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# Globalization and income inequality: The role of transmission mechanisms

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# LIS
# Working Paper Series

No. 610

## Globalization and Income Inequality: The Role of Transmission Mechanisms

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# Globalization and Income Inequality: The Role of Transmission Mechanisms

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**Abstract:** The openness to international trade and capital movements of industrialized countries has increased substantially during the recent decades. At the same time, most of these countries experienced a rise in income dispersion. Against this background, the paper analyzes empirically whether the observable changes in income distribution can be explained by the greater global integration of advanced economies. The analysis thereby focuses on the role of several transmission channels through which globalization should influence the personal distribution of market and disposable incomes as well as redistribution. I employ panel data covering 28 OECD countries between 1960 and 2010 to analyze the impact of globalization on a set of labor market outcomes (transmission channels) and to test how these translate into a greater (or smaller) income inequality. Overall, the empirical findings do not indicate that international trade and capital mobility raise income differences in industrialized countries. Rather, the globalization-induced rise in income dispersion through greater factor price differences is mitigated by a reduction in unemployment.

**Key Words:** trade, capital mobility, labor markets, income distribution
**JEL-Classification:** F16, F20, E24, E25, J31

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# 1 Introduction

The international integration of advanced economies has increased substantially during the second half of the $20^{th}$ century. In particular, the elimination of political barriers to international trade and capital movements as well as improvements in transportation and communication technologies contributed to the rise in trade and capital mobility. At the same time, several industrialized countries experienced an increase in income inequality. This coincidence between a stronger global integration and rising income dispersion has raised the question of a possible causal link between these developments. Economic theories such as neoclassical trade models have long established a framework to assess the distributional consequences of globalization. These primarily suggest that certain domestic groups (e.g. unskilled workers in the industrialized countries) have to bear losses, whereas others benefit from a stronger economic integration. Despite the straightforward theoretical predictions concerning the impact of globalization on the income distribution in industrial countries, the available empirical evidence provides rather mixed results. Whereas several authors show that a greater economic integration has led to a rise in inequality in OECD countries (e.g. Alderson and Nielsen, 2002; Bergh and Nilsson, 2010; Dreher and Gaston, 2008), others do not find significant effects (e.g. Mahler, 2004).

The inconclusive empirical evidence may be explained by the fact that most empirical studies focus only on one specific aspect of the distributive impact of globalization. In particular, the link between international trade and wage inequality has been analyzed extensively (surveys of this literature are provided by e.g. Richardson, 1995; Harrison et al., 2010; Kurokawa, 2010). These studies do, however, not account for the possibility that international trade and factor mobility affect the distribution of incomes through different channels. An analysis focusing only on the consequences of globalization on the distribution of wages, for example, neglects its possible effect on employment, the rewards of capital or adjustments in the relative supply of human capital.[1] These alternative channels might either mitigate or reinforce the impact of globalization-induced changes in the wage dispersion on overall income inequality. Hence, the focus on only one specific aspect of the income distribution may not provide on adequate description of the distributional consequences of international integration. Additionally, the joint existence of different channels through which globalization affects income inequality could also explain the often insignificant results in regressions of income inequality on indicators for global integration if they work in opposite directions.

Against this background this paper provides a more comprehensive analysis to enhance our understanding of the distributional consequences of globalization. I thereby focus on several transmission channels through which globalization might influence the personal distribution

[1] A first attempt to analyze different channels through which globalization affects the distribution of wage incomes has been undertaken in a recent OECD study (OECD, 2011) by providing separate tests for the impact of globalization on the wage dispersion and employment. This study, however, still neglects a number of alternative mechanisms.

of market and disposable incomes. Based on theoretical reasoning, the following transmission mechanisms are considered in the empirical analysis: the labor income share and the wage dispersion in order to account for potential adjustments in the relative factor rewards, the unemployment rate and the relative supply of human capital.

Based on panel data for 28 OECD countries covering the period between 1960 and 2010, I analyze empirically how international trade and capital mobility affect the transmission mechanisms. In addition, I test how these are related to the distribution of market and disposable incomes as well as the degree of income redistribution. The results indicate that a comprehensive view on the distributional consequences of globalization is justified since several transmission mechanisms have been proven relevant. The findings of the empirical analysis enhance our knowledge of the exact mechanisms through which international economic integration affects the income distribution. This is particularly helpful when it comes to the design of policy measures aiming to mitigate potentially adverse effects of globalization. Moreover, the empirical analysis also suggests that the institutional design of the labor markets plays a crucial role in determining how a country is affected by a rising exposure to international trade of goods and factors.

The remainder of this paper is organized as follows: section 2 discusses the theoretical literature on the distributional consequences of globalization and introduces the transmission mechanisms through which globalization is expected to affect the distribution of incomes. The empirical approach and the data are explained in section 3. Section 4 presents the results of the empirical analysis and section 5 offers extensive robustness checks. Finally, section 6 summarizes the results and concludes.

# 2 What are potential transmission mechanisms?

Although globalization is not a recent phenomenon, the elimination of political barriers to trade and capital mobility as well as improvements in transportation and communication technologies during the last decades have lowered the costs of trade and capital mobility considerably. Consequently, all OECD countries faced a rising exposure to international trade and cross-border capital flows during the second half of the $20^{th}$ century. At the same time the distribution of incomes has become more dispersed in most OECD countries.

The subsequent analysis studies to what extent the rising exposure to international trade and mobility of private capital contributes to the explanation of the observable trends in the income distribution in OECD countries. In contrast to a wide range of studies which focus only on some specific aspects of the income distribution (e.g. disposable income differences, wage dispersion), my approach includes several channels through which globalization may alter the distribution of incomes in industrialized countries.

These transmission channels are illustrated in Figure 1, which also serves as an outline of

the subsequent discussion.

**Figure 1 about here**

International trade and capital mobility are expected to influence the functional distribution of incomes (i.e. the relative income of different production factors). Trade affects the relative demand for capital, skilled and unskilled labor, while international capital flows change the relative supply of production factors.[2] With perfect competition on factor and goods markets these shifts in relative factor demand and supply should induce adjustments of the relative factor rewards (as indicated by the arrow (a) in Figure 1). Many advanced economies, however, face labor market frictions which impede the adjustments of wages. If the relative wages of unskilled workers do not respond to changes in relative labor demand, then the relative employment of unskilled workers will adjust (see channel (b) in Figure 1). So far, the supply of production factors has been assumed to be inelastic. While this assumption is appropriate in the short-run, the relative supply of skilled workers (human capital) should respond to adjustments of relative factor demand in the medium- to long-run (see channel (c) in Figure 1). Hence, changes in the skill premium or employment opportunities for well educated workers influence the returns to human capital investments and thereby the supply of skills.

Individuals are mainly interested in disposable incomes as a determinant of their consumption opportunities. The distribution of disposable incomes depends both on market incomes and the extent of redistribution via taxes and transfers. Consequently, a rise in market income inequality may not increase the inequality of disposable incomes by the same extent. The scope and effectiveness of public redistribution itself should depend on a country's exposure to international trade and capital markets. The theoretical predictions regarding the effect of globalization on the welfare state are, however, ambiguous. On the one hand, international competition limits the scope for taxation for national governments and the financing of the welfare state. On the other hand, the demand for redistribution and social insurance may increase as countries become more open.[3]

In the following, I shortly summarize the theoretical literature regarding the role of international trade and capital mobility for the above introduced transmission channels.

The distributional consequences of international trade have long been assessed based on the Heckscher-Ohlin or the Ricardo-Viner ("specific-factors") model. The Heckscher-Ohlin model explains patterns of trade in final goods between countries based on different factor

[2]Besides capital mobility also labor mobility should have an impact on the distribution of incomes. International labor markets are ,however, less integrated than capital markets since cultural and language differences hinder the free movement of people. In addition, an empirical analysis of the effects of migration flows of workers with different levels of education for a panel of countries is not possible since the required data is not available for a sufficient number of countries and years. Hence, I focus on the impact of capital mobility though, in principle, the implications also apply to labor mobility.

[3]An extensive survey on the supply- and demand-side effects of globalization is provided by Schulze and Ursprung (1999).

endowments. Industrialized economies, which are assumed to be capital or human capital abundant compared to developing countries, are expected to specialize in the production of (human) capital-intensive goods. Hence, the reduction of barriers to trade raises the demand for skilled relative to unskilled labor and the relative demand for capital vis-à-vis labor in the industrialized countries. Skilled workers and capital owners thus benefit from trade liberalization and experience rising real incomes while the real income of unskilled workers declines (Stolper and Samuelson, 1941). In contrast to the Heckscher-Ohlin model in which production factors are fully mobile between industries, the Ricardo-Viner ("specific factors") model takes a short-term perspective and presumes that at least one factor of production can be used only in one specific industry. In this framework, trade liberalization raises the rate of return on capital (as the mobile factor), it increases the real wage of workers in the export sector and lowers the real wage of workers employed in the import-competing sector (i.e. mostly unskilled workers in industrialized countries). Consequently, the skill premium will rise.

In contrast to these standard trade models, which assume that trade alters the income distribution through the reallocation of resources between sectors, newer theoretical approaches focus on within-industry shifts of relative labor demand. One approach is based on trade in intermediate goods, which has gained importance due to improvements in transportation and communication technologies. Feenstra and Hanson (1996) show that the offshoring of production activities reduces the relative demand for unskilled workers and thus their relative wages.

A considerable part of trade relationships comprises the exchange of similar goods between industrialized countries and can thus not be explained based on different factor-endowments. Instead, this intra-industry trade is usually driven by the existence of increasing returns to scale in the production of differentiated goods (as in the model developed by Krugman, 1980). Recent works, which allow firms to differ in their productivity and other characteristics, are a good starting point to analyze the implications of intra-industry trade for wage inequality. The standard model by Melitz (2003) implies that in an open economy only the most productive firms will export, whereas the least productive firms have to leave the market. Hence, exposure to trade raises the overall productivity in the industry through a reallocation of market and profit shares toward more productive exporting firms. Several extensions of this standard model to analyze the effect of trade on wage dispersion, for example, by allowing for heterogenous workers (e.g. Yeaple, 2005; Vannoorenberghe, 2011; Harrigan and Reshef, 2011). Then, trade leads to a wage differential between workers employed in exporting and those employed in non-exporting firms.

The liberalization of the capital markets which started in the 1970s has induced a rise in international capital flows. International capital mobility is expected to change the amount of capital available for domestic production and thereby affect the rewards of the production factors capital, skilled and unskilled labor.

The distributive consequences of capital mobility can be described based on a framework including an industrialized and a developing country. Before international capital markets are liberalized, the capital stock in the industrialized country exceeds that in the developing country. Due to a diminishing marginal product of capital, the real interest rate is lower in the capital-rich industrialized than in the developing country. If capital is now fully mobile between the two countries, then it moves from the industrialized to the developing country where it receives higher returns. These flows reduce the capital stock available for domestic production in the industrialized country and increase the capital stock in the developing country. This reallocation will continue until the marginal returns are equalized (i.e. capital earns the same real interest rates) in both countries. In initially capital-rich industrialized economies the liberalization of capital markets therefore benefits capital owners but hurts (internationally immobile) workers as the complementary factor of production.

The consequences of capital mobility for the skill premium depends on the relative endowment with skilled versus unskilled labor in the two countries (see Vaubel, 2005). If the developing country is unskilled labor abundant compared to the industrialized country, then the flow of capital will induce an expansion of the production of the unskilled labor-intensive good. Moreover, the decline in the capital costs in the developing country reduces the costs of production in this country and thereby intensifies the import-competition in the unskilled labor-intensive sector in the industrialized country. The additional imports lower the demand for unskilled workers and reduce their relative wage.[4]

Many advanced economies face labor market frictions which impede the above described adjustments of wages and thereby market clearing. In that case, the lower relative demand for unskilled workers due to globalization should reduce the relative employment of unskilled workers and lead to involuntary unemployment among these workers. Several theoretical works suggest that the adverse effects of trade with developing countries might be stronger in the presence of labor market rigidities (e.g. Krugman, 1995; Davis, 1998).

In addition, globalization may also increase job turnover and frictional unemployment. Trade models usually compare different long-term equilibria (e.g. the autarky versus free trade equilibrium), which require considerable reallocations of resources between industries. These reallocations are, however, highly complex and relative prices will not adjust immediately. Consequently, workers who are displaced from import-competing industries will experience some period of search unemployment before finding a new job, which leads to short-term spikes in unemployment.

International trade may, however, also reduce unemployment in industrialized countries through its impact on overall productivity. Felbermayr et al. (2011a) show that with falling

[4]Despite similar effects on the relative wages of unskilled workers in industrialized countries, the impact of capital mobility on absolute wages differs from that of international trade. The wages of both skilled and unskilled workers decline but unskilled wages fall more than skilled wages. While trade raises the wages for well educated workers in the OECD countries, capital movements reduce them.

trade costs firms decide to hire more workers (at given recruitment costs) if average productivity rises (as in Melitz, 2003). Hence, declining trade costs can both lower unemployment and raise real wages as long as it improves average productivity.

Both international trade and capital mobility are expected to raise the skill premium in industrialized countries (and lowers thus the relative wage of unskilled workers or worsens their employment opportunities). The greater returns to investment in education (human capital formation) should increase the supply of skilled workers in the medium- to long-run. Classical theories of human capital formation (e.g. proposed by Becker, 1962) suggest that an individual's decision to invest in education is based on the maximization of the present value of his expected lifetime earnings. Globalization induces a shift in the relative demand for educated workers and therefore, ceteris paribus, increases their relative wage. The rising returns to an investment in human capital make it more attractive to acquire skills. Thus, the relative supply of skilled labor is expected to rise. This again lowers the wage premium.

