Domestic Inequality and Global Imbalances*

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Abstract

This paper studies how the within-country distribution of income affects the current account. We document that higher income inequality, especially in advanced economies, is associated with higher current account balances. We identify permanent as opposed to transitory income inequality and domestic savings as opposed to investment as the underlying determinants. Building on the empirical analysis, we develop a two-country heterogeneous agent model and show that, all else equal, capital flows from unequal to equal countries. Non-homothetic preferences generate increasing saving rates across the distribution of permanent income which translate into current account surpluses under international capital mobility. We use the model to study the effects of redistributive policies, financial liberalisation and cross-border financial integration.

Keywords: Inequality, Global imbalances, Capital flows

JEL Codes: F32, F41, F62, E21

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1 Introduction

Since the 1990s, the global economy has been characterized by a large increase in within-country income inequality and a surge in current account imbalances. Against the background of sustained financial liberalisation, income inequality has risen by almost 50 percent as measured by the share of income held by the Top 1 percent while current account imbalances peaked at levels unprecedented in modern international monetary history (Eichengreen, 2008). Both developments have been at the forefront of active policy debate and raise the question to what extent "trade wars are class wars" (Klein and Pettis, 2020).

This paper studies how income inequality affects the current account in both data and theory. Empirically, we establish a novel fact: higher income inequality is associated with higher current account balances, in particular for advanced economies. All else equal, countries with a more unequal income distribution exhibit higher domestic saving rates, which, combined with negligible differences in domestic investment rates, yield current account surpluses.

Building on this insight, we develop a tractable theoretical framework that incorporates heterogeneity in savings behaviour across the distribution of permanent income. We illustrate how, all else equal, capital flows from unequal to equal countries. Through our framework, we also shed light on several related phenomena: the role of increased financial liberalisation in fostering cross-border capital flows, the decoupling of inequality and global imbalances after the Global Financial Crisis, and the apparent disconnect between income inequality and the current account in the United States. Finally, we embed our theoretical framework into a fully-fledged general equilibrium model and study the effects of redistributive policies, financial liberalisation and cross-border financial integration.

We begin by documenting a positive co-movement between domestic income inequality and the current account in the data. Using cross-country panel regressions, we find that a one percentage point increase in the share of income earned by the Top 1 percent is associated with a 0.8 percentage point higher current account balance. Relying on other measures of income inequality, such as the share of income accruing to the Top 10 percent or the Gini index, provides comparable estimates.

Changes in income inequality can in principle reflect changes in the distribution of the permanent component of income or in the volatility of its transitory part. Understanding which of the two is associated with changes in current accounts is important from a theoretical perspective, but also bears direct policy implications. Using administrative income data for a subset of countries, we decompose measured income inequality into a permanent and a transitory component, and show that only inequality in permanent income is associated with higher current account balances.

To shed light on the channels through which income inequality affects current accounts, we decompose the current account into domestic savings and investment and study each component individually. We find that the correlation with income inequality primarily operates through the saving rate. Investment, in contrast, does not show any comparable co-movement with the concentration of income. We interpret this evidence in favour of a savings-driven theory of current account changes. Coeurdacier et al. (2015), for example, shows that much of the current account variation in the data is driven by variation in saving rates, without explicitly identifying the source of these changes. Our results suggest that variation in income inequality is one potential candidate. We corroborate this hypothesis by showing that it is primarily private as opposed to public savings that co-move with inequality.

Our findings stand in contrast to the existing evidence on income inequality and current accounts. Previous studies find that rising income inequality induces current account deficits while we find that it prompts surpluses (Behringer and Van Treeck, 2018; De Ferra et al., 2021; Kumhof et al., 2024). In light of these differences, we conduct an extensive set of robustness checks and show that our results are largely unaffected by, amongst others, the choice of inequality measure, country sample, sample period or the estimation method. Methodologically, our approach differs in the type of variation used to infer the relationship between income inequality and current accounts. While previous studies relied largely on between-country variation, we exploit within-country variation by controlling for unobserved, time-invariant country characteristics which turn out to be critical for the configuration of current accounts. Conceptually, we innovate on the existing literature by identifying the effect of permanent income inequality, whereas previous studies focused on the effects of overall income inequality or income risk. This distinction is important for a variety of reasons which we explore separately through the lens of our structural model.

Guided by the empirical analysis, we develop a theoretical framework that rationalizes the link between income inequality and current accounts. At the core of our theory is the observation that saving rates differ along the distribution of permanent income (Dynan et al., 2004; Fagereng et al., 2019; Straub, 2019; Mian et al., 2021b). We embed this feature into a stylized heterogeneous agent model with two countries, Equal (E) and Unequal (U). Each country is populated by a continuum of households split into two household groups, representing the Top 1 percent and the Bottom 99 percent of the income distribution, respectively, who trade debt contracts amongst each other. The countries are identical except for the distribution of domestic endowments: the share accruing to the Top 1 percent is higher in U. The key feature of the model is that households have a non-homothetic preference for wealth.[1] This non-homotheticity generates differences in marginal propensities to save out of permanent income, yielding a role for the distribution of income.

Our main theoretical contribution lies in showing analytically that, all else equal, cross-country differences in the income distribution generate current account imbalances. To understand the intuition behind this result, it is helpful to start from a closed economy setting. Under financial autarky, the more unequal country U is characterized by a lower interest rate. Similar to Mian et al. (2021a), the Top 1 percent of the income distribution act as lenders to the Bottom 99 percent. With a higher share of income earned by the Top 1 percent, the rich are willing to lend more to the poor, thereby depressing the interest rate.[2] Once capital is allowed

[1] Preferences for wealth are a common assumption in the literature on inequality (Kumhof et al., 2015; Straub, 2019; Mian et al., 2021a).

[2] Compared to Mian et al. (2021a), our model features a more conventional upward-sloping instead of

to flow freely between countries, the interest rate on debt is equalized across countries at a level that is above the interest rate under autarky in U and below the interest rate under autarky in E. The higher return on lending incentivises the Top 1 percent in U to expand their lending beyond what can be absorbed domestically by the Bottom 99 percent. The Top 1 percent in E, in contrast, reduce their savings following the decrease in the interest rate. As a result, U runs a current account surplus and E runs a current account deficit.

Our model delivers several testable predictions that we validate in the data. The first set of predictions relates to the relationship between inequality and current accounts. We illustrate that what matters for the configuration of global imbalances are predominantly relative differences in within-country inequality across countries as opposed to the absolute level of inequality. This prediction is supported by two empirical observations: a striking co-movement between the level of global imbalances and the cross-country dispersion of income inequality and the decoupling of inequality and global imbalances after the Global Financial Crisis.

The second set of predictions concerns the role of financial markets. We show that financial liberalisation, as captured by looser borrowing constraints, amplifies the effect of inequality on current accounts. However, we also illustrate that *asymmetric* financial liberalisation can dampen this effect. In fact, sufficiently loose borrowing constraints in U relative to E can offset the effect of inequality on current accounts and induce a current account deficit in the unequal country. This is reminiscent of the experience of the United States, the world's financial center, over the last decades. Despite high and rising levels of domestic income inequality, the United States have been persistently running current account deficits.

We complete the analysis by embedding our theoretical framework into a fully-fledged quantitative model. In particular, we extend the model along two dimensions: a realistic degree of household income risk and a production sector. The former allows us to quantitatively evaluate the role of permanent income differences for the determination of current accounts and draw comparisons to changes in income risk. The latter allows us to study the joint response of savings *and investment* to changes in income inequality as, in principle, an increase in savings could be accompanied by an equivalent increase in investment, offsetting the effects on the current account. In line with the data, our model predicts that changes in income inequality lead to differential responses in savings across countries, but not investment.

Literature. This paper is closely related to the broader empirical literature on the determinants of current accounts (Chinn and Prasad, 2003). To the best of our knowledge, we are the first to document a positive link between income inequality and current accounts in the data. Previous studies, instead, found either a negative link or mixed evidence (Broer, 2014; Behringer and Van Treeck, 2018; De Ferra et al., 2021; Kumhof et al., 2024). In contrast to these studies, we explicitly isolate the role of permanent income inequality from the role of income risk.

Our paper also contributes to an extensive theoretical literature on the determinants of current account imbalances. Caballero et al. (2008) and Coeurdacier et al. (2015) emphasize the role of savings for the configuration of global current accounts but remain agnostic on its

downward-sloping savings supply curve in the interest rate. In contrast to Kumhof et al. (2015), our model does not rely on preference heterogeneity and features a downwards sloping savings demand curve.

underlying drivers. Several explanations for differences in saving rates have been put forward such as demographics (Auclert et al., 2021) or the distribution of firm productivity (Smitkova, 2022). Our analysis is firmly grounded in the strand that links the aggregate saving rate to the distribution of permanent income through preferences for wealth (Grüning et al., 2015; Rannenberg et al., 2022; Kumhof et al., 2024). Our contribution lies in showing analytically through the lens of a tractable framework that cross-country differences in the permanent income distribution can generate current account imbalances. We also explicitly consider the role of financial frictions. Broer (2014) and De Ferra et al. (2021) illustrate how higher income inequality generated by income risk can induce current account deficits as opposed to surpluses, while Azzimonti et al. (2014) examines the role of income risk for public borrrowing. Reversing the direction of causality, another set of papers investigates how trade imbalances itself affect the income distribution (Kehoe et al., 2018; Dix-Carneiro and Traiberman, 2023; Liu et al., 2023).

A large body of literature studies the effects of inequality on interest rates, debt and more broadly secular stagnation in the context of a closed economy (Kumhof et al., 2015; Cairó and Sim, 2018; Rachel and Summers, 2019; Rannenberg, 2019; Straub, 2019; Mian et al., 2020, 2021a; Platzer and Peruffo, 2022). We extend these ideas to an open-economy setting and illustrate how income inequality not only lowers interest rates and increases debt, but also induces cross-border capital flows. Compared to the open-economy literature on secular stagnation (Eggertsson et al., 2016), we explicitly focus on the role of inequality in driving the dynamics of the external sector.

Finally, our theoretical framework connects to the literature emphasizing the role of financial integration for global capital flows (Caballero et al., 2008; Mendoza et al., 2009; Coeurdacier et al., 2015) and relatedly, the exorbitant privilege of the United States (Maggiori, 2017; Kekre and Lenel, 2021). We integrate some of these insights into our model and show how financial forces shape the configuration of global imbalances by mediating inequality-induced capital flows. We also illustrate that deep financial markets can offset the effects of inequality, as exemplified by the case of the United States.

2 Empirical analysis

The role of income inequality for global imbalances has not been settled by the empirical literature. In theory, income inequality can influence the current account through both saving and investment rates. A larger share of income accruing to the top of the distribution might spur investment by relaxing borrowing constraints for entrepreneurs or by improving expected returns to investment, or depress it if expectations around future profitability suffer from downward pressures to aggregate demand (Mirrlees, 1971; Pettis, 2014). Similarly, savings can increase due to a larger marginal propensity to save of the rich, or decrease due to consumption habits and relative income effects (Carroll, 1998; Dynan et al., 2004; Duesenberry et al., 1949; Bertrand and Morse, 2016). Establishing which forces dominate thus requires an econometric analysis of both channels affecting current account balances.

2.1 Data

Our empirical analysis draws on several data sources. For measures of income inequality, we rely on the World Inequality Database (WID). The WID provides a comprehensive range of indicators on income inequality across countries, including top shares, Gini indices, and other measures. Compared to other popular datasets, it combines national accounts and survey data with fiscal data sources in a systematic manner, allowing for comparisons across countries and over longer time periods. For parts of the analysis, we also use income inequality measures from the Global Repository of Income Dynamics (GRID), which provides metholodogically consistent estimates of income moments at the individual level using administrative data from several countries. While the GRID data are more granular than the WID, they are only available for a subset of mostly advanced economies and for a shorter time period. With regards to other macroeconomic variables, we primarily rely on the International Monetary Funds's (IMF) External Balance Assessment (EBA) dataset. We also include data from the OECD on national savings and investment rates and sectoral decompositions of the current account. Overall, our full panel dataset includes 52 countries, comprising 24 advanced and 28 emerging market economies, and spans the years 1986–2019. The large sample size allows us to capture external sector dynamics at a global level, along with potential heterogeneity across advanced and emerging economies. Appendix A.1 reports more details on the sample.

2.2 Empirical strategy

We base our empirical analysis on a variation of the EBA model developed by the IMF and described in Phillips et al. (2013). The baseline regression estimated by the IMF EBA employs the current account as a share of GDP as the dependent variable with a rich vector of covariates divided into three categories: (i) cyclical factors (estimated output gap, commodity terms-of-trade gap), (ii) fundamentals (lagged net foreign assets, lagged output per worker, 5-year-ahead forecasted real GDP growth, reserve currency status, population growth, old-age dependency ratio, share of prime-aged savers over total working age population, life expectancy of current prime-aged savers and its interaction with 20-year-aged old-age dependency ratio, institutional quality as proxied by the International Country Risk Guide, a combination of oil and natural gas balance over GDP, ratio of current extraction to estimated reserves), and (iii) policy variables (instrumented fiscal policy balance, lagged health spending, instrumented foreign exchange intervention interacted with the Quinn index of capital controls, private credit to GDP).

To analyse the relation between the current account and income inequality, we extend the EBA model with a measure of inequality. We also introduce country- and year-fixed effects to capture time-invariant country characteristics and time effects that are common across countries. In particular, we estimate the following regression:

$$ca_{it} = \alpha + \boldsymbol{\beta}\mathbf{X_{it}} + \gamma ineq_{it} + \delta_i + \psi_t + \epsilon_{it} \tag{1}$$

where ca_{it} denotes the current account balance over GDP for country i in year t, $\mathbf{X_{it}}$ refers to the vector of year-country-specific controls and δ_i and ψ_t denote country- and year-fixed effects, respectively. The rationale expressed by the IMF for not including country fixed effects δ_i is the risk of picking up persistent policy distortions. Such concern pertains to the realm of policy prescriptions, whereas the goal of our analysis is to understand from a positive perspective the marginal contribution of income inequality to current account balances. By exploiting within-country variation, we control for persistent factors at the country level, including protracted policy distortions as well as exchange rate systems, institutional arrangements, idiosyncratic measurement errors, to name a few. Finally, $ineq_{it}$ denotes our measure of income inequality, with γ being the coefficient of interest. The share of disposable income accruing to the Top 1 percent of the distribution constitutes our benchmark inequality variable, but across our analysis we consider several alternative definitions of income inequality.

The current account balance is by nature measured relative to other countries and is jointly determined by a country's own characteristics and foreign ones. To ensure consistency between the left- and right-hand-side of our regression, we therefore measure our independent variables relative to other countries, unless the variable is already measured in relative terms, such as the net foreign asset position. In particular, for each variable we compute a GDP-weighted world average and include the variable as the deviation from the world average into our regression.[3]

Given the nature of our data and empirical strategy, we do not claim the identification of a causal effect of income inequality on current accounts. Our aim is to capture as accurately as possible the relation between these variables by controlling for observable economic forces that are theoretically expected to affect the current account, while eliminating unobservable time-invariant determinants – hence the focus on within-country variation. We explore the causal effects of income inequality on current accounts through the lens of a structural model in Section 3.

2.3 Results

Table 1 reports the estimated coefficients from Equation 1 for various measures of income inequality. For expositional purposes, we only report the coefficient on income inequality and leave the remaining coefficient estimates for Appendix Table 8. Overall, we find a positive relation between income inequality and the current account balance. For the sample of advanced economies, the estimated coefficient is positive and statistically significant at the 1 percent level, independently of the specific measure of inequality (Columns 1–3). A one percentage point higher share of disposable income held by the Top 1 percent, our preferred measure, is associated with a 0.81 percentage point higher current account balance. To understand the quantitative implications of our estimates, it is useful to compare this estimate to the average change in the share of disposable income held by the Top 1 percent over the period 1986-2019. On average, this share changed by 2 percentage points across advanced economies, implying a change in the current account of 1.6 percentage points, or almost half of the average current

[3] Year-fixed effects are in principle not necessary given that all variables are expressed relative to a world average. We include them anyways to account for the fact that our sample does not cover all countries and that the global current account does not necessarily balance due to statistical discrepancies. Results are very similar without year-fixed effects.

account balance in absolute terms.

