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Global Inequality and National Inequality: Is there a Trade-Off?

Summary: The objective of this paper is to show that there is a trade-off between global inequality (between countries) and national inequality (within countries). We observed that when the former declines, the latter increases. Empirically, it is possible to observe a shift from higher global inequality to lower global inequality levels (and higher national inequality levels) since the last quarter of the previous century. From a historical perspective, my thesis is that when the main drivers of economic growth are technology and means of transportation, inequality is mostly between countries (higher global inequality). In contrast, when the main driver of economic growth is labour (and related factors such as human capital, skills, knowledge exploitation), then inequality is mostly within countries (higher national inequality). Limitations of data availability did not allow for testing these historical trends. However, the trends of global and national inequalities over the last three to four decades confirm such a thesis.

Key words: Global inequality, Income inequality, Capital accumulation, Technological progress, Labour.

JEL: D31, E24, F6, F43, I14.

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In the last three to four decades, while within-country inequality (or national inequality) has increased, between-countries inequality (or global inequality) has decreased. In other words, differences in GDP *per capita* between countries has decreased, which also means that differences in GDP *per capita* among people in the world has decreased. This may be due to two factors: economic growth in poorer countries increased while it slowed down in richer countries, and differences within countries increased. Although this empirical evidence may lead to a well-known neoclassical theoretical conclusion according to which long-term income and growth convergence between richer and poorer countries occurs, the reasons behind the reduction of differences in GDP *per capita* among countries are completely different from those assumed in the neoclassical approach, which refer to capital per worker endowment. My hypothesis is that global inequality (i.e. GDP *per capita* differences among countries) increases, from a historical perspective, when technology and/or means of transport and infrastructure (like big ships) are the main drivers of economic growth. In contrast, when the main drivers of economic growth are labour and the internal exploitation of skills, human capital (however defined) and competences, then within-country inequality increases.

The rest of the paper is organised as follows. In Section 1, a historical perspective is presented concerning national and global inequality trends and motivations. Section 2 discusses technological progress and labour productivity in connection with inequality from a theoretical and historical perspective. Section 3 presents the switching momentum and the evidences from higher global inequality to higher national inequality. Section 4 briefly concludes the paper.

1. Global and National Inequalities in a Historical Perspective

Inequality is not a new phenomenon. From Marx onwards, the literature on inequality has been abundant. Recently, main stream institutions have also started to question the relationship between inequality and growth (International Monetary Fund - IMF 2017): in those countries where income inequality has increased, the economic growth is more fragile. Excessive inequality can erode social cohesion and lead to political polarisation. Hence, the IMF suggests in its Fiscal Monitor 2017 that countries may consider as useful measures an increase in tax rates at the top of the income distribution, the introduction of a universal basic income, and the role of public spending on education and health. Some scholars argue that this is an intrinsic phenomenon of capitalism. The last book by Thomas Piketty (2014) follows this line. However, he argues that policies and institutions (and wars) can decrease the tendency towards capital accumulation, exploitation and uneven development which create inequality. The notorious tendency law described by Piketty as a key determinant of income inequality is $r > g$, where r is the rate of remuneration of capital and g the rate of growth of the economy. If the former is, over a very long-run, consistently higher than the latter, then income inequality will increase. Institutions, welfare states, taxes and pro-labour policies, like those implemented between 1945 and 1975 in most advanced economies, contribute to reduce inequality or to maintain lower inequality (as also argued by Kosta Josifidis, Novica Supić, and Emilija Beker Pucar 2017). Similarly, Facundo Alvaredo et al. (2017) show that top income and wealth shares have increased in nearly all countries in recent decades. However, the magnitude of the increase depends on country-specific policies and institutions, as well as democratic transparency and access to administrative and financial data. In parallel, Piketty (2014) also considers war as a factor decreasing inequality, since it destroys capital accumulation, having the effect of reducing income inequality, as happened between 1914 and 1945.

The argument of Piketty (2014) overcame Simon Kuznets' (1955) theory, according to which inequality increases in the first phase of capital expansion and GDP growth, and decreases in the second phase when the country reaches a higher level of GDP. Kuznets' argument was based on data which refer to the period between the end of the nineteenth century and the end of the Second World War in the USA (moreover, as Kuznets recognised, much of that theory was based on speculation rather than on empirically observed findings). Kuznets noticed that at the end of the period, when the USA became richer, inequality was decreasing. The argument put forward by Piketty is completely different, so that contrary to the famous reverse U-shaped Kuznets curve, he proposed a horizontal S-shaped curve which indicates that inequality between the nineteenth and twentieth centuries first increased, then decreased between 1914 and 1975, and then, after 1975, increased again. Similarly, Branko Milanovic (2016) sets

against the Kuznets curve a so-called “Kuznets wave”, indicating that inequality rises, falls and then rises again endlessly. In fact, the increase in inequality in rich countries since 1980 shows that having completed its lower part, the curve of explaining inequality is rising again, displaying a sort of horizontal S shape (~).

Both Kuznets and Piketty spoke about income inequality within countries. We refer rather to the global inequality which increased while inequality within countries decreased between 1945 and 1975, for the reasons illustrated above. In this case, we speak about differences between GDP *per capita* among countries - in other words, income divergences. Global inequality has recently been explored by Francois Bourguignon and Christian Morrison (2002), Joerg Baten et al. (2010) and Milanovic (2011, 2016), among others. The very broad and interesting study by Milanovic (2016) shows that while income inequality has increased in advanced economies, global income inequality (differences among countries) has decreased in recent years, particularly since 2000. However, as Milanovic (2016) argues, that might not continue if China’s income per head rises above the global average and if technological progress does not advance in emerging and developing countries.

Our argument is that over a very long period, global inequality and national inequality may move in opposite directions depending on the main factors driving economic growth. When the main driver of economic growth in the central geographical area of development (the core) is technology - and in particular, in the past, means of transport like large ships connecting distant countries and continents, so that the periphery accumulates gaps against the core - then inequality becomes mainly global inequality (B in Table A1 in the Appendix). Forces of divergence take place with increasing differentials in terms of GDP *per capita* among countries. Inequality increases mainly between countries. This is because technological gaps prevail and they take time to be filled. Leader countries enjoy higher income than followers because productivity advantages accumulate. Productivity gains are more equally distributed among profits and wages within the leader countries. Income inequality decreases, internal consumption is boosted, and aggregate demand is sustained, with further benefits for economic growth. Protectionism is functional in this model: international trade is limited and global capital expansion is not necessary since capitalists already enjoy relatively high returns from technological progress. In the meantime, followers have to build both the technological capacity and the social capability - i.e. institutions and organisations - to emulate leaders (Abramovitz 1986). During this process, income in the following economies increases at a slower pace so that differences from the leaders increase (Kuznets 1965). The advantages of technology are distributed better within leader countries and the income of all increases. A similar process takes place in the follower countries, which try to catch up.

