

# **Wage share and the current account. How income policies transmit to the rest of the world. <sup>1</sup>**

**Jorge Carrera (BCRA, UNLP)**

**Esteban Rodríguez (BCRA)**

**Mariano Sardi (BCRA)**

**June 2016**

**Abstract**

This paper analyzes the relationship between inequality and the current account, addressing the role of the functional distribution of income. Using panel data for 60 countries over the period 1975–2011, our results confirm that an increase in the wage share is associated with a decrease in the current account. This result is consistent with the theories that connect higher wages with higher aggregate demand, through greater consumption and less saving. The relationship is stronger for developing economies, highlighting the structural differences between different groups of countries. Specifically, the relevance and sign of control variables like financial intermediation, fiscal balance, demographic variables, capital account openness and growth expectations varies according to the level of development. So, income policies in one country have important spillovers for partners (through the current account). These results are useful for the implementation and coordination of income policies at international level, having into account the complementary target of reducing current account imbalances.

**Keywords** Inequality, Current account, Functional distribution of income, Aggregate demand

**JEL classification** C23, D31, D33, E21, F32, F41.

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<sup>1</sup>A preliminary version of this paper was presented at the L Reunión Anual de la Asociación Argentina de Economía Política and at the II Jornadas Nacionales de Econometría. We would like to thank both reviewers for their insightful comments on the paper. The opinions in this work are the exclusive responsibility of the authors and do not necessarily reflect the position of the Central Bank of Argentina. E-mail: [jorge.carrera@econo.unlp.edu.ar](mailto:jorge.carrera@econo.unlp.edu.ar); [esteban.rodriguez@bcra.gob.ar](mailto:esteban.rodriguez@bcra.gob.ar), [mariano.sardi@bcra.gob.ar](mailto:mariano.sardi@bcra.gob.ar).

# **Wage share and the current account. How income policies transmit to the rest of the world**

**Jorge Carrera, Esteban Rodríguez and Mariano Sardi**

*“[A] declining labour income share can limit household consumption and reduce overall aggregate demand if the redistribution of income to capital does not sufficiently increase investment or if lower wages do not increase net exports sufficiently to offset lower domestic demand. These negative consumption effects can in turn weaken investment, as firms do not see new strong sources of demand. The resulting negative effect on global demand may limit exports and reduce overall economic growth” (ILO, IMF and OECD 2015). Prepared for the G20 Labour and Employment Ministers Meeting and Joint Meeting with the G20 Finance Ministers, Ankara, Turkey, 3-4 September 2015.*

## **1. Introduction**

Since the origin of economics as an independent subject of study, income distribution has always been a central issue in economic theory and policy. However, interest in distribution issues has increased significantly in the last decades, for several reasons. In the first place, income inequality, measured through different indicators, has increased in almost all advanced economies and also in most of the emerging and developing economies. This phenomenon, which is important in itself, is also connected with various micro- and macroeconomic issues that influence growth and development (Stiglitz, 2013; OECD, 2014)

Another reason why inequality has gained traction in the economic debate is that many authors have seen it—along with global current account imbalances and financial deregulation—as a primary cause of the international financial crisis that began in 2008. There is also a complementary discussion happening, in academia and at international fora like the G20, about the role of income distribution in global growth prospects. In fact, theories about secular stagnation that remark the lack of global effective demand place a strong emphasis on inequality (Summers, 2014). As a result, even in international organizations there has been a proliferation of research on inequality (ILO, IMF and OECD, 2015).

All these discussions and research inquiries raise the question of inequality's macroeconomic role in any particular country, and in its interactions with the global economy. In this paper, we tackle one aspect of this question, by investigating how and through which transmission channels different income distribution configurations affect the level and dynamics of a country's current account.

There are different plausible strategies for measuring income inequality. In our analysis, we use the functional income distribution to measure inequality, where data is available for a larger number of countries. Doing this, we are choosing a different approach than the one in recent literature, which focuses on the well-known fact that those at the high end of the income distribution are capturing a larger share of total income. Without discounting the contributions made by the empirical literature based on the inclusion of top incomes, we note that this method of measuring inequality faces some limitations when the results have to be extrapolated for emerging and developing countries. First, the phenomenon of extraordinarily high wages—think CEO compensation and huge executive bonuses—does not seem to be as relevant yet outside the main global financial centers. Second, the lack of comparability, or the absence of tax information, places considerable limits on the number of countries that may be included in such research. Using the functional distribution of income helps solve all these issues and allows us to include a larger number of countries in our analysis.

Our hypothesis in this paper—that an increase in the wage share of income results in a decrease of the current account—is consistent with Keynesian theory: given wage earners' lower marginal propensity to save, an income distribution in their favor results in an increase in the consumption level, a higher level of aggregate demand, and deterioration of the current account<sup>2</sup>. Certainly, this approach allows analytical innovations like those proposed by behavioral economics, or the introduction of the financial sector and the openness in the capital account.

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<sup>2</sup> The current account can be seen as the excess of savings over investment ( $CA = S - I$ ). If an increase in consumption means a decrease in savings without affecting the investment, there is a reduction in the current account.

Using the functional income distribution as the measure of inequality also makes it more explicit that, because of the existence of different marginal propensities to consume between wage earners and the receivers of rents and profits, a reduction in the wage share in income entails a drop in aggregate consumption, which is not fully compensated by the investments of capitalists (Keynes 1936). Adopting this stance, an increase (decrease) in consumption may be associated with a decrease (increase) in the current account, without any significant reaction of investment.

In this paper we show that the share of wages in total income is a significant determinant of the current account: the higher the wage/GDP ratio, the lower the current account. This result is robust for different specifications of the model and different panel compositions. This issue has not been sufficiently studied in recent literature besides some papers related to the European crisis (Brancaccio, 2012). It is also consistent with theories arguing that an increase in aggregate wages implies higher aggregate demand through more consumption and less saving.

The paper is organized as follows. Section 2 reviews the debate in the recent literature concerning the different channels through which inequality might affect the operation of an economy. After outlining the main lines of research—which is a broader discussion than the empirical debate this paper introduces—we focus on the arguments related to how and whether income distribution affects the current account balance. In Section 3 of this paper, we formalize the concept of functional income distribution by analyzing the extent to which it is correlated with the indicators of personal income distribution, such as the Gini coefficient or top incomes (income captured by the top percentiles of the distribution). Section 4 is devoted to analyzing the recent evolution of the functional distribution of income in different groups of countries. In Section 5, we introduce the econometric strategy to prove our main hypothesis, that the functional distribution of income is a highly significant determinant of the current account balance. The results are shown in Section 6, and the main conclusions are

presented in Section 7. The paper also includes several appendices with details of our empirical work.

## **2. How do inequality and income distribution affect the current account?**

In order to provide a clear overview of the recent literature, this section is divided into two parts. The first part reviews the negative impacts that income inequality may have at the micro- and macroeconomic level, to offer a broader perspective on how such inequality might adversely affect the economic performance of any country. The second part focuses more specifically on the issues that this paper attempts to advance: how income distribution relates to saving, consumption and, finally, the current account.

### **2.1 An overview of the economic dimensions of inequality**

We have identified four different branches of research regarding the negative economic impacts of inequality. First, there is abundant evidence demonstrating that an unequal distribution of income (and of wealth) is associated with less *equality of opportunity*<sup>3</sup> as it entails a concrete impediment for some people to invest optimally in their education and health (Banerjee and Duflo 2011; Bénabou 1996; Bischoff and Reardon 2011; Mejía and St-Pierre 2004; Stiglitz 2012). Thus, a vicious circle is generated in which income distribution and inequality of opportunity are replicated across generations (Chetty et al. 2013; Corak 2012; Galor and Zeira 1993; Moav 2002), which in turn adversely affects economic growth (Marrero and Rodríguez 2010; Molinas Vega et al. 2010).

The second branch of research focuses on the role played by income inequality in the determination of individual economic incentives. Contrary to opinions stating that income inequality is instrumental in encouraging the efforts of the less privileged (Becker 2006), other authors argue that this is not always the case: in an economy with high inequality,

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<sup>3</sup> The distinction between “inequality of opportunity” and “inequality of outcomes” is made with equal frequency by those who consider them to be independent (Friedman, M. and Friedman, R. 1979) and by those who argue that they are highly correlated (Paes de Barros et al. 2009).

*investing* in such effort usually implies a greater *return* for high-income families than for the rest of the population. Among other factors, this may be due to the effect of different social networks (Stiglitz 2012) or the role of the family environment (Galor and Tsiddon 1997) on the various work opportunities each individual may have. The fact that the return on the investment in education is unequal, even among university graduates, signals that the economic incentive to make an effort and improve one's educational level does not operate equally for all, favoring those who come from wealthier or better educated families. A separate issue is the fact that high inequality is often associated with the existence of large economic sectors that capture rents from the rest of the economy, such as the financial sector (Moss 2009; Zingales, 2012). This encourages a poor allocation of human capital (Stiglitz, 2012), which breaks with the presumed trade-off between equality and economic efficiency (Okun, 1975). These processes are amplified by the fact that when the inequality of income and wealth is too great, there are pressures—and incentives—to shape the institutional framework to the benefit of the most favored (Galbraith 2013; Mishel 2013a, 2013b). Consequently, the inequality of economic and political power ends up weakening democratic institutions, reinforcing the mechanisms that create and amplify inequality in terms of both opportunities and outcomes.