When including emerging economies in the sample, the coefficient on income inequality remains positive, although weaker in magnitude and less precisely estimated (Columns 4-6). We ascribe the difference in results between the full sample and the sample of advanced economies to structural features primarily affecting emerging markets: amongst others, the exposure to unobserved factors driving sudden swings in sentiment and capital flows which are not captured in our regression, the higher prevalence of measurement error in inequality indicators (Balestra et al., 2018), and the substantially lower degree of capital openness – as captured, for instance, by the Chinn-Ito index (Chinn and Ito, 2008). In addition, income inequality could also play a different role in the determination of current accounts at different stages of development. As a result, in what follows, we will focus our discussion on the more homogeneous sample of advanced economies, but also report results for the full sample for completeness.

Table 1: Current accounts and income inequality

	Advanced economies			All		
	Top 1%	Top 10%	Gini	Top 1%	Top 10%	Gini
Income inequality	0.808***	0.462***	0.404***	0.157*	0.097	0.176**
	(0.241)	(0.135)	(0.081)	(0.078)	(0.069)	(0.069)
R-squared	0.45	0.45	0.46	0.38	0.38	0.39
Observations	750	750	750	1480	1480	1480
Countries	24	24	24	52	52	52

Notes: This table reports the coefficient of disposable income inequality on the current account estimated in equation 1. Coefficients of other covariates are omitted from the regression table. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Income inequality explains a fairly large share of the variation in current accounts. Compared to a regression without inequality variables, the R-squared increases by 4 percentage points for the sample of advanced economies, or around 10 percent. Considering the large set of control variables and the inclusion of both country- and time-fixed effects, this points to a significant role of inequality beyond the impact of other, more traditional variables that are typically considered in the analysis of current accounts.

In Table 2, we investigate the role of top-end income inequality for current accounts by including the shares of disposable income held by the Top 0.1% and Top 0.01%. The coefficient estimates become larger as we move up the income distribution, suggesting that higher income segments play a more important role in the configuration of current accounts. For example, according to our estimates, a given percentage point increase in the Top 0.01% share implies an increase in the current account balance three times larger than if the same additional share of national income accrued to the Top 10%.

In Appendix A.2, we conduct several robustness checks. We show that our results also hold for alternative income concepts such as gross income, i.e. income before taxes and transfers (Table 9). They also remain unaffected if we include the domestic wage or profit share among the controls, pointing to separate roles for inequalities in personal and functional income (Table

Table 2: Current accounts and top-end income inequality

	Advanced economies		All	
	Top 0.1%	Top 0.01%	Top 0.1%	Top 0.01%
Income inequality	1.147***	1.410**	0.235	0.501*
	(0.368)	(0.529)	(0.144)	(0.277)
R-squared	0.43	0.42	0.38	0.38
Observations	750	750	1480	1480
Countries	24	24	52	52

Notes: This table reports the coefficient of disposable income inequality on the current account estimated in equation 1 for different measures of income concentration. Coefficients of other covariates are omitted from the regression table. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

10). We also experiment with using multi-year averages instead of annual data and lagged values of inequality, and obtain very similar results (Table 11). Applying the original EBA estimation method which relies on pooled GLS and panel-corrected standard errors decreases the precision of our estimates but does not impact their sign (Table 12). To detect the potential presence of structural breaks in the relationship between current accounts and domestic inequality, we perform rolling regressions and show that the estimated coefficients are positive over virtually the entire sample (Figure 7). Finally, we perform 'leave-one-out' analysis in which we re-estimate our main equation leaving out one country at a time to investigate the role of outliers and find similar estimates across all samples.

2.3.1 Channels

We now turn to exploring potential channels that underlie the relation between income inequality and current accounts. To this end, we quantify the contribution of the different components of the current account balance to our results.

In a first step, we decompose the current account into domestic savings and investment, and analyse them separately. In particular, we re-estimate Equation 1, but replace the current account by either the gross savings or gross investment rate. Table 3 reports the results of this exercise. We find a positive relation between income inequality and savings (Columns 1 and 3). A one percentage point increase in the share of income held by the Top 1 percent increases the saving rate by 0.85 percentage points in our sample of advanced economies. This coefficient is slightly larger than the one estimated in the current account regression, but is not directly comparable as we lose a few observations due to the availability of data on saving and investment rates.

Next, we repeat the analysis for investment rates. For current account balances to be positively related to income inequality, we expect domestic investment to increase less with inequality than savings. Columns 2 and 4 of Table 3 lend support to this hypothesis. For advanced economies, investment and inequality move in opposite directions, although the coefficient on investment is small and statistically insignificant. When emerging markets are added to the picture, the estimated relationship between inequality and investment turns positive, but not enough to offset the corresponding increase in savings. This differential effect of inequality on investment in emerging economies can be at least partly explained by their substantially lower degree of capital openness, which arguably constrains the possibility for domestic savings to be diverted elsewhere. The Chinn-Ito index of capital account openness, which ranges from 0 (no capital openness) to 1 (full capital openness), is on average 0.40 for emerging economies compared to 0.91 for advanced economies. Taken together, the empirical evidence suggests that the link between inequality and current accounts is largely driven by a stronger response from savings than investment, especially where capital is allowed to flow more freely.

Table 3: Income inequality, domestic savings and investment

	Advanced economies		All	
	Savings	Investment	Savings	Investment
Income inequality	0.851***	-0.191	0.296**	0.222**
	(0.261)	(0.161)	(0.114)	(0.093)
R-squared	0.66	0.64	0.38	0.50
Observations	667	667	1421	1421
Countries	24	24	52	52

Notes: This table reports the coefficient of disposable income inequality, measured as the share of disposable income held by the Top 1 percent, on the the saving rate and investment rate estimated in equation 1. The savings rate is defined as gross national savings in percent of GDP, the investment rate as gross capital formation in percent of GDP. Coefficients of other covariates are omitted from the regression table. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Second, we perform a sectoral decomposition of the current account and analyse private (household and corporate) and public net lending separately. The coefficient estimates in Columns 1 and 3 of Table 4 suggest that income inequality primarily affects the current account through the private sector. Private net lending in advanced economy is strongly correlated with income inequality while the coefficient on public net lending is substantially smaller and statistically insignificant. We interpret this as consistent with inequality operating on current accounts mainly through decentralized saving-investment decisions rather than via public policies (Azzimonti et al., 2014). Adding emerging economies to the picture dilutes, but does not dissolve, the spread between the two sources of net lending.

2.3.2 Income inequality: Risk vs permanent inequality

The extent of measured income inequality can change over time due to different underlying trends. Increases in income risk, i.e. the stochastic component of income, and increases in permanent income inequality, i.e its long-term, predictable component can both lead to higher observed inequality. To inform our theoretical framework, we thus study whether the co-movement between measured income inequality and current account balances is mostly due to changes in income risk or the distribution of permanent income.

Distinguishing permanent from transitory, stochastic changes in income requires longitudinal

Table 4: Income inequality and sectoral current accounts

	Advanced economies		All	
	Private	Public	Private	Public
Income inequality	0.834***	0.041	0.324**	0.164
	(0.246)	(0.197)	(0.154)	(0.097)
R-squared	0.57	0.62	0.52	0.57
Observations	606	606	764	764
Countries	23	23	32	32

Notes: This table reports the coefficient of disposable income inequality, measured as the share of disposable income held by the Top 1 percent, on the private and public net lending rate estimated in equation 1. Coefficients of other covariates are omitted from the regression table. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

data at the household level. For this reason, we rely on the Global Repository of Income Dynamics (GRID) dataset, which provides methodologically consistent estimates of income moments at the individual level using administrative data from several countries over the last decades (Guvenen et al., 2022). These moments allows us to seperately identify the variances of the permanent and transitory components of income under different specifications of the income process.

We consider two income processes, each with a permanent and a transitory component. In the first income process, the permanent component is assigned at the beginning of the lifecycle and does not change afterwards, while the transitory component is i.i.d. and normally distributed. The second income process considered is the one studied in Blundell et al. (2008) where the permanent component is modelled as a random walk and the transitory component follows an MA(1)-process. Appendix A.3 outlines the income processes in more detail and describes the derivation of each measure.

With the caveat in mind that the sample size is significantly smaller due to data availability, Table 5 shows that current account balances tend to be higher in countries where the standard deviation of *permanent* income is larger. In column one, we re-estimate Equation 1 using the standard deviation of three-year averages of income, a simple proxy of permanent income, as our measure of income inequality. We find that a unit increase in the standard deviation of permanent income is associated with a 0.36 pp increase in the current account balance. In columns 2-5, we instead regress the current account balance on our more sophisticated measures of permanent and transitory income inequality jointly. Irrespectively of the underlying income process, the coefficient on permanent income inequality is always positive and statistically significant at the five percent level. Transitory income inequality, instead, is estimated to lower the current account when the permanent income component is assumed to be time-invariant (Column 3) and to not materially affect the current account when the permanent component is a random walk (Column 5).

Table 5: Permanent income inequality and the current account

	(1)	(2)	(3)	(4)	(5)
SD 3-year average income	0.357***				
	(0.091)				
SD permanent income		0.122**	0.291**		
		(0.054)	(0.107)		
SD transitory income			-0.270*		
			(0.134)		
SD permanent income (BPP)				0.309***	0.309***
				(0.068)	(0.067)
SD transitory income (BPP)					-0.027
					(0.075)
R-squared	0.69	0.68	0.69	0.72	0.72
Observations	268	272	272	235	235
Countries	12	12	12	11	11

Notes: This table reports the coefficient of the standard deviation of measures of permanent and transitory income on the current account estimated in equation 1. Details on the construction of the specific measures employed can be found in the text and Appendix A.3. Coefficients of other covariates are omitted from the regression table. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

2.3.3 Discussion

The reported evidence points cohesively towards a positive co-movement between current accounts and disposable income inequality. The results are robust to various definitions of income inequality, sample splits across both countries and time, different estimation methods and controlling for the distribution of functional income. Nevertheless, our findings stand, at first glance, in stark contrast to the existing evidence on the link between income inequality and current accounts. Previous studies find that rising income inequality induces current account deficits while we find that it spurs surpluses (Behringer and Van Treeck, 2018; De Ferra et al., 2021; Kumhof et al., 2024). We believe that these differences can primarily be attributed to our focus on within-country variation in income inequality. Our approach allows us to control for unobserved, time-invariant country characteristics which turn out to be critical for the configuration of current accounts. Methodological differences asides, our conceptual framework is also distinct, as we attempt to identify the effect of permanent income inequality specifically, while previous studies focused on the effects of overall income inequality or income risk. As such, we perceive our results as complementary to the existing evidence. In Appendix B we discuss in detail differences with the aforementioned papers, attempt to reconcile the evidence and further motivate our approach.

Analysing the underlying channels, we find that the co-movement between income inequality and current accounts originates from a strong association between the income distribution and the aggregate savings rate, especially the private one. The empirical literature has extensively documented a positive relationship between measures of permanent income and savings at the individual level (Carroll, 1998; Dynan et al., 2004; Fagereng et al., 2019; Straub, 2019; Ozkan et al., 2023). Our results suggest a correspondence between micro-evidence and macroeconomic aggregates: when the share of national income accruing to high-income households increases, the domestic saving rate follows suit, holding other determinants fixed. Furthermore, disentangling permanent differences in income from transitory ones, we show that only the former is meaningfully correlated with income inequality. This indicates that heterogeneity in savings behaviour does not primarily arise from differential exposure to income risk (i.e., precautionary motives), but rather from structural differences in savings behaviour across the distribution of permanent income. The next section formalizes this insight.

A possible concern could arise from reverse causality if current account balances have a positive effect on income inequality. Much of the existing literature that studies this direction focuses on the relationship between the level of trade and income inequality. Borusyak and Jaravel (2022) find that trade only increases vertical, but not horizontal earnings inequality. Most of the variation in response to an increase in trade exposure takes place within, not across, income quantiles, leaving the shape of the income distribution largely unchanged. Similarly, Galle et al. (2023) find strong heterogeneity on the welfare effect of trade shocks, but little impact on income inequality. Adao et al. (2022) analyse the distributional consequences of trade in Ecuador, finding that export exposure tends to favour the middle class, whereas import exposure mostly benefits the rich, with an overall positive association between trade and inequality. Concerning the relationship between trade *imbalances* and inequality, Borjas and Ramey (1995) document a strong positive correlation between the US deficit in durable goods and the college wage premium, and Liu et al. (2023) find that capital inflows, i.e., current account deficits, increase income inequality. Both results suggest a negative co-movement between current accounts and income inequality, which would attenuate our estimates.[4]

3 Theoretical framework

This section develops a parsimonious framework relating income inequality and current accounts. We first show how higher income inequality induces lower interest rates in a closed economy. We then study an open-economy setting and illustrate how cross-country differences in interest rates under autarky lead to capital flows from unequal to equal countries.

Environment. There are two countries, Equal (E) and Unequal (U). Each country is a deterministic, infinite-horizon endowment economy, populated by two groups of households, representing the Top 1 percent and the Bottom 99 percent of the income distribution, respectively. Each household receives a fixed endowment per period, with a total endowment of Y, normalized to one, in each economy. The countries are identical except for the distribution of the endowment across household groups.

Households make a consumption-savings decision each period. Saving and borrowing is possible via debt contracts which can be traded between households within and across countries. In

[4] Dix-Carneiro and Traiberman (2023), instead, find an ambiguous relation between trade imbalances and inequality using a model with capital-skill complementarity and worker reallocation across sectors.

order to isolate the effect of income inequality on current accounts, we abstract from uncertainty and differentiated endowments.

Household problem. We describe the household problem from the perspective of the unequal country to simplify notation. Households are indexed by i, where $i = \{t, b\}$ denotes the household type, so either the Top 1 percent with mass $\mu^t = 0.01$, or the Bottom 99 percent with mass $\mu^b = 0.99$. Each household maximizes utility over consumption and wealth, choosing how much to consume and how much to lend or borrow each period. Households can lend and borrow domestically or abroad, yielding the following maximization problem for household i in country U:

$$\max_{c^i, d^{i,U}_{t+1}, d^{i,E}_{t+1}} \sum_{t=0}^{\infty} \beta^t \left(u(c^i_t) + v(d^i_{t+1})\right) \tag{2}$$

$$\text{s.t.} \quad c^i_t + d^{i,U}_{t+1} + d^{i,E}_{t+1} = y^i_t + (1 + r_{U,t})d^{i,U}_t + (1 + r_{E,t})d^{i,E}_t \tag{3}$$

where $d^i_t = \sum_k d^{i,k}_t$ denotes the sum of domestic and foreign debt holdings. The country in which the debt was issued is indexed by $k = \{E, U\}$. Positive values of d^i_t denote lending while negative values denote borrowing. The resources of household i are given by the per-capita endowment y^i_t and domestic and foreign claims from the previous period remunerated at interest rate $r_{U,t}$ and $r_{E,t}$, respectively. The per-capita endowment is determined by the share of the aggregate endowment held by each household type, i.e. $y^i = \frac{\omega^i Y}{\mu^i}$. We omit the time subscript due to the assumption of fixed endowments. Borrowing is allowed up to a borrowing limit:

$$r_{t+1} d^i_{t+1} \geq -\phi y^i \tag{4}$$

where ϕ denotes the share of endowment that can be borrowed against. Similarly to Caballero et al. (2008) and Mian et al. (2021a), this parameter allows us to capture the role of financial markets in a parsimonious way while remaining agnostic on the underlying friction.