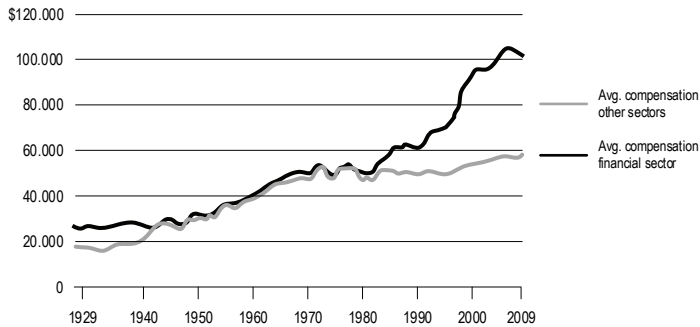
When, in contrast, the main drivers of economic growth in the core countries are labour, skills, human capital and competences, after a wave of innovation which brings about a process of technological accumulation, then inequality becomes mainly within-country inequality (W in Table A1 in the Appendix), with increasing polarisation between rich and poor in these countries. In other words, inequality is increasing mainly within countries in this phase. This is because labour, skills and human capital allow for larger degrees of labour exploitation and therefore for faster and larger

differences in the functional income distribution between profits and wages. This process occurs both in leaders and in follower countries. Global financial expansion occurs as a remedy for declining returns in the industrial sector. Export-led strategies, international competition, financial expansion and globalisation allow for labour cost compression. As a consequence, income inequality increases and, in turn, GDP expansion in rich (core) countries slows down (as also shown by Philip Arestis and Anna Rosa González-Martínez 2016). Global inequality decreases as international technological transfers are now easier. However, income inequality increases in both the core countries and the periphery, although global inequality decreases. For simplicity, we can divide this process into two phases.

(1) In the first phase, a more equal income distribution occurs and the technological advantages are distributed with benefits for all. Economic growth is boosted not only by the technological progress, but also by internal consumption and sustained aggregate demand. Protectionism is also functional to this model. Inevitably, divergences among countries increase (due to the lack of international technological transmission), along with global inequality, while within-country inequality and industrial profits remain low.

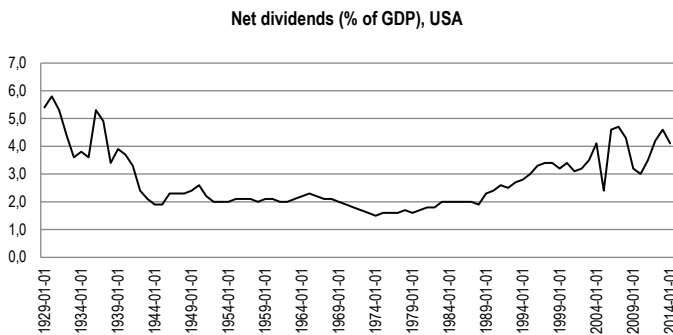
(2) In the second phase, income inequality (within countries) increases; in general - and contrary to the Kuznets curve - this occurs in rich countries which previously experienced long and important waves of technological progress and have exhausted already its benefits. They enter a phase of global financial expansion to increase rents, and slowly abandon industrial improvements where profits decline. International competition substitutes protectionisms, and labour costs, human capital, skills and competences are hugely exploited. Internal inequality increases and GDP growth slows down. Conversely, global inequality declines (since international technological transmission is easier) and within-country inequality remains high, along with financial rents.

A broad and historical view of the accumulation process in modern capitalism is offered by Fernand Braudel (1982) and Giovanni Arrighi (1994). Following these two authors, each accumulation cycle at the end of its period (which also corresponds to its peak) is characterised by a phase of financialisation where financial capital, in terms of liquidity, is abundant and dominates the accumulation phase. This phenomenon occurred at the end of the sixteenth century during the Northern Italian hegemony, where the oligarchy of Genoese capitalism withdrew from commerce, entered the financial business and supported the Spanish expansion. A similar phenomenon occurred at the end of the hegemony of Holland in the middle of the eighteenth century, when the Dutch entered the financial business and became the bankers of Europe. This tendency towards a transformation from industrial capitalism to financial capitalism was confirmed during the crisis of 1873-1896, when British capitalism, at the end of its fantastic industrial momentum, entered the financial phase. Finally, this transformation has been occurring for the past three decades at least in the USA, the hegemonic country of the fourth cycle of capitalism in the Braudel (1982) and Arrighi (1994) classifications. In fact, at least since the shock oils of the 1970s, industrial returns in the American economy started to decline, while financial activities and rents in the financial sector increased (see Figures 1 and 2).



Source: Financial Crisis Inquiry Commission (2011).

Figure 1 Compensation Financial Sector and Other Sectors



Source: Thermodynamic Database (2017)¹.

Figure 2 Dividends in USA

The main point here is that at the end of each cycle of capital accumulation, the returns from the productive expansion start to decline because of the increased competition between capitalists. Hence, capitals become more flexible and very liquid, so are employed in the financial sector and speculation. Financial expansion starts, which allows for another great expansion of financial returns and rents. Labour is compressed and inequality within countries increases. However, as Arrighi (1994) stated, this is already signalling a crisis: the process of capital accumulation is at its end and entering financial expansion represents its last momentum. It is the sign of the beginning of the crisis, the alarm (see Table A1 in the Appendix).

However, inequality within countries, shaped by the intensive use of labour, can be politically and institutionally determined through the rules set by institutions on the basis of which income distribution is regulated. Obviously, in this context, income distribution is not perceived to be functional as in the neoclassical mechanism between the factors of production according to the market forces of demand and supply.

¹ **Thermodynamic Database.** 2017. <https://www.thermart.net/freed-thermodynamic-database/> (accessed May 10, 2017).