The dynamics of shifts in relative skill demand and supply which continue over time have been described by Atkinson (2008). Increasing exposure to globalization induces permanent shifts in the relative demand for educated workers, which increases the skill premium. This results in a rise of the relative skill supply. The steady increase of the relative demand leads to a semi-equilibrium where skilled labor persistently receives a skill premium exceeding the long-run equilibrium.

Based on the above discussed theoretical literature several testable hypotheses for the subsequent empirical analysis can be derived. First, a greater exposure to international trade and capital mobility should reduce both the wages of unskilled relative to skilled workers and the rewards of labor relative to capital. Second, the existence of labor market rigidities may prevent an adjustment of the relative factor prices. In that case, international trade and capital mobility might increase unemployment, in particular among unskilled workers. Due to considerable reallocations of resources globalization may also raise frictional unemployment. In the medium- to long-run, however, international trade should also increase labor productivity and thereby reduce unemployment. Third, the relative supply of skilled workers is expected to rise since international trade and capital mobility improve the relative rewards and employment opportunities of skilled workers and thereby increase the rewards to education.

The globalization-induced change in the functional income distribution likely induces a rise in market income inequality since factors of production that are predominantly owned by low income households bear losses, whereas those factors mostly owned by high income households gain. The extent to which an increase in market income inequality also raises the dispersion of disposable incomes depends on the degree to which incomes are redistributed via the tax and transfer system, which itself is likely affected by the exposure to globalization.

# 3 Empirical strategy and data

This section explains the data and empirical approach employed to estimate the relevance of the transmission mechanisms. The aim of the empirical analysis is to provide a comprehensive test of the effects of globalization on a set of labor market outcomes (transmission mechanisms) and to analyze how these translate into a greater (or smaller) income inequality. For that purpose, the analysis is decomposed into two parts: the first part measures how globalization influences the various transmission mechanisms related to the functional distribution of incomes. In the second part, I relate these transmission mechanisms to the distribution of market and disposable incomes as well as to the extent of income redistribution.

I start by regressing the labor income share ($\theta$), wage dispersion ($\omega$), unemployment rate ($u$) and the relative share of human capital ($H$) on globalization indicators and a set of further explanatory variables. Thus, the following reduced-form equations are estimated:

$$\theta_{it} = \alpha_1 \cdot G_{it-k} + \alpha_2 \cdot C_{it-k} + \mu_i + \lambda_t + \varepsilon_{it} \tag{1}$$

$$\omega_{it} = \beta_1 \cdot G_{it-k} + \beta_2 \cdot C_{it-k} + \mu_i + \lambda_t + \varepsilon_{it} \tag{2}$$

$$u_{it} = \gamma_1 \cdot G_{it-k} + \gamma_2 \cdot C_{it-k} + \mu_i + \lambda_t + \varepsilon_{it} \tag{3}$$

$$H_{it} = \delta_1 \cdot G_{it-k} + \delta_2 \cdot C_{it-k} + \mu_i + \lambda_t + \varepsilon_{it} \tag{4}$$

where $G_{it-k}$ denotes the impact of globalization (i.e. trade openness, imports from non-OECD countries and net exports of capital) included with a time lag of k years.[5] The matrix $C_{it-k}$ contains a set of control variables (with a potential time lag of k years), which may be specific to each equation. $\mu_i$ ($\lambda_t$) denotes country- (year-) specific fixed effects and $\varepsilon_{it}$ is the error term.

The dependent variables of equations (1) to (4) are then used to explain the evolution of the personal distribution of market and disposable incomes ($Gini_{it}^M$, $Gini_{it}^D$) or redistribution ($R_{it}$) based on the following three reduced-form equations:

[5] A time lag is introduced because globalization may not immediately induce an adjustment in labor market outcomes. Moreover, the length of this adjustment process might further differ between the transmission mechanisms and hence the lag length is allowed to vary in the estimation of the equations (1) to (4.)

$$
\begin{aligned}
Gini_{it}^{M} &= a_1 \cdot \theta_{it} + a_2 \cdot \omega_{it} + a_3 \cdot u_{it} + a_4 \cdot H_{it} \\
&\quad + \nu \cdot \chi_{it} + \mu_i + \lambda_t + \varepsilon_{it} \qquad (5) \\
Gini_{it}^{D} &= b_1 \cdot \theta_{it} + b_2 \cdot \omega_{it} + b_3 \cdot u_{it} + b_4 \cdot H_{it} \\
&\quad + \nu \cdot \chi_{it} + \mu_i + \lambda_t + \varepsilon_{it} \qquad (6) \\
R_{it} &= c_1 \cdot \theta_{it} + c_2 \cdot \omega_{it} + c_3 \cdot u_{it} + c_4 \cdot H_{it} \\
&\quad + \nu \cdot \chi_{it} + \mu_i + \lambda_t + \varepsilon_{it}, \qquad (7)
\end{aligned}
$$

where $\chi_{it}$ contains a set of possible control variables, which may also differ between the equations.

The coefficients of the labor market outcomes estimated in equations (5) to (7) could, in principle, be used to assess the impact of each of these transmission mechanisms on the income distribution. Together with the predicted effects of the globalization variables estimated based on the first set of equations, these coefficients provide insights into the influence of globalization on the distribution of incomes in industrialized countries.

The empirical analysis is based on a panel data set covering up to 28 current OECD member countries over the period from 1960 to 2010. The panel is, however, highly unbalanced due to a large number of missing observations and the limited availability of income data. This has several implications for the subsequent empirical analysis. In particular, the number of observations differs considerably between the regressions.

The identification of a *causal* effect of globalization on the transmission mechanisms and therewith the income distribution is characterized by difficulties. In particular, the estimated coefficients might be biased by a possible reverse causation[6] and potential confounding factors that influence both a country's openness to international trade or capital mobility and its labor market outcomes as well as income distribution.

I can neither rule out the existence of a reverse causation problem nor fully solve this problem. To mitigate the problem of reverse causation, I introduce a time-lag for the variables of interest. Although the simple fact that current labor market outcomes are explained by past globalization experience is not sufficient for a causal relationship, it is more reasonable to assume that the labor markets adjust to previous openness experience.

[6]This reverse causation issue is clearly present in the estimation of the relative supply of human capital because the relative endowment with skilled workers determines a country's comparative advantage in international trade and, hence, its structure of trade. A possible reverse relationship could further be driven by trade policies. In particular, a declining labor income share or rising wage dispersion and unemployment rates might increase voters' demand for protectionist measures. The direction of causality might also be ambiguous for the estimates of the second step of the analysis. The level of income redistribution, for instance, could influence labor market behavior through its effect on the incentives to work or invest into education.

Besides reverse causation issues, the existence of factors, which correlate both with the globalization and the transmission variables or with the latter and the measures of income distribution might further bias the results. If these potential *confounding factors* are not considered in the regressions, then this would induce an omitted variable bias. To avoid this, I apply the following estimation approach. To account for a potential heterogeneity between countries (i.e. time-invariant and country-specific effects, which are correlated both with a countries openness to trade or capital mobility and labor market outcomes or the income distribution), I include dummy variables for each country in addition to the pooled OLS estimates. Moreover, I introduce year fixed effects to capture year-specific factors that are common to all countries (e.g. general macroeconomic conditions).[7] In addition to the inclusion of fixed effects, I also directly control for various factors that might be correlated with the variables of interest and the independent variables.[8]

## 3.1 Data

The following section describes the variables used in the empirical analysis. In addition to the variable description in the text, Table 13 entails further information on the variable definitions and the data sources.

### 3.1.1 Globalization data

A country's exposure to international trade is proxied using two different variables. The variable TRADE OPENNESS (i.e. the sum of exports and imports as a percentage of GDP) serves as an indicator for the overall openness to international trade. Since trade with less developed countries is assumed to have a strong impact on the income distribution in advanced economies, I also use the variable NON-OECD IMPORTS. This variable is equal to the share of imports from non-OECD countries (excluding those from OPEC states[9]) in an economy's total imports. To reduce the influence of outliers, I express both variables in logs.

The extent of capital mobility is measured using the net exports of private capital (i.e. outflows *minus* inflows of foreign direct, portfolio and other investments) as a share of GDP.[10] The variable NET CAPITAL EXPORT is based on the idea that the international mobility of private capital, ceteris paribus, affects the domestic capital stock and thereby the factor rewards. This effect should not depend on the specific type of capital (as long as it is

[7] F-tests of the joint significance of country or year fixed effects are reported in each regression table.

[8] The choice of the control variables is motivated by findings of comparable studies and by theoretical considerations.

[9] Imports from OPEC countries should be dominated by petroleum, which is not expected to have similar effects on the income distribution as manufacturing imports. To avoid an imprecise measurement, the petroleum-exporting countries are not included in the construction of this variable.

[10] This variable takes on negative values if a country is a net importer of capital. Hence, no logarithm is used because this would lead to a loss of these observations.

invested) and therefore a distinction between FDI, portfolio and other investments is not necessary.[11]

### 3.1.2 Data on transmission mechanisms

The subsequent analysis focuses on the following transmission variables: labor income share, wage dispersion, unemployment rate and the relative supply of human capital.

The variable LABOR INCOME SHARE is defined as the ratio of the total labor costs and the nominal output (i.e. is equal to the real unit labor costs). This variable measures the share of national income, which accrues to the factor labor. A greater labor income share indicates higher overall payments to labor relative to capital.

The relative income of skilled versus unskilled workers is proxied by a measure of the wage differential. The variable WAGE DISPERSION is equal to the decile ratio (i.e. the ratio between the $9^{th}$ and the $1^{st}$ decile) of gross wages of full-time employees.[12]

Employment effects are indicated based on the variable UNEMPLOYMENT RATE, which is defined as unemployment as a percentage of the civilian labor force.

The RELATIVE SUPPLY OF HUMAN CAPITAL is equal to the number of individuals with tertiary education divided by those for whom primary education is the highest educational degree (both expressed as a percentage of the population older than 25 years).[13]

### 3.1.3 Data on income distribution

The income distribution data used in this study is provided by the Luxembourg Income Study (LIS). LIS collects national micro-datasets and harmonizes them for cross-national income comparisons. This database is currently the best source for cross-country analyses of income inequality available.[14]

I use Gini coefficients to measure income differences. The Gini coefficient is equal to zero in case of complete equality and one if all income is received by one person (i.e. complete

[11] To check the robustness of the impact of capital mobility, I also use net exports of FDI. This is motivated by the observation that most empirical studies, which analyze the effects of international capital flows, focus only on FDI.

[12] The distribution of gross earnings may be no ideal indicator for the skill premium since a substantial degree of wage inequality is, for instance, observable within the group of educated workers. A better approach would be a direct measurement of the gross wages of workers at different levels of educational attainment. To my knowledge, however, no such data is available for a sufficiently large number of countries and years.

[13] This information is taken from a data set on educational attainment constructed by Barro and Lee (2012) who use information on educational attainment from survey or census data to estimate educational attainment rates for five-year age groups and extrapolate the shares of different educational groups in the population of 146 countries from 1950 to 2010. For the purpose of the empirical analysis, I have filled the gaps between these intervals by interpolation and assumed a linear trend in educational attainment.

[14] Currently, income data is available for 46 high- and middle-income countries covering up to eight waves (and some historical data) for the period from 1970 to 2010. Detailed information on LIS is provided at `http://www.lisdatacenter.org` and also in Gornick et al. (2013); Atkinson et al. (1995).

inequality). Hence, a higher value of the Gini coefficient is associated with a higher degree of inequality. The dependent variables are the Gini coefficients of MARKET INCOME INEQUALITY and of DISPOSABLE INCOME INEQUALITY. Moreover, I employ the variable REDISTRIBUTION to measure the inequality-reducing effect of redistribution through taxes and transfers. This variable is equal to the difference in the Gini coefficient of market and disposable income distribution as a percentage of the Gini coefficient of market income distribution. Market incomes consist of incomes from paid- and self-employment and capital[15] as well as income from occupational pension schemes. The disposable income includes market income plus social security and private transfers received less income taxes and social security transfers paid.

The calculation of the Gini coefficients of market and disposable incomes requires several further adjustments, which are described below. To assign household incomes to individuals, these need to be adjusted to different household sizes using an equivalence scale. I use the so-called "square root equivalence scale", which divides the income of an household by the square root of its size (i.e. the number of household members). To achieve a representative picture for the total (covered) national population, I further weighted the incomes using a household weight, which is multiplied by the number of household members. Since the treatment of zero, negative or high incomes differs between the original surveys collected by LIS, I applied a uniform top- and bottom-coding procedure to improve the comparability of the results.[16]

The labor force participation differs between age groups and these differences likely vary both across countries and over time. Since globalization is expected to affect the distribution of incomes mainly through market forces, its impact should be strongest for individuals who participate in the labor market.[17] Hence, the analysis is confined to households with a working-age head (aged 25 to 64 years). The household head has then most likely completed schooling but not yet reached legal retirement age in most countries.

### 3.1.4 Control variables

In the first part of the analysis, the following control variables are included. The relative capital endowment is measured as the amount of CAPITAL PER WORKER (in logs) and is used

[15] Incomes are defined as gross incomes (i.e. before the deduction of direct taxes and employee's social security contributions.

[16] The bottom-coding procedure sets all incomes below one percent of the equivalent mean income equal to this value. The top-coding procedure replaces all (unequivalent) incomes higher than ten times the median income by this value. Moreover, I exclude households reporting zero or negative disposable incomes because these incomes are likely biased by measurement error.