Preferences. Households derive utility from consumption and wealth, captured by $u(c)$ and $v(d)$. While wealth might enter agents' utility for various reasons, e.g. bequests, out-of-pocket medical expenses in old age, utility over status or inter vivos transfers, we remain agnostic on the specific interpretation. Preferences for wealth are a common tool in the literature on inequality to introduce non-homothetic saving behaviour and thus generate the empirically documented differences in savings along the income distribution (Kumhof et al., 2015; Straub, 2019; Mian et al., 2021a; Platzer and Peruffo, 2022). Benhabib et al. (2019) and Gaillard et al. (2023) show that they are necessary to match the right tail of the wealth distribution through a realistic degree of concavity of consumption in wealth, but preferences for wealth have also been used in other contexts such as matching the portfolio allocation of households (Carroll, 2000) and intertemporal MPCs (Auclert et al., 2018), resolving anomalies in New-Keynesian models (Michaillat and Saez, 2021) and explaining the existence of rational bubbles (Michau et al., 2023).[5]

The homotheticity of preferences is determined by the choice of $v(d)$ relative to $u(c)$. If $\frac{v(d)}{u(c)}$ is homogenous of degree zero, preferences are homothetic. Any other choice implies non-homotheticity. Note that with non-homothetic preferences, allocations are not scale-invariant. For this reason, we define preferences for wealth relative to the total endowment of the economy, which is 1, hence $v(\frac{d}{Y}) = v(d)$.

In the remainder of this section, we assume specific functional forms for the utilities from consumption and wealth that are consistent with debt being a luxury good and allow us to derive analytical solutions. In particular,

$$u(c_t^i) = \log\big(c_t^i\big) \tag{5}$$

$$v(d_t^i) = \psi \log\big(\kappa + d_t^i\big) \tag{6}$$

The parameter ψ governs the strength of the wealth motive, whereas $\kappa > 0$ is a Stone-Geary shifter determining the extent of non-homotheticity in households' preferences – the higher κ, the more wealth holdings represent a luxury good, whereas if $\kappa = 0$, preferences are homothetic and top and bottom earners wish to save and consume the same shares of endowment. Without loss of generality, we assume $\kappa = 1$. It is important to emphasize that our results do not hinge on these specific functional forms. In Appendix C, we show that the main features of our model are unchanged if we impose CRRA instead of logarithmic preferences.

Market clearing. Asset markets clear in both U and E and debt is in zero net supply:

$$\sum_i \mu^i \sum_j d_{j,t}^{i,U} = 0, \quad \sum_i \mu^i \sum_j d_{j,t}^{i,E} = 0 \tag{7}$$

where $j = \{E, U\}$ denotes the country in which the debt is held. For example, $d_{U,t}^{i,E}$ denotes per-capita debt issued in E held by agent i in U. The debt market clearing conditions can alternatively be interpreted as stating that the global net foreign asset position (NFA) is zero. The net foreign asset position and current account in country j are then given by:

$$NFA_{j,t} = \sum_i \mu^i d_{j,t}^i = \sum_i \mu^i (d_{j,t}^{i,E} + d_{j,t}^{i,U}), \quad CA_{j,t} = NFA_{j,t} - NFA_{j,t-1} \tag{8}$$

Good markets clear globally:

$$\sum_i \mu^i \sum_j c_{j,t}^i = \sum_j Y^j \tag{9}$$

3.1 Financial autarky

We begin by characterizing the economy under financial autarky in which households can only trade debt domestically. This is equivalent to solving the closed-economy version of the model

[5]In the context of overlapping generations models, Lockwood (2018) and De Nardi et al. (2021) argue for including luxury bequest motives to match the savings behaviour of retirees.

for each country separately. For readability, we drop the country-specific subscript j. The type-specific Euler equation is given by the following expression:

$$\frac{1}{c_t^i} \geq \frac{(1+r_{t+1})\beta}{c_{t+1}^i} + \frac{\psi}{1+d_{t+1}^i}$$

The equation does not necessarily hold with equality due to the presence of the borrowing constraint. Combining the Euler equation with the budget constraint yields the following expression in steady state:

$$1 \geq (1+r)\beta + \frac{\psi(y^i + rd^i)}{1+d^i} \tag{10}$$

Differently from a model without preferences for wealth, the Euler equation contains an additional term: the ratio of marginal utility of wealth relative to consumption. The interest rate is not only a function of the discount factor β, but also of the income share of household i. From Equation (10), we can back out the expression for the optimal level of debt:

$$d^i \geq \frac{\psi y^i - [1-\beta(1+r)]}{1-\beta(1+r)-\psi r} \tag{11}$$

where we again observe that the degree of income inequality affects optimal debt holdings.

We now turn to solving for the equilibra in this economy. Given our focus on capital flows, we restrict our attention to equilibria in which debt is traded and the interest rate is non-negative.[6] This requires restricting the preference for wealth parameter to the range $1-2\beta < \psi < 1-\beta$ – where the first leg of the inequality trivially holds if $\beta \geq 1/2$ (see Appendix C for the derivations). Intuitively, this condition ensures that the strength of the wealth motive is large enough for positive wealth holdings to be optimal for some level of endowment, but not as strong as to induce the unconstrained equilibrium interest rate to fall into negative territory.

Given that the optimal level of debt is increasing in income, the high-endowment type is the lender while the low-endowment type is the borrower (i.e., $d^t > 0$ and $d^b < 0$).[7] Combining the type-specific equations for optimal debt holdings, which correspond to the supply and the demand of debt, yields the equilibrium interest rate in this economy. While the debt supply curve of savers is always given by Equation 11 holding with equality, we can distinguish between two cases for the debt demand by borrowers. Depending on the restrictiveness of the borrowing constraint, debt demand is given either by the Euler equation of the borrowers or by the borrowing limit itself. From Equation (4), the latter corresponds to:

$$d^b = -\phi \frac{y^b}{r} \tag{12}$$

Similarly to the model in Mian et al. (2021a), we will first focus on the case in which low-income households are at the borrowing constraint and discuss the alternative scenario afterwards.[8]

[6]The latter is required due to the specification of the borrowing constraint.

[7]This is consistent with recent empirical evidence provided in Mian et al. (2020, 2021a) who show that the secular rise in savings by the top 1 percent has been accompanied by dissaving of the bottom 90 percent.

[8]Note that in Mian et al. (2021a), the borrowing constraint is always binding due to the way wealth preferences

Specifically,

Lemma 1. *Low-income households are constrained whenever their income per capita y^b is below a threshold $\underline{y}^b$, defined as:*

$$\underline{y}^b = \frac{(1-\beta-\psi)}{(1-\phi)(1-\beta-\psi)+\phi\beta} > 0 \tag{13}$$

Proof. See Appendix C. □

We can now characterize the steady-state properties of our model in autarky, starting from the (dis-)saving schedule. Given our assumptions on the strength of the wealth motive ψ and Lemma 1, the debt supply curve is given by the Euler equation of the Top 1 percent while the debt demand curve is given by the borrowing constraint of the Bottom 99 percent. This yields the following Lemma.

Lemma 2. *Debt demand and supply are, respectively, decreasing and increasing in the interest rate.*

$$\frac{\partial d^b}{\partial r} < 0, \quad \frac{\partial d^t}{\partial r} > 0$$

Proof. See Appendix C.3. □

The economy can be represented by the debt supply-demand diagram in Figure 1 in which the aggregate debt supply (S) and aggregate demand (D) curves of U and E are represented by the blue and red lines, respectively. They are pinned down by:

$$r = \frac{(1-\beta)(S+\mu^t)-\psi\omega^t}{\beta\mu^t+(\beta+\psi)S}, \quad r = \frac{\phi\omega^b}{D}$$

For both demand and supply, it is straightforward to appreciate the role of income inequality in shifting the respective curves and, as a consequence, the equilibrium interest rate. Figure 1 also provides a visual proof of our next result.

Proposition 1. *The closed-economy equilibrium interest rate is decreasing in income inequality (defined as the share of endowment accruing to the Top 1 percent):*

$$\frac{\partial r^*}{\partial \omega^t} < 0$$

Proof. See Appendix C.3. □

The key result under autarky is that the interest rate is decreasing in the level of income inequality.[9] Figure 1 shows that higher inequality shifts the debt supply curve outwards as

are specified. We introduce non-homothetic savings behaviour through the Stone-Geary shifter κ while they impose a different intertemporal elasticity of substitution of consumption and wealth.

[9]The non-negative solution for the interest rate is given by:

$$r^* = \frac{-\xi+\sqrt{\xi^2+4\beta(1-\beta)\mu^t\phi\omega^b}}{2\beta\mu^t}$$

where $\xi = (\beta+\psi)\phi\omega^b+\psi\omega^t-(1-\beta)\mu^t$.

savers are willing to hold more debt for a given interest rate due to the non-homotheticity of preferences. At the same time, higher inequality also lowers debt demand due to a tighter borrowing constraint for borrowers. Jointly, these forces lower the interest rate. The effect of inequality on the level of debt, instead, is ambiguous and depends on the curvature of demand and supply.

To derive this result, we have assumed that low-income households are at the borrowing constraint, in accordance with Lemma 1. In an economy in which low-income households are unconstrained, instead, the interest rate corresponds to $r = \frac{1-\beta-\psi}{\beta}$ and is therefore independent of the level of inequality. While, individually, both the demand and the supply for debt are affected by inequality, these forces have no effect on the interest rate in equilibrium as any increase in debt supply by savers is offset by an equivalent increase in debt demand by borrowers. However, for any wealth motive ψ compatible with our environment, i.e. an equilibrium with debt traded at a non-negative interest rate, there will always be a threshold level of income inequality beyond which the borrower is constrained, such that debt demand is pinned down by the borrowing constraint. The relationship between income inequality and the interest rate is therefore non-linear, but unambigously negative. Figure 8 in Appendix C illustrates this connection.

The idea that income inequality affects interest rates is well established, especially in the context of the literature on secular stagnation. Mian et al. (2021a) illustrates theoretically how higher levels of inequality depress the interest rate in an environment with indebted demand. Platzer and Peruffo (2022) shows in a quantitative exercise that around one third of the decrease in interest rates over the last decades is explained by increases in inequality. We introduce this result to serve as a building block for our open-economy analysis in the next section.

3.2 Financial integration

We now allow households in E and U to trade both goods and debt across countries. Under full financial integration, capital flows freely and asset prices are equalized across countries, i.e. $r_U = r_E = r$. As before, we consider a scenario in which the Bottom 99 percent, now in both countries, are borrowing-constrained. In this case, debt supply is given by the Top 1 percent in E and U, while debt demand is given by the Bottom 99 percent. In steady-state, the former can be derived from the Euler equation of savers in each country:

$$1 = \beta(1+r) + \frac{\psi(y_j^t + rd_j^t)}{1+d_j^t} \quad \text{for} \quad j \in \{E, U\} \tag{14}$$

As with debt supply, aggregate debt demand is given by the sum of individual debt demands by the Bottom 99 percent in each country:

$$d = \sum_j d_j^b = -\sum_j \frac{\phi y_j^b}{r}$$

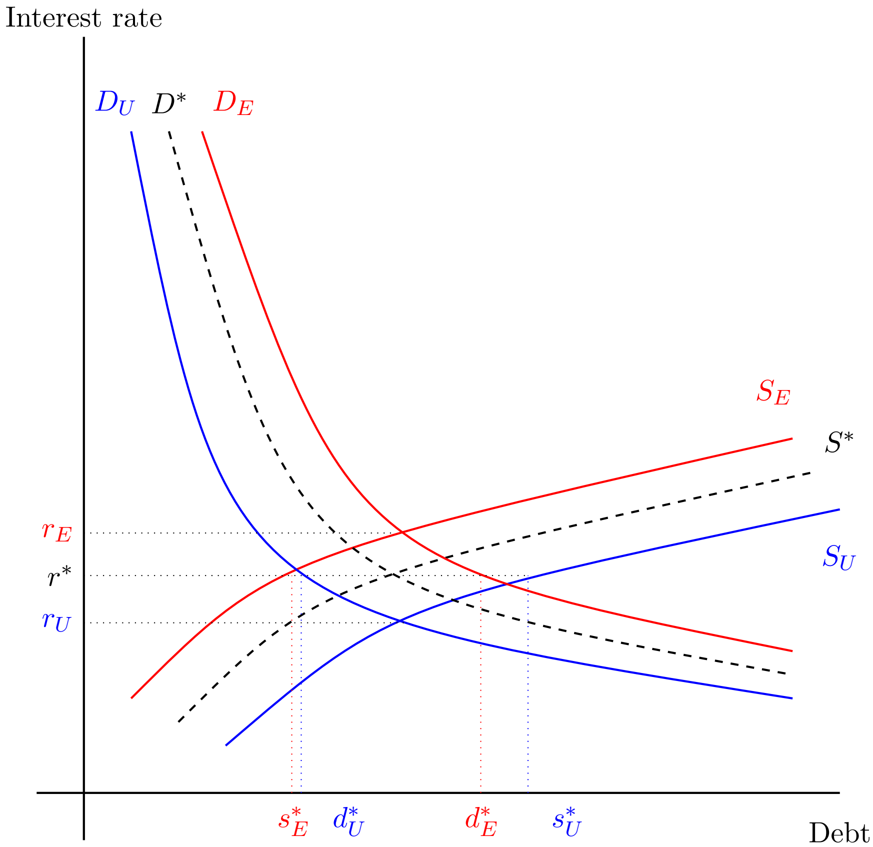


Figure 1: Debt supply and demand. Equilibrium interest rates and debt levels under autarky and financial integration.

We again combine debt supply with debt demand to find the equilibrium interest rate and debt level. This yields the main theoretical result of this paper, as described in the next proposition.

Proposition 2. *All else equal, the unequal country has a positive and the equal country a negative net foreign asset position.*

$$NFA_U^* > 0, \quad NFA_E^* < 0 \quad \textit{iff} \quad \omega_U^t > \omega_E^t$$

Proof. See Appendix C.3. □

Financial integration yields a positive net foreign asset position in U, mirrored by a negative net foreign asset position in E. To see why, it is helpful to draw the comparison to the equilibrium under autarky. Without capital flows, the interest rate in U is lower than the interest rate in E. Once capital is allowed to flow freely, the international interest rate r_W stabilizes at a level that is between the autarkic interest rates in U and E (Figure 1). Because the interest rate is now higher for savers in U than under autarky, they supply more debt. The savers in E, in contrast, save less because interest rates are now relatively lower. On the demand side, borrowers in E can now absorb more debt due to a relaxation of the borrowing constraint, while borrowers in

U face a tighter borrowing constraint. This translates into a positive NFA in U and a negative NFA in E in equilibrium.

While in steady-state the current account is zero by definition, during the transition from autarky to financial integration, U runs a current account surplus and E a current account deficit, since $r_E > r_W > r_U$. We can analytically characterize each country's current account, by defining the latter as the change in aggregate debt flows across the two steady states:

$$CA_j = \mu^t \Delta d_{ij}^t + \mu^b \Delta d_{ij}^b$$

Substituting from our previous expressions, and denoting by r_j the equilibrium rate prevailing in country j under autarky:

$$CA_j = \mu^t \left(\frac{\psi y_j^t - [1 - \beta(1 + r_W)]}{1 - \beta(1 + r_W) - \psi r_W} - \frac{\psi y_j^t - [1 - \beta(1 + r_j)]}{1 - \beta(1 + r_j) - \psi r_j} \right) + \mu^b \left(-\frac{\phi y_j^b}{r_W} + \frac{\phi y_j^b}{r_j} \right) \tag{15}$$

This expression allows us to analyze how global imbalances deteriorate or reverse, compared to their baseline level, in response to changes in the structural parameters characterizing the two economies in our environment.

3.3 Comparative statics

In this section, we analyze the role of income inequality and financial constraints for international capital flows. In particular, we perform a comparative statics exercise and characterize analytically the response of debt flows to changes in the relative level of income inequality (y_j^t) and borrowing frictions (ϕ_j) across countries. To make the notation lighter, we rewrite the share of endowment of the rich in country j as $\omega_j^t \equiv \omega^j$, and the share of the rich in the total population as $\mu^t \equiv \mu$.