The third branch of research we have identified is related to how inequality affects economic growth. Even though this topic has been widely analyzed in the economic literature, the conclusions are not unanimous. This is due to the fact that the relationship between inequality and growth can be analyzed from different perspectives, involving the development stage (Galbraith, 2009, 2012, 2013; Galor and Moav, 2004; Kuznets, 1955; Moran, 2005), the role of human capital (Stiglitz, 1997), the role of innovation at the corporate level (Foellmi and Zweimüller, 2006; Murphy et al., 1989; Zweimüller, 2000), and distribution and collective action conflicts (Alesina and Perotti 1996; Banerjee and Duflo 2003; Rajan 2009), among many other transmission channels. A comprehensive review of this literature can be found in Fiszbein (2012), but it is beyond the scope of this paper. However, given the relevance of the

topic to current political and economic debate, we would highlight the recent publications by the International Monetary Fund (IMF), which clearly suggest that inequality undermines economic growth and show some concern for this topic that was not present in previous IMF papers. Just to mention a few publications, in Berg and Ostry (2011), it is argued that countries with lower income inequality may sustain longer growth cycles; in Berg et al. (2014), it is stated that applying redistribution policies strengthens growth; finally, Dabla-Norris et al. (2015) conclude that if the income share of the richest 20% of the population increases, economic growth goes down in the medium term, but it goes up when the income share of the poorest 20% increases.

The fourth branch of research has found that inequality is one of the causes of the global financial crisis. Just to mention the most widely acknowledged papers, Rajan (2010) found that the crisis originated from the social pressures caused by increasing inequality in the U.S. According to the author, the government confronted this situation by promoting mortgages instead of seeking long-term solutions, which would have entailed higher investment in education. In turn, Palley (2015) explains the implications of this argument, stating that, according to Rajan, inequality neither prevented the efficient performance of the labor market nor did it represent a concern at the macro- or microeconomic levels. According to Palley, Rajan's view implies that inequality is an economic problem only if it might give rise to "populist" responses by government.<sup>4</sup> In a broader sense, this argument is related to the question about whether better-functioning democratic institutions would have prevented higher inequality from unleashing a financial bubble (Stiglitz, 2012).

Most of the literature on which this paper is based is closely related to this fourth branch of research, that is, if inequality has caused the financial crisis. However, this paper has a more

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<sup>4</sup> "According to [Rajan], increased income inequality in the US prompted a **populist political response** focused on making homeownership more affordable. This involved government interventions in the housing finance market which encouraged homeownership beyond people's means and spurred a credit-driven house price bubble. When the bubble eventually burst in 2006, the supporting financial structure came crashing down. [...A]ccording to Rajan the labor market was working efficiently and income distribution was neither a micro nor a macroeconomic problem. Instead income inequality was economically justified by technological developments that had increased returns to skilled labor and lowered returns to unskilled labor, and it was only a problem because it spurred politically motivated flawed policy". Palley (2015, pp. 2-3, emphasis added).

general scope. It seeks to establish the link between inequality and individuals' saving and consumption decisions; as a result, it reflects a core issue in macroeconomic theory that becomes evident in an open economy in the current account balance. The next subsection provides a review of the recent literature.

## **2.2 Income distribution, consumption, debt and the current account**

It has been suggested that with the worsening of income distribution in the years leading up to the financial crisis, middle- and low-income sectors reacted by getting into debt to maintain their consumption levels. Consequently, the evolution of a long trend of increasing inequality has a correlation with a period of increasing indebtedness, which became unsustainable over time and unleashed the subprime crisis. The counterpart of this higher indebtedness is a higher aggregate consumption level, lower aggregate savings, and therefore a lower current account balance. This line of thought suggests that there is a negative relationship between inequality and the current account balance, and there are some empirical works that support this idea (Al-Hussami and Remesal 2012; Behringer and van Treeck 2013; Kumhof et al. 2012). However, there are certain difficulties with this explanation at both the theoretical and empirical levels.

In the field of economic theory, the assumption that the financial system allows the decoupling of savings/consumption decisions from current or future income poses a challenge to consumption theories based on permanent income. Several authors have proposed alternative hypotheses to that of permanent income, incorporating psychological elements suggested by behavioral economics. For example, Barva and Pivetti (2009) argue that individual consumption is related to previously acquired consumption levels; therefore, an individual who loses income does not adjust his/her consumption level. Likewise, theories of relational consumption (Duesenberry, 1949; Schor, 2005) argue that an individual's consumption depends on the consumption level of one's peers. These theories are the basis of so-called *expenditure cascades* (Frank, 2005, 2007), which take place when the income captured by top fractiles increases. When the consumption level of the high-income sectors



goes up, the middle- and low-income households try to replicate this behavior, regardless of the fact that their incomes may not have changed, or even decreased—as was the case for most American households since the 1990s.

There are formal models of how higher inequality translates into higher indebtedness and a lower current account balance, such as two recent studies by the IMF (Kumhof and Rancière, 2010; Kumhof et al., 2012). These models incorporate Keynesian elements when they explain that a worsening of income distribution originates in a weakening of workers' bargaining power, allocating a fundamental role to the financial system in consumption financing. However, they do not provide a sufficient basis to conclude that an increase in inequality necessarily entails a concern at the macroeconomic level. If anything, a failure in the operation of the financial sector would allow the over-indebtedness of the most vulnerable sectors. This means that their explanation of the crisis is really that financial market failure in the form of excessive lending rendered the economy vulnerable to shocks.

We noted this in a previous paper (Carrera, Rodríguez, Sardi, 2015), which showed that Kumhof and Rancière's explanation of the relationship between inequality, indebtedness, and the current account balance would only be valid for countries with large and deep financial systems. However, we also noticed that there were some empirical difficulties with the evidence suggested by the literature in favor of a negative relationship between the income captured by top fractiles and the current account balance. First, these studies were based on a reduced sample of countries (between 18 and 22), which included mostly advanced economies. In our research, however, we tested the hypothesis with a higher number of countries (29). But even though we found that a concentration of income in top fractiles is associated with a lower current account balance, the result was not robust for the compositions of the panel we tested. In particular, our results revealed that this relationship is present only in emerging economies, and not in advanced economies, where it was actually expected given the presence of a more developed financial sector. We concluded our work by highlighting the need to carry out studies with a larger sample of countries, which would

require abandoning the use of top incomes as an indicator of income distribution. This paper is the next step of our inquiry.

The earlier literature used panels with a reduced number of countries because these papers' basic argument was strongly based on the hypothesis of *expenditure cascades*. For studies based on this theory, top income share is preferable as an inequality indicator to the Gini coefficient, given the insensitivity of the latter to changes in the tails of the distribution. Thus, the sample of countries was limited to the data available in "The World Top Incomes Database," prepared by, among others, Atkinson, Piketty, Saez, and Alvaredo. Even though this database has been expanded with the inclusion of some additional countries, the sample is still limited. Moreover, given that top income indicators are built on the basis of tax information, they are only comparable when the legal definitions of taxable income are somewhat consistent and when the tax systems are sufficiently efficient (Amarante, 2015; Galbraith, 2014).

The decision to focus in this paper on the functional distribution of income, rather than on the top income share, not only allows us to considerably increase the number of countries in the sample, but also helps us avoid focusing the theoretical discussion on arguments for which the empirical evidence is still unclear, especially for countries other than the U.S. Indeed, assuming that wages have a higher weight in the income of middle- and low-income sectors, our results go hand in hand with traditional Keynesian theories, in which, given the wage earners' lower marginal propensity to save, an income distribution in their favor results in a higher consumption level, a higher level of aggregate demand, and the resulting deterioration of the current account.

The assumption of the existence of a different marginal propensity to consume between wage earners and the receivers of rents and profits implies that a lower share of wages in income entails a drop in aggregate consumption. For this to translate into a higher current account balance, we need to justify why lower consumption is not offset by a higher investment on the part of the receivers of rents and profits. This would be equivalent to

assuming that there would be an automatic adjustment mechanism affecting aggregate demand at the full employment level, a notion rejected by Keynes (1946) in his *General Theory*. Adopting this stance, an increase (decrease) in consumption may be associated with a decrease (increase) in the current account, without any counteraction of the effect by investment. In a recent document drafted by ILO, IMF and OECD (2015), it is acknowledged that this independence of savings and investment leads to the conclusion that wage share affects economic growth (see the opening paragraph of the paper).

All this does not mean that we have completely abandoned behavioral economics. The consumption scope of this paper is to formulate a theory of consumption that could integrate Keynesian elements with psychological and relational ones.

What we are interested in analyzing is whether or not the evidence that we present regarding the negative relationship between the wage share and the current account is related to the negative relationship that recent literature has found between the top fractiles' income shares and the current account. If we can assume that a larger wage share corresponds with a lower top income share, then our results are opposite to the ones in the literature. The next section describes how wage shares correlate with top income shares and with the Gini coefficient.

### **3. Functional Distribution of Income vs. Other Inequality Indicators**

The functional distribution of income refers to the division of national income between capital and labor: The share of wages in income is the part of national income that is devoted to labor compensation (ILO, IMF and OECD 2015). In this paper, we use the functional distribution of income data prepared by Karabarbounis and Neiman (2013). This dataset has time series, incomplete in some cases, of wage share in the income of 112 countries over the period 1975–2012. As the authors explain, this database was built by combining information from five different sources: (i) Web sites with the official statistics of each country;

(ii) digital information obtained from the United Nations (UN) Organization; (iii) digital information obtained from the Organisation for Economic Co-operation and Development (OECD); (iv) books published by the UN; and (v) books published by the OECD. In our opinion, this is the largest database available with standardized information on the functional distribution of income.