[17] The main focus of this study is on the distribution of market-generated incomes. To limit the influence of differences in labor market participation behavior between different countries and over time, I have decided to focus only on household with a working-age head. This adjustment is common in the literature (see e.g. Mahler, 2004) and also chosen by the OECD for the calculation of summary measures for income distribution (see OECD, 2008, 2011).

as an explanatory variable in the analysis of the labor income share, the wage dispersion, the unemployment rate and the relative supply of human capital. Moreover, a measure for LABOR PRODUCTIVITY is included in the regressions of the labor income share and the unemployment rate, whereas the growth of MULTIFACTOR PRODUCTIVITY is employed as an indicator for productivity shocks in the analysis of the relative supply of human capital. The OUTPUT GAP captures the impact of business cycle effects in the regressions of the unemployment rate. This variable is used as a control for e.g. demand shocks, which affect domestic production (and thereby employment) but also imports, and thus might introduce a omitted variable bias if not included in the regressions.

One aspect which should affect all examined labor outcomes is the institutional framework of a country. In particular, globalization and its impact on labor demand likely depends on the degree of labor market regulation. To measure the degree of regulation of the labor market, I use the Economic Freedom of the World (EFW) Index from the Fraser Institute (Gwartney et al., 2012). The subindex labor market regulation assesses the freedom of employers and employees based on the several types of regulations.[18] A higher value of this index and thus of the variable LABOR MARKET FREEDOM is equal to more economic freedom and less regulated labor markets.

In the analyses of the Gini coefficients of market and disposable income inequality as well as redistribution the following control variables are included: the GDP PER CAPITA and its square (controlling for a Kutznets curve effect) as well as the DEVIATION OF THE REAL GDP GROWTH from its five-year average.[19] Moreover, the variables LEFT GOVERNMENT and VOTER TURNOUT are included in the analysis of income redistribution. [20]

The summary statistics for the variables employed in the main regressions are reported in Table 1.

**Table 1 about here**

# 4 Results

The subsequent section presents the results of the empirical analysis. First, I focus on the transmission mechanisms that should be influenced by international trade and capital mobility (section 4.1). Second, I analyze how these transmission mechanisms affect the

[18] Including minimum wages, hiring and firing regulation, centralized collective bargaining, hours regulation, mandated costs of worker dismissals and conscription.

[19] The inclusion of the latter is motivated by the possibility that the measured level of inequality depends on the economic conditions in the year to which the survey data refers. A change in the measured level of income inequality might solely reflect business cycle effects but not actual trends in inequality (i.e. the Gini coefficient might change simply because one compares observations from a boom phase and a recession).

[20] Further variables such as the share of manufacturing employment, age dependency ratio and female labor force participation have been tested but failed to be significant and are thus not included in the empirical analyses in section 4.2

personal distribution of disposable and market incomes as well as income redistribution in industrialized countries (section 4.2). The main results are briefly summarized in section 4.3.

## 4.1 Globalization and labor market outcomes

In the following, I test empirically how trade openness, imports from non-OECD countries and net exports of private capital affect a country's labor income share, wage dispersion, unemployment rate and relative supply of human capital.

To enhance the comparability of the results, the empirical approach is the same for each dependent variable. I gradually introduce the explanatory variables: column (1) to (3) of each table present the correlations between the transmission variables and the globalization indicators. Specifications (4) to (9) gradually introduce further control variables and columns (10) to (12) report the estimates including a time trend.

The empirical analysis starts with pooled OLS regressions and then introduces country and year fixed effects. The explanatory variables (i.e. the globalization and control variables) are introduced with a time lag of one year in the empirical analyses of the labor income share, wage dispersion and the unemployment rate. A lag of five years is chosen for the analysis of the relative supply of human capital. Consequently, the transmission variables are explained by the level of explanatory variables in the preceding year or their level five years ago.

### Determinants of the labor income share

The first transmission mechanism is the share of national income that accrues to labor. The results reported in columns (1) to (3) of Table 2 suggest that trade openness and net exports of private capital are significantly negatively correlated with the labor income share (at least if country fixed effects are included).

**Table 2 about here**

After the inclusion of further explanatory variables, the results suggest that the labor income share is lower in countries, which are more open to international trade, have a higher share of imports from developing countries (although partly insignificant in regressions with time fixed effects) or face net outflows of private capital. These findings are in line with the theoretical expectations discussed in section 2. The generally insignificant effects of imports from non-OECD countries in regressions including year fixed effects may indicate that the exposure to imports from less developed countries is correlated with another trend variable (e.g. capital-augmenting technological change), which could explain industrialized countries' reduction in labor income share over the recent decades.[21]

[21] This issue is further discussed in section 5.

Among the further control variables a higher amount of capital per worker, a higher labor productivity and labor market freedom tend to be associated with a greater labor income share in regressions accounting for heterogeneity across countries.[22] Moreover, the time trend indicates a general downward trend in the labor income share.

### Determinants of the wage dispersion

The findings of the empirical analysis of the determinants of wage dispersion are shown in Table 3. In line with the theoretical predictions, wage dispersion is positively correlated with trade openness and the share of imports from non-OECD countries. Net exports of private capital, however, reduce the wage differences in pooled OLS regressions and fail to have a significant impact if fixed effects are considered.

**Table 3 about here**

The effect of net export of capital remains robust but the significance of trade openness and non-OECD imports is partly affected by the inclusion of further controls. Among the further control variables only the degree of labor market freedom is significantly and robustly related to the wage dispersion, which is greater in countries with less regulated labor markets. Finally, a positive and significant time trend (if no additional year fixed effects are included) points at an increase in wage dispersion that is common to all countries.

### Determinants of the unemployment rate

Globalization may not only affect the relative factor rewards but also the unemployment rate. Hence, Table 4 presents the regressions of the unemployment rate on the globalization indicators and a set of additional controls.

**Table 4 about here**

A greater exposure to international trade significantly increases the unemployment rate if country fixed effects are included. This effect is, however, not robust to the inclusion of year fixed effects or further control variables. Imports from developing countries are widely significant and in the fixed effects estimations negatively correlated with the unemployment rate suggesting that trade with (unskilled) labor intensive countries seems to reduce unemployment. This findings are in line with earlier studies (e.g. Felbermayr et al., 2011b; Checci and Garcia-Penalosa, 2010), which also find evidence for a negative relationship between trade and unemployment. A possible explanation for this finding is provided by Felbermayr et al.

[22] By controlling for time-invariant and country-specific effects, the fixed effects model focuses on changes *within* countries, whereas the pooled OLS regressions utilize both variation within and between countries. The difference between the two estimated effects of labor market regulation could be interpreted as follows: countries with highly regulated labor markets also have a higher labor income share but a further liberalization of labor markets in a certain country may be beneficial for labor.

(2011a) who show that international trade might reduce unemployment through its positive effect on productivity. Surprisingly, net exports of capital tend to reduce the unemployment rate and the significance of the coefficient increases if further controls are included.

Moreover, the unemployment rate is higher if the economy faces a recession, the amounts of capital available per worker are lower, labor markets are more regulated and partly also if labor productivity grows. Overall, a comparison of the pooled OLS and fixed effects estimations points at an interesting pattern in the data. The pooled regressions suggest that countries with a greater exposure to imports from developing countries also have higher unemployment rates. One should, however, not infer from this finding that trade increases unemployment. The results of the fixed effects regressions even suggest the opposite. Rather the findings indicate that country-specific factors explain why economies with a greater share of imports from less developing countries also have higher unemployment rates.

After controlling for these effects, the results do not support the view that globalization itself is responsible for rising unemployment in industrialized countries.[23] Rather, different factors such as an economy's ability to cope with the challenges of globalization (e.g. allow declining wages) seems to matter for the evolution of unemployment.

### Determinants of the relative supply of human capital

So far, I have assumed implicitly that the relative factor endowments are not directly affected by globalization. To relax this assumption, the econometric analysis presented in the Table 5 examines a possible relationship between globalization and the relative supply of human capital in the population of OECD countries.

**Table 5 about here**

The globalization indicators (and also the other control variables) are now introduced with a lag of five instead of one year because the relative supply of human capital (measured as the ratio between individuals with tertiary and those with primary education) is a consequence of past education decisions, which are expected to be influenced by the global integration of an economy.

The results suggest that trade openness tends to be related with a higher relative supply of human capital in specifications including fixed effects and further controls. The share of imports from developing countries seems also to be associated with a greater relative supply of human capital. But this effect is not robust to the inclusion of further variables. In contrast to the expectations, net exports of private capital also increase the relative supply

[23] The estimated coefficients are equal to the effect of globalization on unemployment rates for an average OECD country but must not apply to a certain country considered in this study. Rather, the impact of international trade and globalization might vary considerably among OECD countries. In particular, domestic institutions may explain different responses to globalization (see section 5.3).

of well educated workers although the significance is lower if the degree of labor market regulation is considered.

A greater relative capital endowment (in OLS regressions) and multifactor productivity tend to raise the relative supply of human capital. In the OLS regressions less regulated labor markets are linked to a greater supply of human capital, the opposite applies if both country and year fixed effects are used.

## 4.2 Labor market outcomes and the distribution of incomes

The following section is devoted to the analysis of the relationship between the labor market outcomes (i.e. transmission mechanisms) and the personal distribution of market and disposable incomes as well as income redistribution. This empirical analysis is supposed to answer the question to which extent (globalization-induced) changes of the transmission variables affect income inequality. For that purpose, the Gini coefficients of market and disposable income inequality and the extent of income redistribution are regressed on the four transmission variables both with and without the inclusion of additional control variables.

To test the robustness of the results and to consider the potential heterogeneity between countries as well as time-specific effects, each specification is estimated both using pooled OLS and fixed effects models (both with and without the inclusion of period fixed effects).[24]

### Market income inequality

The estimated impact of the four transmission variables on the Gini coefficient of the market income distribution is reported in Table 6. In columns (1) to (3), the transmission variables are jointly considered as determinants of the level of market income inequality among working-age households. The GDP per capita and its square are included in columns (4) to (6). Business cycle effects are proxied by the deviation of the real GDP growth rate from its five-year average and are further added in columns (7) to (9).

**Table 6 about here**

The results depend, at least partly, on the choice of the estimator. The F-tests indicate that the country fixed effects are jointly significant and that the fixed effects model is, hence, more appropriate for the analysis of market income inequality.[25]

The empirical findings indicate that in particular the incidence of unemployment is a significant driver of the level of market income inequality. A higher unemployment rate is thereby associated with a more dispersed distribution of market incomes. In addition, a

[24] The income distribution data is available only infrequently and thus several years include only observations for one country. Hence, the inclusion year fixed effects would lead to a further loss of observations. Nevertheless, to account for time-specific effects, I employ period fixed effects capturing the following periods from 1960 to 2010: 1960-69, 1970-79, 1980-89, 1990-99, 2000-06 and 2007-10.

[25] The period fixed effects are jointly significant only if GDP per capita is not included.

greater labor income share is related to a more egalitarian distribution of market incomes. This effect is, however, only significantly different from zero if country fixed effects are included and in specifications that do not include the GDP per capita. The dispersion of wages also tends to translate into a greater market income inequality but this effect is not robust to the inclusion of period fixed effects and the GDP per capita. Finally, the relative supply of human capital fails to be a significant predictor of market income inequality.

### Redistribution

Table 7 reports the findings of the regressions of the extent of redistribution (i.e. the difference in the Gini coefficients before and after taxes and transfers[26]) on the four transmission variables.

**Table 7 about here**

Again, the first three columns are based on regressions including only the transmission variables. Specifications (4) to (6) further account for business cycle effects that might affect the measured degree of inequality. Finally, the specifications (7) to (9) include additional variables capturing political factors such as the strength of left wing parties and the voter turnout.

The results are less robust and significant than for the estimates of market income inequality.[27] The labor income share is not significantly related to income redistribution. Wage dispersion significantly reduces redistribution in the pooled OLS regressions but this effect is not robust to the inclusion of fixed effects. The relative supply of human capital mostly fails to be a significant predictor of the degree of redistribution.

Finally, the empirical analysis points at the unemployment rate as the most relevant explanatory factor for the extent of income redistribution in industrialized countries and this effect is robust: a higher share of unemployed individuals significantly increases income redistribution. Among the control variables a higher voter turnout is related with more redistribution in the fixed effects regressions.

### Disposable income inequality

Finally, Table 8 reports how changes in the examined labor market outcomes translate into a higher (or lower) inequality in the distribution of disposable incomes. Columns (1) to (3) present the results of the regression of the Gini coefficient of disposable income inequality on the transmission variables without further controls, whereas the specifications (4) to (6)

[26] Expressed as a percentage of the Gini coefficient before taxes and transfers (i.e. market income inequality).

[27] This might, however, simply reflect the fact that the extent of income redistribution via taxes and transfers is an outcome of political decisions. Redistributive policies are unlikely to be affected immediately by changing labor market conditions. Moreover, most of the transmission variables primarily affect the distribution of market incomes.

also consider a possible bias of the measured level of inequality due to different positions in the business cycle.

**Table 8 about here**

The labor income share has a significantly positive coefficient in the pooled OLS regressions but is not statistically significant if country fixed effects are included. A more unequal distribution of wages translates into greater inequality of the income after taxes and transfers. The relative supply of human capital tends to be positively related with disposable income inequality (though this effect is marginally significant only in the pooled OLS regressions). As already indicated by the analysis of market income inequality and the extent of redistribution, the unemployment rate is a major driver of income inequality: higher unemployment rates are related to a more unequal distribution of disposable incomes.

