rise, the possibilities of better education are fewer, and their social mobility declines. Unemployment is rising or stalling, but never really disappearing. The environmental problems and its degradation worsen the quality of life; natural resources are destroyed. Such a path is clearly not sustainable and it cannot bring about the prosperity, as Porenta (2017) has shown.

Hereafter, the following hypotheses will be tested: *H4: Higher household and public debt caused higher income inequality*; *H5: Higher income inequality has influenced the increased corporate power.*

2. Data and Methodology

2.1 Econometric Technique

Partial analysis of the main system variables is followed by a synthesis of partial equations into a system of simultaneous equations. The CCC model has five main system variables, which also appear as explanatory variables in other equations.

The following equations of the model are tested (the variables' labels are described in Table A2 in the Appendix):

$$TA_t = \beta_0 + \beta_1 INE_t + \beta_2 FLI_t + \beta_3 TUD_t + \epsilon_{1t}, \tag{1}$$

$$TS_t = \beta_4 + \beta_5 INE_t + \beta_6 FLI_t + \beta_7 TUD_t + \epsilon_{2t}, \tag{2}$$

$$TE_t = \beta_8 + \beta_9 INE_t + \beta_{10} FLI_t + \beta_{11} TUD_t + \epsilon_{3t}, \tag{3}$$

$$C_t = \beta_{12} + \beta_{13} CP_t + \beta_{14} Y_t + \beta_{15} i_t + \beta_{16} W_t + \epsilon_{4t}, \tag{4}$$

$$HD_t = \beta_{17} + \beta_{18} C_t + \beta_{19} GDP_t + \beta_{20} S + \beta_{21} 90Y_t + \epsilon_{5t}, \tag{5}$$

$$PD_t = \beta_{22} + \beta_{23} C_t + \beta_{24} GDP_t + \beta_{25} PS_t + \beta_{26} T_t + \epsilon_{6t}, \tag{6}$$

$$INE_t = \beta_{27} + \beta_{28} HD_t + \beta_{29} PD_t + \beta_{30} PR_t + \beta_{31} TI_t + \epsilon_{7t}, \tag{7}$$

$$CP_t = l_1 TA_t + l_2 TS_t + l_3 TE_t. \tag{8}$$

Equations (1) to (7) are behavioural and contain explicit disturbances (ϵ_{1t} to ϵ_{7t}). The Equation (8) is an identity that specifies a variable corporate power, which is implicitly endogenous as a construct of a factor analysis that contains other endogenous variables (total assets, total sales and total employment). Equations from (1) to (3) are indicators of a variable corporate power, which are evaluated separately because of their endogenous positions, thus capturing their indirect effects and allowing for their full mediation. In contrast, evaluating the construct of corporate power directly could lead to biased parameter estimates, erroneous total effects, and questionable conclusions (Dirk Temme, Adamantios Diamantopoulos, and Vanessa Pfegfeidel 2014). All dependent variables also appear as endogenous in other equations, thus producing a non-recursive model.

Since the dependent variables are also the explanatory variables in other equations, we have the error terms correlated among the equations. Additionally, the endogenous variables are correlated with the disturbances, which violates the ordinary least squares (OLS) assumption. This problem can be addressed with instrumental variables to produce consistent estimates and with generalized least squares (GLS) estimation to account for the correlation structure in the disturbances across the system of equations.

To test the relationship between the variables, we rely econometrically on three-stage estimation of systems of simultaneous equations. The estimation refers to a system of structural equations, where some equations contain endogenous variables among the explanatory variables. Estimation is *via* three-stage least squares (3SLS) and it is arising out of the two-stage least squares (2SLS) estimates. In the first stage, the instrumented values for all endogenous variables are developed as the predicted values, resulting from a regression of each endogenous variable on all exogenous variables in the system. In the second stage, a consistent estimate for the covariance matrix of the equation disturbances is computed, based on the residuals from a 2SLS estimation of each structural equation. In the last stage, GLS estimator is obtained using the covariance matrix estimated in the second stage and with the instrumented values in place of the right-hand-side endogenous variables. 3SLS method gives more efficient results than the alternative 2SLS method, which is also using the instrumental variables. Both are producing consistent estimates, whereas the OLS method gives us biased estimates of the parameters (Arnold Zellner and Henri Theil 1962; Russell Davidson and James G. MacKinnon 1993; William H. Greene 2012; Stata 2016).

For preliminary test of unit-roots and stationarity we used Augmented Dicky-Fuller (ADF) test (David A. Dickey and Wayne A. Fuller 1979) and Dicky-Fuller generalized least squares (DF-GLS) test. The later can overcome the problems of ADF tests with reliability of small sample data due to their size and power properties (David N. DeJong et al. 1992a, b). The ADF test can over reject the null hypothesis when it is true (Type I error) and fail to reject it when it is false (Type II error). DF- GLS unit-root test performs a modified Dickey-Fuller *t*-test for a unit-root in which the series has been transformed by a generalized least squares regression, and where the power can be improved when an unknown mean or trend is present (G. William Schwert 1989; Graham Elliott, Thomas J. Rothenberg, and James H. Stock 1996). The results

of these tests are presented in Table A2 and are additionally available from the author upon request.

2.2 Data

Henceforward, this paper focuses on the sample of OECD economies between 1990 and 2013. Though, there are some substantial institutional differences between OECD economies, the common denominator are TNCs. OECD economies were used because 85 per cent of the top 100 TNCs were headquartered in the Triad (EU, US and Japan), with TNCs headquartered in the US dominating the list with 25 entries. Five countries, the US, the UK, Japan, France and Germany, accounted for 73 per cent of the top 100 firms, while the EU alone represented 53 per cent of all entries in 2004. Top 100 TNCs are therefore predominantly coming from Triad, changing its share from 100 per cent back in 1990 to around 85 per cent in 2013. Some possible limitations of the analysis could be due to the short time series. Prolonging the time series could deliver more efficient results. Nevertheless, the time horizon of 24 years was chosen upon the data availability and it is capturing the period of interests. The main variables of the model, its description and data source are presented in Table A1.