2. Technological Progress, Labour Productivity and Inequality: A Theoretical Perspective

While financialisation and globalisation are directly involved in our model as forces driving national inequality, something more has to be said regarding technological progress as a force for global inequality. According to Conrad Allison et al. (2014), major determinants of growing income inequality within countries appear to be skill-biased technical change (SBTC) and the growth of incomes of workers in the financial industry, particularly among executives. Other recent explanations for income inequality within countries were put forward by John Van Reenen (2011), who seems to find support for trade-induced technological change associated with inequality.

However, the SBTC explanation for income inequality within countries is very controversial and quite complex (Mario Pianta and Massimiliano Tancioni 2008). Engelbert Stockhammer (2015), in his econometric analysis, showed that technological change has had little effect on the decline of wage share over GDP in advanced economies in the last three decades, which was instead caused by the decline in the bargaining power of trade unions. The successive reduction of wage share contributed to the increase in income inequality within countries rather than the SBTC. Similarly, James Galbraith (2012), in his recent book, stresses inequality as a cause of the crisis: he argues that inequality within countries reflects the concentration of wealth at the very top of the distribution quite independently from the SBTC. These contributions have also stressed the links between credit availability (as a consequence of increasing inequality), financial crisis (see, for instance, Cristiano Perugini, Hölscher Jens, and Simon Collie 2015) and inequality as the cause of the current financial crisis (Galbraith 2012; Stockhammer 2015).

Hence, it seems that the technological explanation for income inequality within countries has little empirical evidence. What really matters, as far as this relationship is concerned, is the governance of the technological progress and the institutions which are at the basis of the pay-off for its improvement. First of all, evidences among countries are not at all consistent: Scandinavian and other North European countries have proved that technological progress is compatible with equity if institutions and appropriate policies are implemented. Similar conclusions are reached by Francesco Bogliacino and Matteo Lucchese (2015), who analysed the East and West Germany reunification in order to see whether the supply of skills could lead to inequality, finding no evidence for that. Moreover, technological change (and its consequences) can be state-guided, as Mariana Mazzucato (2013) showed for the case of the USA, where every major technological change in recent years traces most of its funding back to the state. Finally, Piketty (2014) shows that most income inequality can be attributed to the top one *per cent* of wage earners, particularly within the financial sector, and this is difficult to explain in combination with the SBTC argument. In fact, as Anthony Atkinson (2015, p. 3) stated: “Technological progress is not a force of nature but reflects social and economic decisions”.

If, however, the SBTC argument is not relevant to explain income inequality within countries, the technological dimension is very relevant to explain inequality between countries in our approach, as explained above with the help of Table A1.

Angus Deaton (2013) shows how 250 years ago, some countries started a sustained process of progress which widened gaps between countries. Deaton describes innovations and technology as determinants of this process, which brought about discoveries such as antibiotics, pest control, vaccinations and clean water, among others.

When technology and/or means of transportation are the main drivers of economic growth, then inequality increases mainly between countries. When the main drivers of economic growth are labour, skills and human competences, then inequality increases mainly within countries. A very specific case is the introduction of the robot, which can be considered both an improvement in technology and an increase in human capital. In this field, Daron Acemoglu and Pascual Restrepo (2017) show that robots may reduce employment and wages, and therefore increase inequality, if appropriate institutions, regulations, taxes and policies are not implemented.

Technological progress remains the main driver of labour productivity (λ), which, in turn, shapes economic growth (gY). This simple relationship can be captured by the following equation (see also Pasquale Tridico 2016):

$$gY = L * \lambda, \quad (1)$$

where L stands for labour. In turn, λ is defined as Y/hL - i.e. the output divided by the labour input per hour h (giving the hourly labour productivity).

Neoclassical economics attributes differences in wages to differences in labour productivity, so that higher wages correspond to higher labour productivity (Gary S. Becker 1962; Jacob Mincer 1993). Hence, there is a sort of “justified” inequality coming from work effort and labour productivity. This type of inequality is even functional in economic growth, since neoclassicists argue that it is the basis of incentives for the work effort. However, heterodox economists argue that institutions, capital-labour relations, power relations, industrial relations, politics, norms and laws stand above technical coefficients of distribution and determine levels and factors of income distribution. Hence, it would easily be possible to allow for differences in compensation of a factor of 500 or of 1,000 between the poorest and richest earners without even being able to count for personal labour productivity. In 1950, an average American chief executive was paid about 20 times as much as the typical employee of his firm. Today, the pay ratio between the corner office and the shop floor is more than 500 to 1, and many CEOs do even better, despite the fact that the difference in labour productivity, in terms of personal effort, has not greatly changed. In 2011, Apple’s Tim Cook received 378 million dollars in salary, stock and other benefits, which was 6,258 times the wage of an average Apple employee (around \$60,000). A typical worker at Walmart earns less than \$25,000 a year, yet Michael Duke, the retailer’s former chief executive at Walmart, was paid more than 23 million dollars in 2012. These differences have nothing to do with differences in labour productivity, but are instead differences determined by board decisions, institutional choices and so on. Hence, inequality cannot be understood independently of politics and institutions.

However, technological progress and, in turn, labour productivity contribute greatly to economic growth and to differences between countries (Paul Romer 1986; Charles Jones and Robert Hall 1998). This has occurred in the most successful cases

of economic development - cases such as the USA, Western Europe and Japan - and in others like South Korea and new emerging countries in Asia.

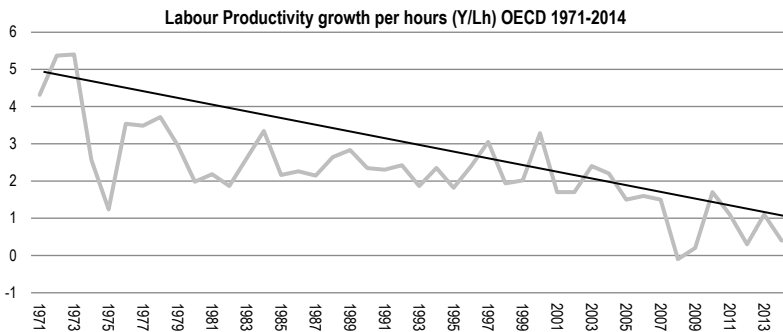
The period after the Second World War was definitely the best period and the most important in terms of innovation and technological progress: most of the greatest innovations of all time occurred in this period and encouraged growth in labour productivity through unprecedented industrial development. The period between the Industrial Revolution, which began in England at the end of the eighteenth century, and the First World War provided the necessary conditions for a subsequent wave of modern development and the great innovations of the 1900s. During this period, modern societies witnessed great transformations and went from being industry-based economies to service-based ones. During this period, the biggest contribution to the transformation was a massive increase in labour productivity, stimulated by significant technological innovation and all the inventions in this period.