In what follows, we analyze the correlation between these indicators and the main indicators of personal income distribution: top incomes and the Gini coefficient. For top incomes, we will use the income captured by the richest 1% of the population (Top 1%), available in the “World Top Incomes Database.” In the case of the Gini coefficient, we use data from the “Standardized World Income Inequality Database,” prepared by Solt (2014) on the basis of data from different sources compiled by the Luxembourg Income Study (LIS). Currently, this database has partial information for 174 countries from 1960 onward.

With this data, we were able to analyze the correlation between wage share and income captured by the Top 1% for 24 countries, while the correlation using the Gini coefficient could be extended to 60 countries, which were eventually included in our empirical work. For the total sample, a negative correlation is observed, even though it is not too significant. This is illustrated in Figure 1, which shows that there is a correlation between a larger wage share in income and a lower income concentration in the Top 1%, and with a lower Gini coefficient. In other words, a higher share of wages correlates with lower inequality levels.

[Insert Figure 1 about here]

Moreover, this negative correlation for the total sample is in fact relative as the situation may differ considerably between countries. Even though negative correlations prevail, a case-by-case analysis reveals that there are countries for which the correlation is null or even positive, as illustrated in Table 1 and in the histograms in Figure 2.

[Insert Table 1 about here]

[Insert Figure 2 about here]

These correlations remain stable both when contemporary values of each indicator are considered and when a lag or lead in any of the variables is included. This, together with the aforementioned dispersion among different correlations, is observed in the following box plots.

[Insert Figure 3 about here]

The “+” sign represents the sample mean, while the thick horizontal line represents the median. The “boxes” represent the second and third quartiles of the distribution, from 25% to 75%, i.e., they contain the central 50% of the sample. The height of the box represents the interquartile range (IQR), while the whiskers represent the last value of the sample between the respective quartile and a 1.5 IQR distance. The white circles represent the estimated correlations for each country; when they are out of the reach of the whiskers, they are considered outliers.

It may be observed that the sample mean adopts negative values in all cases. Moreover, the median is always below the mean, and this suggests that there is a higher concentration of correlations in the negative tail, something also observed in the tails of the histograms of Figure 2. This is confirmed when noting that the outliers, if any, are positive, and the lower limit of the boxes always adopts a value equal to or lower than -0.5, while the upper limit rarely comes close to the 0.5 value and even adopts negative values in some cases.

[Insert Figure 4 about here]

Figure 4 shows the correlations for some selected countries, while Appendix I describes the estimated correlations for each country under analysis.

This analysis confirms that, in general, a larger share of wages is related to an improvement in income distribution, measured by the Gini coefficient and also by the income captured by the Top 1%. However, we must not forget that these indicators are different and that in each particular country or historical time there may be different relationships. Indeed, this

relationship may be weakened by the existence of “super wages” in the upper tails of the distribution, as will be discussed in the following section.

#### **4. Recent Trends in the Functional Distribution of Income**

The functional distribution of income depends directly on: the real wage and on the proportion of wage earners’ relative to income earners’ and depends inversely on productivity. Consequently, we cannot directly associate an increase in the share of wages in income with an improvement in the well-being of workers, as the increase in the wage share may occur with a fall in real wages, provided the fall of productivity is higher. Accordingly, a lower wage share may occur when productivity increases at a faster pace than real wages. However, beyond these extreme cases, the evolution of real wages is usually a strong determining factor in the functional distribution of income.

The aforementioned points suggest that there may be different trends in each country’s functional distribution of income, depending on the economic process it is undergoing. For a long time, the empirical evidence suggested that there was stability in the wage share in income, at least for long periods, to such an extent that this was one of the well-known *stylized facts* given by Kaldor (1961). In his studies of economic growth, he had found that the functional distribution of income remained stable over the years, and this translated into an increase in real wages proportional to the average productivity growth rate. However, recent studies have indicated that the current stylized fact is that the capital income share has gone up rather than staying constant (Kanbur and Stiglitz 2015). In addition, the aforementioned work by Karabarbounis and Neiman (2013) argues that—at least since the beginning of the 1980s—there has been a decreasing global trend of wage share in income. The following figures summarize the main findings of these authors, who find evidence that this trend may be explained by a fall in the relative price of investment goods. Consequently, the efficiency gains of the productive sectors, usually attributed to progress in information

technology (IT), lead to a more intensive use of capital, displacing human work in relative terms.

[Insert Figure 5 about here]

[Insert Figure 6 about here]

It is beyond the scope of this paper to discuss these global trends, but we would like to highlight that these trends may have been underestimated, at least for advanced economies, due to the increasing weight of bonuses and rewards in the income of the high-income sectors. Even though this income is more similar to corporate profit sharing and consequently should not be computed as wage income, this distinction is not always possible.

As explained by Kanbur and Stiglitz (2015), the economic literature has traditionally assumed that capital income is distributed more unequally than wage income. Furthermore, they argue that this assumption is the basis of models in which only capitalists save while wage earners only consume. However, according to these authors, such ideas no longer describe reality satisfactorily due to the facts that: (i) there is a broader capacity for wealth accumulation by people through savings they make over their lifecycle, including the different pension systems; (ii) the increasingly unequal returns on the increasingly unequally distributed human capital have led to a marked rise in wage inequality. Kanbur and Stiglitz's makes reference to the intergenerational transmission of inequality of opportunity and outcomes mentioned in Section 2 of this paper.

The discussion above means that what we consider wage income may vary from country to country, depending on the social and economic processes it is undergoing. Moreover, we are likely to find wage earners belonging to the top income sector who have sufficient capacity for saving and capital accumulation. This may explain for some countries, as we noted in the previous section, a higher share of wages in income correlates with an increase in inequality measured by the Gini coefficient or top incomes. It also leads us to think that the degree of

wage share is not independent on the country's developmental stage, as illustrated by Figure 7.

[Insert Figure 7 about here]

For both the complete sample and that omitting some countries with outliers, an “inverted U” relationship is observed between wage share and purchasing power parity (PPP)-converted GDP per capita. These figures immediately bring to mind the famous Kuznets Curve (1955), according to which countries starting development processes saw their inequality indicators increase until they reached a certain level of development, at which point inequality began to drop. It is necessary to point out that, assuming that a larger wage share correlates with lower inequality, Figure 7 indicates an inverse relationship to that of Kuznets: inequality goes down, as wage participation increases in the initial phases of development, and then it stabilizes or increases.

One of the criticisms of the Kuznets Curve is that, as it is based on cross-sectional data, it does not show the evolution of inequality during the development process, but rather the differences among countries at a certain historical time (Fields, 2002). This criticism is also valid for the relationship illustrated in Figure 7, but it reinforces the argument that what is behind a specific trend in wage share—and the macroeconomic implications of such a trend—may not be the same for different groups of countries. As the next section explains in depth, in order to address these issues we have tested the robustness of our results with different compositions of the data panel.

## **5. Methodology and Econometric Strategy**

In this section, we describe our strategy for estimating the relationship between the current account and the functional distribution of income. In particular, we will try to show that a higher wage share is associated with a lower current account balance. This result is in line with the suggestion that a larger aggregate wage bill is associated with higher aggregate



demand by boosting consumption. The fact that lower aggregate savings are not accompanied by an investment crowding-out effect implies that the current account balance must fall. This is a strong argument for focusing on the functional distribution of income when evaluating how distribution issues become a relevant concern at the macroeconomic level.

The estimation methodology follows the recommendations of IMF technical notes (Phillips et al. 2014) and uses pooled GLS with an AR (1) correction, given the strong autocorrelation shown by the current account series. We apply this methodology to an unbalanced data panel of 60 countries with annual data on different variables throughout the period 1975–2011. We attempted to identify the cyclical sources of current account behavior and for this reason we discarded the use of four- or five-year non-overlapping averages.

In what follows, we describe our database, starting with the list of countries selected on the basis of the availability of data on income distribution, both functional and personal. As observed, the sample includes both advanced and emerging countries, which altogether account for 83% of world trade for the period 2005–2011:<sup>5</sup>

- **Africa (12):** Burkina Faso, Egypt, Ivory Coast, Kenya, Lesotho, Morocco, Niger, Nigeria, Senegal, Sierra Leone, South Africa and Tunisia.
- **America (12):** Argentina, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Mexico, Panama, Peru, the U.S. and Venezuela.
- **Asia (10):** China, Iran, Israel, Japan, Mongolia, the Philippines, the Republic of Korea, Singapore, Sri Lanka and Thailand.
- **Europe (23):** Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Norway, the Netherlands, Poland, Portugal, Romania, Spain, Sweden, Switzerland, the United Kingdom (U.K.) and Turkey.
- **Oceania (3):** Australia, New Zealand and Papua New Guinea.

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<sup>5</sup> Authors' calculations using data series from the IMF's International Financial Statistics.