3. Results

3.1 Descriptive Statistics

For a variable of corporate power data from corporate economic statistics were collected, specifically from UNCTAD's internationalization statistics of 100 largest non-financial TNCs worldwide (UNCTAD 1993-2015). Those top 100 TNCs are mostly from Triad, changing its share from 100 per cent in 1990 to around 85 per cent in 2013. In that period, three corporate indicators grew sharply: total assets by 282 per cent, total sales by 193 per cent and total employment by 137 per cent, respectively. The latter coincides with the GDP growth in the same period for OECD countries, whereas the growth of total assets significantly outpaced the growth of GDP. Other important variables for the explanation of the corporate power, such as inequality, financial liberalization index and trade union density, are all rising (first two) or declining (the latter) consistent with the theory.

      Household final consumption expenditure rose by 2.59 per cent on average in the same period from 1990 to 2013. Household adjusted disposable income and net private wealth showed the same trend. Interest rate, on the other hand, fell from 11.76 per cent to 1.08 per cent on average in OECD countries, respectively. At the same time, household debt, public debt and government spending sharply increased, while net household savings bottom 90 per cent income share, and government taxes and social security contributions all declined. Additional inequality indicators, such as Palma ratio and tax redistribution inequality, also show an increase in income inequality. Descriptive statistics for the main model variables are shown in Table A2.

      After observing the units (Table A1), testing for the unit-roots (Table A2) and performing data plots, the final regression shows that optimal result is treating the time series as cointegrated with one common trend where not all data are stationary. Since the stationarity condition does not hold, the lagged dependent variable (LDV) model

is not appropriate for our model, but the time effect is partially controlled due to the first differences or original data being in the growth units. Alternatively, regressing full stationary data is causing too big loss of efficiency and may eliminate the permanent components, leaving only the relations among the remaining stochastic components of the time series. That may be pure noise, when what is of economic interest are actually the relations between the permanent components (Friedman 1988; John H. Cochrane 2012). 3SLS method is performing GLS estimation, which corrects the OLS regression standard errors for the correlation of the residuals. GLS, or equivalently quasi-first differencing the data, gives efficient estimation.

3.2 Regression Results

In the next paragraphs, the model results presented in Table 1 are discussed. For the first three equations of the corporate power's indicators, the three-stage least squares regression shows high values of coefficients of determination, continuing with still quite high value for consumption and somewhat lower value for household debt equation. Public debt equation, which is parallel to household debt equation in the system, has already a higher value of 65 per cent, whereas the inequality equation increases again up to 85 per cent of the variation explained by the regressors in the model. All coefficients of determination are significant. We can also observe that the model has a good fit.

The coefficients in the first three equations of the corporate power's indicators have signs consistent with predicted economic theory of the model, meaning that an increase in income inequality and financial liberalization, and decrease in trade union density would increase the three indicators of the corporate power. All coefficients, except for inequality in total assets and total sales equations are significant.

The coefficients are also significant in the consumption equation and their signs are as expected. A negative sign for wealth, for example, could imply that people who are disinvesting by selling their wealth increase their consumption through this additional income. With decreased interest rate and increased income people consume more. These results are in accordance with the main existing theories based on income dependent consumption function.

Increased consumption is leading towards increased household and public debt, which can be observed in the fifth and sixth equations. Both coefficients are significant. Other coefficients are also consistent with predicted economic theory and only three coefficients are slightly above the threshold of 5 per cent of significance, two of them in the household debt equation. With declined GDP, both household and public debt are increasing. When private saving and the bottom 90 per cent income share are decreasing, the household debt is rising, and when government expenditure is rising and government taxes are declining, the public debt is rising.

All coefficients in the last equation of inequality are significant and have positive signs of coefficients, which is again in the accordance with the predicted model. It can also be observed that all the coefficients in the system are well within the 95 per cent confidence intervals for the parameters. Rising household and public debt are causing increased income inequality, and so are the rising tax redistribution inequality and the income Palma ratio.

Table 1 Estimation Results

Three-stage least squares regression

Equation	Obs.	Parms.	*RMSE*	*R-sq*	*Chi2*	*p*
totalassets	23	3	1173.21	0.8335	152.02	0.0000
totalsales	23	3	758.754	0.7220	82.07	0.0000
totalemployment	23	3	608.4977	0.8661	154.45	0.0000
consumption	23	4	0.979405	0.5401	39.37	0.0000
householddebt	23	4	2.460867	0.2249	14.64	0.0055
publicdebt	23	3	1.957432	0.6541	108.94	0.0000
inequality	23	4	0.006561	0.8512	157.93	0.0000

	Coef.	Std. err.	*z*	*p>|z|*	[95% conf. interval]	
totalassets						
inequality	35308.26	19888.32	1.78	0.076	-3672.132	74288.64
finliberalindex	9808.608	2290.752	4.28	0.000	5318.815	14298.4
tradeunidensity	-1583.77	189.4785	-8.36	0.000	-1955.142	-1212.4
_cons	28500.31	6978.038	4.08	0.000	14823.61	42177.02
totalsales						
inequality	14419.9	14245.31	1.01	0.311	-13500.39	42340.2
finliberalindex	4809.017	1552.619	3.10	0.002	1765.94	7852.094
tradeunidensity	-776.491	128.363	-6.05	0.000	-1028.078	-524.9037
_cons	17120.08	5018.896	3.41	0.001	7283.222	26956.94
totalemployment						
inequality	26857.07	11695.02	2.30	0.022	3935.262	49778.88
finliberalindex	5500.441	1313.821	4.19	0.000	2925.4	8075.483
tradeunidensity	-854.6666	108.4926	-7.88	0.000	-1067.308	-642.0251
_cons	22697.44	4129.27	5.50	0.000	14604.22	30790.67
consumption						
corporatepower	4.452624	1.328785	3.35	0.001	1.848254	7.056995
income	0.000757	0.000271	2.80	0.005	0.000226	0.001288
interestrate	-0.226725	0.104416	-2.17	0.030	-0.431377	-0.022073
wealth	-0.046710	0.009207	-5.07	0.000	-0.064755	-0.028664
_cons	22.83991	4.222182	5.41	0.000	14.56458	31.11523
householddebt						
consumption	3.226772	1.41158	2.29	0.022	0.460126	5.993418
gdp	-0.009724	0.006012	-1.62	0.106	-0.021508	0.002061
privatesaving	-0.732970	0.335256	-2.19	0.029	-1.390059	-0.075880
bottom90income	-4.272218	2.951486	-1.45	0.148	-10.05702	1.512589
_cons	3.125533	1.896713	1.65	0.099	-0.591957	6.843023
publicdebt						
consumption	1.531773	0.726926	2.11	0.035	0.107025	2.956521
gdp	-0.005893	0.001757	-3.35	0.001	-0.009337	-0.0024493
publicspending	8.63e-13	5.66e-13	1.53	0.127	-2.46e-13	1.97e-12
taxes	-4.87158	0.848523	-5.74	0.000	-6.534654	-3.208505
_cons	171.8417	29.47569	5.83	0.000	114.0705	229.613
inequality						
householddebt	0.0019	0.000925	2.05	0.040	0.000088	0.003713
publicdebt	0.001027	0.000522	1.97	0.049	4.97e-06	0.002050
palmaratio	0.066681	0.015389	4.33	0.000	0.036519	0.096844
taxinequality	0.001629	0.000588	2.77	0.006	0.000476	0.002782
_cons	0.218166	0.019372	11.26	0.000	0.180198	0.256135