Before the Industrial Revolution in England - and earlier still, in the Middle Ages - there was very little technological innovation and it was limited to agriculture and construction. In contrast, following the Industrial Revolution, a phase of great development started, initially technical and then economic, that encouraged labour productivity and which was seen from the nineteenth century onwards in the agrofood industry, in industry in a narrow sense and in the economy as a whole. If we consider the 50 most important inventions of all time, according to a group of scientists interviewed by *The Atlantic*, from the invention of the wheel onwards 20 occurred during the nineteenth century (15 in the second half), another 20 in the twentieth century and only ten prior to the year 1800. This explains the stagnation of labour productivity and income before the Industrial Revolution (Tridico 2016).

The most recent economic literature (Eric Hanushek and Ludger Woessmann 2008) underlines the importance of the acquisition of skills and educational knowledge to boost productivity. These factors, in turn, depend on economic and institutional incentives - rules according to which individuals acquire knowledge - the school and education system, and its level of accessibility. These arguments are reported within the framework of the efficiency wage theory, where the effect of higher wages on labour productivity is positive and inefficiencies are reduced. High worker turnover, firing procedures, flexible contracts, low pay and a more generally conflictual working environment are detrimental to the firm's work culture and negatively affect workers' effort (Carl Shapiro and Joseph Stiglitz 1984). In contrast, higher wages positively affect workers' effort. The improvement in workers' conditions contributes to the establishment of more cooperative industrial relations and increase employees' commitment. Hence, *ceteris paribus*, bonuses and premiums, wages, trust, a good environment and good relations within firms (and in principal-agent relations) increase labour productivity. In mainstream literature, this is known as the "wage-efficiency effect" (see, for example, Shapiro and Stiglitz 1984; George A. Akerlof and Janet L. Yellen 1986; Morris Altman 1988)².

² See also Marc Lavoie (2014, pp. 304-306) for a discussion of Marxist and radical approaches which share with the efficiency wage literature an emphasis on workers' morale and motivation as a main explanatory factor for productivity.

More recently, in particular since 1975, labour productivity has not increased as fast as before, as shown in Figure 3 for OECD countries. This occurred mainly in advanced countries, which in the meantime experienced a structural transformation towards the service sector, usually characterised by lower levels of technological intensity and productivity. The problem is that in advanced economies, the tertiary sector employs around 70 *per cent* of the working population, while manufacturing employs around 25 *per cent* or less and the rest, a very small fraction, is involved in agriculture. The bulk of the working population therefore works in a sector where productivity gains are more difficult to obtain (Domenico Delli Gatti et al. 2012), such as the service sector, and this may have negative consequences for wages, income and consumption, as well as for the dynamics of the GDP. Alongside the excess of saving, a productivity slowdown is often reported as an important explanation for the secular stagnation (Larry Summers 2016). This favours the catching up of peripheral countries and a reduction in global inequality.



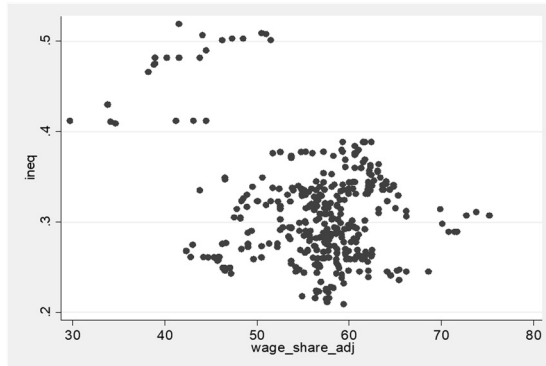
Source: Own elaboration.

Figure 3 Labour Productivity

However, the productivity slowdown is not an exogenous variable occurring by natural causes. Labour productivity is endogenous, as Nicholas Kaldor (1961) and other classical economists have argued. In his 1961 article, Kaldor criticises the way neoclassical economics deals with technical progress, which is characterised, in his view, as a continuous, exogenous process of improvement in the state of knowledge driven, in turn, by capital accumulation and aggregate demand. Moreover, from the entrepreneur's perspective, the pressure exerted by the increasing cost of labour provides a stimulus to reorganise the production process in a more efficient way. This incentivises the adoption of technologically advanced equipment and machinery, which allows increased production without having to increase the number of employees. In this sense, the wage share has an enhancing role in productivity, as also shown by Paolo Sylos Labini (1984, 1999), who stressed the connections between labour productivity, income distribution and the dynamics of demand in connection with the wage share.

Empirically, it can be observed that the increase in income inequality in rich countries has to do with both the reduction of the wage share and the increase in

personal income dispersion in the last two or three decades. These two concepts are strongly correlated: when wage share decreases, *ceteris paribus*, the total personal income distribution will be more uneven, as Sebastiano Fadda (2016, p. 24) argues. The figure below shows the correlation between inequality (Gini coefficient) and wage share (adjusted) over a long period (1990-2013) among a group of 34 OECD countries and clearly indicates this relationship: when wage share shrinks, inequality increases.

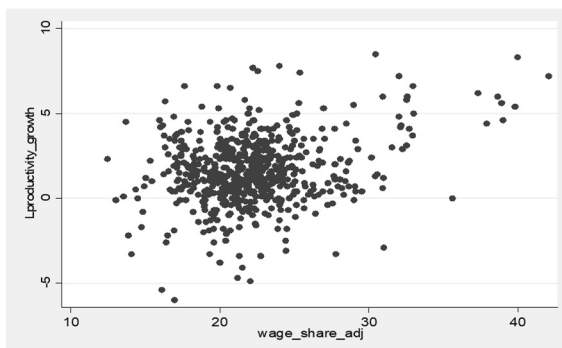


Notes: "adjusted" wage share considers also in the share self-employment (ILO projections), contrary to the "unadjusted" wage share. Panel 1990-2013.

Source: Own elaboration.

Figure 4 Wage Share (Adjusted) and Inequality (GINI) in OECD Countries

Riccardo Pariboni and Tridico (2016) show how wage share positively affects labour productivity in a sample of OECD countries between 1990 and 2013. They tested a modified Sylos Labini equation and their findings confirm that relationship, as Figure 5 shows.