### 4.3 Summary of the results

The main findings of the empirical analysis are summarized in Figure 2. Openness to international trade raises the dispersion of market incomes through its impact on the labor income share and the wage dispersion. Imports from non-OECD countries have the same effect on the relative factor rewards but reduce market income differences by lowering the unemployment rate. Net exports of private capital raise market income inequality by reducing the labor income share but also contribute to declining income differences through a lower unemployment rate.

**Figure 2 about here**

The extent of redistribution is limited by imports from developing countries and net exports of capital through a lower unemployment rate. Moreover, net exports of capital tend to by associated with more redistribution through their negative impact on the relative supply of human capital.

The dispersion of disposable incomes rises in response to a higher wage dispersion and unemployment rate. Hence, international trade contributes to increasing income differences through its effect on wage dispersion, whereas the unemployment-reducing impact of non-OECD imports and net exports of capital have the opposite effect. Overall, the empirical findings suggest that international trade and capital mobility do not necessarily contribute to a rise in inequality in industrialized countries. Rather, the increase in income dispersion induced by greater factor income differences are mitigated by the reduction in unemployment.

## 5 Robustness checks

To check the robustness of my results, I run several additional regressions using different specifications and estimators. In particular, I employ an alternative measure of capital

mobility, test the relevance of technological change as a competing explanation for changes in labor market outcomes and focus on the role of labor market institutions. Moreover, I conduct seemingly unrelated regressions to take a potential simultaneity bias into account.[28] The additional variables included in the regressions of this section are described in Table 13.

## 5.1 Alternative measurement of capital mobility

Most empirical studies that elaborate on the impact of financial globalization on labor market outcomes, government redistribution or income inequality focus on FDI to measure capital mobility. Although this confinement seems adequate for an analysis involving multinational firms (e.g. tax issues, firm organization, technology transfers or productivity), it is not a priori clear why studies on capital mobility focusing on the country-level should be based only on one specific source of private capital and exclude portfolio or other investments. Nevertheless, to enhance the comparability of the results with those of earlier studies and to test whether these are affected by focusing merely on FDI, Table 9 presents the baseline regressions using net exports of FDI instead of net exports of private capital. The results indicate that net FDI exports are not significantly related to the examined transmission variables.

**Table 9 about here**

Given the difference of the results based on FDI versus general private capital flows (including FDI, portfolio and other investments), a mere focus on one kind of investment might be highly misleading. Insignificant results for FDI measures should, moreover, not be interpreted as evidence for the absence of any effects of financial globalization. At least broader indicators should be employed to check the validity of such a conclusion.

## 5.2 The role of technological change

There is a widespread agreement among economists that shifts in the relative demand for skilled versus unskilled labor are responsible for growing wage inequality or unemployment in many industrialized countries. No consensus exists, however, on the underlying forces. In general, two explanations compete: international trade and skill-biased technological change. To check the robustness of the baseline results concerning the role of globalization, I control for several measures of technological change. The results are presented in Table 10. Indeed,

[28] I have further experimented with the length of time lags, measured the variables in first-differences instead of levels and used five-year averages rather than yearly data. Although the influence of the globalization indicators varies in some cases with the length of the time lags suggesting that their short-run effects on labor market outcomes may differ from those in the medium- to long-run, the general findings of section 4.1 remain valid. I also tested the sensitivity of the results toward the exclusion of certain countries and periods. The results are widely robust and are available upon request.

several transmission variables are significantly correlated with these proxies of technological change.

**Table 10 about here**

The labor income share decreases if the share of information and communication technology (ICT) investments grows, whereas the wage dispersions is not significantly and robustly related to any of the proxies of technological change. R&D expenditures are significantly negatively associated with the wage differential if year fixed effects are not included. The unemployment rate is affected by technological improvements: whereas the growth of investments in ICT in relation to total capital input is negatively correlated with the unemployment rate (if year fixed effects are not included), both higher R&D expenditures and employment raise the unemployment rate. Surprisingly, the relative supply of highly educated individuals is significantly negatively related with ICT investments.

Despite the inclusion of proxies for technological change, globalization mostly remains significantly related to the transmission variables. Thus, the view of several economists that not international trade but predominantly technological change is responsible for developments such as rising wage dispersion cannot be confirmed.

## 5.3 Interdependence between globalization and labor market institutions

The impact of globalization on the labor income share, wage dispersion, unemployment rate and the relative supply of human capital likely varies among countries with flexible versus highly regulated labor markets. To account for a possible interdependence between globalization and domestic institutions, I interact the globalization indicators with the index of labor market freedom. Table 11 presents the analysis of the transmission variables including interactions between globalization and labor market freedom.

**Table 11 about here**

The findings regarding the labor income share indicate that the impact of trade openness indeed depends on the extent of labor market regulation. In a country with average labor market institutions (as measured by the variable labor market freedom), a rise in trade openness (and to some extent also non-OECD imports and net capital exports) reduces the labor income share. The adverse effect of trade openness on the relative rewards of labor are, however, significantly reduced if labor markets are less regulated.

Although the interaction effects are less robust than for the regressions of the labor income share, the effect of globalization on wage dispersion seems to depend on domestic labor market institutions, too. In line withe the expectations, international trade tends to raise

wage dispersion in particularly in less regulated labor markets. Net exports of capital, however, tend to increase wage dispersion in countries with an average degree of labor market regulation but this effect is less pronounced more in flexible labor markets (though this finding is not fully robust toward the choice of the estimator).

The effects of globalization on the unemployment rate only partly depend on different labor market institutions. The interaction terms between non-OECD imports as well as net exports of capital and labor market freedom are significantly negative suggesting that the unemployment rate is less likely to increase in response to globalization if labor markets are less regulated.[29]

In sum, the findings deliver weak support for the conventional wisdom that trade with developing countries raises the wage dispersion in countries with flexible labor markets (e.g. the U.S. or UK), whereas in the presence of labor market rigidities (e.g. in Continental Europe) the unemployment rates increase. Given the missing robustness, the estimated effect is, however, not as strong as often assumed.

The analysis of the relative supply of human capital in the light of institutional differences suggests that the influence of globalization partly depends on the extent to which domestic labor markets are regulated. In particular, rising import-competition from developing countries seems to increase the relative supply of human capital for countries with less regulated labor markets.[30]

## 5.4 Seemingly unrelated regressions

A qualified concern regarding the reliability of the OLS estimates is that the analyzed transmission mechanisms are not the result of an independent optimization but reflect equilibrium outcomes that are determined jointly. Relative wages and unemployment rates, for instance, should not be studied in isolation since both are the result of interactions between labor demand and supply.

Due to the simultaneous determination of these variables, the residuals of the equations might be correlated and OLS may thus be not efficiently estimated. To cope with this issue, I have estimated a system of equations using the seemingly unrelated regressions (SUR) model proposed by Zellner (1962). Table 12 reports the results for the baseline specification including country and year fixed effects. Since this estimation approach requires a balanced panel dataset, the number of observations is considerably lower for the SUR regressions than in the baseline estimates. To enhance the comparability of the results, Table 12 also presents OLS estimations based on the common sample.

[29] The results again confirm a negative relationship between imports from developing countries as well as net capital exports and the unemployment rate at an average level of labor market regulation.

[30] The OLS estimates suggest that the relative supply of human capital is lower in countries that were more open to international trade five years ago and that this effect is even more pronounced in less regulated labor markets. The F-test (not reported) supports the joint-significance of the country dummy variables and thus indicates that the fixed effects regressions are more appropriate.

**Table 12 about here**

The SUR-coefficients differ, at least partly, from the baseline estimates discussed in section 4.1. This does, however, not necessarily imply that the OLS estimates are biased but could also result from the different sample sizes. This is indeed what the comparison of both estimators based on a common sample suggests. The variables are widely unaffected by the choice of the estimator and the simultaneity bias seems to be not very severe. The estimates based on the common sample indicate that greater openness to international trade reduces the unemployment rate but raises the wage dispersion and the relative supply of human capital in OECD countries. A higher share of imports from developing countries tends to reduce the unemployment rate and raises the wage dispersion, whereas the relative rewards of labor and the relative supply of human capital are lower if net capital exports increase.

# 6 Conclusion

The coincidence between the growing exposure to international trade as well as capital mobility and the dispersion of incomes experienced by many industrialized countries has raised the question of a possible causal relationship between these developments. I add to the existing empirical literature on this issue by focusing on several channels through which globalization may affect the distribution of incomes.

The main results suggest that globalization indeed alters the relative rewards of production factors. International trade tends to reduce the labor income share and increases the dispersion of wages among full-time workers, whereas net exports of private capital lower the relative rewards of labor but have no significant impact on the degree of wage dispersion.

A robust finding is related to the link between globalization and the unemployment rate in OECD countries: imports from developing countries reduce unemployment, whereas trade openness mostly has no significant impact on unemployment. In contrast to the theoretical expectations, net exports of capital are negatively related to the unemployment rate.

I further analyze how the relative supply of human capital responds to globalization-induced shifts in the relative rewards to education. These supply adjustments have, so far, been neglected in studies on the distributional consequences of international trade and capital mobility. My results show that the relative supply of human capital increases in response to international trade and declines if a country faces higher net outflows of private capital.

Despite the consequences of globalization for labor market outcomes, the relationship between these outcomes and the income distribution matters for the assessment of the overall distributional effects as well. The combined findings for both steps of the empirical analysis can be summarized as follows: whereas international trade and net exports of capital tend to increase income inequality by raising the differences in factor payments, it also reduces

the unemployment rate in industrialized countries. In particular the latter effect has proven relevant for the income distribution in advanced economies. Hence, the positive employment effect of globalization tends to overcompensate the effect of a greater dispersion in factor rewards. This indicates that, probably due to productivity gains, more jobs are created than destroyed by international trade and capital mobility. It is thus possible for advanced economies to benefit from the overall welfare gains from globalization without facing a persistent and undesirable rise in income differences.

The question how globalization affects the distribution of market and disposable incomes (through the identified transmission mechanisms) varies between countries depending on the design of their domestic labor market institutions. In particular, the extent of labor market regulation could determine how different labor market outcomes react to increasing international trade and capital mobility. The adverse effects of international trade on the labor income share, for instance, are less pronounced if labor markets are less regulated. At the same time, a globalization-induced rise in wage dispersion is higher in less regulated labor markets and imports from developing countries reduce the unemployment rate especially in countries with less regulated labor markets. Since the unemployment rate has a stronger overall effect on income inequality in industrialized countries than the wage distribution, deregulation of labor markets could be an appropriate way to cope with the challenges of globalization.

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# Appendix

Figure 1: Globalization and income distribution: the role of transmission mechanisms