Notes: Endogenous variables: totalassets, totalsales, totalemployment, consumption, householddebt, publicdebt, inequality, finliberalindex, tradeunidensity, corporatepower, gdp; Exogenous variables: income, interestrate, wealth, privatesaving, bottom90income, publicspending, taxes, palmaratio, taxinequality.

Source: Author's calculation.

Given the regression results, we can confirm the first hypothesis about the increasing corporate power in the OECD economies in the period from 1990 to 2013. All three corporate power's indicators, total assets, total sales and total employment, have been rising in that period. We can also confirm the next three hypotheses:

increased corporate power caused increased consumption, increased consumption caused higher household and public debt, higher household and public debt caused higher income inequality. Finally, the fifth hypothesis can be confirmed as well, higher income inequality has influenced the increased corporate power or more precisely, the three corporate power's indicators, total assets, total sales and total employment.

3.3 Discussion

Corporate power, increased by transnational production and liberalization, obtains an enhanced bargaining position towards labor force. As Keith Cowling and Philip R. Tomlinson (2005) argue, this was obtained through increased corporate influence on governments in order to change employment legislation. This was combined with proper corporate strategy, like countervailing the increased power of the labour unions, attained during the Golden Age. The corporations are using the so-called "divide and rule" strategy to reduce the labour costs (Cowling and Roger Sugden 1994). They threaten to relocate the plant, where unions are too aggressive. Where the trade union existence was strong and active, the plants were more likely to be closed (John T. Addison, John S. Heywood, and Xiangdong Wei 2003). Similarly, James Peoples and Sugden (2000) observe that the "divide and rule" strategy is a significant factor in corporations' decision to manufacture in more than one country, whereas, according to Dan Coffey and Tomlinson (2003), Japanese corporations first used domestic sub-contracting and later global outsourcing to divide and rule the workers.

Corporate influence on governments varies from changing employment legislation to curtail the bargaining power of the workers, to regulatory legislation. As Helen Mercer (1995) illustrates, the competition policies have been formed by the strategies of powerful business interests. The corporations have interests in the design and implementation of regulatory policy, and as Cowling and Tomlinson (2005) further state, such "regulatory capture" suggests that the performance of the regulators will mainly reflect the benefits of the regulated. Next example of corporate influence on government are the growing transnational corporations that influence their corporate power over the states in the context of globalization. They employ the "divide and rule" strategy on governments, threatening to invest in other countries as a bargaining leverage (Cowling and Sugden 1994; Peter Dicken 2015). Decreased corporate tax liabilities were also studied by Farnsworth and Fooks (2015). Transnational corporations have successfully lobbied for decreases in corporate taxes and increases in tax benefits in the past 30 years. Corporate tax rates have been falling steadily since the 1960s across most OECD countries (Swank 2002).

Corporate influence on governments varies from changing employment legislation to changing the regulatory legislation. Financial deregulation and financial liberalization, along with financial globalization, increased the corporate power of the transnational corporations. Additionally, one of the consequences of the financial deregulation is also higher household debt (Reserve Bank of Australia (RBA) Bulletin 2003; Hugh Green, Ian Harper, and Lachlan Smirl 2009; Kim et al. 2014), induced by decreased restrictions on borrowing and increased relative consumption (Palley 2010; Alvarez-Cuadrado and Long 2011; Sarah Brown, Daniel Gray, and Jennifer Roberts 2015). This is accompanied by stagnant real wages and income distribution changes,

i.e. income inequality, which is causing increased bargaining power of the corporations and its owners (Piketty and Saez 2003; Johnna Montgomerie 2006; William A. Darity 2008; Mishel et al. 2012; Fieldhouse 2013; Michael Kumhof, Romain Rancière, and Pablo Winant 2015). Therefore, the financial liberalization index and income inequality, as well as the trade union density, are good predictors of changes in corporate power.

Consumption decisions driven by "relative" consumption concerns, i.e. an individual's inclination to consumption motivated more by his income in relation to others than by an abstract standard of living, or in other words, "keeping up with the Joneses" (Duesenberry 1949; D'Orlando and Sanfilippo 2010; Palley 2010; Alvarez-Cuadrado and Long 2011), confirm that the variable of corporate power is a good predictor of consumption function. Additional factors that can explain the consumption decisions are also their initial assets, i.e. wealth and the interest rate (Modigliani and Brumberg 1954; Friedman 1957; Albert Ando and Modigliani 1963; Meghir 2004). Thus, including wealth and interest rate as explanatory variables of consumption function is reasonable.

The demand financed by debt emerged from the credit creation practises of lenders and financial deregulation. Household debt is rising due to consumption partially financed by debt and driven by the imposed social norm "keeping up with the Joneses" or the so-called neighbourhood effect (RBA Bulletin 2003; Montgomerie 2006; Karen E. Dynan and Donald L. Kohn 2007; Steve Keen 2009; Nepomuceno and Laroche 2015; Berlemann and Salland 2016). Hence, the variable of consumption is a good explanatory variable of household debt, along with the GDP and saving (Meniago et al. 2013). On the other hand, household debt is also rising due to a process of labour markets social restructuring, or in other words, due to income distribution changes and stagnant real wages (Guy Debelle 2004; Montgomerie 2006; Aldo Barba and Massimo Pivetti 2009). In this sense, the variable that captures changes in bottom 80 per cent of income share is a good regressor of household debt function.