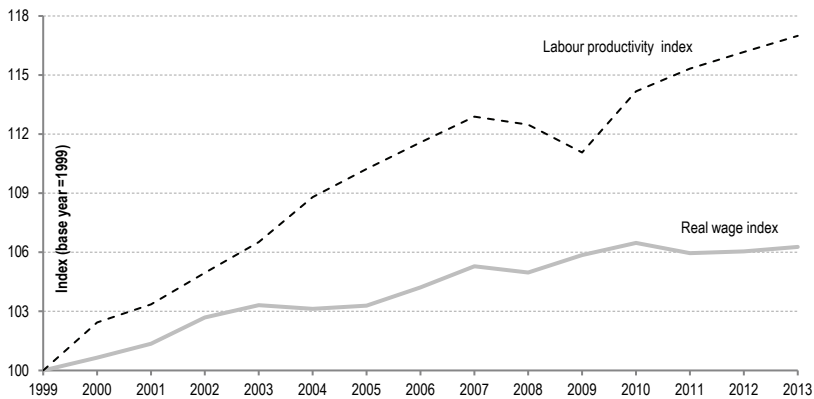
Source: Pariboni and Tridico (2016).

Figure 5 Wage Share and Productivity

Michal Kalecki (1965) shows in his economic growth model that the wage share is determined by the degree of monopoly and can therefore vary, although he

recognises that the Kaldor stylised constancy of factor share, empirically observed until the 1960s, to some extent applied, since no great wage share fluctuations were observed. These findings - in particular the different interpretations of Kalecki and Kaldor with reference to different periods - suggest that the wage share also depends on particular political and social conditions, which can change over time. A similar interpretation is put forward by Kuznets (1933, p. 30) who pointed out that labour share is intimately related to the struggle of labour against capital and to the significant political and social conflicts that centre on the relative share of these productive factors.

The figure below shows the gap accumulated in recent years between ULC (the labour productivity index in the figure below) and the real wage index in advanced economies. This gap contributed dramatically to the reduction of wage share and therefore to the increase in national inequality in advanced economies (OECD countries).



Source: International Labour Organization (2017)³.

Figure 6 The Gap: Labour Productivity and Real Wage in Advanced Economies

3. Switching from Global Inequality to National Inequality: The Empirical Evidences

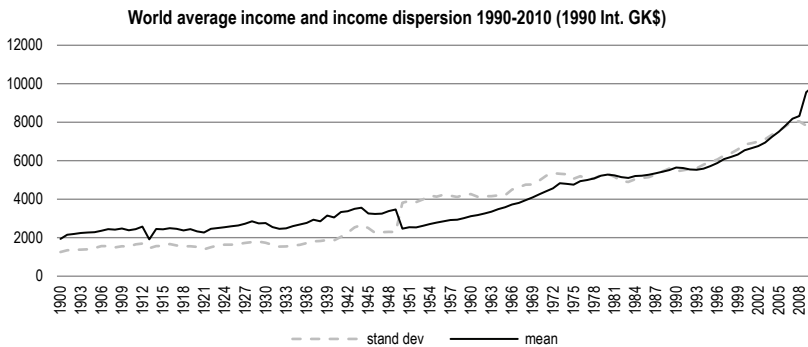
It would be difficult to test an econometric model on the basis of the assumption made. We would need historical data not only about GDP *per capita*, dispersion and income inequality, but also about foreign direct investments, imports and exports, financialisation, technology, etc. However, if we focus on the last three to four decades, despite the limited available data, our assumption can be verified: a switch occurred from higher global inequality to lower global inequality and simultaneously to higher national inequality levels.

In particular, the example of the USA (a leader country) and Western Europe (as a follower) is very interesting. The USA and Western Europe can be considered the core countries with respect to the rest of the world. Between 1950 and 1975 (a sub-

³ International Labour Organization. 2017. <https://www.ilo.org/global/lang--en/index.htm> (accessed May 10, 2017).

period included in the USA hegemony period of 1900-present), an important wave of innovation allowed the US economy to grow and to accumulate technological gaps. Technical progress was the main driver of economic growth both in the USA and, to some extent, in Western Europe (with some delay), which managed to get similar social, organisational and institutional capability to the USA and to emulate the leader (Abramovitz 1986). Within countries (in the USA and in Europe), income increased for all and inequality decreased. Pro-labour institutions and welfare-oriented policies contributed to this objective to a very large extent. In contrast, between-countries differences, on a global level, increased faster, in particular between the core (USA and Western Europe and a few other countries) and the periphery. In the second period 1975-present, skills, labour and human capital are the main drivers of growth, both in the USA and in Western Europe. In this period, within-country income differences (in the USA and in Europe) increased faster and between-countries differences, on a global level, increased more slowly or reduced.

Figure 7 represents this situation at the global level: we report world data from 1900 to 2010 concerning average income and income dispersion (standard deviation among countries). It appears clear that between 1950 and 1975, income dispersion (which is a proxy for between-countries inequality) was higher than average income. In the second phase (1975-2010), there is a convergence in the sense that income dispersion (between-countries inequality) decreased towards average income, and within-country inequality increased. In the last ten years (2000-2010), this process has further intensified: in fact, within-country inequality has increased much more than between-countries inequality. This is highly consistent with the recent results from Milanovic (2016). Thus, within-country income inequality has reached similar levels to that before the Second World War (1900-1945).



Source: Own elaboration.

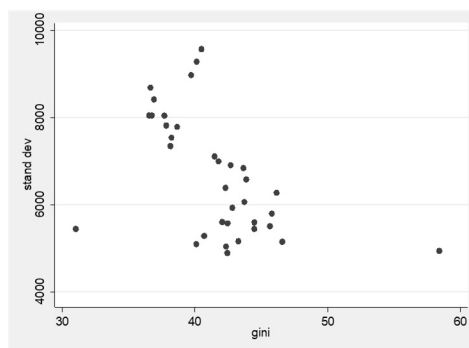
Figure 7 World Income and Disparities

After the Second World War, economic growth in most advanced economies occurred under the Keynesian compromise or paradigm of economic policy, which not only allowed for the construction of an important welfare state able to provide indirect wages and consumption capability to nearly everybody, but also allowed the equal

distribution of productivity gains between workers and firms. Therefore, wage earners increased their income steadily, at least until the mid-1970s. The increased wage share and consumption fuelled the positive dynamic of the aggregate demand. At the same time, productive investments, both public and private, accompanied this positive trend and supported the demand. Economic growth occurred, and demand management policies guaranteed steady development. Labour productivity was driven, following the Kaldor-Verdoorn approach (Petrus J. Verdoorn 1949), by the expansion of aggregate demand which created positive spill-over and economies of scale.