Higher income inequality dispersion. We first study a scenario in which the unequal country U is more unequal: the share of endowment of the rich in U moves from ω_1^U to ω_2^U, where $\omega_2^U > \omega_1^U$. As a consequence, it follows from Proposition 1 that the interest rate under autarky in U is now lower, $r_U^2 < r_U^1$, and so is the interest rate under financial integration as a consequence, $r_W^2 < r_W^1$. To illustrate the implications of this change for external positions, we use the expression for the current account of E in Equation 15.

$$\begin{aligned} CA_E &= NFA_E(\omega_2^U) - NFA_E(\omega_1^U) \\ &= \frac{\psi \omega_E - \mu[1 - \beta(1 + r_W^2)]}{1 - \beta - (\beta + \psi) r_W^2} - \frac{\psi \omega_E - \mu[1 - \beta(1 + r_W^1)]}{1 - \beta - (\beta + \psi) r_W^1} + \frac{\phi(1 - \omega^E)(r_W^2 - r_W^1)}{r_W^1 r_W^2} \end{aligned}$$

Given Lemma 2 and $r_W^2 < r_W^1$, this equation is always negative, implying that current account imbalances are stronger in the presence of higher endowment inequality dispersion. In E, where agents' have unchanged endowments but are now faced with a lower interest rate, savings decrease and the demand for debt moves upwards, amplifying the original deficit. The same result would apply to the case in which inequality dispersion was attributed to lower income inequality in E: a relatively higher global interest rate would simultaneously stimulate debt supply and dampen debt demand in U, giving rise to a larger current account surplus in U.

The left panel of Figure 2 depicts the direction of capital flows following an increase in inequality in U. Higher inequality dispersion shifts downwards both debt supply (from S_U^1 to S_U^2, due to a stronger preference for wealth) and debt demand (from D_U^1 to D_U^2, through a decrease in pledgeable endowment). The resulting downward pressure on the international interest rate exacerbates the pre-existing levels of imbalances, as a smaller excess supply of debt in U is matched by a much larger demand for debt in E.

Asymmetric financial development. Next, we study a scenario in which the strength of the borrowing constraint differs across countries. In particular, we focus on the case in which the unequal country has a looser borrowing constraint, i.e. $\phi_U > \phi_E$. A loosening of the borrowing constraint increases debt demand, thereby raising the equilibrium interest rate.

Lemma 3. *The closed-economy equilibrium interest rate is increasing in the share of pleadgeable endowment:*

$$\frac{\partial r^*}{\partial \phi} > 0$$

Proof. See Appendix C.3. □

This results in the following proposition:

Proposition 3. *There exists a level of the borrowing constraint $\phi_U > \phi_E$ under which U's net foreign asset position is negative.*

$$NFA_U < 0 \quad \text{if} \quad \phi_U > \tilde{\phi} > \phi_E$$
$$\text{where} \quad \tilde{\phi} \quad \text{s.t.} \quad r_U(\tilde{\phi}) = r_E(\phi_E)$$

Proof. Follows from Lemma 2 and 3. □

If domestic credit in U is liberalized to such extent that its autarkic interest rate lies above the autarkic interest rate in E, U has a negative NFA under the financially integrated steady-state, despite higher endowment inequality, as borrowing upon trade opening becomes cheaper and the return to lending lower. Furthermore, independently from the sign of the final NFA position, an asymmetric liberalization in U under financial integration will lead to a current account *deficit*. As shown by the right panel of Figure 2, the upward shift in country U's debt demand curve increases the equilibrium interest rate. For agents in E, this results in lower debt demand and higher debt supply, hence in capital outflows, absorbed by the initial increased demand by poor households in U. Compared to the baseline scenario, the flow of imbalances *reverses*.

The role granted to financial markets can therefore provide one possible explanation for the experience of the United States over the last decades. Despite rising levels of income inequality, the US has run persistent current accounts deficits. Through its deep and liquid financial

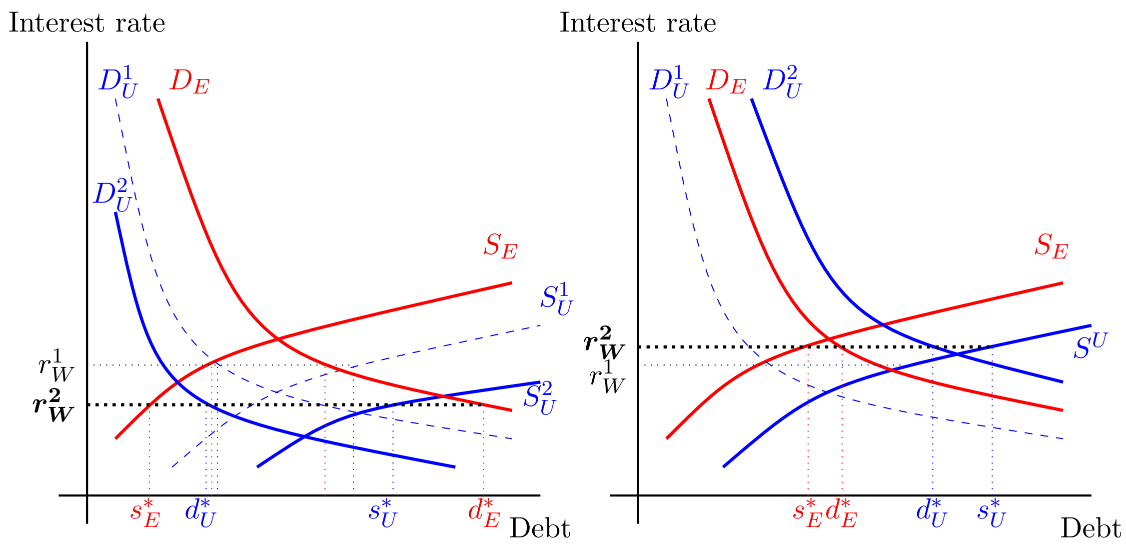


Figure 2: Comparative statics. Left panel: increase in income inequality dispersion (i.e., $y_U^t \uparrow$). Right panel: larger share of pleadgeable endowment in U (i.e., $\phi_U > \phi_E$).

markets, it has accomodated the influx of overseas savings, especially from countries where lower levels of inequality have coexisted with less developed financial institutions.

4 Quantitative model

In this section, we extend our theoretical framework in several directions for a quantitative analysis. First, we depart from the simplifying two-household setting and introduce richer *ex-post* household heterogeneity through the addition of uninsurable, idiosyncratic income risk. This generates an additional source of income inequality and maps more closely into our empirical analysis. In particular, it allows us to causally determine and quantify the relative importance of permanent income inequality versus income risk for current accounts. Second, we introduce a production sector to study the joint response of savings *and* investment to changes in the income distribution. The combination of these elements lends itself more naturally to the study of transition dynamics across steady states, given the presence of realistic feedback effects across prices, distributions, and expectations. Analyzing the behavior of savings-investment imbalances out of steady-state is key to provide a clearer theoretical counterpart to our empirical findings.

4.1 Environment

Income process. Each household i in country j supplies one unit of labor inelastically. Labor income depends on the wage rate w_{jt} and households' labour productivity, which is given by a permanent and a transitory component.

$$y_{ijt} = w_{jt} s_{ij} z_{ijt} \tag{16}$$

The permanent component s_{ij} is drawn from from a three-point distribution which represents the *Bottom*, *Middle*, and *Top* of the income distribution, with cutoffs at the 90th and 99th percentiles. The transitory income component is stochastic and follows an AR(1) process with persistence ρ_z and innovation variance $\sigma_{z_{ij}} \sim N(0, \sigma_{z_j})$. As indicated by the subindex j, both the unconditional distribution of permanent and transitory income are allowed to differ across countries. However, we assume that aggregate labour productivity is identical across countries to isolate the distributional effects.

Ideally, we would specify the same income process that we used in Section 2.3.2 of the empirical analysis to decompose income inequality into a permanent and a transitory component. A specification with permanent income shocks and a transitory component that follows an MA(1)-process comes, however, at additional computational cost. Due to our preference structure, we cannot reduce the dimensionality of the problem by normalizing by permanent income and shocks to permanent income yield a non-stationary distribution of households.

Households. To simplify notation, we present the household problem from the perspective of an economy with perfect capital mobility in which the distinction between domestic and foreign assets is irrelevant. As before, households face an infinite horizon and have preferences over consumption and wealth:

$$u(c_{ijt}) = \frac{c_{ijt}^{1-\gamma}}{1-\gamma} \tag{17}$$

$$v(a_{ijt+1}) = \psi \frac{(\kappa + a_{ijt+1})^{1-\gamma}}{1-\gamma} \tag{18}$$

where a now denotes assets. Compared to the stylized theoretical framework, we depart from using d to denote wealth to make clear that households in this economy save by supplying capital to firms instead of lending to each other. The household's dynamic optimization problem can be rewritten recursively as:

$$V(a_{ij}, s_{ij}, z_{ij}) = \max_{c_{ij}, a'_{ij}} u(c_{ij}) + v(a'_{ij}) + \beta E_{z'_{ij}||z_{ij}} V(a'_{ij}, s_{ij}, z'_{ij}) \tag{19}$$

such that

$$c_{ij} = y_{ij} + (1 + r_j)a_{ij} - a'_{ij}$$
$$a'_{ij} \geq -\phi_j f(y_{ij})$$

As indicated by the expectation operator, households now face uncertainy about their income. They are subject to two constraints, a budget and a borrowing constraint. The borrowing limit is income-dependent and is allowed to vary across countries.

Firms. We assume the presence of a representative firm in each economy. Under the assumption of no labour mobility and full capital mobility across countries, each firm hires labour domestically and rents capital domestically and abroad. It produces output according to a standard Cobb-Douglas technology:

$$Y_{jt} = A_{jt} K_{jt}^{\alpha} L_{jt}^{1-\alpha} \tag{20}$$

Each production factor is paid its marginal product, where the respective prices are determined in equilibrium.

Market clearing. The labour market clears in each country separately:

$$L_{jt} = L_t = \sum_i \lambda(s_{ij}, z_{ijt}) s_{ij} z_{ijt} \tag{21}$$

where $\lambda(s_{ij}, z_{ijt})$ denotes the unconditional distribution of permanent and transitory labour productivity. Aggregate labour is assumed to be identical across countries. Capital markets clear across both countries:

$$\sum_j K_{jt} = \sum_{ij} \tilde{\lambda}(s_{ij}, z_{ijt}, a_{ijt}) g(s_{ij}, z_{ijt}, a_{ijt}) \tag{22}$$

where $\tilde{\lambda}(s_{ij}, z_{ijt}, a_{ijt})$ denotes the joint distribution of labour productivity and assets and $g(s_{ij}, z_{ijt}, a_{ijt})$ denotes the optimal savings choice of a household in a given state.

Equilibrium. A stationary equilibrium in this environment is given by the policy functions $g_j(s, z, a)$, probability distributions $\tilde{\lambda}_j(s, z, a)$ and factor prices r and w such that households and firms optimize and labour and capital markets clear.

4.2 Calibration

Our calibration strategy is guided by the aim of comparing two identical economies which only differ in the degree of permanent income inequality. Instead of targeting a specific country or time period, we consider the entire cross-section of countries during our sample period 1986-2019 and interpret a country at the 25th percentile of the disposable income inequality distribution as Equal and a country at the 75th percentile as Unequal. Based on this initial calibration, we then successively introduce additional layers of heterogeneity to understand how shifts in various parameters affect the configuration of current account imbalances.

The calibration exercise consists of two parts. We first calibrate a set of parameters outside the model and then calibrate the remaining parameters internally. Table 6 reports the calibration results.

We choose a standard value for the elasticity of intertemporal substitution of consumption and set $\gamma = 2$. We specify the income-dependent borrowing constraint in terms of permanent income and allow households to borrow up to two months of permanent income scaled by the wage rate, based on the estimates in Kaplan and Violante (2014). On the production side, we choose an output elasticity of capital of 0.33 and a depreciation rate of 5 percent a year.

The calibration of the income process involves choosing parameters for the permanent and the transitory component of income. With regards to the former, we select permanent income levels for the *Bottom*, *Middle*, and *Top* of the distribution in order to match the share of aggregate disposable income held by each group in the respective percentile range. For the Equal country, we target the shares at the 25th percentile of the disposable income distribution while for the Unequal country, we target the shares at the 75th percentile.[10] The persistence and variance of the transitory income component are calibrated to the US economy based on household-level income data in the PSID. We directly take the estimates provided in Kaplan and Violante (2022) for the annual model with permanent heterogeneity and persistent-transitory shocks, but abstract from the fully transitory shock to keep the model tractable. The choice of US data stems purely from the availability of granular data. The assumption of identical income uncertainty across countries is certainly a simplification, but helps us isolate the effect permanent income differences. We also find in our decomposition exercises in Section 2.3.2 that the variances of transitory income shocks are broadly similar in magnitude across advanced economies.

The remaining parameters β, ψ and κ are set to match the average long-term real interest rate of 3.2 percent and the average absolute NFA as a share of GDP of 22 percent in our sample. The interest rate is primarily informative about the discount factor while the NFA identifies the preference parameters for wealth. In a homothetic world, differences in permanent income would not generate cross-border capital flows. The size of the NFA can therefore be interpreted as a gauge for the non-homotheticity of preferences.[11]

Unsurprisingly, the model generates the targeted interest rate and NFA. How well does it match other moments of the data? We first test how well our coarse permanent income classification into three groups matches the overall distribution of income by comparing the model-based Gini index with the data. Our model predicts disposable income Gini indices of 0.45 and 0.36 compared to 0.47 and 0.30 in the data. The model therefore slightly underestimates differences in income inequality based on the Gini index. Next, we investigate to what extent differences in income inequality translate into differences in wealth inequality. The model predicts a wealth Gini of 0.65 and 0.56 which are substantially larger than for income. Compared to the data, however, the model again underestimates the degree of wealth inequality with Gini indices of 0.79 and 0.73. The difficulty of reproducing the right tail of the wealth distribution is a well-known fact and typically requires several additions to the standard model (Benhabib et al., 2019; Gaillard et al., 2023).

5 Inequality, financial development and current accounts

In this section, we revisit through the lens of our calibrated model two major global developments that characterized the last decades: rising income inequality and financial liberalisation, both within and across borders. We begin by studying the transition path from financial autarky

[10] Note that the measure of disposable income in the data contains both labour and capital income, while we use it to calibrate labour income only. We tolerate this minor inconsistency in order to avoid matching total income shares which are endogenous in the model. Labour income shares, instead, are exogenous.

[11] One could alternatively consider targeting moments that reflect differences in savings behaviour at the household level, but these are typically not well measured.

Table 6: Calibration

Parameter	Description	Value	Target/Source
Panel A: Externally calibrated			
Households			
γ	Curvature u(c) and v(a)	2	Standard
ϕ	Borrowing constraint	0.2826	Two months of average income
Income			
s_j^1	Permanent income of bottom 90%	0.7/0.8	Income share of 65%/75%
s_j^2	Permanent income of bottom 90-99%	2.7/2.0	Income share of 24%/18%
s_j^3	Permanent income of top 1%	11.0/6.7	Income share of 11%/7%
σ_z^2	Variance of AR-1 innovation	0.16	PSID
ρ_z	Persistence of AR-1 component	0.916	PSID
Production			
A	Productivity	1	Normalized
α	Output elasticity of capital	0.33	Standard
δ	Depreciation	0.05	Standard
Panel B: Internally calibrated			
β	Discount factor	0.947	Avg. long-term interest rate
ψ	Weight on v(d)	2.34	Avg. absolute NFA
κ	Constant in v(d)	91.8	Avg. absolute NFA

Notes: This table reports the calibrated parameters of the quantitative model.

to financial integration against the background of cross-country differences in income inequality. We then zoom into the role of income inequality and assess how changes in permanent income inequality within a country induce cross-border capital flows under international capital mobility. We also investigate if the underlying source of income inequality, i.e. differences in the permanent versus stochastic component of income, matters for aggregate outcomes. Finally, we analyze the role of domestic financial liberalisation, i.e. easier access to credit, and how this force interacts with inequality. Across these scenarios, the model provides several testable predictions that we validate in the data.