To test the robustness of our results, five different specifications of the model were run with different panel data compositions: (i) including an indicator of the functional distribution of income; (ii) including an indicator of the personal distribution of income; (iii) including both income distribution indicators (functional and personal); (iv) including a linear term and a squared term of the functional income distribution indicator; (v) including the contemporary value and two lags of the functional income distribution indicator. All these specifications were tested for: (i) the total sample of 60 countries; (ii) a panel of advanced countries and another panel of emerging countries; (iii) two partitions of the panel, the first corresponding to the 30 countries with the highest share of wages in income in the average of the period, and the second corresponding to the 30 remaining countries. These different panel compositions were used to identify structural differences between countries, and also different processes in the evolution of the functional distribution of income as we detected might arise at the end of the previous section. In particular, the separation between advanced and emerging economies, together with the inclusion of squared terms, is due to the non-linear relationship observed in Figure 7 between the functional distribution and PPP-converted GDP per capita.

Below is a description of the variables used, together with their source of information and the sign expected for the regressions based on economic theory. Appendix II shows the amount of data available by country and by variable.

**Current Account (% GDP) (“CA”).** This is the dependent variable in our regressions. Our main source of information is the database built by Lane and Milesi-Ferretti (2007), which has a version updated to 2011. We also use data from the IMF’s World Economic Outlook (WEO) database to complete the series for Belgium (1980–1994) and Hungary (1980–1981).

**Wage Share in Total Income (“wage\_share”).** As mentioned above, the data come from the work of Karabarbounis and Neiman (2013). A negative sign is expected for the estimated coefficient as a higher share of wages must correlate with higher aggregate consumption and a lower current account balance. We analyzed the existence of nonlinearities in this relationship; we also evaluated whether it was pertinent to include lags of this variable.

**Gini Coefficient (“gini”).** The main information source was the “Standardized World Income Inequality Database,” compiled by Solt (2014), using versions 4.0 and 5.0. With the same arguments used for wage share and assuming a higher marginal propensity for consumption by the low- and middle-income sectors, a negative sign for Gini coefficient is expected. However, previous literature, including our earlier paper (Carrera, Rodríguez, Sardi, 2015), suggests that it is not a significant variable in determining the current account.

**Net Foreign Assets Position (% GDP) (“nfa”).** The main source here is also the database built by Lane and Milesi-Ferretti (2007), completing the information with the World Bank’s WDI database for China (1977–1980), Luxembourg (1983–1998), Mongolia (1991), and Romania (1981–1989). The variable is included in the regressions with a lag and a positive sign in its coefficient is expected as a higher accumulation of external assets in  $t$  generates a rent flow in  $t+1$ , which is recorded in the current account. In a sense, this variable reflects the history of the current account as a series of surpluses (deficits) correlates with an accumulation (de-accumulation) of foreign assets. According to Phillips et al. (2014), this positive relationship between the lag of the NFA and the current value of the current account may disappear when the NFA adopts very negative values due to the emergence of sustainability problems. Therefore, following his recommendations, we include a dummy (“nfa\_60”), which adopts a value of 1 when the NFA is lower than 60% (negative) of GDP and a value of zero in all other cases.

**Population Dependence Ratios (“dep\_young” and “dep\_elderly”).** According to the lifecycle hypothesis, a higher proportion of an economically active population reduces savings, thus negatively affecting the current account as young people and the elderly are net consumers. However, several factors can induce the elderly to continue saving: the wish to leave an inheritance, or uncertainty about life expectancy and future expenses. For this reason, and to capture these effects properly, two different dependence ratios are used, both derived from the World Bank’s WDI database. The first ratio includes the young

population, between 0 and 14 years old, while the second corresponds to people over 65 years old. For both ratios, the denominator is the population between 15 and 64 years old.

**Credit to the Private Sector (% GDP) (“cred\_tot”).** The source of data is the World Bank’s “Financial Development and Structure Dataset,” and the measure comprises the sum of private credit from banks and from other financial institutions. The series for Chile and Venezuela have been completed with data on “Domestic Credit to the Private Sector” from the World Bank’s WDI database. The effects of the size of the financial sector on the current account are also ambiguous. On the one hand, they may render investment financing more efficient, leading to a higher level of savings and a higher current account balance. On the other hand, they allow access to financing to increase consumption levels, adversely affecting the current account.

**Fiscal Balance (% GDP) (“fiscal\_balance”).** The main source of data is the IMF’s WEO database (general government net lending), supplemented with data from the OECD (net lending/net borrowing) for Australia (1975–1987), Finland (1975–1979), Israel (1995–1999), Korea (1975–1994), the U.S. (1975–2000), and South Africa (1995–1999). We also use data from the European Commission’s “Annual Macro-Economic Database” (AMECO) (net lending/net borrowing general government) for Canada (1975–1979), France (1975–1979), Romania (1995-1999) and Turkey (2000-2001). The expected sign for this variable is positive as a higher fiscal balance resulting from lower spending or higher taxes reduces disposable income and aggregate consumption, positively affecting the current account.

**Five-Year Growth Forecast (“5y\_gdp\_f”).** The source of information is the estimates from the IMF’s WEO database. As these series start in 1988, for earlier years we use as a proxy the average real growth of the previous five years, employing economic growth data for the World Bank’s World Development Indicators (WDIs). Future growth expectations tend to promote investment, reducing the current account balance; therefore, a negative sign is expected for the coefficient. The growth forecast for the year  $t+5$  is considered, rather than

the annualized growth forecast for the next five years, so as to focus on growth perspectives rather than on cyclical fluctuations.

**PPP-converted GDP Per Capita (“rel\_pcgdp”).** This variable is included as a proxy of productivity or the level of development, and it is taken in terms relative to the GDP per capita of the average of three large economies: the U.S., Germany, and Japan. The source is the Penn World Table 7.1 up to 2010. For 2011, values are estimated on the basis of relative GDP growth and population growth (data from the World Bank’s WDI database). Even though the empirical evidence is contradictory in this respect, capital is expected to flow from countries with excess savings to countries with higher investment opportunities; as a result, the sign of the coefficient should be positive. For this to happen, policies must allow these capital flows. Thus, the variable (with a lag) is interacted with the capital account openness index, described as follows.

**Capital Account Openness Index (“k\_openness”).** In this case, we use the database built by Chinn and Ito (2006), the online version of which is updated to 2013. The series corresponding to Switzerland is completed with the maximum levels of openness possible as the series starts in 1996. There was no data for Luxembourg, so we constructed the series with the maximum levels of openness possible. This variable is included only in the regressions for which there is an interaction with PPP-converted GDP per capita.

**Dummy of “Financial Center” (“fin”).** Following Phillips et al. (2014), this variable adopts a value equal to 1 for relatively small economies with developed financial systems. Deciding which countries fall under this category is somewhat arbitrary, but, following the recommendations of the aforementioned authors, we decided to include Belgium, Luxembourg, the Netherlands, Singapore, and Switzerland. A positive value is expected for this variable.

Some of these variables, such as the current account balance and the net foreign assets position, are not independently determined in each country, but their values incorporate the common factors in the cross-sectional dimension. The variables that do not meet this

criterion were demeaned using GDP for weighting,<sup>6</sup> as recommended by literature. As a result, the demeaned variables were: the demographic ratios, the GDP growth forecast, the credit/GDP ratio, and the fiscal balance. The following section describes the results of our estimations.

## 6. Results

Table 2 shows the results for the total sample of 60 countries. It can be observed that the coefficient associated with wage share is highly significant in all cases and has a negative sign. This means that a higher share of wages in total income is associated with a lower current account balance. On the other hand, the Gini coefficient is not significant when it is included together with the functional distribution of income indicator and nor is it significant when the wage indicator is not included. The values of the wage share coefficients are similar in models (1) and (3), and they nearly double in models including squared terms or lags, which are also significant but with a positive sign. Model (4) indicates that the negative effect exerted by wage share on the current account decreases for high values of wage share, while model (5) indicates a negative but not explosive relationship between these variables.

Regarding the control variables, they are significant and have the expected signs, with the only exception being the credit/GDP ratio. Higher GDP per capita, a higher accumulation of foreign assets, and a higher fiscal balance are associated with a higher current account. On the other hand, higher future growth expectations and a higher proportion of a population

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<sup>6</sup> As in Al-Hussami and Remesal (2012), Behringer and van Treeck (2013) and Phillips et al. (2014), the demeaning was undertaken using the following formula:

$$\tilde{X}_{it} \equiv X_{it} - \frac{\sum_{i=1}^J PIB_{it} X_{it}}{\sum_{i=1}^J PIB_{it}}$$

where  $X_{it}$  is the original variable,  $\tilde{X}_{it}$  is the demeaned variable,  $PIB_{it}$  is GDP at current values taken from the *External Wealth of Nations* dataset of Lane and Milesi-Ferretti (2007), subindex  $i$  refers to the country and  $t$  to the year.

under 15 years old or above 64 years old correlate with a lower current account. The dummies are also significant and have the expected signs: financial centers have a higher current account balance, while the positive effect of foreign assets accumulation diminishes when the net foreign assets position becomes very negative.

[Insert Table 2 about here]

Considering the observations made in Section 4, we tested the validity of these results for different compositions of the panel. First, we divided the sample between advanced and emerging countries. According to the classification used by the IMF, the partition is as follows:

**Advanced Countries (25):** Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the U.K. and the U.S.

**Emerging Countries (35)<sup>7</sup>:** Argentina, Bolivia, Brazil, Burkina Faso, Chile, China, Colombia, Costa Rica, Cyprus, Egypt, Hungary, Iran, Ivory Coast, Kenya, Lesotho, Mexico, Mongolia, Morocco, Niger, Nigeria, Panama, Papua New Guinea, Peru, the Philippines, Poland, the Republic of Korea, Romania, Senegal, Sierra Leone, Sri Lanka, South Africa, Thailand, Tunisia, Turkey and Venezuela.