After the end of the 1970s, a new paradigm of economic policy, which can be called financial capitalism, emerged - or rather was shaped - in policy and institutional terms, firstly in the UK and in the US and later in other advanced economies (Eckhard Hein 2015; Tridico 2017). The political and economic roots of the financialisation process, which brought about a new financial-led growth regime along with the process of globalisation, can be found in the 1970s. However, they were manifested openly politically in the 1980s. The financial sector was an early and eager promoter of deregulation in the 1980s in the UK and in the USA under the Thatcher and Reagan administrations respectively, (Robert Boyer 2000; Pascal Petit 2009), which Bob Jessop (2002) identifies as a transition phase to the post-Fordist financial-led regime. Jessop (2002) argues that new accumulation strategies emerged during that period, a new paradigm of political economy. This new paradigm involved multinational firms, international financial discipline, a more authoritarian state and a form of popular capitalism. The previous Fordist strategy was replaced by an internationally oriented and financially aggressive strategy, deregulated and concentrated dually on Wall Street and in the City of London.

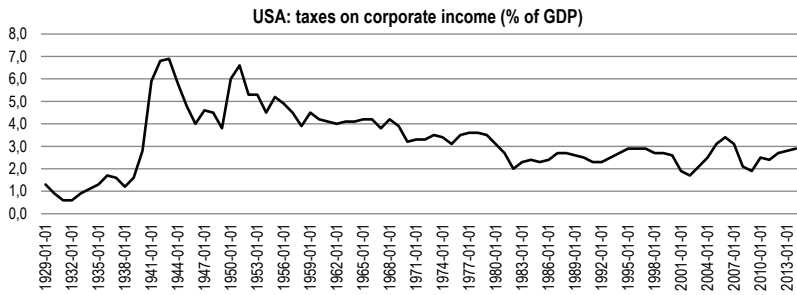
The figure below represents a correlation between national inequality (captured by yearly average Gini coefficients) and income differences among countries (captured by yearly standard deviations of GDP *per capita*) from 1982 to 2015 (data come from Maddison database). It is possible to identify an inverse relationship between the two: when Gini coefficients increase, standard deviation declines, and this identifies a sort of trade-off between the two.



Source: Own elaboration.

Figure 8 Scatter Plot National Inequality vs. Global Inequality 1980s-2015

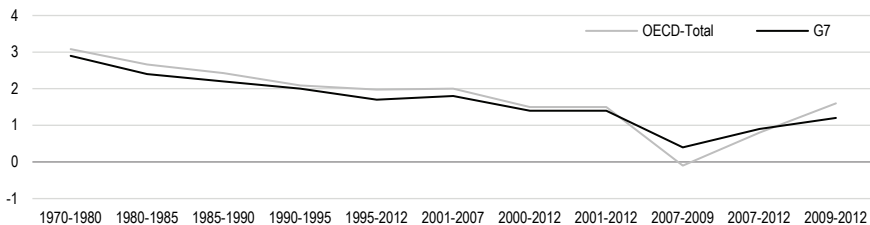
The main objective of the financial capitalism paradigm was to restore the profit rate, which had not increased between 1945 and 1975, and to stop the decline of labour productivity growth which started at the end of 1970s (William Lazonick and Mary O’Sullivan 2000; Photis Lysandrou 2011; Michael Roberts 2014). Financialisation and globalisation were identified as two pillars through which (global) capitalism could return to its original idea, freed from the strings imposed by the Keynesian compromise. Financial expansion and globalisation shaped the model of financial capitalism into which states and governments are obliged to fit in terms of creating institutions, implementing policies to compete with each other through tax competition, attracting capital, social dumping, and deregulating labour markets and compressing labour through labour flexibility. The case of the USA is the best example in this respect: corporate taxes declined, and profits and dividends increased, as the figures below show.



Source: Thermodynamic Database (2017).

Figure 9 Tax Corporations in USA

However, a decline in labour productivity occurred in most advanced economies and among the greatest economies (G7), as the graph below suggests. Financialisation and globalisation did not help to return to the labour productivity growth rate present before the 1970s. Nevertheless, as was stated, it allowed for a recovery of the profit rate and financial compensation, which in turn led to an increase in inequality.



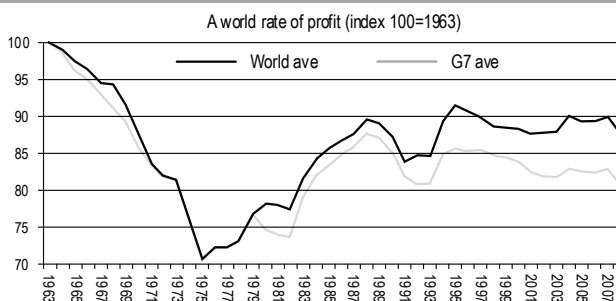
Source: Organisation for Economic Co-operation and Development (2017) database⁴.

Figure 10 Labour Productivity per Hour (US \$ per Periods)

⁴ Organisation for Economic Co-operation and Development. 2017. <https://data.oecd.org/lprdty/gdp-per-hour-worked.htm> (accessed April 02, 2017).

Reaganomics and Thatcherism were strategies that aimed to restructure the accumulation system through deregulation of the financial system (James Peck and Adam Tickell 1992) at the expense of the social compromise realised after the Second World War. Moreover, after the fall of the Soviet Union, Alan Greenspan, who rose to oversee the US Federal Reserve during the Reagan administration, believed that the world economy could expand greatly through globalisation of the financial sector (Alan Greenspan 2007).

In this context, the profit rate, which constantly fell after the Second World War, arrested its decline and started to recover. The figure below shows a recovery of profit both at world level and in the most advanced economies (in the so-called G7) since the 1980s, in concurrence with the processes of financialisation and globalisation.



Source: Michael Roberts (2014)⁵.