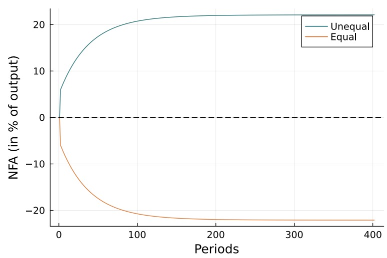
5.1 Financial integration

As a first exercise, we study how country E and U transition from financial autarky to a world with perfect capital mobility, with the aim of capturing the episode of rapid financial integration starting in the 1980s. We simulate a scenario in which both countries, starting at the steady state under financial autarky, are unexpectedly and permanently allowed to trade in foreign assets. To simplify the exposition, we model financial integration as a one-off event instead of a gradual change.

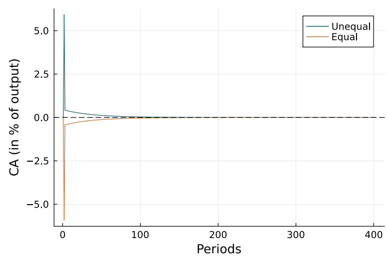
Figure 3 reports the transition paths of the net foreign asset position, current account, domestic savings, investment and the interest rate. The upper left panel shows that financial opening leads to a sudden jump in the net foreign asset position in the unequal country, mirrored by an equivalent spike in the current account position. After this initial increase, the current account remains positive for a prolonged period of time, leading to a further, but more gradual build-up of the NFA. Quantitatively, the effects of sudden financial liberalisation are highly persistent, with the unequal country running a current accout surplus of 0.4 percent of GDP ten years after the shock.

What is behind these dynamics? Financial integration equalizes interest rates across countries. Households in U want to save more due to a higher interest rate compared to financial autarky, while firms in U invest less for the same reason. Both forces contribute to positive current account balances. The investment response, however, is stronger on impact while the savings response is more persistent. As such, the strong initial current account response is driven by the frictionless adjustment of firms while the persistence of the effect comes from the gradual adjustment of households. Naturally, whatever happens in country U is mirrored by country E.

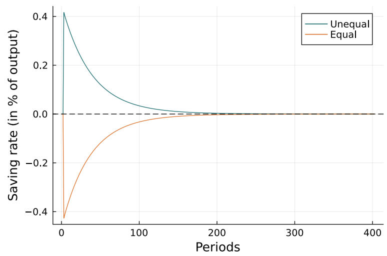
Figure 3: Transition from financial autarky to perfect capital mobility



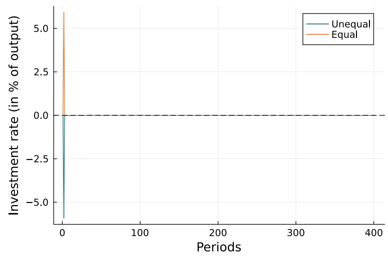
(a) Net foreign asset position



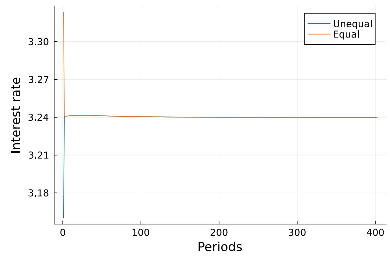
(b) Current account



(c) Savings



(d) Investment



(e) Interest rate

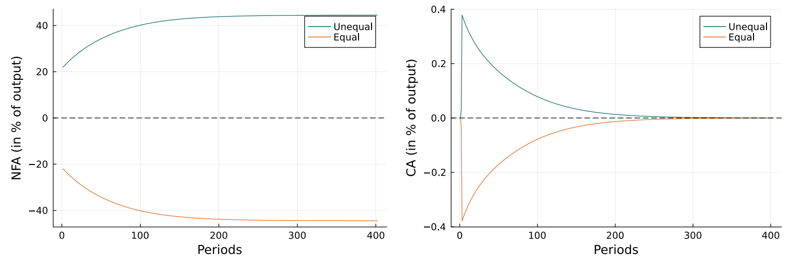
Notes: This figure reports the transition path of net foreign assets, the current account, saving, investment and interest rate from a steady state under financial autarky to a steady state under full capital mobility. In $t = 1$, capital is permanently and unexpectedly allowed to flow freely across countries.

5.2 Increasing permanent income inequality

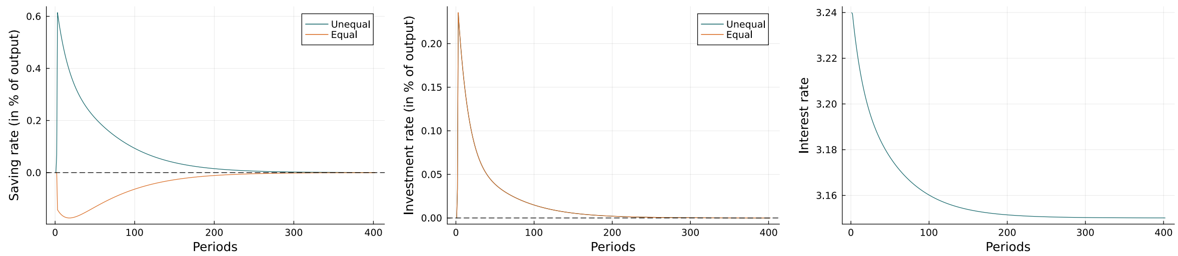
Income inequality has been rising steadily since the 1990s. What does this broad-based rise in inequality imply for current accounts? We address this question in two steps. First, we analyze how an increase in the *dispersion* of income inequality, i.e. country U becoming more unequal, affects the current account. We then simulate an increase in inequality across both countries.

To study the increase in income inequality dispersion, we permanently increase the level of permanent income inequality in U from period t=1 onwards by increasing the share of income held by *Top* and *Middle* by 5 and 1 percentage points, respectively. This mimics the rise in income inequality in the US over our sample period and corresponds to an increase in the Gini index of 5 percentage points. Figure 4 again reports the transition paths of the net foreign asset position, current account, domestic savings, investment and the interest rate under this scenario. In the initial steady state, U is a net lender while E is a net debtor. The increase in income inequality in U further exacerbates this imbalance. The NFA in U increases gradually by more than 20 percentage points throughout the transition period. This is reflected in a persistently positive current account over more than 200 periods. As already illustrated in the previous experiment, this underscores the fact that one-off changes in income inequality can have long-lasting effects on the external positions of countries.

Figure 4: Transition to higher cross-country dispersion of permanent income inequality



(a) Net foreign asset position (b) Current account



(c) Savings (d) Investment (e) Interest rate

Notes: This figure reports the transition path of net foreign assets, the current account, saving, investment and interest rate from the initial steady state under financial openness to a steady state with larger cross-country differences in permanent income inequality. In $t = 1$, permanent income inequality in the unequal country increases permanently and unexpectedly through an increase in the share of aggregate income held by the *Top* and the *Middle* of the distribution of 5 and 1 percentage points.

Turning to savings and investment rates separately, we observe that savings increase substantially in the unequal country while they decrease, albeit to a lesser extent, in the equal country. The increase in inequality leads to more demand for savings in U, which depresses the interest rate and in turn lowers the savings demand in E. On the investment side, the responses are identical across countries. In both U and E, investment increases for a prolonged period of time. However, the investment repsonse is not strong enough to offset the increase in savings in U, generating a positive currrent account balance.

The predicted investment response across countries is particularly relevant in light of our empirical finding that investment rates and income inequality are unrelated. Within our empirical framework, we would not expect to find a significant association between investment and income inequality in the data if investment reacted identically in both countries. Recall that our approach considered changes in investment *relative* to other countries, not in *absolute* terms. A parsimonious production sector is therefore sufficient to explain the null-response of investment in the data. This findings is also in line with the idea that the Feldstein-Horioka puzzle (Feldstein and Horioka, 1980), i.e. the high correlation of domestic savings and investment rates, has become less relevant over the last few decades due to increased capital mobility.

We next simulate a global increase in income inequality by increasing *Top* and *Middle* income shares in both countries instead of U only. Figure 6 reports the steady-state NFA of U following this experiment. For brevity, we omit the full transition path. The global increase in income inequality affects the external position much less than the previously studied relative increase. Higher savings by high-income households in U are to a large extent compensated by higher savings by high-income households in E, offsetting the effect on the current account. Compared to the previous scenario, however, the interest rate decreases substantially more to absorb the increased desire of high-income households to accumulate assets. This is in line with the empirically observed negative co-movement of interest rates and inequality and the quantitative exploration in Platzer and Peruffo (2022).

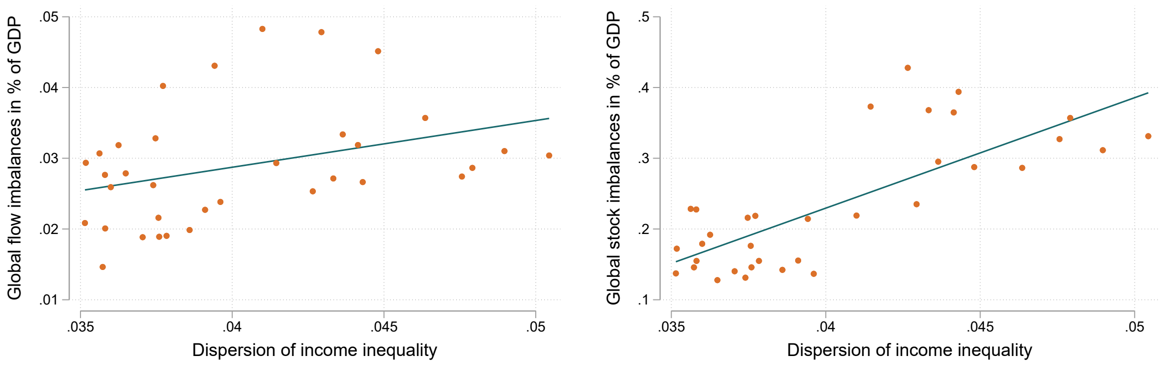
These two experiments illustrate that the model captures two empirical observations: the negative co-movement of interest rates and income inequality at the global level, and the decoupling of global current account imbalances from the rise in income inequality after the Global Financial Crisis. In particular the latter observation highlights a key prediction of the model. What matters for the global current account configuration is not so much the absolute level of income inequality, but differences in income inequality across countries. We provide empirical support for this prediction in Figure 5 which plots the global dispersion of income inequality across countries in each year against the level of global imbalances, measured as the GPD-weighted average of current accounts and net foreign asset positions expressed in absolute terms. The figure shows that periods with a larger dispersion of income inequality across countries are associated with larger global imbalances.

In this exercise, we remained intentionally agnostic on the drivers underlying the shifts in income inequality. These could be the result of structural changes in the economy, but also deliberate policy choices, such as changes to the progressivity of income taxes. Our results indicate that fiscal authorities need to consider the effects redistributive taxation has on the country's external position. A country such as Germany which has been reprimanded several times for its persistently large current account surplus could pursue redistribution as a policy tool to address its external position, while other countries plagued by current account deficits need to consider how redistributive policies might exacerbate their existing problems by further decreasing saving rates.

5.3 Increasing income risk

We now turn to analyzing the transition to a more dispersed income inequality distribution driven by changes in the stochastic instead of the permanent component of income. While

Figure 5: Cross-country dispersion of income inequality and global imbalances



(a) Flow imbalances (b) Stock imbalances

Notes: Income inequality dispersion is computed as the weighted standard deviation of disposable income inequality across countries for each year. Global imbalances are computed as the GDP-weighted average of current accounts and net foreign asset positions across countries in absolute terms.

changes in income risk are not the focus of our analysis, we pursue this experiment to relate to previous studies that interpret changes in income inequality as changes in income risk and evaluate their consequences quantitatively (Broer, 2014; De Ferra et al., 2021). For this purpose, we permanently increase the variance of the transitory income component in U from period t=1 onwards to mimic the rise in income inequality, as measured by the Gini index, simulated in the previous subsection.

Qualitatively, the transition paths of net foreign assets, the current account, domestic savings, investment and the interest rate are almost identical to the scenario in which we considered shifts in permanent income inequality. Figure 6 shows, however, that quantitatively the response of the net foreign asset position is almost three times larger. Lifting the Gini coefficient by 5 percentage points requires a large increase in the risky component of income which triggers substantial precautionary savings and therefore large current account surpluses.

What distinguishes the increase in income risk from the increase in permanent income inequality is the prediction regarding wealth inequality. The increase in the permanent component leads to an increase in wealth inequality in U from 0.65 to 0.72 as measured by the Gini index while an increase in the transitory component decreases wealth inequality by 3 percentage points. In the first scenario, savings increase primarily at the top of the distribution due to the non-homotheticity of preferences while in the second scenario, the precautionary savings motive increases savings foremost at the bottom of the distribution.[12] Seen through the lens of the model, the correlation between income and wealth inequality therefore provides a moment to distinguish between changes in the permanent versus the stochastic income component. In our sample, the correlation between income and wealth inequality within countries is on average positive. For the Gini, the correlation coefficient is 0.35 while for the Top 1 percent share it is

[12] Favilukis (2013) provides a similar argument. In his model, however, changes in the permanent income distribution affect the wealth distribution through a stock market participation cost instead of non-homothetic preferences.

0.40. We also confirm that within the sample of countries for which we estimated the variances of the permanent and transitory components, countries with larger increases in the permanent component have a more positive correlation of income and wealth inequality.

Compared to the analyses in Broer (2014) and De Ferra et al. (2021), our model predicts a positive effect of income inequality on the current account, whereas their models predict a negative effect. In our setting, markets are exogenously incomplete, while they endogenize market incompleteness through frictions to contract enforcement. In the latter setting, unequal countries endogenously develop deeper financial markets under certain parameter combinations, borrow more and thus run current account deficits. This idea is captured in reduced form in our model by differences in the ability to borrow across countries through ϕ which we evaluate in the next section. The key message to take away is that in discussions about income inequality, it is critical to consider the underlying source, since, as evidenced by this brief example, the implications can diverge starkly.

5.4 Domestic financial liberalisation

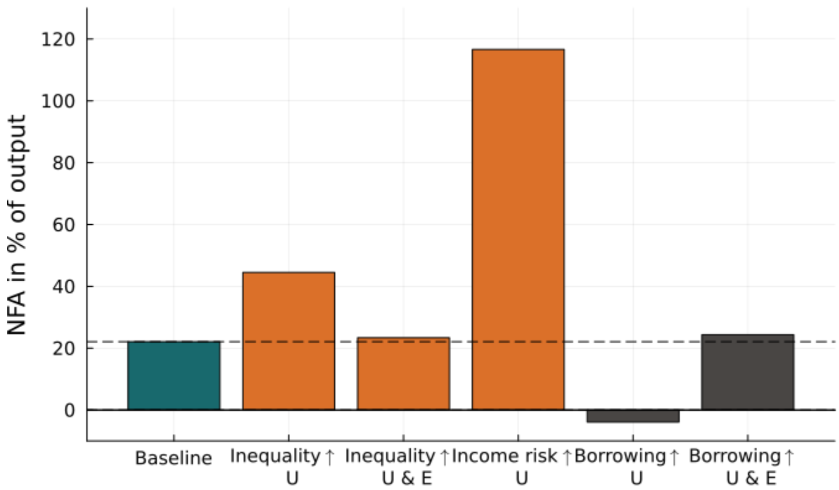
Finally, we analyse the role of domestic financial liberalisation. The role of financial factors in shaping the configuration of current accounts has received vast attention in the literature (Caballero et al., 2008; Coeurdacier et al., 2015). This has largely been motivated by the dominant role of the United States in the global financial system. Most interestingly for our application, the United States have run persistent current account deficits despite rising inequality over the last decades, standing seemingly at odds with the predictions of our model. However, it turns out that our model can also account for the exceptional position of the US through the role of financial markets.