These results could lead to the fact that both the Great Depression and the Great Recession were the consequence of income distribution changes and indebted households (Matteo Iacoviello 2008; Raghuram G. Rajan 2010; Robert B. Reich 2013; Kumhof, Rancière, and Winant 2015). In these income distribution changes, which are leading towards income inequality, the 90/40 differential (or 90/50) is rather significant (Rajan 2010; Mishel et al. 2012; Mishel and Shierholz 2013; Reich 2013; Saez and Gabriel Zucman 2016). In addition, all major income sources became immensely concentrated in the hands of the top 1 per cent of the income distribution (Congressional Budget Office (CBO) 2011; Piketty, Saez, and Stantcheva 2011; Hungerford 2012, 2013; Saez and Zucman 2016). Household indebtedness is also influencing the changes of income inequality (Iacoviello 2008; Kumhof, Rancière, and Winant 2015; Edmond Berisha and John Meszaros 2017), therefore it is a good predictor, as well as it is the public debt due to constrained expansionary fiscal policy.

Further, influence of taxes, particularly a tax and transfer system role in reducing inequality (CBO 2011; Hungerford 2013), also makes the difference between pre-tax inequality and post-tax inequality a feasible explanatory variable of overall income inequality.

4. Conclusion

The aim of this paper is to provide an empirical investigation of the CCC model. It examines the corporate power and its influence on consumption, household and public debt, and inequality. As the existing literature shows, relying on their corporate power, corporations have stimulated the rising consumerism and reverse the classical view of consumer-production relationship. Such a revised sequence and dependence effect, which has roots both in conspicuous consumption and handicap principle, have shown to be the most powerful corporate tools in today's economy. Corporations are keen to exploit one of the most powerful human instincts of the reproduction and display of the social status, thus fostering the consumerism. At the same time, literature shows that consumers' real wages stall or stagnate, which leads to increased borrowing and debt-driven consumption, while retaining the same level of consumption and social norm "keeping up with the Joneses".

Such household debt is mostly consumptive and therefore not self-liquidating. In addition, more people need social help. Rising social transfers lead to a further rise in public debt, which is already increasing due to the consequences of financial liberalization and the bailouts of private capital. Rising public debt, financial liberalization and increased income inequality are highly correlated and further studies show that trade liberalization and economic globalization increase economic inequality. Decreased union density and workers' bargaining power, along with indebted households, can be noticed in income distribution. This clearly shows that income inequality is increasing and that wealth is globally even more concentrated than income both on an individual and national basis. All this further leads towards more social inequality and is only strengthening corporate power.

We assess the non-recursive structural model using the data for the OECD between 1990 and 2013, and three-stage least squares regression of a system of simultaneous structural equations. The regression shows significant and high values of coefficients of determination. Most coefficients of regressors are significant and all coefficients have signs consistent with predicted economic theory of the model. The results support the notion of CCC of the main identified variables. Growing corporate power causes increased consumption; this results in surging household and public debt, which in turn causes rising inequality. Higher inequality is further strongly and positively correlated with the corporate power's indicators, leading to an increase in corporate power. The main system variables are accumulating in time, which is not economically and socially sustainable. Some of the consequences could be: slower economic growth, social and health problems, fewer education opportunities, lower human capital and lower social mobility, political instability and higher unemployment.

This paper makes several original contributions to the literature. First, it is the first empirical investigation of the CCC relationship, corporate power and its influence on consumption, household and public debt, and inequality. Second, it extends the knowledge about the trends of rising corporate power and consumerism at macro level, and its transmission mechanisms. It shows how system dynamics endangers long-term growth sustainability and deteriorates social cohesion as well as the results of the welfare state achievements.

References

Abiad, Abdul, Enrica Detragiache, and Thierry Tressel. 2010. "A New Database of Financial Reforms." *IMF Economic Review*, 57(2): 281-302. http://dx.doi.org/10.1057/imfsp.2009.23

Acemoglu, Daron, Suresh Naidu, Pascual Restrepo, and James A. Robinson. 2013. "Democracy, Redistribution and Inequality." National Bureau of Economic Research Working Paper 19746.

Addison, John T., John S. Heywood, and Xiangdong Wei. 2003. "New Evidence on Unions and Plant Closings: Britain in the 1990s." *Southern Economic Journal*, 69(4): 822-841. http://dx.doi.org/ 10.2307/1061653

Alvarez-Cuadrado, Francisco, and Ngo V. Long. 2011. "The Relative Income Hypothesis." *Journal of Economic Dynamics and Control*, 35(9): 1489-1501. http://dx.doi.org/10.1016/j.jedc.2011.03.012

Ando, Albert, and Franco Modigliani. 1963. "The 'Life Cycle' Hypothesis of Saving: Aggregate Implications and Tests." *American Economic Review*, 53(1): 55-84.

Arestis, Philip, and Ana Rosa Gonzalez-Martinez. 2016. "Income Inequality: Implications and Relevant Economic Policies." *Panoeconomicus*, 63(1): 1-24. http://dx.doi.org/10.2298/pan1601001A

Azzimonti, Marina, Eva de Francisco, and Vincenzo Quadrini. 2014. "Financial Globalization, Inequality, and the Rising Public Debt." *American Economic Review*, 104(8): 2267-2302. http://dx.doi.org/10.1257/aer.104.8.2267

Bagwell, Kyle. 2005. "The Economic Analysis of Advertising." Columbia University Department of Economics Discussion Paper 0506-01.

Baran, Paul A., and Paul M. Sweezy. 1966. *Monopoly Capital: An Essay on the American Economic and Social Order*. New York: New York University Press.

Barba, Aldo, and Massimo Pivetti. 2009. "Rising Household Debt: Its Causes and Macroeconomic Implications - A Long-Period Analysis." *Cambridge Journal of Economics*, 33(1): 113-137. http://dx.doi.org/10.1093/cje/ben030

Benhabib, Jess, and Alberto Bisin. 2002. "Advertising, Mass Consumption, and Capitalism." http://www.econ.nyu.edu/user/bisina/POMO9.pdf.