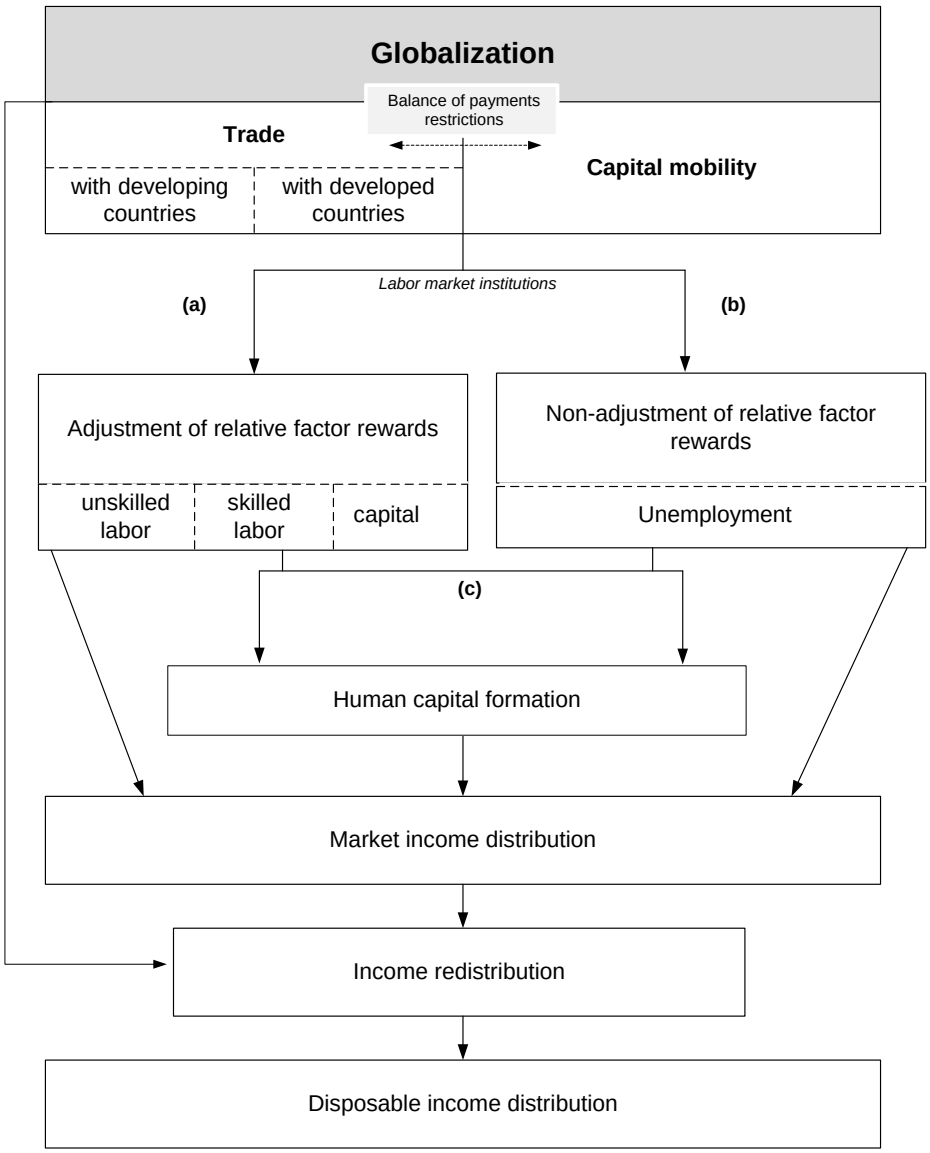


Table 1: Summary statistics: main variables

| Variable | Mean | Std. Dev. | Min. | Max. | N |
|---|---|---|---|---|---|
| *Income inequality and redistribution* | | | | | |
| Disposable income inequality | 28.823 | 6.167 | 18.461 | 48.589 | 171 |
| Market income inequality | 38.346 | 5.061 | 27.566 | 51.914 | 122 |
| Redistribution | 28.121 | 8.537 | 10.076 | 49.442 | 121 |
| *Transmission mechanisms* | | | | | |
| Labor income share | 0.66 | 0.095 | 0.384 | 0.985 | 1222 |
| Wage dispersion | 3.191 | 0.769 | 0.817 | 5.375 | 563 |
| Unemployment rate | 5.712 | 4.11 | 0 | 24.171 | 1411 |
| Relative supply of human capital | 1.195 | 6.073 | 0.015 | 148.474 | 1683 |
| *Globalization* | | | | | |
| Trade openness (log) | 3.966 | 0.695 | 2.206 | 5.891 | 1262 |
| Non-OECD imports (log) | 2.639 | 0.557 | -0.1 | 3.941 | 1378 |
| Net capital exports | -2.085 | 7.096 | -82.83 | 52.517 | 1144 |
| *Control variables* | | | | | |
| Labor productivity | 2.203 | 2.448 | -10.94 | 18.048 | 1021 |
| Capital per worker (log) | 2.559 | 0.272 | 1.716 | 3.676 | 624 |
| Labor market freedom | 5.247 | 1.495 | 2.81 | 9.130 | 1032 |
| Output gap | -0.036 | 3.009 | -11.681 | 13.442 | 794 |
| Multifactor productivity | 1.15 | 1.674 | -7.600 | 7.600 | 459 |
| Left government | 32.622 | 37.154 | 0 | 100 | 1132 |
| Voter turnout | 78.522 | 13.166 | 35 | 95.8 | 1134 |
| GDP per capita | 23028.123 | 9885.935 | 2431.692 | 73912.586 | 1278 |
| Devation real GDP growth | 0 | 2.463 | -16.905 | 10.498 | 1476 |

Table 2: Labor income share

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trade openness$_{t-1}$ (log) | -0.0181*** | -0.0828*** | -0.0350*** | -0.0448*** | -0.0733*** | -0.0168 | -0.0405*** | -0.0805*** | -0.0330** | -0.0302*** | -0.0437*** | -0.0330** |
| | (0.0048) | (0.0056) | (0.0118) | (0.0038) | (0.0074) | (0.0158) | (0.0037) | (0.0074) | (0.0151) | (0.0059) | (0.0142) | (0.0151) |
| Non-OECD imports$_{t-1}$ (log) | -0.0061 | 0.0017 | -0.0004 | -0.0359*** | -0.0167** | -0.0079 | -0.0456*** | -0.0242*** | -0.0011 | -0.0345*** | -0.0162* | -0.0011 |
| | (0.0066) | (0.0059) | (0.0069) | (0.0067) | (0.0072) | (0.0094) | (0.0068) | (0.0078) | (0.0095) | (0.0070) | (0.0083) | (0.0095) |
| Net capital exports$_{t-1}$ | 0.0005 | -0.0016*** | -0.0015*** | 0.0006 | -0.0015*** | -0.0012*** | -0.0002 | -0.0019*** | -0.0016*** | -0.0002 | -0.0017*** | -0.0016*** |
| | (0.0003) | (0.0004) | (0.0004) | (0.0006) | (0.0002) | (0.0002) | (0.0006) | (0.0003) | (0.0003) | (0.0005) | (0.0003) | (0.0003) |
| Capital per worker$_{t-1}$ (log) | | | | -0.0040 | 0.0382*** | 0.0462*** | 0.0166 | 0.0282*** | 0.0303*** | 0.0195 | 0.0251*** | 0.0303*** |
| | | | | (0.0145) | (0.0076) | (0.0077) | (0.0166) | (0.0079) | (0.0077) | (0.0166) | (0.0081) | (0.0077) |
| Labor productivity$_{t-1}$ | | | | -0.0026 | 0.0012* | 0.0018** | -0.0041* | 0.0009 | 0.0013* | -0.0045** | 0.0005 | 0.0013* |
| | | | | (0.0022) | (0.0007) | (0.0008) | (0.0022) | (0.0007) | (0.0008) | (0.0022) | (0.0007) | (0.0008) |
| Labor market freedom$_{t-1}$ | | | | | | | -0.0109*** | 0.0086*** | 0.0137*** | -0.0106*** | 0.0083*** | 0.0137*** |
| | | | | | | | (0.0019) | (0.0020) | (0.0027) | (0.0019) | (0.0020) | (0.0027) |
| Time trend | | | | | | | | | | -0.0010** | -0.0013*** | -0.0015*** |
| | | | | | | | | | | (0.0004) | (0.0004) | (0.0006) |
| Year fixed effects | No | No | Yes | No | No | Yes | No | No | Yes | No | No | Yes |
| Country fixed effects | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes |
| Adj. R-Square | 0.0145 | 0.8286 | 0.8396 | 0.2037 | 0.8838 | 0.8938 | 0.2794 | 0.8930 | 0.9030 | 0.2841 | 0.8953 | 0.9030 |
| Observations | 950 | 950 | 950 | 512 | 512 | 512 | 485 | 485 | 485 | 485 | 485 | 485 |
| F-test | | 276.0075 | 2.5084 | | 222.1958 | 1.8946 | | 221.3121 | 2.0327 | | 216.6681 | 1.8356 |
| p-value | | 0.0000 | 0.0000 | | 0.0000 | 0.0013 | | 0.0000 | 0.0004 | | 0.0000 | 0.0024 |

*Notes:* OLS and fixed effects regressions. Robust standard errors are reported in parentheses. ***/**/* denotes significance at the 1/5/10%-level. The F-tests provide information on the joint significance of country or year fixed effects (if the latter are included).

Table 3: Wage dispersion

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trade openness$_{t-1}$ (log) | -0.0181 | 0.4478*** | 0.6851*** | -0.1883*** | 0.4222*** | 0.2970*** | -0.2301*** | 0.3794*** | 0.3008** | -0.3100*** | 0.1169 | 0.3008** |
| | (0.0406) | (0.0457) | (0.1065) | (0.0420) | (0.0679) | (0.1123) | (0.0406) | (0.0721) | (0.1184) | (0.0733) | (0.0949) | (0.1184) |
| Non-OECD imports$_{t-1}$ (log) | 0.6839*** | 0.1365*** | 0.2626*** | 0.4185*** | 0.1212** | 0.2002* | 0.0720 | 0.0507 | 0.3027** | -0.0024 | -0.0076 | 0.3027** |
| | (0.0805) | (0.0386) | (0.0630) | (0.1131) | (0.0529) | (0.1044) | (0.1091) | (0.0727) | (0.1364) | (0.1232) | (0.0794) | (0.1364) |
| Net capital exports$_{t-1}$ | -0.0287*** | 0.0011 | 0.0017 | -0.0421*** | 0.0004 | 0.0007 | -0.0349*** | 0.0013 | 0.0010 | -0.0356*** | 0.0009 | 0.0010 |
| | (0.0042) | (0.0018) | (0.0021) | (0.0053) | (0.0026) | (0.0023) | (0.0050) | (0.0026) | (0.0024) | (0.0051) | (0.0022) | (0.0024) |
| Capital per worker$_{t-1}$ (log) | | | | -0.2977** | 0.1182 | 0.3133*** | -0.1216 | 0.1283 | 0.2052 | -0.1677 | 0.1890 | 0.2052 |
| | | | | (0.1458) | (0.1014) | (0.1153) | (0.1511) | (0.1106) | (0.1258) | (0.1513) | (0.1149) | (0.1258) |
| Labor market freedom$_{t-1}$ | | | | | | | 0.1623*** | 0.0402** | 0.0400* | 0.1583*** | 0.0321* | 0.0400* |
| | | | | | | | (0.0171) | (0.0194) | (0.0231) | (0.0171) | (0.0185) | (0.0231) |
| Time trend | | | | | | | | | | 0.0082* | 0.0100** | -0.0000 |
| | | | | | | | | | | (0.0048) | (0.0039) | (0.0033) |
| Year fixed effects | No | No | Yes | No | No | Yes | No | No | Yes | No | No | Yes |
| Country fixed effects | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes |
| Adj. R-Square | 0.2848 | 0.9420 | 0.9425 | 0.3032 | 0.9355 | 0.9385 | 0.4408 | 0.9358 | 0.9389 | 0.4438 | 0.9373 | 0.9389 |
| Observations | 506 | 506 | 506 | 354 | 354 | 354 | 338 | 338 | 338 | 338 | 338 | 338 |
| F-test | | 2.3e+03 | 4.6571 | | 667.7426 | 3.7980 | | 315.6713 | 18.5129 | | 372.7793 | 15.5154 |
| p-value | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 |

*Notes:* OLS and fixed effects regressions. Robust standard errors are reported in parentheses. ***/**/* denotes significance at the 1/5/10%-level. The F-tests provide information on the joint significance of country or year fixed effects (if the latter are included).

Table 4: Unemployment rate

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trade openness$_{t-1}$ (log) | 0.2986 | 1.9757*** | -1.3377** | 0.2170 | 0.1182 | -1.4542 | 0.2354 | 1.1117* | -0.1146 | -0.2773 | -1.3049 | -0.1146 |
| | (0.1872) | (0.3722) | (0.6487) | (0.2413) | (0.5623) | (1.1319) | (0.2559) | (0.5743) | (1.1248) | (0.3592) | (1.0433) | (1.1248) |
| Non-OECD imports$_{t-1}$ (log) | 0.5691** | -2.0638*** | -2.3933*** | 1.1113*** | -0.9275* | -3.7495*** | 1.7800*** | -0.2408 | -3.4516*** | 0.9748** | -1.6891** | -3.4516*** |
| | (0.2625) | (0.3855) | (0.3942) | (0.2584) | (0.4751) | (0.6141) | (0.3659) | (0.5573) | (0.6434) | (0.4793) | (0.6881) | (0.6434) |
| Net capital exports$_{t-1}$ | -0.0709*** | -0.0017 | 0.0078 | -0.0558*** | -0.0325** | -0.0120 | -0.1040*** | -0.0627*** | -0.0434*** | -0.1112*** | -0.0701*** | -0.0434*** |
| | (0.0193) | (0.0189) | (0.0157) | (0.0191) | (0.0154) | (0.0142) | (0.0284) | (0.0180) | (0.0150) | (0.0282) | (0.0184) | (0.0150) |
| Output gap$_{t-1}$ | | | | -0.3433*** | -0.3805*** | -0.4205*** | -0.3329*** | -0.4188*** | -0.4524*** | -0.3380*** | -0.3834*** | -0.4524*** |
| | | | | (0.0699) | (0.0496) | (0.0558) | (0.0709) | (0.0503) | (0.0517) | (0.0709) | (0.0504) | (0.0517) |
| Labor productivity$_{t-1}$ | | | | 0.1338** | 0.0285 | 0.1312*** | 0.0864 | 0.0190 | 0.1325*** | 0.1220* | 0.0438 | 0.1325*** |
| | | | | (0.0660) | (0.0435) | (0.0493) | (0.0669) | (0.0433) | (0.0468) | (0.0705) | (0.0438) | (0.0468) |
| Capital per worker$_{t-1}$ (log) | | | | -3.9674*** | -3.4684*** | -3.2695*** | -4.0033*** | -3.0568*** | -2.2484* | -4.1364*** | -3.6281*** | -2.2484* |
| | | | | (0.8060) | (1.0894) | (1.1804) | (0.8322) | (1.1209) | (1.1723) | (0.8073) | (1.2933) | (1.1723) |
| Labor market freedom$_{t-1}$ | | | | | | | -0.5286*** | -0.5863*** | -1.0695*** | -0.5653*** | -0.5873*** | -1.0695*** |
| | | | | | | | (0.0946) | (0.1665) | (0.1896) | (0.0970) | (0.1637) | (0.1896) |
| Time trend | | | | | | | | | | 0.0832** | 0.1360*** | 0.2051*** |
| | | | | | | | | | | (0.0349) | (0.0466) | (0.0407) |
| Year fixed effects | No | No | Yes | No | No | Yes | No | No | Yes | No | No | Yes |
| Country fixed effects | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes |
| Adj. R-Square | 0.0197 | 0.6036 | 0.7006 | 0.3162 | 0.7767 | 0.8038 | 0.3410 | 0.7803 | 0.8166 | 0.3491 | 0.7853 | 0.8166 |
| Observations | 951 | 951 | 951 | 430 | 430 | 430 | 417 | 417 | 417 | 417 | 417 | 417 |
| F-test | | 68.0999 | 5.6e+09 | | 56.2341 | 6.8045 | | 64.3483 | 6.7455 | | 65.4683 | 6.8262 |
| p-value | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 |

*Notes:* OLS and fixed effects regressions. Robust standard errors are reported in parentheses. ***/**/* denotes significance at the 1/5/10%-level. The F-tests provide information on the joint significance of country or year fixed effects (if the latter are included).