Suppose that borrowing in U is relaxed, but not in E, i.e. $\phi^U > \phi^E$. Figure 6 illustrates that a loose enough borrowing constraint in U can in fact induce a current account deficit in the unequal country. It reports the results of a simulation in which we increase the borrowing limit to roughly one and a half years of income. The NFA decreases from a positive 20 percent to a negative 4 percent. While the required increase in borrowing capacity is arguably large, the exercise shows that for large enough differences in borrowing capacity, even strongly unequal countries can run current account deficits.

We can again test this prediction in the data. We re-estimate Equation 1 from our empirical analysis, but interact our measure of income inequality with a variable measuring private credit flow as a percentage of GDP, which previously entered the regression as a control variable. We interpret this variable as a proxy for the degree of borrowing constraints ϕ. The resulting regression coefficients are reported in Table 7. In line with the predictions of the model, more credit dampens the effect of income inequality on the current account, as indicated by the negative interaction term. However, the coefficients are imprecisely estimated.

As for income inequality, the distinction between relative and absolute, or country-specific versus global changes is important. To illustrate this point, we run a final experiment in which we relax the borrowing constraint in both countries instead of in U only. Instead of an eightfold

Figure 6: Borrowing limits and net foreign asset positions



Notes: This figure reports the net foreign assets for the unequal country U across various scenarios: (i) the baseline scenario, (ii) an increase in permanent income inequality in U by increasing the share of aggregate income held by *Top* and *Middle* of 5 and 1 percentage points, (iii) an equivalent increase in permanent income inequality in both U and E, (iv) an increase in income risk in U mimicking the rise in the income Gini in (ii), (v) an eight-fold increase in the borrowing limit in U and (vi) a four-fold increase in the borrowing limit in both U and E.

Table 7: Current accounts, income inequality and credit

	Advanced economies			All		
	Top 1%	Top 10%	Gini	Top 1%	Top 10%	Gini
Income inequality	0.811***	0.461***	0.401***	0.174**	0.105	0.186**
	(0.242)	(0.135)	(0.079)	(0.086)	(0.072)	(0.071)
Income inequality X Credit	-0.223	-0.183	-0.143	-0.348	-0.182	-0.192
	(0.850)	(0.522)	(0.341)	(0.330)	(0.145)	(0.124)
R-squared	0.45	0.45	0.46	0.38	0.38	0.40
Observations	750	750	750	1480	1480	1480
Countries	24	24	24	52	52	52

Notes: This table reports the coefficient of disposable income inequality on the current account estimated in equation 1, augmented with an interaction term between income inequality and private credit flow in percent of GDP. The sample consists of advanced economies. Coefficients of other covariates are omitted from the regression table. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

increase, we increase the borrowing limit by a factor of four. This scenario is useful to understand how financial liberalisation, a development distinct from financial integration, contributed to the build-up of global imbalances. Figure 6 shows that looser borrowing conditions are associated with slightly larger global imbalances, shedding light on the interaction between inequality and financial markets. Given that capital flows in our framework are purely driven by inequality, this implies that financial liberalisation amplifies the effects that inequality has on current accounts.

6 Conclusion

This article unveils a tight link between income inequality and current accounts. Using cross-country panel regressions, we document that higher income inequality is associated with higher current account balances. This link is economically meaningful, stronger for advanced economies, and robust to different ways of measuring income inequality. We show that inequality affects current accounts through its positive association with domestic savings. Furthermore, for a subset of countries, we provide evidence that inequality in permanent income, rather than income risk, is the key margin to explain the observed empirical co-movement.

We rationalize these findings in two steps. First, through a stylized two-country framework with heterogeneous agents, which highlights the core of our theory, namely differences in households' savings behaviour along the distribution of permanent income. Despite its simplicity, the model not only generates the positive co-movement between inequality and current accounts observed in the data, but delivers several other nuanced predictions through the interaction between inequality and financial markets. Second, we develop a richer quantitative model, accomodating broader heterogeneity, income uncertainty and an endogenous production side. Through the lens of this model, we quantify the relative importance of the different margins contributing to income inequality and study the evolution of current accounts along transitions paths, providing theoretical counterparts to our empirical facts.

Our analysis suggests that the distribution of income constitutes an important variable in the assessment of global imbalances. It raises the question to what extent current account surpluses caused by income inequality can be considered justified, or should instead be labelled as excessive. In our framework, inequality in labor income arises exogenously but in a world in which it is partly policy-induced, the answer to this question is far from obvious. This provides an interesting avenue for further research.

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A Empirical evidence

A.1 Data

Our sample covers 52 countries of which 24 are classified as advanced and 28 are classified as emerging according to the IMF definition. For some countries, we also have data on income inequality from the GRID database, which are marked with an asterix.

Advanced economies: Australia, Austria, Belgium, Canada*, Czech Republic, Denmark*, Finland, France*, Germany*, Greece, Ireland, Israel, Italy*, Japan, Netherlands, New Zealand, Norway*, Portugal, South Korea, Spain*, Sweden*, Switzerland, United Kingdom, United States*

Emerging economies: Argentina*, Bangladesh, Brazil*, Chile, China, Colombia, Costa Rica, Egypt, Guatemala, Hungary, India, Indonesia, Malaysia, Mexico*, Morocco, Pakistan, Peru, Philippines, Poland, Romania, Russia, South Africa, Sri Lanka, Thailand, Tunisia, Turkey, Uruguay, Vietnam

A.2 Robustness checks

This section collects a wealth of complementary analyses to assess the robustness of our results. For brevity, we only report results for our main measure of inequality, the percentage held by the top 1%.

Pre-tax income inequality. We start our robustness analysis by considering different measures of pre-tax income inequality. Table 9 reports the results of re-estimating Equation 1. The estimate is positive across inequality measures (top 1%, top 10%, Gini index) and again larger and more precisely estimated for the sample of advanced economies. Compared to disposable income, an increase in gross income inequality is associated with a slightly smaller increase in current account balances.

Functional income distribution. Table 10 shows the results for the baseline regression including the labour and profit share along with inequality in disposable income. The profit share is measured by the gross operating surplus of non-financial firms as a percentage of national income, provided by the WID. The coefficients on the labour share have the expected sign, while those associated to income inequality remain strongly positive and significant at the 1% level in the advanced economies sample. Similarly to the findings in Behringer and Van Treeck (2018), a larger labour share is associated with smaller current account balances. We also find that a higher profit share is associated with larger current account balances. Smitkova (2022) shows that if profits disproportionately flow towards high-income households, a higher aggregate profit share induces current account surpluses if households exhibit non-homothetic savings bevahiour. The distribution of disposable income, however matters beyond what is captured by the profit share as the coefficient on income inequality remains largely unchanged once we include the profit share as an additional control.

Table 8: Current accounts and income inequality, full table

	Advanced economies			All		
	Top 1%	Top 10%	Gini	Top 1%	Top 10%	Gini
mb_ygap_dif_wo	-0.482**	-0.552***	-0.674***	-0.322***	-0.318***	-0.321***
	(0.176)	(0.189)	(0.202)	(0.065)	(0.065)	(0.063)
mb_totcomgap_open	0.254*	0.260*	0.285**	0.108	0.113	0.130
	(0.131)	(0.129)	(0.128)	(0.092)	(0.090)	(0.086)
l1_d_reer	-0.029	-0.034	-0.041	-0.022*	-0.022**	-0.020*
	(0.024)	(0.025)	(0.025)	(0.011)	(0.011)	(0.011)
mb_nfa2y_1	0.043***	0.041***	0.043***	0.031***	0.030***	0.027***
	(0.012)	(0.012)	(0.012)	(0.008)	(0.008)	(0.009)
mb_rel3pppypw15DM_1	-0.053	-0.074	-0.093	0.015	0.011	0.003
	(0.072)	(0.070)	(0.067)	(0.060)	(0.059)	(0.057)
mb_yg_mt_dif_wo	0.817	1.194	1.568**	-0.542*	-0.569*	-0.611**
	(0.655)	(0.711)	(0.749)	(0.289)	(0.286)	(0.289)
odep_dif_wo	0.168*	0.171	0.234**	-0.043	-0.050	-0.065
	(0.096)	(0.101)	(0.099)	(0.096)	(0.098)	(0.097)
mb_pgro_dif_wo	-0.735	-0.582	-0.216	-0.729	-0.699	-0.751
	(0.899)	(0.840)	(0.810)	(0.587)	(0.579)	(0.562)
ps_shr1_dif_wo	0.144	0.195	0.225	0.096	0.100	0.093
	(0.140)	(0.144)	(0.147)	(0.098)	(0.100)	(0.100)
le_wap_dif_wo	0.010	0.008	0.009	-0.007	-0.008	-0.008
	(0.010)	(0.010)	(0.008)	(0.006)	(0.006)	(0.005)
le_wap_odepf20	-0.013	-0.010	-0.008	0.020**	0.021**	0.021**
	(0.018)	(0.018)	(0.017)	(0.010)	(0.010)	(0.009)
icrg_pol_risk_x_d	-0.024	-0.003	0.054	-0.030	-0.030	-0.028
	(0.095)	(0.098)	(0.100)	(0.041)	(0.042)	(0.041)
mb_ob_alt_dif_wo	0.647***	0.690***	0.701***	0.424***	0.426***	0.408***
	(0.094)	(0.082)	(0.072)	(0.117)	(0.118)	(0.117)
mb_ggcb2y_fit2	0.129	0.140	0.030	0.018	0.013	-0.077
	(0.384)	(0.361)	(0.338)	(0.218)	(0.218)	(0.212)
mb_heal2y_dif_wo_1	-1.921***	-2.033***	-2.018***	-1.398***	-1.418***	-1.366***
	(0.566)	(0.583)	(0.561)	(0.411)	(0.411)	(0.393)
mb_ca_reserves_kc	-7.006**	-8.566***	-10.563***	0.049	0.025	0.083
	(2.828)	(3.036)	(3.290)	(0.786)	(0.785)	(0.781)
dmfd_pcr2y_adj_d	-0.136***	-0.157***	-0.182***	-0.086***	-0.085***	-0.080***
	(0.039)	(0.041)	(0.044)	(0.019)	(0.019)	(0.019)
Income inequality	0.808***	0.462***	0.404***	0.157*	0.097	0.176**
	(0.241)	(0.135)	(0.081)	(0.078)	(0.069)	(0.069)
R-squared	0.45	0.45	0.46	0.38	0.38	0.39
Observations	750	750	750	1480	1480	1480
Countries	24	24	24	52	52	52

Notes: This table reports the coefficients estimated in equation 1. Country and time-fixed effects are not reported. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 9: Current accounts and pre-tax income inequality

	Advanced economies			All		
	Top 1%	Top 10%	Gini	Top 1%	Top 10%	Gini
Pre-tax income inequality	0.680***	0.365**	0.287***	0.177**	0.080	0.126*
	(0.196)	(0.131)	(0.083)	(0.081)	(0.067)	(0.065)
R-squared	0.46	0.44	0.44	0.38	0.38	0.38
Observations	750	750	750	1480	1480	1480
Countries	24	24	24	52	52	52

Notes: This table reports the coefficient of pre-tax income inequality on the current account estimated in Equation 1. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 10: Current accounts and functional income inequality

	Advanced economies		All	
	Labour share	Profit share	Labour share	Profit share
Income inequality	0.693***	0.743***	0.099	0.241***
	(0.229)	(0.224)	(0.084)	(0.088)
Labour share	-0.304***		-0.110	
	(0.099)		(0.071)	
Profit share		0.256**		0.126**
		(0.102)		(0.052)
R-squared	0.48	0.48	0.39	0.40
Observations	750	697	1420	1103
Countries	24	24	49	47

Notes: This table reports the coefficient of disposable income inequality on the current account estimated in equation 1 augmented with the labour and profit share. Income inequality is measured by the share of disposable income held by the top 1%. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 11: Current accounts, lagged income inequality and 4-year averages of data

	Advanced economies		All	
	Lagged income	4-y averages	Lagged income	4-y averages
Lagged income inequality	0.497**		0.106	
	(0.228)		(0.073)	
Income inequality		0.772**		0.103
		(0.298)		(0.086)
R-squared	0.43	0.52	0.38	0.43
Observations	750	208	1480	416
Countries	24	24	52	52

Notes: This table reports the coefficient of disposable income inequality on the current account estimated in equation 1. Income inequality is measured by the share of disposable income held by the top 1%. In Columns 1 and 3, coefficients are estimated based on annual data and lagged income inequality. In Columns 2 and 4, coefficients are instead estimated on non-overlapping four year averages of the data and a contemporaneous measure of income inequality. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Lagged inequality. We replicate the main exercise including lagged instead of contemporaneous inequality as the independent variable. Table 11 shows that the coefficient on income inequality remains positive and statistically significant at the 5% level for the advanced economies sample. We take this as reassuring evidence concerning the possibility of reverse causality. The coefficient remains positive but is imprecisely estimated when estimated on the sample including emerging economies.

Multi-year averages. In Table 11, we use four-year averages instead of annual data and repeat our analysis. This is meant to account for high-frequency movements in the current account, potentially related to the business cycle, which we do not control for. Despite the information loss from the decrease in available observations, the estimated coefficients are similar to those obtained with annual data.

Estimation method. This section conducts robustness analysis with respect to the estimation method. Table 12 reports the results of estimating Equation 1 using the original EBA methodology which consists of pooled GLS estimation with panel-corrected standard errors. The latter takes into account the autocorrelation of current accounts. The coefficient on income inequality remains positive, but is only statistically significant at 10% level in the advanced economies sample.

Stability over time. Figure 7 reports rolling coefficient estimates of Equation 1 using 10-year windows. The coefficient of inequality on the current account is positive throughout virtually the entire sample and somewhat larger in the beginning of the sample period and the mid-2000s.

A.3 Decomposing income inequality

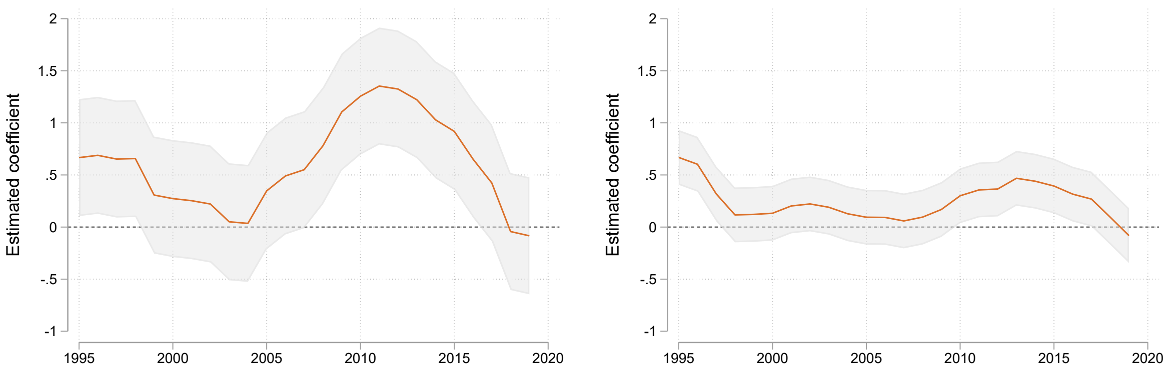
This section shows how to decompose income inequality into income risk and permanent income differences for two parsimonious income processes.

Table 12: Current accounts and income inequality with EBA estimation

	Advanced economies	All
Income inequality	0.158*	0.034
	(0.090)	(0.037)
R-squared	0.30	0.32
Observations	750	1480
Countries	24	52

Notes: This table reports the coefficient of disposable income inequality on the current account estimated from variations of equation 1. Coefficients are estimated with pooled GLS and panel-corrected standard errors. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figure 7: Coefficient estimates from rolling regressions



(a) Advanced economies (b) All

Notes: This figure reports rolling coefficient estimates of Equation 1 using 10-year windows. The horizontal axis denotes the endpoint of each subsample. The shaded area denotes the 95 percent confidence interval.