Benhabib, Jess, and Alberto Bisin. 2011. "Chapter 6: Social Construction of Preferences: Advertising." In *Handbook of Social Economics, Vol. 1*, ed. Jess Benhabib, Alberto Bisin, and Matthew O. Jackson, 201-220. New York: Elsevier Science & Technology. http://dx.doi.org/10.1016/B978-0-444-53187-2.00006-1

Bergh, Andreas, and Therese Nilsson. 2010. "Do Liberalization and Globalization Increase Income Inequality?" *European Journal of Political Economy*, 26(4): 488-505. http://dx.doi.org/10.1016/j.ejpoleco.2010.03.002

Bergh, Andreas, and Christian Bjørnskov. 2014. "Trust, Welfare States and Income Equality: Sorting out the Causality." *European Journal of Political Economy*, 35(C): 183-199. http://dx.doi.org/10.1016/j.ejpoleco.2014.06.002

Berisha, Edmond, and John Meszaros. 2017. "Household Debt, Economic Conditions, and Income Inequality: A State Level Analysis." *The Social Science Journal*, 54(1): 93-101. http://dx.doi.org/10.1016/j.soscij.2016.11.002

Berlemann, Michael, and Jan Salland. 2016. "The Joneses' Income and Debt Market Participation: Empirical Evidence from Bank Account Data." *Economics Letters*, 142(C): 6-9. http://dx.doi.org/10.1016/j.econlet.2016.02.030

Brown, Sarah, Daniel Gray, and Jennifer Roberts. 2015. "The Relative Income Hypothesis: A Comparison of Methods." *Economics Letters*, 130: 47-50. http://dx.doi.org/10.1016/j.econlet.2015.02.031

Charles, Kerwin Kofi, Erik Hurst, and Nikolai Roussanov. 2007. "Conspicuous Consumption and Race." National Bureau of Economic Research Working Paper 13392.

Cochrane, John H. 2012. "A Brief Parable of Over-Differencing." http://faculty.chicagobooth.edu/john.cochrane/research/papers/overdifferencing.pdf.

Coffey, Dan, and Philip R. Tomlinson. 2003. "Coordination and Hierarchy in the Japanese Firm: The Strategic Decision-Making Approach vs. Aoki." In *Competition, Monopoly and Corporate Governance: Essays in Honour of Keith Cowling*, ed. Michael Waterson, 3-19. Cheltenham: Edward Elgar Publishing. http://dx.doi.org/10.4337/9781781951361.00007

Congressional Budget Office. 2011. "Trends in the Distribution of Household Income between 1979 and 2007." Congressional Budget Office Publication 4031.

Cowling, Keith, and Roger Sugden. 1994. *Beyond Capitalism: Towards a New World Economic Order*. London: Pinter Publishers.

Cowling, Keith, and Philip R. Tomlinson. 2005. "Globalisation and Corporate Power." *Contributions to Political Economy*, 24(1): 33-54. http://dx.doi.org/10.1093/cpe/bzi002

Credit Suisse Research Institute. 2013. *Global Wealth Report 2013*. Zurich: Credit Suisse Research Institute.

Crespo, Nuno, Sandrina B. Moreira, and Nadia Simoes. 2015. "An Integrated Approach for the Measurement of Inequality, Poverty, and Richness." *Panoeconomicus*, 62(5): 531-555. http://dx.doi.org/10.2298/pan1505531C

Darity, William A. 2008. *International Encyclopedia of the Social Sciences*. 2nd ed. Detroit: Macmillan Reference.

Davidson, Russell, and James G. MacKinnon. 1993. *Estimation and Inference in Econometrics*. New York: Oxford University Press.

Davies, James B., Susanna Sandström, Anthony F. Shorrocks, and Edward N. Wolff. 2008. "The World Distribution of Household Wealth." World Institute for Development Economic Research Working Paper 3/2008.

Debelle, Guy. 2004. "Macroeconomic Implications of Rising Household Debt." Bank for International Settlements Working Paper 153.

DeJong, David N., John C. Nankervis, N. E. Savin, and Charles H. Whiteman. 1992a. "Integration versus Trend Stationary in Time Series." *Econometrica*, 60(2): 423-433. http://dx.doi.org/10.2307/2951602

DeJong, David N., John C. Nankervis, N. E. Savin, and Charles H. Whiteman. 1992b. "The Power Problems of Unit Root Test in Time Series with Autoregressive Errors." *Journal of Econometrics*, 53(1-3): 323-343. http://dx.doi.org/10.1016/0304-4076(92)90090-E

Dicken, Peter. 2015. *Global Shift: Mapping the Changing Contours of the World Economy*. London: Guilford Press.

Dickey, David A., and Wayne A. Fuller. 1979. "Distribution of the Estimators for Autoregressive Time Series with a Unit Root." *Journal of the American Statistical Association*, 74(366): 427-431. http://dx.doi.org/10.2307/2286348

D'Orlando, Fabio, and Eleonora Sanfilippo. 2010. "Behavioral Foundations for the Keynesian Consumption Function." *Journal of Economic Psychology*, 31(6): 1035-1046. http://dx.doi.org/10.1016/j.joep.2010.09.004

Duesenberry, James S. 1949. *Income, Saving, and the Theory of Consumer Behavior*. Cambridge, MA: Harvard University Press.

Dunn, Stephen P., and Steven Pressman. 2005. "The Economic Contributions of John Kenneth Galbraith." *Review of Political Economy*, 17(2): 161-209. http://dx.doi.org/10.1080/09538250500067254

Dynan, Karen E., and Donald L. Kohn. 2007. "The Rise in US Household Indebtedness: Causes and Consequences." In *The Structure and Resilience of the Financial System*, ed. Christopher Kent and Jeremy Lawson, 84-113. Sydney: Reserve Bank of Australia.

Elliott, Graham, Thomas J. Rothenberg, and James H. Stock. 1996. "Efficient Tests for an Autoregressive Unit Root." *Econometrica*, 64(4): 813-836. http://dx.doi.org/10.2307/2171846

Farnsworth, Kevin, and Gary Fooks. 2015. "Corporate Taxation, Corporate Power, and Corporate Harm." *Howard Journal of Criminal Justice*, 54(1): 25-41. http://dx.doi.org/10.1111/hojo.12112

Fieldhouse, Andrew. 2013. "Rising Income Inequality and the Role of Shifting Market-Income Distribution, Tax Burdens, and Tax Rates." Economic Policy Institute Issue Brief 365.

Foster, John Bellamy, and Fred Magdoff. 2009. *The Great Financial Crisis: Causes and Consequences*. New York: New York University Press.