Table 5: Relative supply of human capital

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trade openness$_{t-5}$ (log) | 0.7646* | 1.3693** | -14.0627*** | -3.1291*** | 6.7417*** | 7.4140*** | -3.4891*** | 6.8433*** | 7.6690*** | -4.0009*** | 5.1917** | 7.6690*** |
| | (0.4190) | (0.5772) | (4.7580) | (0.4628) | (1.4372) | (2.4002) | (0.4655) | (1.5372) | (2.4621) | (0.5845) | (2.0224) | (2.4621) |
| Non-OECD imports$_{t-5}$ (log) | 2.9085*** | 4.7881*** | 4.0405*** | 3.9205*** | -0.3979 | -0.2320 | 3.2997*** | 0.0527 | 0.3957 | 2.6328*** | -0.4501 | 0.3957 |
| | (0.5137) | (1.4275) | (1.4407) | (0.5299) | (0.7828) | (1.0132) | (0.4511) | (0.8178) | (1.0496) | (0.5827) | (0.9899) | (1.0496) |
| Net capital exports$_{t-5}$ | 0.2545* | 0.3955** | 0.3832** | -0.1582*** | -0.1139*** | -0.1070*** | -0.0436 | -0.1179*** | -0.1184*** | -0.0468 | -0.1182*** | -0.1184*** |
| | (0.1457) | (0.1776) | (0.1604) | (0.0602) | (0.0420) | (0.0377) | (0.0539) | (0.0446) | (0.0398) | (0.0531) | (0.0442) | (0.0398) |
| Capital per worker$_{t-5}$ (log) | | | | 5.8296*** | -0.4635 | 1.8527 | 6.0858*** | -0.4884 | 1.7296 | 5.8814*** | -0.8336 | 1.7296 |
| | | | | (0.6655) | (1.0282) | (1.1958) | (0.6409) | (1.1509) | (1.2477) | (0.6176) | (1.2121) | (1.2477) |
| Multifactor productivity$_{t-5}$ | | | | 0.2394* | 0.1279* | 0.2149** | 0.2806** | 0.1099 | 0.2129** | 0.3210** | 0.1216 | 0.2129** |
| | | | | (0.1399) | (0.0699) | (0.0891) | (0.1277) | (0.0758) | (0.0913) | (0.1324) | (0.0777) | (0.0913) |
| Labor market freedom$_{t-5}$ | | | | | | | 0.7579*** | -0.1923 | -0.4630** | 0.7372*** | -0.2380 | -0.4630** |
| | | | | | | | (0.1301) | (0.1668) | (0.1884) | (0.1271) | (0.1613) | (0.1884) |
| Time trend | | | | | | | | | | 0.0709 | 0.0834 | 0.0041 |
| | | | | | | | | | | (0.0570) | (0.0784) | (0.1125) |
| Year fixed effects | No | No | Yes | No | No | Yes | No | No | Yes | No | No | Yes |
| Country fixed effects | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes |
| Adj. R-Square | 0.0342 | 0.2294 | 0.2601 | 0.5340 | 0.9074 | 0.9058 | 0.6123 | 0.9072 | 0.9071 | 0.6135 | 0.9072 | 0.9071 |
| Observations | 820 | 820 | 820 | 241 | 241 | 241 | 236 | 236 | 236 | 236 | 236 | 236 |
| F-test | | 22.1767 | 1.3e+07 | | 82.0319 | 0.6263 | | 72.4661 | 0.7491 | | 68.0015 | 0.7839 |
| p-value | | 0.0000 | 0.0000 | | 0.0000 | 0.8904 | | 0.0000 | 0.7712 | | 0.0000 | 0.7245 |

*Notes:* OLS and fixed effects regressions. Robust standard errors are reported in parentheses. ***/**/* denotes significance at the 1/5/10%-level. The F-tests provide information on the joint significance of country or year fixed effects (if the latter are included).

Table 6: Market income inequality (Gini coefficients)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|
| Labor income share | 0.3774 | -31.9205*** | -21.9784** | 3.2389 | -10.8537 | -14.8071 | 4.8995 | -8.5096 | -12.9901 |
| | (9.0303) | (8.8462) | (8.8286) | (8.6861) | (8.7262) | (9.2956) | (9.6884) | (9.1696) | (9.6156) |
| Wage dispersion | 3.5688*** | 9.2406*** | 3.3342 | 3.4409*** | 3.0423 | 2.4083 | 3.4530*** | 2.9732 | 2.3823 |
| | (0.7851) | (2.5666) | (3.3612) | (0.6764) | (2.8240) | (2.9965) | (0.6771) | (2.8772) | (3.0271) |
| Unemployment rate | 0.4351*** | 0.8044*** | 0.7069*** | 0.5594*** | 0.8250*** | 0.7755*** | 0.5664*** | 0.8352*** | 0.7840*** |
| | (0.1434) | (0.1192) | (0.1112) | (0.1400) | (0.1137) | (0.1333) | (0.1387) | (0.1153) | (0.1326) |
| Relative supply human capital | 0.0866 | -0.1442 | -0.0930 | -0.0669 | 0.0320 | -0.0047 | -0.0683 | 0.0307 | -0.0033 |
| | (0.1261) | (0.2039) | (0.1701) | (0.1421) | (0.2221) | (0.2352) | (0.1436) | (0.2236) | (0.2388) |
| GDP per capita | | | | 0.0008** | 0.0010** | 0.0007 | 0.0007** | 0.0009** | 0.0007 |
| | | | | (0.0003) | (0.0005) | (0.0004) | (0.0003) | (0.0005) | (0.0004) |
| GDP per capita$^2$ | | | | -0.0000 | -0.0000 | -0.0000 | -0.0000 | -0.0000 | -0.0000 |
| | | | | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) |
| Devation real GDP growth | | | | | | | 0.1066 | 0.0743 | 0.0467 |
| | | | | | | | (0.2332) | (0.1153) | (0.1198) |
| Period fixed effects | No | No | Yes | No | No | Yes | No | No | Yes |
| Country fixed effects | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes |
| Adj. R-Square | 0.4669 | 0.8394 | 0.8698 | 0.5614 | 0.8793 | 0.8733 | 0.5569 | 0.8779 | 0.8711 |
| Observations | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 |
| F-test a | | 16.6830 | 2.6230 | | 21.7492 | 0.3338 | | 21.3817 | 0.2764 |
| p-value a | | 0.0000 | 0.0451 | | 0.0000 | 0.8539 | | 0.0000 | 0.8918 |

*Notes:* OLS and fixed effects regressions. Robust standard errors are reported in parentheses. ***/**/* denotes significance at the 1/5/10%-level.

Table 7: Redistribution

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|
| Labor income share | 5.9120 | -2.5193 | -9.1232 | 12.0240 | 2.0031 | -3.0773 | 9.6306 | -9.4540 | -17.5486 |
| | (10.8719) | (15.0600) | (13.9634) | (12.4594) | (14.1503) | (15.4476) | (17.4127) | (13.9890) | (16.7545) |
| Wage dispersion | -7.9299*** | 2.5741 | 5.0143 | -7.9179*** | 2.3618 | 4.9305 | -8.3554*** | 5.7069 | 8.2165 |
| | (1.5338) | (4.3322) | (5.5673) | (1.5366) | (4.4882) | (5.6844) | (2.3998) | (5.2378) | (5.7207) |
| Unemployment rate | 0.6463* | 0.8982*** | 0.9555*** | 0.6792** | 0.9160*** | 0.9834*** | 0.3324 | 0.9509*** | 0.9815*** |
| | (0.3495) | (0.1998) | (0.2257) | (0.3405) | (0.1870) | (0.2132) | (0.3635) | (0.2079) | (0.2179) |
| Relative supply of human capital | 0.3001* | -0.1927 | -0.2537 | 0.2918 | -0.1882 | -0.2455 | 0.1846 | -0.4646 | -0.6834** |
| | (0.1790) | (0.2528) | (0.2791) | (0.1789) | (0.2539) | (0.2788) | (0.2010) | (0.2874) | (0.3364) |
| Devation real GDP growth | | | | 0.4192 | 0.1327 | 0.1531 | 0.1998 | -0.0878 | -0.2295 |
| | | | | (0.4574) | (0.2149) | (0.2333) | (0.5626) | (0.2451) | (0.2624) |
| Voter turnout | | | | | | | -0.0341 | 0.2227** | 0.3008* |
| | | | | | | | (0.0688) | (0.1071) | (0.1527) |
| Left government | | | | | | | -1.9047 | 0.2250 | 0.2045 |
| | | | | | | | (1.6989) | (0.6572) | (0.7446) |
| Period fixed effects | No | No | Yes | No | No | Yes | No | No | Yes |
| Country fixed effects | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes |
| Adj. R-Square | 0.3261 | 0.8675 | 0.8660 | 0.3245 | 0.8659 | 0.8643 | 0.3776 | 0.8637 | 0.8696 |
| Observations | 79 | 79 | 79 | 79 | 79 | 79 | 69 | 69 | 69 |
| F-test a | | 491.5843 | 0.6396 | | 104.8803 | 0.6412 | | 100.8008 | 1.0598 |
| p-value a | | 0.0000 | 0.6366 | | 0.0000 | 0.6355 | | 0.0000 | 0.3883 |

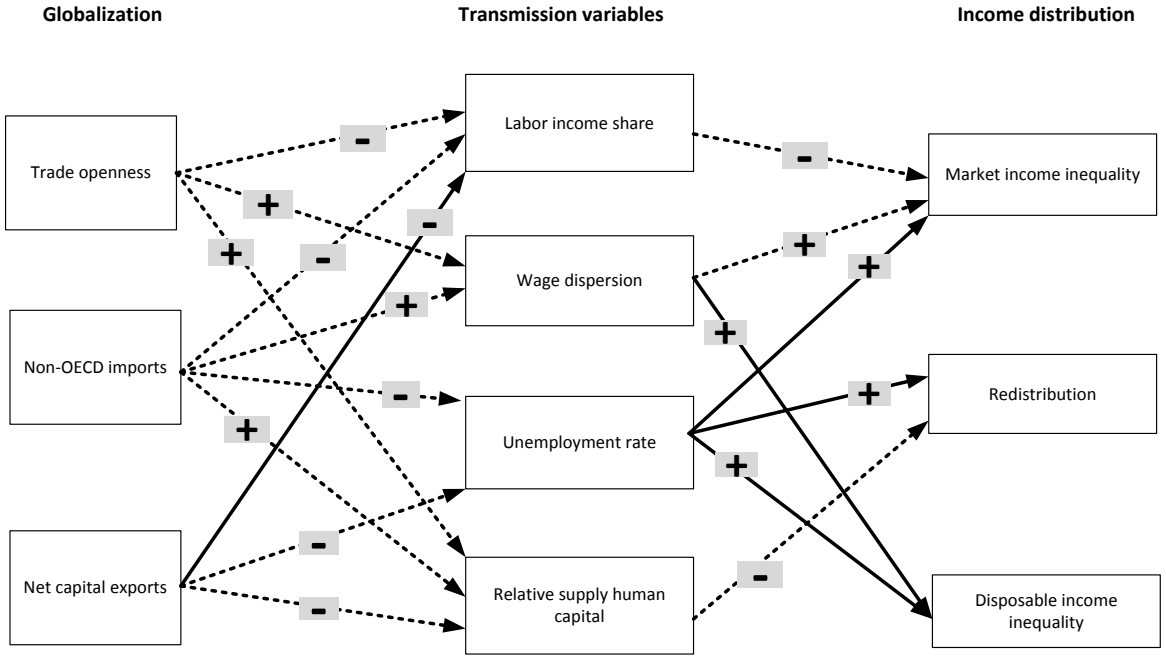
*Notes:* OLS and fixed effects estimations. Robust standard errors are reported in parentheses. ***/**/* denotes significance at the 1/5/10%-level.

Table 8: Disposable income inequality (Gini coefficient)

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Labor income share | 12.0688* | -9.7335 | -0.4193 | 13.3133** | -7.1685 | 1.2887 |
| | (6.6691) | (8.2694) | (9.8699) | (6.6193) | (8.5394) | (10.3531) |
| Wage dispersion | 3.8065*** | 5.1278*** | 2.7012* | 3.7792*** | 5.0460*** | 2.6982* |
| | (0.6601) | (1.8449) | (1.5304) | (0.6615) | (1.8133) | (1.4599) |
| Unemployment rate | 0.3468*** | 0.2123** | 0.1584** | 0.3492*** | 0.2174** | 0.1637** |
| | (0.1227) | (0.0857) | (0.0697) | (0.1220) | (0.0839) | (0.0689) |
| Relative supply human capital | 0.1546* | 0.0685 | 0.0309 | 0.1572* | 0.0574 | 0.0270 |
| | (0.0859) | (0.1328) | (0.1155) | (0.0869) | (0.1293) | (0.1134) |
| Devation real GDP growth | | | | 0.1152 | 0.1431 | 0.0906 |
| | | | | (0.1975) | (0.1380) | (0.1099) |
| Period fixed effects | No | No | Yes | No | No | Yes |
| Country fixed effects | No | Yes | Yes | No | Yes | Yes |
| Adj. R-Square | 0.4446 | 0.8725 | 0.8939 | 0.4404 | 0.8736 | 0.8935 |
| Observations | 98 | 98 | 98 | 98 | 98 | 98 |
| F-test | | 38.5956 | 2.9082 | | 31.1580 | 3.0220 |
| p-value | | 0.0000 | 0.0277 | | 0.0000 | 0.0235 |

*Notes:* OLS and fixed effects estimations. Robust standard errors are reported in parentheses. ***/**/* denotes significance at the 1/5/10%-level.