[Insert Table 3 about here]

Table 3 shows the results for advanced economies. The significance of the coefficients associated with wage share is lower than that estimated for the total sample. Moreover, the values of the coefficients estimated in models (1) and (3), despite the fact that they have a negative sign, are approximately one half of the values estimated for the total sample. This means that for advanced countries, the negative relationship between wage share and the current account exists, but it is not as strong as it is for the emerging countries. Furthermore, the linear coefficient of model (4) is positive, albeit less significant than that of the squared

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<sup>7</sup> For simplicity, in this paper we have considered as “Emerging Countries” both Emerging and Developing Economies.

term, which is clearly negative. The first lag of model (5) is not significant, whereas the contemporary term and the second lag are highly significant but with opposite coefficients. This suggests that the negative association between wage share and the current account may for these economies be only a short-term phenomenon that fades away over time. As for the total sample, the Gini coefficient is not significant in any of the regressions in which it is included.

The results for emerging countries illustrated in Table 4 are consistent with those given above. In fact, the wage share may be a highly significant determinant of the current account and may have a negative coefficient. The intensity of these coefficients is higher in all cases than that of the sample total, given the weak relationship between wage share and current account in the case of advanced countries. Unlike the previous samples, the squared term is not significant, while the lags are only significant at 10% and with coefficients that fail to offset the negative coefficient of the contemporary term even though positive. This means that for these countries, the negative relationship does not fade away over time. Once again, the Gini coefficient is not significant.

It is interesting to highlight the differences observed in the control variables for the three samples. The only variables that behave in the same way in all cases are fiscal balance and—with some loss of significance for emerging countries—the net foreign assets position. Capital openness interacted with relative GDP per capita is significant in all cases, but it shows a positive sign for advanced countries and a negative sign for emerging countries. This means that openness of the capital account allows capital—assuming that the current account is the counterpart of capital flows—to go from the advanced countries to the emerging ones.

The GDP growth expectations variable is not significant for advanced economies, but it is highly relevant for emerging economies. The negative sign could be an indicator that investment based on the imports of capital goods is attracted by future growth perspectives. The credit/GDP ratio is negatively associated with the current account in advanced countries



in line with the idea that a more developed financial system allows for higher levels of aggregate consumption. In contrast, in emerging countries the credit ratio is not a significant determinant of the current account. This means that the decoupling between wages and consumption levels of middle- and low-income households, which is considered to have been one of the causes of the subprime crisis in the United States, seems to be specially relevant in the context of developed economies. In most emerging countries consumption and mortgage credit is not so important in terms of GDP, and the main collaterals are related to the income itself. As a consequence, decoupling is more difficult in these countries. Finally, it is interesting to observe that demographic ratios are highly significant for developing countries, but they are not so relevant for advanced economies.

The different results obtained for advanced and emerging economies reveal the existence of structural differences between these two groups of countries, justifying a separate analysis of each sub-sample.

[Insert Table 4 about here]

Another robustness analysis for our results consists of dividing our sample in two halves according to the average share of each country over the period under study. Even though, as illustrated in Figure 7, the countries with a larger wage share are mostly developed economies, the correspondence is not absolute<sup>8</sup>.

[Insert Table 5 about here]

Tables 5 and 6 show the results for these partitions of the sample. With the exception of model (4), in the sub-samples of Table 5 the coefficient associated with wage share is highly significant and has a negative sign in all cases. Squared terms and lags, when they are significant, have a positive sign, thus confirming a less strong relationship between the

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<sup>8</sup> Countries with a larger wage share (30): Australia, Austria, Belgium, Canada, China, Costa Rica, Cyprus, Denmark, Finland, France, Germany, Hungary, Iceland, Israel, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Sierra Leone, Singapore, Sri Lanka, South Africa, Spain, Sweden, Switzerland, the U.K., and the U.S. Countries with a lower wage share (30): Argentina, Bolivia, Brazil, Burkina Faso, Chile, Colombia, Egypt, Greece, Iran, Ireland, Ivory Coast, Kenya, Lesotho, Mexico, Mongolia, Morocco, Niger, Nigeria, Panama, Papua New Guinea, Peru, the Philippines, Poland, the Republic of Korea, Romania, Senegal, Thailand, Tunisia, Turkey, and Venezuela.

functional distribution of income and the current account for countries with a higher wage share, or a partial reversal of the initial effect over time. On the other hand, the Gini coefficient is not significant in any case.

[Insert Table 6 about here]

The fiscal balance behaves in the same way in all sub-samples, while for the GDP per capita, the net foreign assets positions, the ratio of dependence of the elderly, and the credit ratio, the differences are similar to those observed in advanced and emerging countries, a result that is not a surprise given the partial overlap between the samples. The GDP growth forecast of the countries with a lower wage share behaves in the same way as for emerging countries. However, unlike advanced countries, this result is significant and positive for countries with a higher wage share. Finally, it is worth mentioning that with this partition, the dependence ratio of the young population is highly significant and negative in both sub-samples, unlike in the separation between advanced and emerging economies.

## **7. Conclusions**

The increase in income inequality registered in recent decades is a phenomenon that involves almost all countries, both advanced and emerging ones. In this context the economic literature has shown a renewed interest in distribution issues given its relevance in explaining the latest international financial crisis, the present stagnation and the question of why some countries grow faster than others.

As we have noted, there is a persuasive argument about the importance of reducing inequality in order to put the global economy on a better growth path. International institutions like the IMF, the World Bank and the International Labor Organization, as well as the international leaders at G20 summits have stated their common commitment to this target.

The fact that there is a consensus that inequality must be lowered in order to obtain more balanced and sustainable global growth, implies that policymakers have sufficient knowledge of how the transmission channels at the national and the global level works. In this sense, the current account is one of the natural interfaces between national context and global growth. Decisions about inequality in one country are transmitted to the rest of the world by means of the current account. Our research is focused on understanding what the relationship between income distribution and current account is in a wide panel of countries, controlling by several key variables used in this type of literature.

While we welcome the renewed concern about inequality in economics, it is notable that advanced countries predominate in the recent empirical literature. A better understanding of the structural differences between advanced and non-advanced countries is required for international policy coordination. Without ignoring the contributions made by the literature based on the inclusion of top incomes in the empirical research, we note that this perspective faces some limitations when the results have to be extrapolated to emerging and developing countries. Our use of the functional distribution of income, rather than the data sets that have predominated in other studies of inequality in advanced countries, has allowed us to extend our analysis to a larger, more inclusive group of countries.

As shown by the results of this paper, the share of wages in total income is a significant determinant of the result for external accounts: the higher the wage/GDP ratio, the lower the current account. This result is robust for different specifications of the model and different panel compositions. It is also consistent with theories arguing that an increase in the aggregate wage bill implies higher aggregate demand through more consumption and less saving.

Even without including top incomes in our regressions, our paper has in a sense considered them. By dividing the sample between advanced and emerging countries, we observe that the negative relationship between wage share and the current account weakens in the first group and strengthens in the less developed economies. This may be due to the widening of

the wage gap, indicating that in advanced economies there is a group of wage earners with a high capacity for saving, whose marginal propensity to consume is more similar to the level usually attributed to those who derive their income from rents and capital.

At the same time, our paper brings to the surface the importance of structural differences between advanced and non-advanced economies. In fact, fiscal balance and net foreign assets are the only control variables that behave in the same way in all the subsamples. Nevertheless, the differences in significance and even in direction found in key variables such as the credit/GDP ratio, GDP per capita, the growth expectation, and the demographic ratios, reveal, in turn, the differences between countries groups. Indeed, credit, as a representation of financial intermediation, is a significant determinant of the current account only in advanced countries, while demographic ratios and expected growth are significant only in emerging countries. On the other hand, the signs of financial openness interacting with GDP per capita show opposite effects for these two groups of countries. This means that, assuming the current account is the counterpart of capital flows, openness of the capital account allows that capital goes from the developed countries to non-developed ones. Regarding the GDP growth expectations variable, it is not significant for advanced economies, but it is highly relevant for emerging economies.

Our results contribute to different strands of the literature. First, they could be useful in order to build and test economic models that could capture more accurately the role of income inequality and its interaction with structural issues. Second, they also make more plausible the inclusion of Keynesian considerations about the different marginal propensity to consume of wage earners and capitalists, and how consumption reduction produced by a decline of wage participation is not compensated by investment. Third, these results show that inequality, and specifically the wage share in income, has significant repercussions on the current account. Therefore, any domestic economic policy that wants to simultaneously succeed in reaching an external target and in income distribution should take this important interaction into account. Fourth, capital account openness and financial sector intermediation

seems to be very important and to play a different role according to the stage of a country's development. Fifth, any model of global policy coordination of expansionary policies, such as those proposed by the G20, should take into account the particular characteristics of interaction between the wage share, the current account, financial deepness, and the relative development of countries. In this regard, implementing international policies that promote growth while improving income distribution requires close coordination in order to increase growth and simultaneously prevent the widening of existing imbalances. From an optimal sequencing perspective, countries with current account surplus should be the first to start the process of inequality reduction. In that way, countries with current account deficits would be allowed to improve their external balance, making it possible to follow the same income policy in a second stage. In that way this sequencing generates enough room for expansive policies in the country partners, but without further increases of the current account imbalances.