Permanent-transitory with initial permanent variation only. Assume the permanent component of income is assigned upon birth, i.e. in period 0, and does not change afterwards. The transitory component is given by an iid process. Log income can then be expressed as:

$$y_{it} = z_i + \epsilon_{it}, \quad \text{where} \quad z_i, \sim N(0, \sigma_z), \epsilon_{it} \sim N(0, \sigma_\epsilon)$$

The cross-sectional dispersion of permanent income is given by σ_z, while the dispersion of the transitory component is given by σ_ϵ. We can then decompose the cross-sectional distribution of income into a permanent and a transitory component.

$$Var(y_{it}) = Var(z_i) + Var(\epsilon_{it}) = \sigma_z + \sigma_\epsilon$$

To identify each variance separately, we can look at the variance of income growth:

$$\Delta y_{it} = y_{it} - y_{it-1} = z_i + \epsilon_{it} - z_i - \epsilon_{it-1} = \epsilon_{it} - \epsilon_{it-1}$$

$$Var(\Delta y_{it}) = \sigma_\epsilon$$

Within this framework, the variance of income growth is given by the variance of the transitory component. From there, we can use the formula for the variance of income in levels to recover the variance of the permanent component. The variance of permanent income is just the difference between the dispersion in income and income growth.

$$Var(y_{it}) = \sigma_z + \sigma_\epsilon = \sigma_z + Var(\Delta y_{it}) \rightarrow \sigma_z = Var(y_{it}) - Var(\Delta y_{it})$$

If the variance of income growth does not change, any change in the cross-sectional dispersion of income is fully attributed to changes in permanent income inequality.

Permanent-transitory. Next, we consider the income process studied in Blundell et al. (2008). Log income is given by the sum of a permanent component that is modelled as a random walk with innovation variance σ_η and a transitory component that follows an MA(1)-process with variance σ_ϵ.

$$y_{it} = z_{it} + u_{it}, \quad \text{where} \quad z_{it} = z_{it-1} + \eta_{i,t}, \quad u_{it} = \epsilon_{it} + \theta\epsilon_{it-1}$$

$$\eta_{i,t} \sim N(0, \sigma_\eta), \epsilon_{it} \sim N(0, \sigma_\epsilon)$$

The variance of income in levels is not defined due to the random walk component. The variance of income growth is given by the variance of the permanent and the transitory income component.

$$\Delta y_{it} = z_{it-1} + \eta_{it} + \epsilon_{it} + \theta\epsilon_{it-1} - z_{it-1} - \epsilon_{it-1} - \theta\epsilon_{it-2} = \eta_{it} + \epsilon_{it} + (\theta - 1)\epsilon_{it-1} - \theta\epsilon_{it-2}$$

$$Var(\Delta y_{it}) = \sigma_\eta + (1 + \theta^2 - 2\theta + 1 + \theta^2)\sigma_\epsilon = \sigma_\eta + 2(1 + \theta^2 - \theta)\sigma_\epsilon$$

Following Blundell et al. (2008), the variances of the individual components can be identified from the covariances of different lags of income growth using panel data on income. For a transitory component that follows an MA(q) process, we need $q + 1$ covariances:

$$Cov(\Delta y_{it}, \Delta y_{it-1}) = \mathbb{E}(\eta_{it} + \epsilon_{it} + (\theta - 1)\epsilon_{it-1} - \theta\epsilon_{it-2})(\eta_{it-1} + \epsilon_{it-1} + (\theta - 1)\epsilon_{it-2} - \theta\epsilon_{it-3})$$
$$= (\theta - 1)\sigma_\epsilon - (\theta - 1)\theta\sigma_\epsilon = (\theta - 1 - \theta^2 + \theta)\sigma_\epsilon = (2\theta - \theta^2 - 1)\sigma_\epsilon$$

$$Cov(\Delta y_{it}, \Delta y_{it-2}) = \mathbb{E}(\eta_{it} + \epsilon_{it} + (\theta - 1)\epsilon_{it-1} - \theta\epsilon_{it-2})(\eta_{it-2} + \epsilon_{it-2} + (\theta - 1)\epsilon_{it-3} - \theta\epsilon_{it-4})$$
$$= -\theta\sigma_\epsilon$$

These covariances jointly identify the MA-parameter θ and the variance of the transitory component σ_ϵ. Combining these with the formula for the variance of income growth yields the variance of the permanent component.

We perform these decompositions using administrative income data from the GRID database over the period 1986-2019 for an unbalanced panel of twelve countries: Argentina, Brazil, Canada, Denmark, France, Germany, Italy, Mexico, Norway, Spain, Sweden, and the US. Our decompositions are based on the concept of residualized income which removes the life-cycle profile from the income series.

B Reconciliation with existing empirical results

This section provides a detailed comparison of our empirical analysis with existing studies on the link between income inequality and current accounts. Our aim is to reconcile as well as we can potential differences and identify which choices in the empirical strategy are critical to explain these. For the clarity of the argument, we refrain from listing all possible differences, and only focus on a selected few for each paper which we consider most important. In Appendix A.1, we already provide a battery of robustness checks based on our own empirical strategy. Here, instead, we will proceed by starting with the empirical strategy pursued in the respective study and gradually build towards our own.

Broer (2014). Figure 5 of the paper shows a negative relationship between the average current account and the average change in the disposable income Gini for the period 1980-2005 across ten advanced economies. First, we find that this relationship is positive instead of negative for our sample period 1986-2019. Second, the figure reports the unconditional correlation between the two variables. We, instead, perform a regression analysis including a large set of controls. In doing so, we can capture potential confounding effects of other variables that might affect the current account. Third, the paper interprets the rise in income inequality as a rise in income risk while we illustrate that it is the permanent component of income that yields the positive relation between income inequality and current accounts.

Behringer and Van Treeck (2018). The authors find a negative relationship between income inequality and current accounts for a sample of 20 countries over the period 1972-2007. Methodologically, the authors pursue a similar strategy in the sense that they estimate conditional correlations using cross-country panel regressions controlling for several variables. We

Table 13: Reconciliation of results with Behringer and Van Treeck (2018)

	(1)	(2)	(3)
Income inequality	0.082	0.368*	0.472**
	(0.178)	(0.196)	(0.166)
Estimation	Pooled OLS	FE	FE
R-squared	0.70	0.77	0.64
Observations	110	110	388
Countries	20	20	20

Notes: This table reports the coefficient of income inequality, measured by the share of pre-tax income held by the top 1 percent, on the current account estimated based on variations of the specification estimated Equation 1. In Columns 1 and 2, estimation is based on 4-year averages of the data, whereas in Column 3, annual data are used. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

primarily consider the sample period and estimation method to cause the difference in results. The period between 1972 and 1985, which is not covered in our sample, saw a high prevalence of state intervention in capital flows in the form of exchange rate management, capital controls and financial repression. In Table 13, we report the results of our reconciliation exercise. Across all specifications, income inequality is measured by the share of pre-tax income held by the top 1 percent instead of disposable income and the sample is restricted to the period 1986-2007 and the sample of countries studied in Behringer and Van Treeck (2018). Estimation is performed using pooled OLS on 4-year averages instead of annual data. Differently to Behringer and Van Treeck (2018), we find a coefficient on income inequality that is not statistically significant at the 10 percent level (Column 1). This can be due to the fact that our sample starts in 1986 instead of 1972, differences in the vector of controls, which is similar but not identical or potentially revisions to the underlying inequality series which are regularly updated by the WID. Once we include country and time fixed-effects in the regression, the coefficient on income inequality increases in magnitude and becomes statistically significant at the 10 percent level. While including country-fixed effects allows us to capture unobserved country-characteristics that are time-invariant and might affect the current account, this comes at the cost of losing between-country variation and thus statistical power. In Column 3, we therefore increase the variation available by analysing annual data instead of four-year averages which yields a positive and statistically significant coefficient on income inequality at the 5 percent level.

De Ferra et al. (2021). The authors show that current accounts and income inequality are negatively correlated over the period 1997-2007 for a large set of countries in their main analysis, both unconditionally and conditionally on selected variables. The main methodological difference with our approach is that the authors perform a cross-sectional analysis using long-term averages, i.e. study between-variation, while we exploit the panel dimension of the data to study within-variation. Including country-fixed effects allows us to capture unobserved country-characteristics that are time-invariant and might affect the current account. However, we also show in our robustness section that including country fixed effects is not crucial to obtain a positive relation between income inequality and current accounts. As in Broer (2014), the authors interpret the rise in income inequality as a rise in income risk and provide support-

Table 14: Reconciliation of results with De Ferra et al. (2021)

	(1)	(2)	(3)
Income Gini	-0.525***	-0.194	0.237**
	(0.122)	(0.384)	(0.114)
Data	WIID	WID	WID
Panel	No	No	Yes
R-squared	0.90	0.76	0.96
Observations	34	34	149

Notes: This table reports the coefficient of income inequality on the current account estimated based on the specification estimated in De Ferra et al. (2021). More details can be found in the original paper. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

ive evidence that the stochastic component of income inequality is negatively associated with current accounts. We, instead, illustrate that it is the permanent component of income that yields the positive relation between income inequality and current accounts.

Table 14 reports the results of our reconciliation exercise. In Column 1, we attempt to stay as close as possible to the original specification in De Ferra et al. (2021). In particular, we compute long-term averages of all variables entering the regression over the period 1997-2007. The income inequality measure is given by the income Gini from the WIID dataset. More details on the specification including the vector of controls can be found in the original paper. As expected, we obtain a negative correlation between income inequality and the current account. In Column 2, we replace the income Gini from the WIID with the income Gini from the WID, our preferred dataset. Using WID data, the coefficient on income inequality is not statistically significant anymore at the 10 percent level. In Column 3, we exploit the full panel dimension of the data and, instead of averaging over the years, estimate a regression on annual data adding country and time fixed-effects. The coefficient on income inequality changes signs and becomes positive, recovering the relationship between income inequality and current accounts established in this paper.

Kumhof et al. (2024). The authors pursue a similar empirical strategy by augmenting the IMF EBA model with measures of income inequality. They find that income inequality and current accounts are, on average, negatively correlated and that this correlation is strongly dependent on the level of financial development, as proxied by stock market capitalization. Our approach differs broadly along three dimensions: our sample ends in 2019 instead of 2013 and includes more countries, we analyse disposable instead of pre-tax income inequality and we include country and time-fixed effects in the regression.

To understand where the differences in results might be coming from, Column 1 in Table reports the results of a regression for the period 1986-2013 with the share of pre-tax income held by the top 1 percent as the measure of inequality. Estimation is performed using pooled GLS with a panel-wide AR(1) correction. Despite the similarity with the approach in Kumhof et al. (2024), we find a positive correlation between income inequality and the current account. In Columns 2-4, we successively move towards our preferred specification by replacing pre-

Table 15: Reconciliation of results with Kumhof et al. (2024)

	(1)	(2)	(3)	(4)	(5)
Income inequality	0.057	0.007	0.027	0.127	0.240***
	(0.040)	(0.041)	(0.037)	(0.078)	(0.076)
Income measure	Pre-tax	Disposable	Disposable	Disposable	Pre-tax
Time & Country FE	NO	NO	NO	YES	NO
Sample	1986-2013	1986-2013	1986-2019	1986-2019	1986-2013
R-squared	0.35	0.35	0.29	0.34	0.37
Observations	1168	1168	1480	1480	606
Countries	52	52	52	52	24

Notes: This table reports the coefficient of income inequality on the current account estimated based on variations of Equation 1. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

tax income inequality with disposable income inequality in Column 2, extending the sample to 2019 in Column 3 and introducing time and country fixed-effects in Column 4. Across all specifications, the coefficient remains positive but is not statistically significant at the 10 percent level. In Column 5, we revert to the specification in Column 1, but restrict the sample to advanced economies only. In doing so, we recover the positive and statistically signficant coefficient found in the main text of this paper. In conlcusion, we believe that the differences in results, in particular in Column 1 which is closest to the original paper, arise due to our slighly different sample of countries and potential differences in the underlying data as in particular the income inequality data from the WID are updated on a regular basis.

C Model

For this section, we assume log utility from both consumption and financial wealth – with $u(c) = \log(c)$ and $v(d) = \psi \log(\kappa + d)$. For simplicity, and without loss of generality, we further assume $\kappa = 1$. In subsection C.4, we show how our results extend to an environment with CRRA preferences in consumption and financial wealth.

C.1 Parameter restrictions

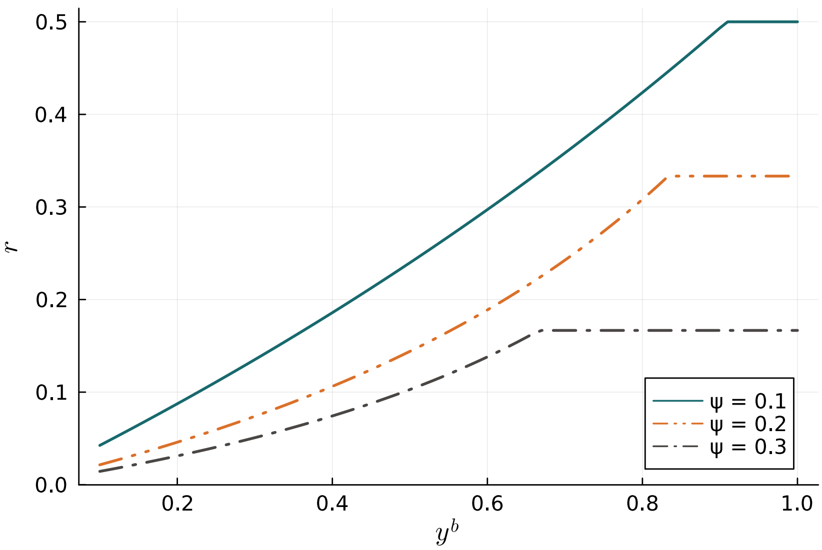
For the log case, we introduce the following two assumptions on the parameters. The first enables us to study equilibria in which debt is traded at a non-negative interest rate:

$$1 - 2\beta < \psi < 1 - \beta$$

To see the rationale of this restriction, consider agents' optimal wealth decision $d^{i*} = \frac{\psi y^i - [1-\beta(1+r)]}{1-\beta(1+r)-\psi r}$ in combination with market clearing $d^b = -\frac{\mu^t}{\mu^b} d^t$. This results in:

$$r = \frac{1 - \beta - \psi}{\beta}$$

Figure 8: Interest rate and inequality



Notes: This figure plots the closed-economy equilibrium interest rate against the level of income per capita of bottom earners, for $\beta = 0.6$ and $\phi = 0.1$.

The equilibrium interest rate when no agent is unconstrained is therefore positive whenever the sum of the discount factor and the strength of the wealth motive lies below 1. Substituting the interest rate expression in agents' wealth policy function, we have $d^{i*} = \frac{\beta(y^i-1)}{2\beta+\psi-1} \equiv \chi(y^i - 1)$. Considering $\psi > 1 - 2\beta \Leftrightarrow \chi > 0$ therefore allows us to focus on equilibria with debt consistent with wealth being a luxury good (i.e., $\chi > 0$), rather than an inferior one (i.e., $\chi < 0$). Debt trading is implicitly guaranteed by $y^b < 1 < y^t \Rightarrow d^b < 0 < d^t$.

Second, we restrict our attention to cases consistent with Lemma 1. In this environment, low-endoment agents are borrowing-constrained. Note that this is not necessarily a strong assumption. For any ψ compatible with the existence of an equilibrium with debt, there is always a strictly positive level of endowment per capita for bottom earners below which they are borrowing constrained.

It follows that the interest rate is weakly decreasing in the level of income inequality, as seen in Figure 8. For low levels of inequality, low-income households are unconstrained and the interest rate is flat in income. Once inequality reaches a certain threshold, low-income households become constrained and the interest rate becomes responsive to further increases in inequality. Inuitively, the threshold level of inequality is closer to perfect equality the smaller the utility weight ψ on wealth is.