Figure 2: Globalization and its impact on the income distribution through the transmission mechanisms




*Notes:* Flow chart summarizing the sign and significance of the main results from the fixed effects estimations. The dashed lines indicate that the coefficients are not always statistically significant, whereas the arrows with solid lines show robustly significant relationships.

Table 9: Measurement of capital mobility: net exports of FDI capital

| | Labor income share | | Wage dispersion | | Unemployment rate | | Relative supply human capital | |
|---|---|---|---|---|---|---|---|---|
| Trade openness$_{t-1}$ (log) | -0.0773*** | -0.0151 | 0.3744*** | 0.2888** | 1.1861** | 0.3015 | | |
| | (0.0079) | (0.0153) | (0.0729) | (0.1206) | (0.5892) | (1.1390) | | |
| Trade openness$_{t-5}$ (log) | | | | | | | 6.0449*** | 6.8588*** |
| | | | | | | | (1.4006) | (2.4154) |
| Non-OECD imports$_{t-1}$ (log) | -0.0353*** | -0.0070 | 0.0568 | 0.3121** | -0.5325 | -3.6475*** | | |
| | (0.0087) | (0.0101) | (0.0723) | (0.1332) | (0.5330) | (0.6451) | | |
| Non-OECD imports$_{t-5}$ (log) | | | | | | | -0.0750 | 0.3098 |
| | | | | | | | (0.8062) | (1.1044) |
| Net FDI exports$_{t-1}$ | 0.0002 | 0.0003 | 0.0007 | 0.0021 | 0.0236 | -0.0101 | | |
| | (0.0004) | (0.0004) | (0.0029) | (0.0033) | (0.0249) | (0.0169) | | |
| Net FDI exports$_{t-5}$ | | | | | | | -0.0143 | -0.0067 |
| | | | | | | | (0.0198) | (0.0208) |
| Labor productivity$_{t-1}$ | 0.0009 | 0.0012* | | | 0.0106 | 0.1291*** | | |
| | (0.0007) | (0.0007) | | | (0.0442) | (0.0476) | | |
| Capital per worker$_{t-1}$ (log) | 0.0293*** | 0.0305*** | 0.1230 | 0.2017 | -3.3649*** | -2.3114** | | |
| | (0.0073) | (0.0074) | (0.1099) | (0.1254) | (1.1259) | (1.1434) | | |
| Capital per worker$_{t-5}$ (log) | | | | | | | 0.7295 | 3.0382** |
| | | | | | | | (1.0439) | (1.3174) |
| Labor market freedom$_{t-1}$ | 0.0113*** | 0.0154*** | 0.0384** | 0.0381 | -0.5123*** | -1.0287*** | | |
| | (0.0021) | (0.0027) | (0.0193) | (0.0231) | (0.1605) | (0.1874) | | |
| Labor market freedom$_{t-5}$ | | | | | | | -0.1363 | -0.3642* |
| | | | | | | | (0.1735) | (0.2031) |
| Output gap$_{t-1}$ | | | | | -0.3940*** | -0.4383*** | | |
| | | | | | (0.0509) | (0.0526) | | |
| Multifactor productivity$_{t-5}$ | | | | | | | 0.0772 | 0.1608* |
| | | | | | | | (0.0727) | (0.0872) |
| Year fixed effects | No | Yes | No | Yes | No | Yes | No | Yes |
| Country fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adj. R-Square | 0.8817 | 0.8955 | 0.9357 | 0.9389 | 0.7744 | 0.8138 | 0.9026 | 0.9024 |
| Observations | 485 | 485 | 338 | 338 | 417 | 417 | 236 | 236 |
| F-test | | | | | | | | |
| p-value | | | | | | | | |

*Notes:* Fixed effects estimations. Based on the baseline specifications of the fixed effects estimations. Robust standard errors are reported in parentheses. ***/**/* denotes significance at the 1/5/10%-level.

Table 10: Technological change versus globalization

| | Labor income share | | | | | | Wage dispersion | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (1) | (2) | (3) | (4) | (5) | (6) |
| Trade openness$_{t-1}$ (log) | -0.0764*** | -0.0158 | -0.0722*** | -0.0356* | -0.0783*** | -0.0276 | 0.2301** | 0.6271*** | 0.0625 | 0.0929 | 0.2848*** | 0.3383** |
| | (0.0116) | (0.0217) | (0.0116) | (0.0188) | (0.0098) | (0.0170) | (0.1051) | (0.1559) | (0.0812) | (0.1673) | (0.0813) | (0.1510) |
| Non-OECD imports$_{t-1}$ (log) | -0.0043 | 0.0220 | -0.0193* | -0.0034 | -0.0171 | 0.0086 | 0.1401* | 0.3326** | 0.2472*** | 0.4625*** | 0.1428** | 0.2861** |
| | (0.0099) | (0.0134) | (0.0114) | (0.0134) | (0.0104) | (0.0119) | (0.0774) | (0.1369) | (0.0700) | (0.1701) | (0.0644) | (0.1417) |
| Net capital exports$_{t-1}$ | -0.0023*** | -0.0024*** | -0.0015*** | -0.0012*** | -0.0016*** | -0.0013*** | -0.0050* | -0.0071** | 0.0043* | 0.0038 | 0.0027 | 0.0022 |
| | (0.0004) | (0.0004) | (0.0003) | (0.0003) | (0.0003) | (0.0003) | (0.0029) | (0.0036) | (0.0024) | (0.0027) | (0.0022) | (0.0024) |
| Labor productivity$_{t-1}$ | 0.0002 | 0.0006 | 0.0005 | 0.0010 | 0.0009 | 0.0014* | -0.0006 | 0.0023 | -0.0060 | -0.0102 | -0.0036 | -0.0019 |
| | (0.0010) | (0.0010) | (0.0007) | (0.0008) | (0.0008) | (0.0008) | (0.0048) | (0.0059) | (0.0045) | (0.0064) | (0.0046) | (0.0060) |
| Capital per worker (log)$_{t-1}$ | 0.0149 | 0.0388** | 0.0279*** | 0.0349*** | 0.0280*** | 0.0377*** | -0.0563 | -0.0562 | -0.1200 | -0.2527 | -0.0077 | 0.0199 |
| | (0.0157) | (0.0193) | (0.0089) | (0.0091) | (0.0092) | (0.0090) | (0.1345) | (0.1599) | (0.1102) | (0.1585) | (0.1068) | (0.1507) |
| Labor market freedom$_{t-1}$ | 0.0042* | 0.0106*** | 0.0084*** | 0.0121*** | 0.0080*** | 0.0131*** | 0.0368** | 0.0508** | 0.0289 | 0.0284 | 0.0278 | 0.0164 |
| | (0.0023) | (0.0028) | (0.0024) | (0.0030) | (0.0023) | (0.0031) | (0.0150) | (0.0200) | (0.0208) | (0.0251) | (0.0180) | (0.0221) |
| ICT investment$_{t-1}$ (log) | -0.0077** | -0.0140** | | | | | 0.0025 | -0.0534 | | | | |
| | (0.0035) | (0.0069) | | | | | (0.0390) | (0.0490) | | | | |
| R&D personnel$_{t-1}$ (log) | | | -0.0121 | -0.0051 | | | | | -0.1204 | -0.0418 | | |
| | | | (0.0109) | (0.0114) | | | | | (0.1324) | (0.1443) | | |
| R&D expenditures$_{t-1}$ (log) | | | | | -0.0119 | -0.0096 | | | | | -0.2048* | -0.1991 |
| | | | | | (0.0087) | (0.0090) | | | | | (0.1067) | (0.1320) |
| Year fixed effects | No | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No | Yes |
| Country fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adj. R-Square | 0.9094 | 0.9217 | 0.8866 | 0.8946 | 0.8854 | 0.8996 | 0.9671 | 0.9663 | 0.9476 | 0.9478 | 0.9579 | 0.9568 |
| Observations | 297 | 297 | 358 | 358 | 407 | 407 | 229 | 229 | 253 | 253 | 287 | 287 |
| F-test | | | | | | | | | | | | |
| p-value | | | | | | | | | | | | |

*Continued on next page*

Table 10 – continued from previous page

| | Unemployment rate | | | | | | Relative supply human capital | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (1) | (2) | (3) | (4) | (5) | (6) |
| Trade openness$_{t-1}$ (log) | 1.8206** | -1.4698 | -0.4699 | -0.4394 | 0.1589 | -0.8261 | | | | | | |
| | (0.7483) | (1.5324) | (0.7699) | (1.2335) | (0.6697) | (1.2518) | | | | | | |
| Trade openness$_{t-5}$ (log) | | | | | | | 8.3194*** | 10.2544*** | 1.8837** | 1.4334 | 7.1296*** | 8.3242*** |
| | | | | | | | (1.7045) | (2.7564) | (0.7672) | (1.6575) | (1.5838) | (2.7505) |
| Non-OECD imports$_{t-1}$ (log) | -2.6797*** | -5.0349*** | -1.5409*** | -3.3802*** | -0.7357 | -3.7311*** | | | | | | |
| | (0.7022) | (0.6522) | (0.5815) | (0.6482) | (0.5902) | (0.6758) | | | | | | |
| Non-OECD imports$_{t-5}$ (log) | | | | | | | -0.2261 | 0.9174 | 1.8001*** | 1.6604** | -0.0001 | 0.5097 |
| | | | | | | | (0.8568) | (1.0849) | (0.5534) | (0.6494) | (0.9253) | (1.1308) |
| Net capital exports$_{t-1}$ | -0.0359 | -0.0142 | -0.0680*** | -0.0449*** | -0.0577*** | -0.0407** | | | | | | |
| | (0.0309) | (0.0218) | (0.0188) | (0.0163) | (0.0188) | (0.0158) | | | | | | |
| Net capital exports$_{t-5}$ | | | | | | | -0.1151*** | -0.1166*** | 0.0351 | 0.0292 | -0.1251*** | -0.1194*** |
| | | | | | | | (0.0422) | (0.0400) | (0.0216) | (0.0241) | (0.0452) | (0.0426) |
| Output gap$_{t-1}$ | -0.4879*** | -0.6147*** | -0.4304*** | -0.4906*** | -0.4006*** | -0.4479*** | | | | | | |
| | (0.0625) | (0.0631) | (0.0470) | (0.0500) | (0.0491) | (0.0529) | | | | | | |
| Labor productivity$_{t-1}$ | 0.0843 | 0.1632** | 0.0691 | 0.1401*** | 0.0453 | 0.1418*** | | | | | | |
| | (0.0652) | (0.0636) | (0.0434) | (0.0460) | (0.0440) | (0.0472) | | | | | | |
| Multifactor productivity$_{t-5}$ | | | | | | | 0.1314 | 0.1996** | -0.0125 | 0.0475 | 0.0824 | 0.1877* |
| | | | | | | | (0.0826) | (0.0982) | (0.0483) | (0.0590) | (0.0830) | (0.0987) |
| Capital per worker$_{t-1}$ (log) | 0.8414 | -0.3695 | -2.0785* | -1.3378 | -2.8199** | -2.1765* | | | | | | |
| | (1.2431) | (1.2391) | (1.2408) | (1.2508) | (1.2236) | (1.2840) | | | | | | |
| Capital per worker$_{t-5}$ (log) | | | | | | | 1.0345 | 2.6039* | 0.7393 | 0.9140 | -0.7286 | 2.1009 |
| | | | | | | | (1.2467) | (1.3737) | (0.7789) | (0.9979) | (1.2060) | (1.5536) |
| Labor market freedom$_{t-1}$ | -0.5461*** | -0.8278*** | -0.6233*** | -0.8806*** | -0.4794*** | -0.9285*** | | | | | | |
| | (0.1774) | (0.1988) | (0.1820) | (0.2067) | (0.1716) | (0.1965) | | | | | | |
| Labor market freedom$_{t-5}$ | | | | | | | -0.3912** | -0.4135** | -0.2654** | -0.4771*** | -0.2787 | -0.6026*** |
| | | | | | | | (0.1638) | (0.1842) | (0.1309) | (0.1705) | (0.1853) | (0.1977) |
| ICT investment$_{t-1}$ (log) | -1.6016*** | 0.4112 | | | | | | | | | | |
| | (0.3956) | (0.3848) | | | | | | | | | | |
| ICT investment$_{t-5}$ (log) | | | | | | | -1.2118*** | -1.0043** | | | | |
| | | | | | | | (0.3425) | (0.4867) | | | | |
| R&D personnel$_{t-1}$ (log) | | | 4.6337*** | 4.1029*** | | | | | | | | |
| | | | (0.6687) | (0.7243) | | | | | | | | |
| R&D personnel$_{t-5}$ (log) | | | | | | | | | -0.1064 | -0.1674 | | |
| | | | | | | | | | (0.7876) | (0.9943) | | |
| R&D expenditures$_{t-1}$ (log) | | | | | 2.9394*** | 2.0571*** | | | | | | |
| | | | | | (0.6647) | (0.6127) | | | | | | |
| R&D expenditures$_{t-5}$ (log) | | | | | | | | | | | 0.3480 | -0.2191 |
| | | | | | | | | | | | (0.9745) | (1.0376) |
| Year fixed effects | No | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No | Yes |
| Country fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adj. R-Square | 0.8003 | 0.8420 | 0.8008 | 0.8273 | 0.7852 | 0.8160 | 0.9119 | 0.9086 | 0.8191 | 0.8092 | 0.9055 | 0.9063 |
| Observations | 294 | 294 | 344 | 344 | 388 | 388 | 225 | 225 | 186 | 186 | 219 | 219 |
| F-test | | | | | | | | | | | | |
| p-value | | | | | | | | | | | | |

*Notes:* Fixed effects estimations. Based on the baseline specifications of the fixed effects estimations. Robust standard errors are reported in parentheses. ***/**/* denotes significance at the 1/5/10%-level. The explanatory variables are included in the the regressions with a lag of one year for all transmission variables except for the RELATIVE SUPPLY OF HUMAN CAPITAL where a lag of five years is chosen.