Figure 11 World Profits

This is consistent with Arrighi's argument (1994), explained in the previous section, which identifies alarm for investors in the 1970s mainly due to the decline in the profit rate in the manufacturing industrial sector. The deregulation of finance, the expansion of global capital and capital mobility, the process of globalisation and market integration, and the change in labour-capital relations (in favour of capital) allowed for an arrest in the decline of the profit rate and its recovery and, in particular, allowed for an increase in dividends and shareholders' payments in the financial sector, as Figure 1 shows with reference to the USA case.

Finance allows for both speculation and indebtedness. Financial investments look more lucrative for investors, and households are more and more pushed towards private indebtedness and credit consumption since their income constraints increase consistently in a period of wage stagnation. The dramatic increase in labour flexibility occurring in the age of financial capitalism is functional to the idea of "downsize and distribute", which allows for an expansion of financialisation and the implementation of remuneration schemes for managers based on the firm's short-term performance and on shareholders' objectives, interested uniquely in the maximisation of dividends. Corporate managers in advanced economies are increasingly abandoning the pursuit of "new ways to generate productivity gains on the basis of retain and reinvest" and

⁵ Data used in this figure comes from World Penn Tables weighted for the size of GDP.

are capitulating “to the new competitive environment through corporate downsizing” (Lazonick and O’Sullivan 2000). The US economy, as shown in Figure 2, is a paramount example.

The link between globalisation and inequality has been largely explored in the literature following the Stolper and Samuelson theorem, according to which market integration increases inequality and vulnerability as increased international trade raises the incomes of the owners of abundant factors and reduces the incomes of the owners of scarce factors (Wolfgang F. Stolper and Paul Samuelson 1941). Since advanced industrial countries are more capital-intensive economies and abundant in skilled labour, trade is expected to be beneficial for skilled labour and detrimental to unskilled labour, thus increasing income inequality. However, researches in this field may produce controversial results. In particular, Elhanan Helpman (2016, p. 1) finds that “trade played an appreciable role in increasing wage inequality, but that its cumulative effect has been modest, and that globalisation does not explain the preponderance of the rise in wage inequality within countries”.

Globalisation and global finance introduced aggressive outsourcing practices and foreign direct investment (FDI) outflows, which have improved the bargaining position of capital relative to labour in higher income countries. Trade unions lost power and labour market regulations, such as labour protection against firing, unemployment benefits, minimum wage, etc., weakened. As a consequence of the increased bargaining power of capital against labour, it is easier for capital to obtain tax reductions and welfare retrenchment. States are willing to embark on tax competition with other states in order to keep investments and production at home. This has a direct and negative impact on unskilled labour and income distribution which worsens without welfare support and social institutions. Income inequality increases because labour, which is the most important source of income, is seen by the supply-side approach as a cost to be compressed rather than as a fundamental part of aggregate demand to be expanded.

Figure A1 in the Appendix suggests a mechanism of cumulative causation which led to the increase in income inequality and mass unemployment. Following the approach of Arrighi (1994) described above, the process started with the decline in the profit rate and in labour productivity in advanced economies in the manufacturing sector. The reactions of firms (and of policy) to those declines developed through two main pillars: the financialisation of the economy and the intensification of globalisation. The former to some extent represented a refuge sector for firms - the finance - in order to invest their liquidity and get higher returns than in the manufacturing sector. This is already well described by Arrighi (1994). The latter, globalisation, was the necessary appendix of financialisation. In fact, the process of financialisation was favoured by international openness, market integration and capital mobility which has shaped the process of globalisation since the end of 1980s (see Figure A1 in the Appendix).

Hence, while globalisation and financialisation allowed restoration of the declining path of the profit rate, their expansion also determined the increase in income inequality (Thomas Goda 2013). To be more precise, restoring the profit rate occurred at the expense of squeezing the wage share (Özlm Onaran and Giorgos Galanis 2012).

The reduction of wage share in advanced economies occurred mainly through two channels (financialisation and globalisation) which operate in the following directions.

Firstly, financialisation negatively affected wage share through downsizing of the employment level, the intensive use of labour, the pursuit of objectives such as distribution of higher dividends to shareholders, and the distribution of higher payoffs in the finance sector, which caused the worsening income inequality. Secondly, globalisation negatively affected wage share decline through capital mobility, which increased the power relation of capital *vis-à-vis* labour. Trade unions lost their influence in bargaining for higher wages, higher welfare and better working conditions. Global tax competition (to attract capital) increased among countries and social policies decreased along with public expenditure. Unemployment increased and semi-employment (precarious jobs) increased. Weaker institutions in the labour market and labour flexibility allowed the continuous adjustment of labour to capital through supply side policies. Therefore, income inequality increased.

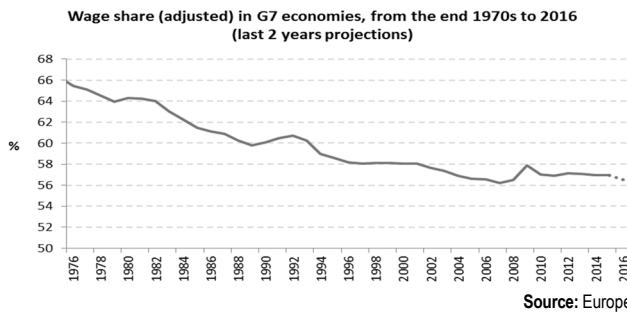


Figure 12 Wage Share in G7 (on Average)

The interaction of the two channels above allowed for a decline in consumption level and in worker income, which became instable and mostly reliant on credit consumption. Aggregate demand declined along with GDP dynamics.

Hence, consequences have been negative not only in terms of income distribution, but also in terms of unemployment, under-utilisation and, above all, in terms of GDP dynamics. In fact, this new paradigm is not able to restore labour productivity and to produce high economic performance. Instead, it seems to us, it is the basis for what has been defined as secular stagnation (Summers 2016) - in other words, an economic decline along with a worsening of income distribution in advanced economies.

4. Conclusion

The main finding of the paper, explored statistically and historically, is that global and national inequalities alternate with one another. In particular, when technology is the main driver of economic growth, differences in technological levels contribute to

⁶ **European Commission.** 2017. AMECO Database. https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/macro-economic-database-ameco/ameco-database_en (accessed April 02, 2017).

increase differences between countries and to increase global inequality in terms of GDP *per capita*. In contrast, in periods of expansion driven by labour (skills and human capital) and by labour exploitation, inequality within countries increases, since technology exhausts its effects on growth, and global inequality decreases.