Friedman, Milton. 1957. *A Theory of the Consumption Function*. Princeton: Princeton University Press.

Friedman, Milton. 1988. "Money and the Stock Market." *Journal of Political Economy*, 96(2): 221-245. http://dx.doi.org/10.1086/261534

Galbraith, James K. 2012. *Inequality and Instability: A Study of the World Economy just before the Great Crisis*. New York: Oxford University Press.

Galbraith, John Kenneth. 1952. *American Capitalism: The Concept of Countervailing Power*. Boston: Houghton Mifflin.

Galbraith, John Kenneth. 1958. *The Affluent Society*. Boston: Houghton Mifflin.

Galbraith, John Kenneth. 1967. *The New Industrial State*. Harmondsworth: Penguin Books.

Grant, Randy R. 1997. "Measuring Corporate Power: Assessing the Options." *Journal of Economic Issues*, 31(2): 453-460.

Green, Hugh, Ian Harper, and Lachlan Smirl. 2009. "Financial Deregulation and Household Debt: The Australian Experience." *Australian Economic Review*, 42(3): 340-346. http://dx.doi.org/10.1111/j.1467-8462.2009.00561.x

Greene, William H. 2012. *Econometric Analysis*. 7th ed. Upper Saddle River: Pearson Prentice Hall.

Hall, Robert E. 1978. "Stochastic Implications of the Life Cycle-Permanent Income Hypothesis: Theory and Evidence." *Journal of Political Economy*, 86(6): 971-987.

Hall, Robert E., and Frederic S. Mishkin. 1982. "The Sensitivity of Consumption to Transitory Income: Estimates from Panel Data on Households." *Econometrica*, 50(2): 461-481. http://dx.doi.org/10.2307/1912638

Hungerford, Thomas L. 2012. "Taxes and the Economy: An Economic Analysis of the Top Tax Rates since 1945." Congressional Research Service Report R42729.

Hungerford, Thomas L. 2013. "Changes in Income Inequality among U.S. Tax Filers between 1991 and 2006: The Role of Wages, Capital Income, and Taxes." *Social Science Research Network Electronic Journal*. http://dx.doi.org/10.2139/ssrn.2207372

Iacoviello, Matteo. 2008. "Household Debt and Income Inequality, 1963-2003." *Journal of Money, Credit and Banking*, 40(5): 929-965. http://dx.doi.org/10.1111/j.1538-4616.2008.00142.x

Iredale, Wendy, and Mark van Vugt. 2012. "Altruism as Showing off: A Signaling Perspective on Promoting Green Behaviour and Acts of Kindness." In *Applied Evolutionary Psychology*, ed. S. Craig Roberts, 173-185. Oxford: Oxford University Press. http://dx.doi.org/10.1093/acprof:oso/9780199586073.003.0011

Josifidis, Kosta, Radmila Dragutinović-Mitrović, Novica Supić, and Olgica Glavaški. 2016. "Redistribution and Transmission Mechanisms of Income Inequality - Panel Analysis of the Affluent OECD Countries." *Panoeconomicus*, 63(2): 231-258. http://dx.doi.org/10.2298/pan1602231J

Keen, Steve. 2009. "Household Debt: The Final Stage in an Artificially Extended Ponzi Bubble." *Australian Economic Review*, 42(3): 347-357. http://dx.doi.org/10.1111/j.1467-8462.2009.00560.x

Kim, Hyun Jeong, Dongyeol Lee, Jong Chil Son, and Min Kyu Son. 2014. "Household Indebtedness in Korea: Its Causes and Sustainability." *Japan and the World Economy*, 29(C): 59-76. http://dx.doi.org/10.1016/j.japwor.2013.12.001

Kochan, Thomas A. 2013. "The American Jobs Crisis and Its Implication for the Future of Employment Policy: A Call for a New Jobs Compact." *Industrial and Labor Relations Review*, 66(2): 291-314. http://dx.doi.org/10.1177/001979391306600201

Kumhof, Michael, Romain Rancière, and Pablo Winant. 2015. "Inequality, Leverage, and Crises." *American Economic Review*, 105(3): 1217-1245. http://dx.doi.org/10.1257/aer.20110683

Lora, Eduardo, and Mauricio Olivera. 2007. "Public Debt and Social Expenditure: Friends or Foes?" *Emerging Markets Review*, 8(4): 299-310. http://dx.doi.org/10.1016/j.ememar.2006.12.004

Luo, Yadong. 2001. "Toward a Cooperative View of MNC-Host Government Relations: Building Blocks and Performance Implications." *Journal of International Business Studies*, 32(3): 401-419.

Meghir, Costas. 2004. "A Retrospective on Friedman's Theory of Permanent Income." *Economic Journal*, 114(496): F293-F306. http://dx.doi.org/10.1111/j.1468-0297.2004.00223.x

Meniago, Christelle, Janine Mukuddem-Petersen, Mark A. Petersen, and Itumeleng P. Mongale. 2013. "What Causes Household Debt to Increase in South Africa?" *Economic Modelling*, 33(C): 482-492. http://dx.doi.org/10.1016/j.econmod.2013.04.028

Mercer, Helen. 1995. *Constructing a Competitive Order: The Hidden History of British Antitrust Policies*. Cambridge, MA: Cambridge University Press.

Miller, Geoffrey. 2009. *Spent. Sex, Evolution, and the Secrets of Consumerism*. London: William Heinemann/Random House.

Mishel, Lawrence, Josh Bivens, Elise Gould, and Heidi Shierholz. 2012. *The State of Working America*. Ithaca: Cornell University Press.

Mishel, Lawrence, and Heidi Shierholz. 2013. "A Decade of Flat Wages: The Key Barrier to Shared Prosperity and a Rising Middle Class." Economic Policy Institute Briefing Paper 365.

Modigliani, Franco, and Richard Brumberg. 1954. "Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data." In *Post Keynesian Economics*, ed. Kenneth K. Kurihara, 388-436. New Brunswick: Ruthers University Press.

Molinari, Benedetto, and Francesco Turino. 2013. *Advertising and Aggregate Consumption: A General Equilibrium Assessment*. Sevilla: Universidad Pablo de Olavide.