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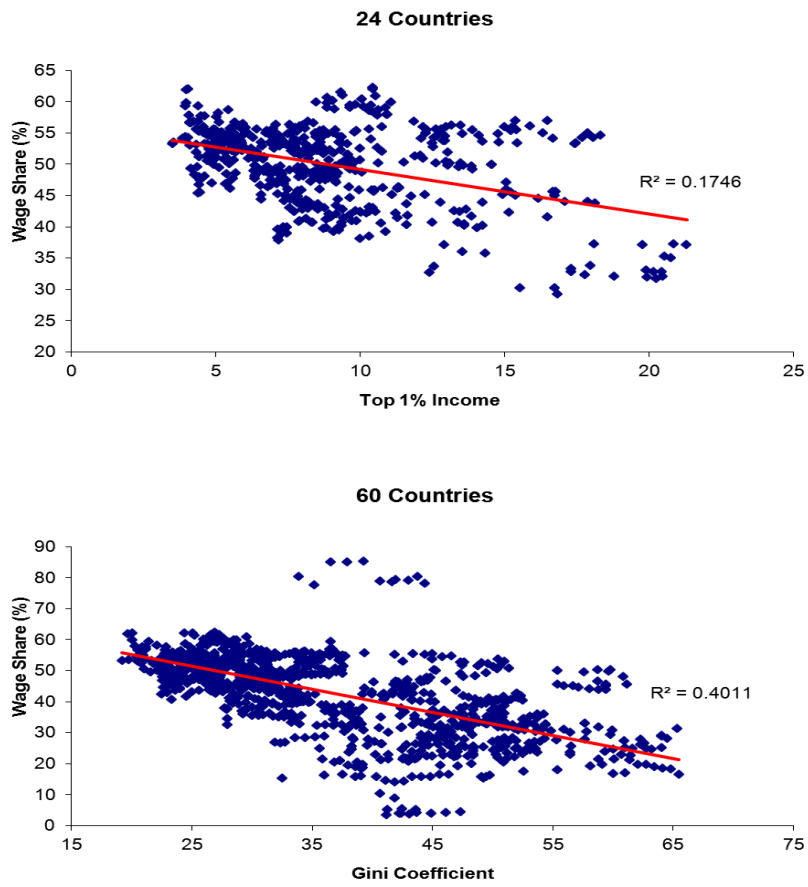


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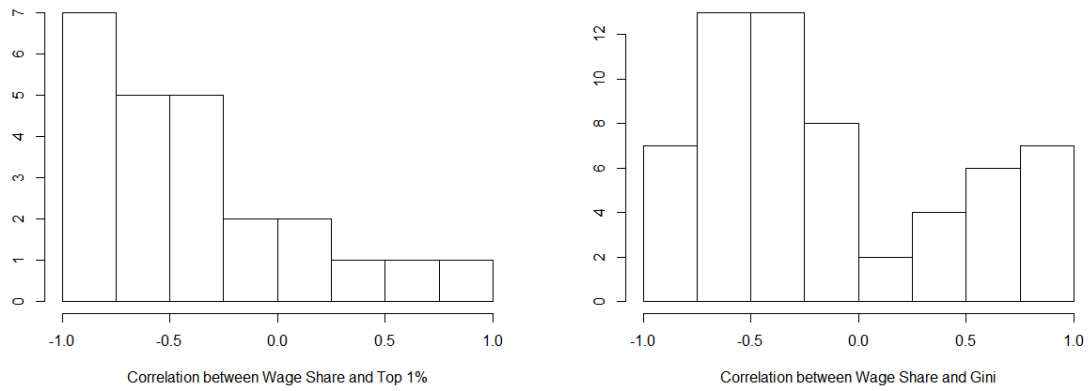
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**Figure 1.** Dispersion between Wage Share, Top 1%, and Gini



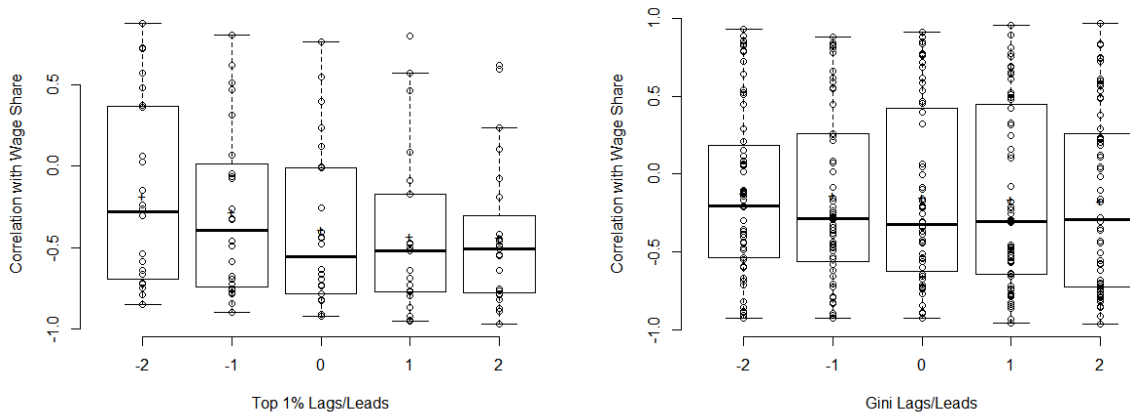
**Source:** Authors' calculations using data series from Karabarbounis and Neiman (2013), the World Top Incomes Database, and the Standardized World Income Inequality Database.

**Figure 2.** Histogram of Correlations between Wage Share, Top 1%, and Gini



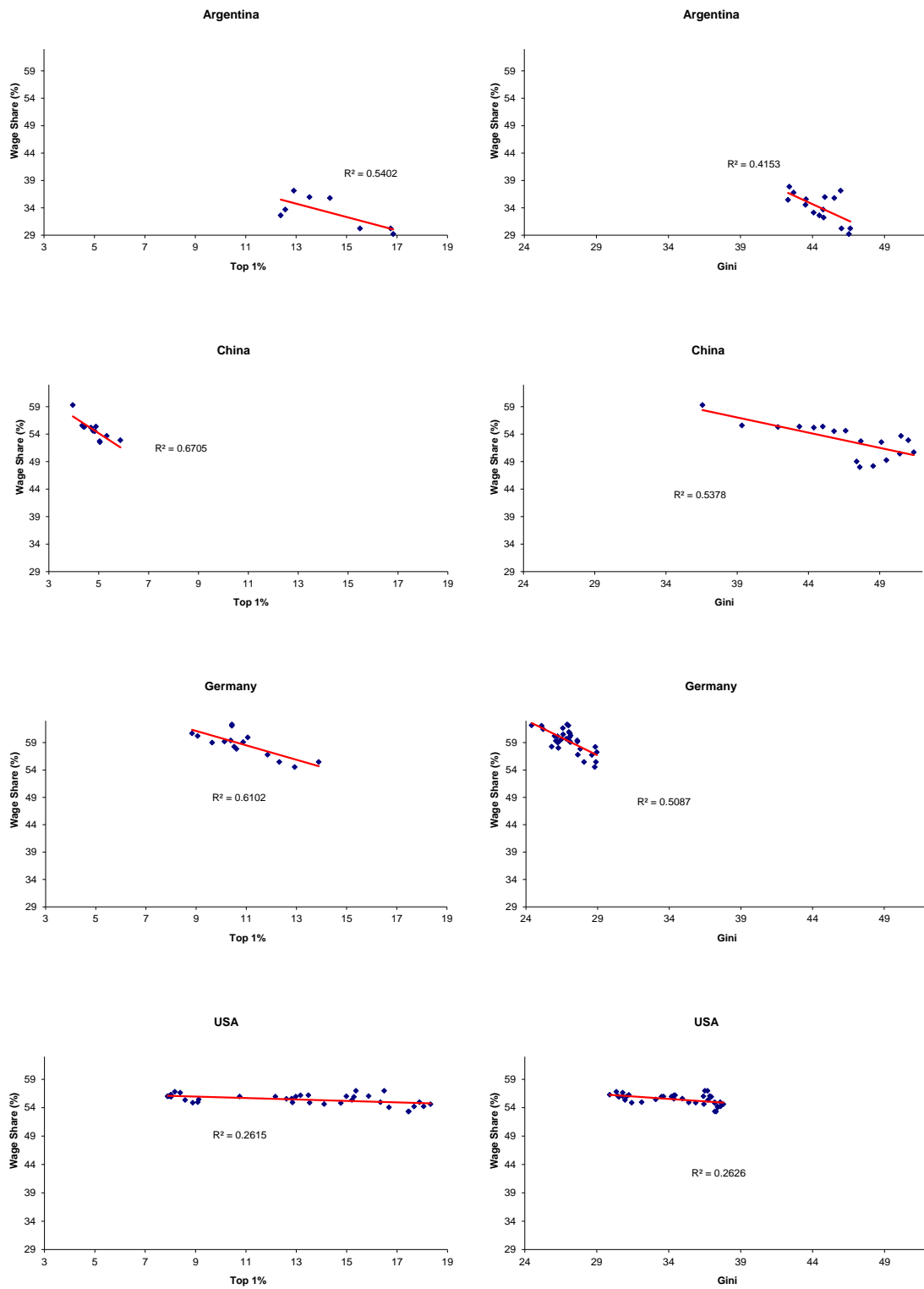
**Source:** Authors' calculations using data series from Karabarbounis and Neiman (2013), the World Top Incomes Database, and the Standardized World Income Inequality Database.