I have also argued, in line with the post-Keynesian literature, that globalisation and financial expansion contributed to the increase in inequality within rich (core) countries. At the same time, this allowed some degree of technological transfer and the takeover of some developing and emerging economies, which reduced disparities with respect to the core countries.

In this way, global inequality declined. The switch from a phase with higher global inequality to lower global inequality levels, and to higher levels of national (within-country) inequality, was possible because a new paradigm of economic policy and institutions was implemented. In particular, the shift from a demand side regime to a supply side regime policy, where labour is seen as a cost to compress rather than as a fundamental part of the aggregate demand to increase, is the fundamental cause. The decline in the wage share was a natural appendix to this new model which, consequently, is characterised by higher internal inequality and lower GDP dynamics.

I have also connected, as in other post-Keynesian researches, wage share reduction and income inequality (within-country), which in turn led to lower labour productivity performance in rich countries in the last three to four decades. Historically, it can be observed that in the previous phase, with higher wage share and lower income inequality (within-country), global inequality was higher. In this context, it is possible to conclude that, empirically, there is a trade-off between global inequality and national inequality. Further research would be necessary, however, to be able to generalise (or at least to apply) these findings to all phases of capitalism.

The results of the paper suggest that this trade-off can be avoided only if wage share does not shrink and globalisation (or rather capital mobility) is limited. This also means that the policy paradigm should change dramatically.

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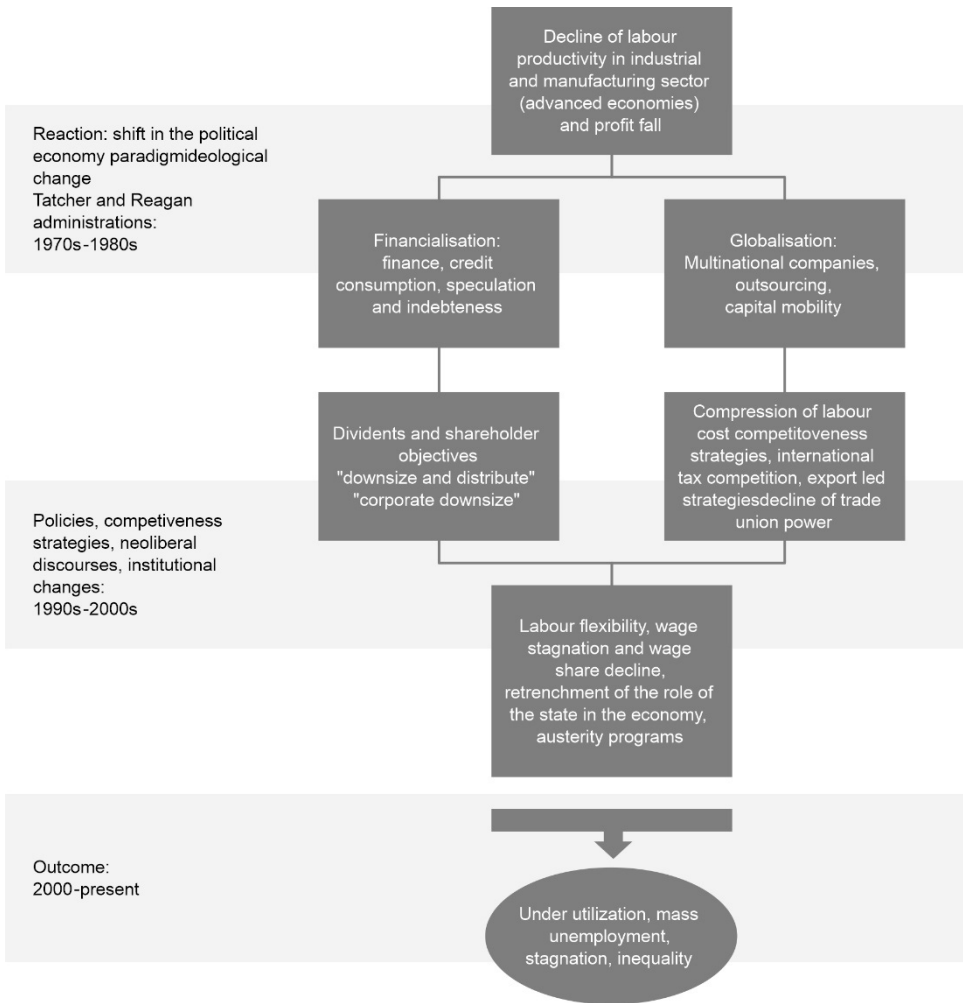
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Appendix

Table A1 Types of Inequality (B/W), and Accumulation: A Historical Perspective

	Types of inequality between vs. within	Inequality	Period/cycle of accumulation	Core	Rival incumbent	Main driver of growth	Main/decisive events	Regime of capital accumulation: main sector	International regime
B (between)	Higher	1400-1600	Northern Italy: city-states of Venice, Florence, Genoa and (later) Spain	Spain/ Holland/ Portugal/ France	Technology/means of transport/large ship	Venetian trade and conquer/ Florentine banking invention/Genoise financial intermediaries to Spain	Money and trade	Protectionism	
W (within)	Lower	1400-1600	Northern Italy: city-state of Venice, Florence, Genoa and Spain		Technology/means of transport/large ship		Money and finance	Protectionism	
B	Higher	1600-1750	Holland	UK/France	Technology/means of transport/large ship	1648: Westfalia Pax	Commerce and trade	Protectionism	
W	Lower	1600-1750	Holland		Technology/means of transport/large ship		Commerce and trade	Protectionism	
B	Lower	1750-1900	UK	France	Labour	30 years war/industrial revolution	Industry, trade and finance	Openness, international trade	
W	Higher	1750-1900	UK		Labour		Industry, trade and finance	Openness, international trade	
B	Higher	1900-1970	USA		Technology	Financial crisis 1870/1 and IIWW	Advanced industry	Protectionism	
W	Lower	1900-1970	USA	Germany	Technology		Advanced industry	Protectionism	
B	Lower	1970-2050	USA		Labour/skills	Oil shock 1970s/financial boom	Finance	Openness, globalisation financialization	
W	Higher	1970-2050	USA		Labour/skills		Finance	Openness, globalisation financialization	

Source: Own elaboration



Source: Own elaboration.

Figure A1 Forces Driving National Inequality