Table 11: Transmission variables: interaction globalization and labor market regulation

| | Labor income share | | | Wage dispersion | | | Unemployment rate | | | Relative supply human capital | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (1) | (2) | (3) | (1) | (2) | (3) | (1) | (2) | (3) |
| Trade openness$_{t-1}$ (log) | -0.0475*** | -0.0711*** | -0.0395*** | -0.0671 | 0.3769*** | 0.2154 | -0.8999** | 0.5650 | -0.7040 | | | |
| | (0.0059) | (0.0071) | (0.0146) | (0.0647) | (0.0702) | (0.1423) | (0.4090) | (0.6451) | (1.1987) | | | |
| Trade openness$_{t-5}$ (log) | | | | | | | | | | -1.4858*** | 7.2355*** | 10.5850*** |
| | | | | | | | | | | (0.3445) | (1.4845) | (2.8475) |
| Non-OECD imports$_{t-1}$ (log) | -0.0532*** | -0.0289*** | -0.0110 | -0.0263 | -0.0839 | 0.1751 | 2.6661*** | -0.2063 | -3.3329*** | | | |
| | (0.0094) | (0.0070) | (0.0086) | (0.1168) | (0.0793) | (0.1337) | (0.3399) | (0.5532) | (0.6158) | | | |
| Non-OECD imports$_{t-5}$ (log) | | | | | | | | | | 2.3183*** | -1.1826 | -0.1563 |
| | | | | | | | | | | (0.4185) | (0.8424) | (0.8721) |
| Net capital exports$_{t-1}$ | -0.0003 | -0.0020*** | -0.0018*** | -0.0376*** | 0.0077*** | 0.0100*** | -0.1543*** | -0.0506** | -0.0385** | | | |
| | (0.0007) | (0.0003) | (0.0003) | (0.0055) | (0.0029) | (0.0029) | (0.0341) | (0.0200) | (0.0187) | | | |
| Net capital exports$_{t-5}$ | | | | | | | | | | -0.0223 | -0.0526 | -0.0541* |
| | | | | | | | | | | (0.0460) | (0.0335) | (0.0308) |
| Labor productivity$_{t-1}$ | -0.0048** | 0.0005 | 0.0010 | | | | 0.0882 | 0.0320 | 0.1420*** | | | |
| | (0.0022) | (0.0007) | (0.0007) | | | | (0.0666) | (0.0432) | (0.0476) | | | |
| Multifactor productivity$_{t-5}$ | | | | | | | | | | 0.2538** | 0.0771 | 0.1405 |
| | | | | | | | | | | (0.1070) | (0.0722) | (0.0884) |
| Capital per worker$_{t-1}$ (log) | 0.0152 | 0.0362*** | 0.0419*** | -0.1818 | 0.1417 | 0.2887** | -2.7093*** | -2.9054*** | -2.2603** | | | |
| | (0.0169) | (0.0072) | (0.0071) | (0.1550) | (0.1035) | (0.1177) | (0.8025) | (1.0980) | (1.1450) | | | |
| Capital per worker$_{t-5}$ (log) | | | | | | | | | | 4.9809*** | -1.3540 | 1.1550 |
| | | | | | | | | | | (0.5544) | (1.1490) | (1.1964) |
| Labor market freedom$_{t-1}$ | -0.0133*** | 0.0017 | 0.0060** | 0.1556*** | -0.0065 | -0.0086 | -0.3884*** | -0.3923** | -0.9018*** | | | |
| | (0.0018) | (0.0024) | (0.0028) | (0.0207) | (0.0229) | (0.0267) | (0.0825) | (0.1945) | (0.2103) | | | |
| Labor market freedom$_{t-5}$ | | | | | | | | | | 0.8137*** | -0.3786** | -0.4771** |
| | | | | | | | | | | (0.1124) | (0.1696) | (0.1947) |
| Labor market freedom$_{t-1}$ × Trade openness$_{t-1}$ | 0.0084** | 0.0131*** | 0.0134*** | -0.1149*** | 0.0492 | 0.0799*** | 0.6485*** | 0.0408 | 0.0636 | | | |
| | (0.0033) | (0.0028) | (0.0020) | (0.0348) | (0.0299) | (0.0274) | (0.2306) | (0.1801) | (0.1602) | | | |
| Labor market freedom$_{t-5}$ × Trade openness$_{t-5}$ | | | | | | | | | | -1.7383*** | 0.2616 | 0.2062 |
| | | | | | | | | | | (0.2646) | (0.2490) | (0.2423) |
| Labor market freedom$_{t-1}$ × Non-OECD imports$_{t-1}$ | 0.0159*** | 0.0039* | 0.0028 | 0.0662 | 0.1288*** | 0.1064*** | -1.4470*** | -0.4649*** | -0.3879*** | | | |
| | (0.0051) | (0.0023) | (0.0024) | (0.0542) | (0.0224) | (0.0254) | (0.2145) | (0.1753) | (0.1396) | | | |
| Labor market freedom$_{t-5}$ × Non-OECD imports$_{t-5}$ | | | | | | | | | | 0.4911* | 1.2444*** | 1.2743*** |
| | | | | | | | | | | (0.2962) | (0.2685) | (0.2928) |
| Labor market freedom$_{t-1}$ × Net capital exports$_{t-1}$ | 0.0009** | 0.0006*** | 0.0006*** | 0.0020 | -0.0017 | -0.0040** | 0.0244 | -0.0294*** | -0.0181* | | | |
| | (0.0004) | (0.0002) | (0.0002) | (0.0033) | (0.0015) | (0.0017) | (0.0188) | (0.0111) | (0.0101) | | | |
| Labor market freedom$_{t-5}$ × Net capital exports$_{t-5}$ | | | | | | | | | | -0.0325 | -0.0084 | -0.0016 |
| | | | | | | | | | | (0.0311) | (0.0206) | (0.0223) |
| Output gap$_{t-1}$ | | | | | | | -0.3536*** | -0.4076*** | -0.4350*** | | | |
| | | | | | | | (0.0671) | (0.0507) | (0.0520) | | | |
| Year fixed effects | No | No | Yes | No | No | Yes | No | No | Yes | No | No | Yes |
| Country fixed effects | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes |
| Adj. R-Square | 0.3024 | 0.9060 | 0.9153 | 0.4546 | 0.9444 | 0.9492 | 0.4461 | 0.7850 | 0.8187 | 0.7137 | 0.9186 | 0.9173 |
| Observations | 485 | 485 | 485 | 338 | 338 | 338 | 417 | 417 | 417 | 236 | 236 | 236 |

*Notes:* OLS and fixed effects regressions. Robust standard errors are reported in parentheses. ***/**/* denotes significance at the 1/5/10%-level.

Table 12: Seemingly unrelated regression: country and year fixed effects

| | OLS | | | | SUR | | | |
|---|---|---|---|---|---|---|---|---|
| | Labor inc. | Wage dispers. | Unempl. rate | Supply hum. cap. | Labor inc. | Wage dispers. | Unempl. Rate | Supply hum. cap. |
| Trade openness$_{t-1}$ (log) | -0.0029 | 0.3307* | -4.4113** | | -0.0006 | 0.2906* | -4.5017** | |
| | (0.0236) | (0.1716) | (2.0940) | | (0.0193) | (0.1603) | (1.7528) | |
| Trade openness$_{t-5}$ (log) | | | | 11.3157*** | | | | 9.0533*** |
| | | | | (2.9923) | | | | (1.9603) |
| Non-OECD imports$_{t-1}$ (log) | -0.004 | 0.1858 | -6.8003*** | | -0.0128 | 0.2993*** | -6.4683*** | |
| | (0.0151) | (0.1283) | (1.2128) | | (0.0118) | (0.0987) | (1.0749) | |
| Non-OECD imports$_{t-5}$ (log) | | | | 1.0419 | | | | 0.2056 |
| | | | | (1.2747) | | | | (1.0143) |
| Net capital exports$_{t-1}$ | -0.0023*** | -0.0037 | -0.0201 | | -0.0024*** | -0.0025 | -0.0166 | |
| | (0.0005) | (0.0032) | (0.0283) | | (0.0003) | (0.0027) | (0.0300) | |
| Net capital exports$_{t-5}$ | | | | -0.1905*** | | | | -0.1209*** |
| | | | | (0.0461) | | | | (0.0346) |
| Labor productivity$_{t-1}$ | -0.0016* | | 0.2072*** | | -0.0012* | | 0.2039*** | |
| | (0.0009) | | (0.0742) | | (0.0007) | | (0.0599) | |
| Multifactor productivity$_{t-5}$ | | | | 0.0972 | | | | 0.0261 |
| | | | | (0.1038) | | | | (0.0846) |
| Capital per worker$_{t-1}$ (log) | -0.0119 | -0.3267 | -4.6114** | | -0.0064 | -0.3626*** | -4.5924** | |
| | (0.0175) | (0.2012) | (1.9410) | | (0.0156) | (0.1227) | (1.9060) | |
| Capital per worker$_{t-5}$ (log) | | | | -0.3841 | | | | -0.1034 |
| | | | | (1.7775) | | | | (1.4272) |
| Labor market freedom$_{t-1}$ | -0.0026 | 0.0287 | -0.5255** | | -0.0017 | 0.0159 | -0.5601** | |
| | (0.0030) | (0.0216) | (0.2293) | | (0.0025) | (0.0206) | (0.2286) | |
| Labor market freedom$_{t-5}$ | | | | -0.5033** | | | | -0.2517 |
| | | | | (0.2178) | | | | (0.2208) |
| Output gap$_{t-1}$ | | | -0.3837*** | | | | -0.3940*** | |
| | | | (0.0841) | | | | (0.0853) | |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Country fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adj. R-Square | 0.952 | 0.9671 | 0.808 | 0.9139 | | | | |
| Observations | 198 | 198 | 198 | 198 | 198 | | | |

*Notes:* OLS and SUR estimations based on a common sample. Both country and year fixed effects are included. Robust standard errors are reported in parentheses. ***/**/* denotes significance at the 1/5/10%-level.

Table 13: Variable description

| Variable | Definition | Source |
|---|---|---|
| **Income distribution variables** | | |
| Market incomes | Gini coefficient of the distribution of market incomes. | Own calculations based on LIS data. |
| Disposable incomes | Gini coefficient of the distribution of disposable incomes. | |
| Redistribution | Percentage difference between the Gini coefficient of the market and disposable income distribution. | |
| **Transmission variables** | | |
| Labor income share | Annual labor income share defined as total labor costs (i.e. compensation of employees adjusted for the self-employed) divided by nominal output. | OECD Main Economic Indicators |
| Wage dispersion | Decile ratio (i.e. the ratio between the $9^{th}$ and the $1^{st}$ decile) of gross wages of full-time employees. | OECD (2010b) Earnings database |
| Unemployment rate | Unemployment as a percentage of the civilian labor force. | OECD Labour Force Statistics |
| Relative supply of human capital | Number of individuals with tertiary education divided by those for whom primary education is the highest educational degree (both expressed as a percentage of the population older than 25 years). | Barro and Lee (2012) |
| **Globalization indicators** | | |
| Trade openness (log) | Trade in goods and services (i.e. sum of ex- and imports) as a percentage of GDP. | OECD (2010c): Macro Trade Indicators |
| Non-OECD imports (log) | Imports from non-OECD (excluding OPEC) countries as a share of total imports. | OECD (2013b): Monthly Statistics of International Trade |
| Net capital exports | Net exports of foreign direct, portfolio and other investments as a percentage of GDP. | Capital flows (IMF, 2012), GDP (World Bank, 2012) |
| **Control variables** | | |
| Capital per worker (log) | Gross fixed capital formation divided by total employment. | Gross fixed capital formation (OECD, 2012b), total employment (OECD, 2010a) |
| Labor productivity | Labor productivity per unit labor input (i.e. real output divided by total labor input. | OECD (2013c): Unit Labour Costs |

*Continued on next page*

Table 13 – continued from previous page

| Variable | Definition | Source |
|---|---|---|
| Multifactor productivity | Growth of multifactor productivity for the total economy (i.e. difference between the rate of change of output and rate of change of total input. | OECD (2010d): Productivity Database |
| Output gap | Deviation of actual GDP from potential GDP as a % of the potential GDP. | OECD (2013a): Economic Outlook |
| Labor market freedom | Labor market regulation index (subcomponent 5B of the Economic Freedom of the World index). | Gwartney et al. (2012) |
| Left government | Cabinet composition: social democratic and other left parties in percentage of total cabinet posts (weighted by days in office). | Armingeon et al. (2012) |
| Voter turnout | Voter turnout in parliamentary elections. | |
| GDP per capita | Real GDP divided by total population. | OECD (2012b) |
| Deviation real GDP growth | Deviation of the real GDP growth rate from its five-year average. | OECD (2012b) |
| **Variables robustness test** | | |
| Net FDI exports | Net exports of foreign direct investments as a percentage of GDP. | Capital flows (IMF, 2012), GDP (World Bank, 2012) |
| ICT investment (log) | Contribution of ICT equipment to growth of total capital services (in percent). | OECD (2010d): Productivity Database |
| R&D expenditures (log) | Gross domestic expenditure in research and experimental development as a percentage of GDP. | OECD (2012a): Main Science and |
| R&D personnel (log) | Total R&D personnel per 1,000 employees. | Technology Indicators |