Montgomerie, Johnna. 2006. "Giving Credit where It's Due: Public Policy and Household Debt in the United States, the United Kingdom and Canada." *Policy and Society*, 25(3): 109-141. http://dx.doi.org/10.1016/S1449-4035(06)70085-6

Nepomuceno, Marcelo Vinhal, and Michel Laroche. 2015. "The Impact of Materialism and Anti-Consumption Lifestyles on Personal Debt and Account Balances." *Journal of Business Research*, 68(3): 654-664. http://dx.doi.org/10.1016/j.jbusres.2014.08.006

Oh, Hyunseung, and Ricardo Reis. 2012. "Targeted Transfers and the Fiscal Response to the Great Recession." *Journal of Monetary Economics*, 59(Supplement): S50-S64. http://dx.doi.org/10.1016/j.jmoneco.2012.10.025

Organization for Economic Co-operation and Development. 2006. "Has the Rise in Debt Made Households More Vulnerable?" In *OECD Economic Outlook 80 (Edition 2006/2)*, 135-158. Paris: Organization for Economic Co-operation and Development. http://dx.doi.org/10.1787/data-00086-en

Organization for Economic Co-operation and Development. 2013. "Crisis Squeezes Income and Puts Pressure on Inequality and Poverty: Results from the OECD Income Distribution Database (May 2013)." http://www.oecd.org/els/soc/OECD2013-Inequality-and-Poverty-8p.pdf.

Ortiz, Isabel, and Matthew Cummins. 2011. "Global Inequality: Beyond the Bottom Billion - A Rapid Review of Income Distribution in 141 Countries." Unicef, Division of Policy and Strategy Working Paper 1102.

Ostry, Jonathan D., Andrew Berg, and Charalambos G. Tsangarides. 2014. "Redistribution, Inequality, and Growth." International Monetary Fund Discussion Note SDN/14/02.

Palley, Thomas I. 2010. "The Relative Permanent Income Theory of Consumption: A Synthetic Keynes-Duesenberry-Friedman Model." *Review of Political Economy*, 22(1): 41-56. http://dx.doi.org/10.1080/09538250903391954

Peoples, James, and Roger Sugden. 2000. "Divide and Rule by Transnational Corporations." In *The Nature of the Transnational Firm*, ed. Christos Pitelis and Roger Sugden, 174-192. New York: Routledge. http://dx.doi.org/10.4324/9780203982594

Piketty, Thomas, and Emmanuel Saez. 2003. "Income Inequality in the United States, 1913-1998." *Quarterly Journal of Economics*, 118(1): 1-39.

Piketty, Thomas, Emmanuel Saez, and Stefanie Stantcheva. 2011. "Optimal Taxation of Top Labor Incomes: A Tale of Three Elasticities." National Bureau of Economic Research Working Paper 17616. http://dx.doi.org/10.3386/w17616

Piketty, Thomas. 2014. *Capital in the Twenty-First Century*. Cambridge, MA: Harvard University Press.

Porenta, Franci. 2017. "Impact of Corporate Power on Consumption, Debt and Inequality: Political-Economic Model of CCC." *Economic and Business Review*, 19(2): 155-179. http://dx.doi.org/10.15458/85451.46

Pressman, Steven. 2007. "Economic Power, the State, and Post-Keynesian Economics." *International Journal of Political Economy*, 35(4): 67-86. http://dx.doi.org/10.2753/IJP0891-1916350404

Rajan, Raghuram G. 2010. *Fault Lines: How Hidden Fractures still Threaten the World Economy*. Princeton: Princeton University Press.

Reich, Robert B. 2013. *Aftershock: The Next Economy and America's Future*. New York: Vintage Books.

Reserve Bank of Australia Bulletin. 2003. "Household Debt: What the Data Show." http://www.rba.gov.au/publications/bulletin/2003/mar/pdf/bu-0303-1.pdf.

Roach, Brian. 2007. *Corporate Power in a Global Economy*. Medford, MA: Global Development and Environment Institute, Tufts University.

Saez, Emmanuel, and Gabriel Zucman. 2016. "Wealth Inequality in the United States since 1913: Evidence from Capitalized Income Tax Data." *Quarterly Journal of Economics*, 131(2): 519-578. http://dx.doi.org/10.1093/qje/qjw004

Schwert, G. William. 1989. "Tests for Unit Roots: A Monte Carlo Investigation." *Journal of Business and Economic Statistics*, 7(2): 147-159.

Scott III, Robert H., and Steven Pressman. 2015. "Inadequate Household Deleveraging: Income, Debt, and Social Provisioning." *Journal of Economic Issues*, 49(2): 483-492. http://dx.doi.org/10.1080/00213624.2015.1042794

Stata. 2016. "Three-Stage Estimation for Systems of Simultaneous Equations." http://www.stata.com/manuals/rreg3.pdf#rreg.

Swank, Duane. 2002. *Global Capital, Political Institutions, and Policy Change in Developed Welfare States*. Cambridge: Cambridge University Press.

Temme, Dirk, Adamantios Diamantopoulos, and Vanessa Pfegfeidel. 2014. "Specifying Formatively-Measured Constructs in Endogenous Positions in Structural Equation Models: Caveats and Guidelines for Researchers." *International Journal of Research in Marketing*, 31(3): 309-316. http://dx.doi.org/10.1016/j.ijresmar.2014.03.002

United Nations Conference on Trade and Development. 1993-2015. *World Investment Report*. Geneva: United Nations Publications.

United Nations Conference on Trade and Development. 2007. *The Universe of the Largest Transnational Corporations*. New York: United Nations Publications.

Vakratsas, Demetrios, and Tim Ambler. 1999. "How Advertising Works: What Do We Really Know?" *Journal of Marketing*, 63(1): 26-43. http://dx.doi.org/10.2307/1251999

Veblen, Thorstein. 1899. *The Theory of the Leisure Class*. New York: Penguin Books, 1967.

Vitali, Stefania, James B. Glattfelder, and Stefano Battiston. 2011. "The Network of Global Corporate Control." *PloS ONE*, 6(10). http://dx.doi.org/10.1371/journal.pone.0025995

Wilkinson, Richard, and Kate Pickett. 2011. *The Spirit Level: Why Greater Equality Makes Societies Stronger*. London: Bloomsbury Press.

Zahavi, Amots, and Avishag Zahavi. 1999. *The Handicap Principle: A Missing Piece of Darwin's Puzzle*. New York: Oxford University Press.