**Figure 3.** Box Plots for the Correlations with Different Lags and Leads



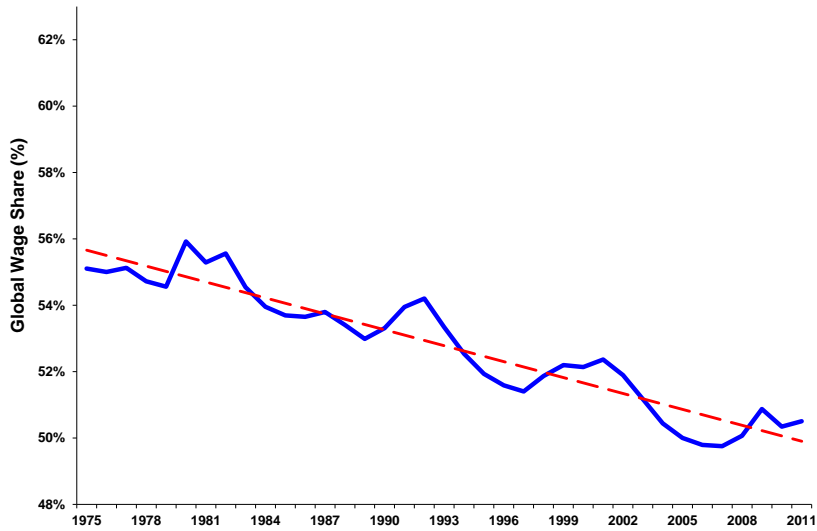
**Source:** Authors' calculations using data series from Karabarbounis and Neiman (2013), the World Top Incomes Database, and the Standardized World Income Inequality Database.

**Figure 4.** Dispersion of Wage Share, Top 1%, and Gini. Selected Countries.



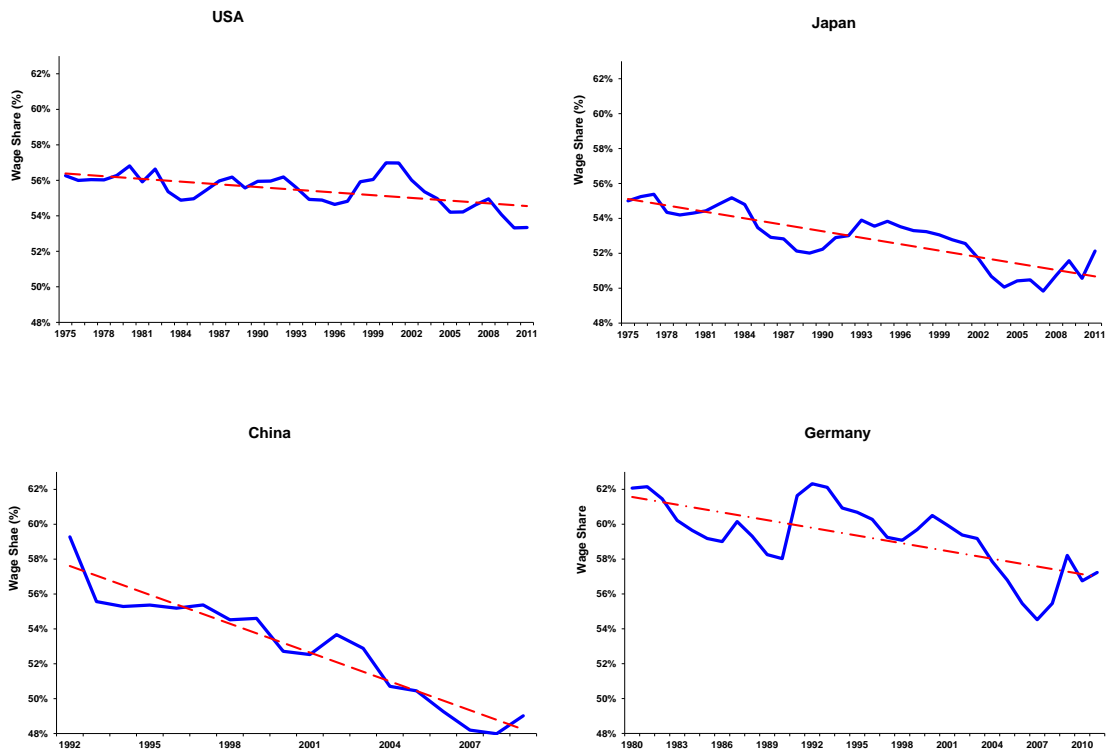
**Source:** Authors' calculations using data series from Karabarbounis and Neiman (2013), the World Top Incomes Database, and the Standardized World Income Inequality Database.

**Figure 5. Share of Wages at the Global Level**



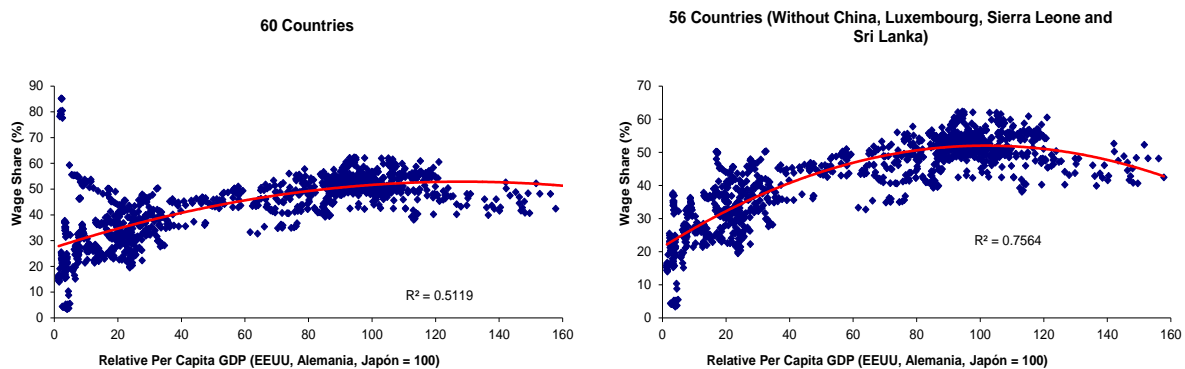
**Source:** Authors' calculations using data series from Karabarbounis and Neiman (2013)

**Figure 6. Wage Share for Selected Countries**



**Source:** Authors' calculations using data series from Karabarbounis and Neiman (2013)

**Figure 7.** Non-linear Relationship between the Functional Distribution of Income and Developmental Stage



**Source:** Authors' calculations using data series from Karabarbounis and Neiman (2013) and the Penn World Table

**Table 1.** Different Correlations between Wage Share, Top 1%, and Gini

	Wage Share/Top 1%	Wage Share/Gini
Countries with correlations < -0.5	12	20
Countries with correlations of -0.5–0	7	21
Countries with correlations of 0–0.5	3	6
Countries with correlations > 0.5	2	13

**Source:** Authors' calculations using data series from Karabarounis and Neiman (2013), the World Top Incomes Database, and the Standardized World Income Inequality Database.

**Table 2.** Results for the Total Sample

	(1) CA	(2) CA	(3) CA	(4) CA	(5) CA
wage_share	-0.217*** (-6.04)		-0.225*** (-6.14)	-0.480*** (-3.64)	-0.533*** (-7.84)
gini		0.009 (0.18)	-0.063 (-1.27)		
wage_share^2				0.301** (2.06)	
wage_share(-1)					0.163** (2.26)
wage_share (-2)					0.214*** (3.23)
rel_pcgdp(-1)*k_openness	0.009*** (2.65)	0.008** (2.38)	0.010*** (2.82)	0.008*** (2.59)	0.009*** (2.94)
5y_gdp_f	-0.560*** (-3.83)	-0.566*** (-5.22)	-0.548*** (-3.71)	-0.552*** (-3.79)	-0.147 (-0.91)
nfa(-1)	0.029*** (3.82)	0.022*** (2.96)	0.029*** (3.86)	0.027*** (3.59)	0.030*** (4.05)
nfa_60(-1)	-0.031*** (-4.10)	-0.023*** (-3.24)	-0.031*** (-4.11)	-0.030*** (-3.98)	-0.030*** (-3.98)
dep_young	-0.198*** (-6.51)	-0.089*** (-3.35)	-0.198*** (-6.43)	-0.230*** (-6.70)	-0.172*** (-5.67)
dep_elderly	-0.229*** (-2.95)	-0.205** (-2.57)	-0.293*** (-3.37)	-0.248*** (-3.15)	-0.185** (-2.40)
cred_tot	-0.011 (-1.47)	-0.020*** (-2.91)	-0.010 (-1.42)	-0.010 (-1.42)	-0.009 (-1.36)
fiscal_balance	0.159*** (4.98)	0.166*** (5.18)	0.157*** (4.85)	0.151*** (4.72)	0.165*** (5.14)
fin	0.058*** (4.08)	0.055*** (3.94)	0.054*** (3.80)	0.058*** (4.10)	0.056*** (4.08)
constant	0.081*** (4.33)	-0.027* (-1.65)	0.103*** (3.93)	0.136*** (4.18)	0.051*** (2.65)
Countries	60	60	60	60	60
N	1053	1300	1034	1053	975
ECM	0.042	0.034	0.042	0.043	0.041

Notes: *t*-statistics are reported in parentheses. \*, \*\*, and \*\*\* indicate the rejection of the null hypothesis at the 10%, 5% and 1% statistical significance levels, respectively. ECM denotes mean squared error (MSE).