Zellner, Arnold, and Henri Theil. 1962. "Three-Stage Least Squares: Simultaneous Estimation of Simultaneous Equations." *Econometrica*, 30(1): 54-78.

Appendix

Table A1 The Main Model Variables in OECD Countries (1990-2013)

Equation	Dependent variable	Explanatory variable	Unit/measure	Source
(1) (2) (3)	Total assets Total sales Total employment	Inequality	Gini (disposable income, post taxes and transfers); age group, total population	OECD (2016)
		Financial liberalization index	Aggregated financial liberalization index for 22 OECD countries; own calculation 2006-2013	Abiad, Detragiache, and Tressel (2010)
		Trade union density	Ratio of wage and salary earners that are trade union members, divided by the total number of wage and salary earners	OECD (2016)
(8)	Corporate power	Total assets	Billions of dollars, deflated by the US Core inflation index, 2009	UNCTAD (1993-2015)
		Total sales	Billions of dollars, deflated by the US Core inflation index, 2009	UNCTAD (1993-2015)
		Total employment	Thousands	UNCTAD (1993-2015)
(4)	Consumption	Corporate power	Variable construct, composed of indicators: corporate total assets, total sales and employment; from internationalization statistics of 100 largest non-financial TNCs worldwide	UNCTAD (1993-2015)
		Income	Real gross household adjusted disposable income *per capita*, US dollars, deflated by the US Core inflation index, 2009	OECD (2016)
		Interest rate	Short-term interest rate; as percentage	OECD (2016)
		Wealth	Net private wealth; as a percentage of national income	World Inequality Database (WID 2016)[2]
(5)	Household debt	Consumption	Household final consumption expenditure, volume, annual growth rates; as percentage	OECD (2016)
		GDP	GDP *per capita*; at constant 2010 prices and purchasing power parities (PPPs), US dollars	OECD (2016)
		Saving	Net household savings; percentage of households' net disposable income	OECD (2016)
		Bottom 90% income share	Bottom 90% income share; as percentage	WID (2016)
(6)	Public debt	Consumption	Household final consumption expenditure, volume, annual growth rates; as percentage	OECD (2016)
		GDP	GDP *per capita*; at constant 2010 prices and PPPs, US dollars	OECD (2016)
		Government spending	Government final consumption expenditure, volume OECD - Total; US Dollar, 2010	OECD (2016)
		Taxes	Taxes and social security contributions; as a percentage of GDP (government accounts)	OECD (2016)
(7)	Inequality	Household debt	Debt of households; percentage of net disposable income (own calculation 1990-1994)	OECD (2016)
		Public debt	General government net financial liabilities; as a percentage of GDP	OECD (2016)
		Income - Palma ratio	Share of all income received by the 10% of people with the highest disposable income divided by the share of all income received by the 40% of people with the lowest disposable income	OECD (2016)
		Tax redistribution inequality	Inequality Growth Index 1990 = 100 (Gini, disposable income, post taxes and transfers - Gini, market income, before taxes and transfers); age group, total population (own calculation)	OECD (2016)

Source: Author's calculation.

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[2] **World Inequality Database (WID).** 2016. World Wealth and Income Database. http://www.wid.world/ (accessed June 04, 2016).

Table A2 Descriptive Statistics for the Variables in OECD Countries (1990-2013)

Variable (label)	Obs.	Mean	Std. Dev.	Min	Max	DF-GLS trend incl. (used data)	ADF trend incl. (used data)
totalassets (*TA*)	24	8138.934	2968.437	4668.613	13165.41	-2.218 (at level)	-2.495 (at level)
totalsales (*TS*)	24	6282.846	1486.282	4535.767	8755.639	-2.390 (at level)	-2.327 (at level)
totalemployment (*TE*)	24	14054.33	1709.094	11621	16937	-2.618 (at level)	-2.705 (at level)
inequality (*INE*)	24	.2944416	.0171429	.2602222	.3210833	-3.892*** (at level)	-3.779** (at level)
finliberalindex (*FLI*)	24	19.07897	1.290304	15.31818	20.0487	-3.894*** (in 1st diff.)	-3.592** (in 1st diff.)
tradeunionensity (*TUD*)	24	20.85833	3.238533	17.0223	26.9602	-0.640 (at level)	-0.367 (at level)
consumption (*C*)	24	2.590088	1.451887	-1.679076	4.374799	-2.843 (at level)	-2.705 (at level)
corporatepower (*CP*)	24	1.30e-08	1	-1.162499	1.663883	-4.437*** (in 1st diff.)	-4.224** (in 1st diff.)
income (*Y*)	24	21800.67	2076.287	18669.96	24675.98	-3.556** (in 1st diff.)	-3.407* (in 1st diff.)
interestrate (*i*)	24	4.830537	2.862939	1.0767	11.75778	-2.332 (at level)	-2.652 (at level)
wealth (*W*)	24	425.948	31.67033	381.4262	485.8991	-2.970 (at level)	-2.893 (at level)
householddebt (*HD*)	24	104.008	25.88355	65.65898	136.3518	-1.708 (in 1st diff.)	-1.589 (in 1st diff.)
gdp (*GDP*)	24	31729.36	3555.598	26159.5	36036	-3.600** (in 1st diff.)	-3.433* (in 1st diff.)
privatesaving (*S*)	24	6.139763	1.829854	3.760558	9.231913	-1.665 (at level)	-1.543 (at level)
bottom90income (*90Y*)	24	63.58788	.5232338	62.7156	64.5821	-3.423** (in 1st diff.)	-3.227* (in 1st diff.)
publicdebt (*PD*)	24	44.75229	11.17342	30.645	70.114	-3.011* (in 1st diff.)	-2.824 (in 1st diff.)
publicspending (*PS*)	24	6.85e+12	8.99e+11	5.52e+12	8.09e+12	-1.026 (at level)	-0.805 (at level)
taxes (*T*)	24	36.41212	.5232343	35.4179	37.2844	-1.950 (at level)	-2.002 (at level)
palmaratio (*PR*)	24	1.102993	.1597751	.85	1.6	-4.852*** (at level)	-4.628*** (at level)
taxinequality (*TI*)	24	2.66731	4.167472	-10.95031	5.258899	-3.970*** (at level)	-4.025** (at level)

Source: Author's calculation.