**Table 3. Results for Advanced Countries**

	(1) CA	(2) CA	(3) CA	(4) CA	(5) CA
wage_share	-0.102* (-1.77)		-0.104* (-1.68)	1.093* (1.85)	-0.296*** (-3.86)
gini		-0.023 (-0.35)	-0.089 (-1.18)		
wage_share^2				-1.201** (-2.01)	
wage_share (-1)					0.084 (0.97)
wage_share (-2)					0.296*** (4.06)
rel_pcgdp (-1)* k_openness	0.013*** (4.76)	0.013*** (4.89)	0.015*** (4.96)	0.013*** (4.89)	0.015*** (5.13)
5y_gdp_f	0.086 (0.43)	-0.061 (-0.36)	0.104 (0.50)	0.089 (0.44)	0.200 (0.96)
nfa(-1)	0.021*** (3.22)	0.019*** (3.05)	0.023*** (3.51)	0.025*** (3.82)	0.020*** (3.08)
nfa_60(-1)	-0.028*** (-4.06)	-0.025*** (-3.94)	-0.030*** (-4.31)	-0.030*** (-4.41)	-0.027*** (-3.96)
dep_young	-0.013 (-0.14)	-0.021 (-0.29)	-0.028 (-0.31)	-0.041 (-0.46)	-0.046 (-0.49)
dep_elderly	0.050 (0.47)	-0.028 (-0.28)	0.030 (0.28)	0.049 (0.48)	0.003 (0.03)
cred_tot	-0.020*** (-2.67)	-0.026*** (-3.92)	-0.019** (-2.55)	-0.020*** (-2.73)	-0.020*** (-2.73)
fiscal_balance	0.160*** (3.79)	0.178*** (4.52)	0.166*** (3.87)	0.179*** (4.21)	0.188*** (4.42)
fin	0.066*** (5.46)	0.057*** (5.18)	0.062*** (5.18)	0.062*** (5.32)	0.065*** (5.45)
constant	0.015 (0.49)	-0.027 (-1.33)	0.039 (0.87)	-0.279* (-1.91)	-0.081** (-2.29)
Countries	25	25	25	25	25
N	591	678	580	591	559
EMC	0.043	0.039	0.043	0.043	0.043

Notes: *t*-statistics are reported in parentheses. \*, \*\* and \*\*\* indicate the rejection of the null hypothesis at the 10%, 5% and 1% statistical significance levels, respectively. ECM denotes mean squared error (MSE).

**Table 4.** Results for Emerging Countries

	(1)	(2)	(3)	(4)	(5)
	CA	CA	CA	CA	CA
wage_share	-0.273*** (-5.88)		-0.274*** (-5.97)	-0.510*** (-3.10)	-0.664*** (-5.68)
gini		0.035 (0.56)	-0.034 (-0.51)		
wage_share^2				0.279 (1.48)	
wage_share (-1)					0.203* (1.78)
wage_share (-2)					0.219* (1.91)
rel_pcgdp (-1)* k_openness	-0.028** (-2.14)	-0.028** (-2.29)	-0.027** (-2.11)	-0.027** (-2.05)	-0.027** (-2.07)
5y_gdp_f	-0.722*** (-3.42)	-0.682*** (-4.53)	-0.713*** (-3.36)	-0.726*** (-3.41)	-0.198 (-0.83)
nfa(-1)	0.038* (1.92)	0.021 (1.20)	0.038* (1.92)	0.033 (1.62)	0.051*** (2.60)
nfa_60(-1)	-0.041*** (-2.61)	-0.021 (-1.57)	-0.040** (-2.56)	-0.037** (-2.34)	-0.044*** (-2.79)
dep_young	-0.284*** (-6.63)	-0.120*** (-3.64)	-0.289*** (-6.83)	-0.307*** (-6.55)	-0.260*** (-6.09)
dep_elderly	-0.678*** (-3.91)	-0.394** (-2.43)	-0.750*** (-4.06)	-0.661*** (-3.64)	-0.596*** (-3.49)
cred_tot	-0.009 (-0.74)	-0.012 (-1.07)	-0.008 (-0.65)	-0.006 (-0.45)	-0.011 (-0.91)
fiscal_balance	0.156*** (3.19)	0.154*** (3.15)	0.153*** (3.08)	0.143*** (2.91)	0.158*** (3.19)
constant	0.077*** (2.79)	-0.042 (-1.55)	0.087** (2.53)	0.130*** (2.84)	0.061** (2.24)
Countries	35	35	35	35	35
N	462	622	454	462	416
ECM	0.047	0.032	0.046	0.048	0.045

Notes: *t*-statistics are reported in parentheses. \*, \*\*, and \*\*\* indicate the rejection of the null hypothesis at the 10%, 5% and 1% statistical significance levels, respectively. ECM denotes mean squared error (MSE).

**Table 5. Results for Countries with a Larger Wage Share**

	(1) CA	(2) CA	(3) CA	(4) CA	(5) CA
wage_share	-0.247*** (-4.50)		-0.224*** (-3.86)	0.309 (0.83)	-0.402*** (-5.47)
gini		0.086 (1.58)	0.071 (1.19)		
wage_share^2				-0.503 (-1.49)	
wage_share (-1)					0.203** (2.40)
wage_share (-2)					0.069 (0.95)
rel_pcgdp (-1)* k_openness	0.013*** (4.32)	0.011*** (3.84)	0.013*** (4.28)	0.012*** (4.33)	0.013*** (4.33)
5y_gdp_f	0.365** (1.99)	0.191 (1.26)	0.371** (1.98)	0.358* (1.94)	0.500** (2.53)
nfa(-1)	0.019*** (2.83)	0.023*** (3.47)	0.018** (2.56)	0.023*** (3.34)	0.017** (2.53)
nfa_60(-1)	-0.024*** (-3.33)	-0.029*** (-4.20)	-0.023*** (-3.17)	-0.026*** (-3.59)	-0.023*** (-3.18)
dep_young	-0.119* (-1.74)	-0.228*** (-3.82)	-0.140** (-1.98)	-0.084 (-1.20)	-0.183*** (-2.58)
dep_elderly	0.051 (0.50)	-0.001 (-0.01)	0.092 (0.84)	0.061 (0.63)	0.015 (0.15)
cred_tot	-0.014* (-1.93)	-0.019*** (-2.95)	-0.015** (-2.06)	-0.015** (-2.18)	-0.013* (-1.76)
fiscal_balance	0.178*** (3.95)	0.197*** (4.49)	0.193*** (4.21)	0.203*** (4.37)	0.213*** (4.54)
fin	0.061*** (4.75)	0.050*** (4.22)	0.063*** (4.79)	0.059*** (4.86)	0.063*** (4.84)
constant	0.093*** (3.20)	-0.058*** (-3.23)	0.057 (1.43)	-0.058 (-0.56)	0.031 (0.90)
Countries	30	30	30	30	30
N	660	726	649	660	622
ECM	0.046	0.042	0.047	0.046	0.046

Notes: *t*-statistics are reported in parentheses. \*, \*\*, and \*\*\* indicate the rejection of the null hypothesis at the 10%, 5% and 1% statistical significance levels, respectively. ECM denotes mean squared error (MSE).

**Table 6.** Results for Countries with a Lower Wage Share

	(1)	(2)	(3)	(4)	(5)
	CA	CA	CA	CA	CA
wage_share	-0.334*** (-4.66)		-0.325*** (-4.51)	-0.863*** (-3.92)	-0.752*** (-5.63)
gini		-0.041 (-0.59)	-0.097 (-1.34)		
wage_share^2				0.973** (2.54)	
wage_share (-1)					0.102 (0.80)
wage_share (-2)					0.385*** (3.02)
rel_pcgdp (-1)* k_openness	-0.015 (-1.46)	-0.008 (-0.95)	-0.015 (-1.48)	-0.015 (-1.46)	-0.012 (-1.11)
5y_gdp_f	-1.178*** (-4.89)	-0.888*** (-5.63)	-1.215*** (-4.99)	-1.219*** (-5.10)	-0.635** (-2.36)
nfa(-1)	0.033 (1.51)	0.003 (0.15)	0.030 (1.35)	0.026 (1.19)	0.044** (2.02)
nfa_60(-1)	-0.030* (-1.78)	-0.005 (-0.39)	-0.029* (-1.69)	-0.025 (-1.46)	-0.033* (-1.94)
dep_young	-0.273*** (-6.56)	-0.114*** (-3.52)	-0.272*** (-6.58)	-0.278*** (-6.84)	-0.245*** (-5.51)
dep_elderly	-0.736*** (-4.66)	-0.518*** (-4.04)	-0.826*** (-5.11)	-0.766*** (-4.97)	-0.654*** (-3.93)
cred_tot	0.015 (0.95)	-0.006 (-0.46)	0.015 (0.95)	0.011 (0.71)	0.011 (0.70)
fiscal_balance	0.131** (2.53)	0.137*** (2.82)	0.130** (2.45)	0.122** (2.36)	0.118** (2.32)
fin					
constant	0.115*** (2.99)	-0.015 (-0.52)	0.144*** (3.30)	0.171*** (3.93)	0.085** (2.07)
Countries	30	30	30	30	30
N	393	574	385	393	353
ECM	0.046	0.032	0.045	0.047	0.043

Notes: *t*-statistics are reported in parentheses. \*, \*\*, and \*\*\* indicate the rejection of the null hypothesis at the 10%, 5% and 1% statistical significance levels, respectively. ECM denotes mean squared error (MSE).