C.2 Model derivations

Financial autarky. Combining Euler equation and budget constraint yields debt supply. Debt demand follows directly from the borrowing constraint. Debt is in zero net supply.

$$1 = \beta(1+r) + \psi \left(\frac{y^t + rd^t}{1+d^t} \right), \quad d^b = -\frac{\phi y^b}{r}, \quad d^t = -\frac{\mu^b}{\mu^t} d^b$$

Combining supply and demand with market clearing, the equilibrium condition is given by:

$$1 = \beta(1+r) + \psi \left(\frac{y^t + r\frac{\mu^b}{\mu^t}d^b}{1 + \frac{\mu^b}{\mu^t}d^b} \right)$$

Financial integration. Debt supply is again given by the Euler equations. The Euler equations across countries additionally need to equate:

$$1 = \beta(1+r) + \psi \left(\frac{y_U^t + rd_U^t}{1 + d_U^t} \right) = \beta(1+r) + \psi \left(\frac{y_E^t + rd_E^t}{1 + d_E^t} \right)$$

Debt demand is given by the bottom 99 percent in each country:

$$d^b = d_U^b + d_E^b = -\phi \frac{y_U^b + y_E^b}{r}$$

Market clearing is now given by:

$$\mu^t(d_U^t + d_E^t) = -\mu^b(d_U^b + d_E^b)$$

To solve for the equilibrium interest rate, we rewrite the system as two equations in two unknowns. The first equation is given by the Euler equation in U, the second equation by the Euler equation in E combined with market clearing and debt demand:

$$1 = \beta(1+r) + \psi \left(\frac{y_U^t + rd_U^t}{1 + d_U^t} \right)$$

$$1 = \beta(1+r) + \psi \left(\frac{y_E^t + \mu\phi\left(y_U^b + y_E^b\right) - rd_U^t}{1 + \mu\phi\frac{y_U^b + y_E^b}{r} - d_U^t} \right)$$

where $\mu = \frac{\mu_b}{\mu_t}$. Solving this system yields r and d_U^t. From there, we can compute the other endogenous variables:

$$d_U^b = -\frac{\phi y_U^b}{r}, \quad d_E^b = -\frac{\phi y_E^b}{r}, \quad d_E^t = -\mu(d_U^b + d_E^b) - d_U^t$$

The net foreign asset position is given by:

$$NFA_U = \mu_t d_U^t + \mu_b d_U^b, \quad NFA_E = \mu_t d_E^t + \mu_b d_E^b$$

C.3 Proofs

Lemma 1. *Low-income households are constrained whenever their income per capita y^b is below a threshold $\underline{y_b}$, defined as:*

$$\underline{y_b} = \frac{(1-\beta-\psi)}{(1-\phi)(1-\beta-\psi)+\phi\beta} > 0 \tag{23}$$

The borrowing constraint is represented by $d^b = -\phi\frac{y^b}{r}$, whereas optimal debt is pinned down by $d^b = \frac{\psi y^b - [1-\beta(1+r)]}{1-\beta(1+r)-\psi r}$. Substituting the equilibrium rate $r = \frac{1-\beta-\psi}{\beta}$ into the two equations, we can verify that $-\phi\frac{y^b}{r} > \frac{\psi y^b - [1-\beta(1+r)]}{1-\beta(1+r)-\psi r}$ iff:

$$-\frac{\phi y^b}{1-\beta-\psi} > \frac{y^b - 1}{2\beta+\psi-1} \Rightarrow y^b < \underline{y}^b \equiv \frac{(1-\beta-\psi)}{(1-\phi)(1-\beta-\psi)+\phi\beta} > 0 \tag{24}$$

For given discount factor and strength of wealth motive, this threshold level lies between r when the borrowing constraint corresponds to the natural borrowing limit ($\underline{y}^b(\phi = 1) = r$) and 1 when no borrowing is allowed ($\underline{y}^b(\phi = 0) = 1$).

Lemma 2. *Debt demand and supply are, respectively, decreasing and increasing in the interest rate.*

$$\frac{\partial d^b}{\partial r} < 0, \quad \frac{\partial d^t}{\partial r} > 0$$

The fact that debt demand is decreasing in interest rate follows directly from the borrowing constraint. In steady state, $c = y + rd$ and the Euler equation for the top earners holds with equality (we drop the superscripts for readability):

$$1 = \beta(1+r) + \psi\left(\frac{c}{1+d}\right) = \beta(1+r) + \psi\left(\frac{y+rd}{1+d}\right)$$

From this, we can derive a closed-form solution for savers' optimal debt:

$$d = \frac{\psi y - [1-\beta(1+r)]}{\xi(r)} \tag{25}$$

where

$$\xi(r) = 1 - \beta(1+r) - \psi r$$

We can now study the relationship between debt supply and the interest rate:

$$\frac{\mathrm{d}d}{\mathrm{d}r} = \frac{\beta\xi(r) - \xi'(r)[\psi y - [1-\beta(1+r)]]}{\xi(r)^2} = \frac{\beta\xi(r) + (\beta+\psi)[\psi y - [1-\beta(1+r)]]}{\xi(r)^2}$$

This expression is always positive, as long as any equilibrium with debt is possible.

Proposition 1. *The closed-economy equilibrium interest rate is decreasing in income inequality (defined as the share of endowment accruing to the top 1 percent):*

$$\frac{\partial r^*}{\partial \omega^t} < 0$$

Starting from top earners' optimal debt supply schedule from (25) and equalizing it with bottom earners' borrowing constraint because of market clearing:

$$\mu^t\frac{\psi y^t - [1-\beta(1+r)]}{\xi(r)} = \mu^b\frac{\phi y^b}{r} \Longrightarrow \psi\omega^t - [1-\beta(1+r)]\mu^t - \frac{\phi(1-\omega^t)\xi(r)}{r} = 0 \tag{26}$$

By total differentiation:

$$\left[\beta\mu^t - \frac{\phi(1-\omega^t)[\xi'(r)r - \xi(r)]}{r^2}\right] \mathrm{d}r + \left[\psi + \phi\frac{\xi(r)}{r}\right] \mathrm{d}\omega^t = 0$$

Therefore:

$$\frac{\mathrm{d}r}{\mathrm{d}\omega^t} = -\frac{\psi r^2 + \phi\xi(r)r}{\beta\mu^t r^2 - \phi(1-\omega^t)[\xi'(r)r - \xi(r)]}$$

Since $\xi(r) > 0$, and $\xi'(r) < 0$, both numerator and denominator of this expression are positive. As a consequence, $\frac{\mathrm{d}r}{\mathrm{d}\omega^t} < 0$: the equilibrium interest rate is decreasing in income inequality.

Proposition 2. *All else equal, the unequal country has a positive and the equal country a negative net foreign asset position.*

$$NFA^*_U > 0, \quad NFA^*_E < 0 \quad \text{iff} \quad \omega^t_U > \omega^t_E$$

It follows from Proposition 1 and Lemma 2. With international mobility of capital, and assuming as in the closed-economy case that debt supply is determined by top earners' Euler equations, Proposition 1 states that the equilibrium global interest rate will be in between the two closed economy ones (specifically, $r_U < r_W < r_E$ since the global share of endowment accruing to top earners will be in between E's and U's). Furthermore, from Lemma 2, we know that debt supply is increasing in the interest rate. This inevitably translates into a decrease of debt supply in E, and viceversa. The effect of the new interest rate in relaxing/tightening the borrowing constraint further reinforces this dynamics. We can define the current account as the change in debt flows:

$$CA^i = \mu^t \Delta d^t_i + \mu^b \Delta d^b_i$$

So, for U, we will have:

$$CA^U = \mu^t \left(\frac{\psi y^{t,U} - [1-\beta(1+r_W)]}{\xi(r_W)} - \frac{\psi y^{t,U} - [1-\beta(1+r_U)]}{\xi(r_U)} \right) + \mu^b \left(-\frac{\phi y^{b,U}}{r_W} + \frac{\phi y^{b,U}}{r_U} \right)$$

where both terms are positive: the first from Lemma 2 and the second since it simplifies to $\frac{\phi\omega^b}{\mu^b r_W r_U}(r_W - r_U) > 0$.

Lemma 3. *The closed-economy equilibrium interest rate is increasing in the share of pleadgeable endowment:*

$$\frac{\partial r^*}{\partial \phi} > 0$$

Totally differentiating (26):

$$\left[\beta\mu^t - \frac{\phi(1-\omega^t)[\xi'(r)r - \xi(r)]}{r^2}\right] \mathrm{d}r + \left[-\frac{1-\omega^t}{r}\right] \mathrm{d}\phi = 0$$

Therefore:

$$\frac{\mathrm{d}r}{\mathrm{d}\phi} = \frac{\frac{1-\omega^t}{r}}{\beta\mu^t - \frac{\phi(1-\omega^t)[\xi'(r)r-\xi(r)]}{r^2}}$$

Since $\xi'(r) < 0$ and $\xi(r) > 0$, this expression is always positive.

C.4 CRRA utility

Financial autarky. Combining Euler equation and budget constraint yields debt supply. Debt demand follows directly from the borrowing constraint. Debt is in zero net supply.

$$1 = \beta(1+r) + \psi\left(\frac{1+d^t}{y^t+rd^t}\right)^{-\gamma}, \quad d^b = -\frac{\phi y^b}{r}, \quad d^t = -\frac{\mu^b}{\mu^t}d^b$$

Combining supply and demand with market clearing, the equilibrium condition is given by:

$$1 = \beta(1+r) + \psi\left(\frac{1+\frac{\mu^b}{\mu^t}d^b}{y^t + r\frac{\mu^b}{\mu^t}d^b}\right)^{-\gamma}$$

Financial integration. Debt supply is again given by the Euler equations. The Euler equations across countries additionally need to equate:

$$1 = \beta(1+r) + \psi\left(\frac{1+d^t_U}{y^t_U+rd^t_U}\right)^{-\gamma} = \beta(1+r) + \psi\left(\frac{1+d^t_E}{y^t_E+rd^t_E}\right)^{-\gamma}$$

Debt demand is given by the bottom 99 percent in each country:

$$d^b = d^b_U + d^b_E = -\phi\frac{y^b_U + y^b_E}{r}$$

Market clearing is now given by:

$$\mu^t(d^t_U + d^t_E) = -\mu^b(d^b_U + d^b_E)$$

To solve for the equilibrium interest rate, we rewrite the system as two equations in two unknowns. The first equation is given by the Euler equation in U, the second equation by the Euler equation in E combined with market clearing and debt demand:

$$1 = \beta(1+r) + \psi\left(\frac{1+d^t_U}{y^t_U+rd^t_U}\right)^{-\gamma}$$

$$1 = \beta(1+r) + \psi\left(\frac{1+\mu\phi\frac{y^b_U+y^b_E}{r} - d^t_U}{y^t_E + \mu\phi\left(y^b_U+y^b_E\right) - rd^t_U}\right)^{-\gamma}$$

where $\mu = \frac{\mu_b}{\mu_t}$. Solving this system yields r and d^t_U. From there, we can compute the other endogenous variables:

$$d_U^b = -\frac{\phi y_U^b}{r}, \quad d_E^b = -\frac{\phi y_E^b}{r}, \quad d_E^t = -\mu(d_U^b + d_E^b) - d_U^t$$

The net foreign asset position is given by:

$$NFA_U = \mu_t d_U^t + \mu_b d_U^b, \quad NFA_E = \mu_t d_E^t + \mu_b d_E^b$$

C.4.1 Proofs

Lemma 1. *Low-income households are constrained whenever their income per capita y^b is below a threshold $\underline{y_b}$, defined as:*

$$\underline{y_b} = \frac{(1-\beta-\psi)}{(1-\phi)(1-\beta-\psi)+\phi\beta} > 0 \tag{27}$$

The borrowing constraint is represented by $d^b = -\phi\frac{y^b}{r}$, whereas optimal debt is pinned down by $d^b = \frac{y^b\xi(r)-1}{1-r\xi(r)}$, where $\xi(r) = \left(\frac{\psi}{1-\beta(1+r)}\right)^{\frac{1}{\gamma}}$. Substituting the equilibrium rate $r = \frac{1-\beta-\psi}{\beta}$ into the two equations, we can verify that $-\phi\frac{y^b}{r} > \frac{y^b\xi(r)-1}{1-r\xi(r)}$ iff:

$$-\frac{\phi y^b}{1-\beta-\psi} > \frac{y^b-1}{2\beta+\psi-1} \Rightarrow y^b < \underline{y^b} \equiv \frac{(1-\beta-\psi)}{(1-\phi)(1-\beta-\psi)+\phi\beta} > 0 \tag{28}$$

For given discount factor and strength of wealth motive, this threshold level lies between r when the borrowing constraint corresponds to the natural borrowing limit ($\underline{y^b}(\phi=1)=r$) and 1 when no borrowing is allowed ($\underline{y^b}(\phi=0)=1$).

Lemma 2. *Debt demand and supply are, respectively, decreasing and increasing in the interest rate.*

$$\frac{\partial d^b}{\partial r} < 0, \quad \frac{\partial d^t}{\partial r} > 0$$

The fact that debt demand is decreasing in interest rate follows trivially from the borrowing constraint. In steady state, $c = y + rd$ and the Euler equation for the top earners holds with equality (we drop the superscripts for readability):

$$1 = \beta(1+r) + \psi\left(\frac{1+d}{c}\right)^{-\gamma} = \beta(1+r) + \psi\left(\frac{1+d}{y+rd}\right)^{-\gamma}$$

From this, we can derive a closed-form solution for agents' optimal wealth holdings:

$$d = \frac{y\xi(r)-1}{1-r\xi(r)} \tag{29}$$

where

$$\xi(r) = \left(\frac{\psi}{1-\beta(1+r)}\right)^{\frac{1}{\gamma}}$$

We can now study the relationship between debt supply and the interest rate:

$$\frac{\mathrm{d}d}{\mathrm{d}r} = \frac{\frac{\mathrm{d}\xi(r)}{\mathrm{d}r}(1 - r\xi(r)) + (y\xi(r) - 1)(\xi(r) + r\frac{\mathrm{d}\xi(r)}{\mathrm{d}r})}{(1 - r\xi(r))^2} > 0$$

This expression is always positive, as long as any equilibrium with debt is possible, since $\frac{\mathrm{d}d}{\mathrm{d}r} > 0$. Therefore, $\frac{\partial d^b}{\partial r} < 0$ and $\frac{\partial d^t}{\partial r} > 0$. As before, for any equilibrium with debt to exist, we need $1 - 2\beta < \psi < 1 - \beta$.

Proposition 1. *The closed-economy equilibrium interest rate is decreasing in income inequality (defined as the share of endowment accruing to the top 1 percent):*

$$\frac{\partial r^*}{\partial \omega^t} < 0$$

Starting from top earners' optimal debt supply schedule from (29) and equalizing it with bottom earners' borrowing constraint because of market clearing:

$$\mu^t \frac{y^t\xi(r) - 1}{1 - r\xi} = \mu^b \frac{\phi y^b}{r} \Longrightarrow \frac{\omega^t\xi(r) - \mu^t}{1 - r\xi(r)} = \frac{\phi(1 - \omega^t)}{r}$$

By total differentiation:

$$\left[(\omega^t + \phi - \omega^t\phi)\left(\xi(r) + r\frac{\mathrm{d}\xi}{\mathrm{d}r}\right) - \mu^t\right]\mathrm{d}r + \\ [\phi + (1 - \phi)r\xi(r)]\,\mathrm{d}\omega^t = 0$$

Therefore:

$$\frac{\mathrm{d}r}{\mathrm{d}\omega^t} = -\frac{\phi + (1 - \phi)r\xi(r)}{(\omega^t + \phi - \omega^t\phi)\left(\xi(r) + r\frac{\mathrm{d}\xi}{\mathrm{d}r}\right) - \mu^t}$$

Given $r\xi(r) > 0$, the numerator is always positive. The first term of the denominator is always positive too (since $\omega^t, \phi \in [0, 1]$, and $\frac{\mathrm{d}\xi}{\mathrm{d}r} > 0$). The overall sign therefore depends on the magnitude of the last term $-\mu^t$. Note that $\xi(r)\frac{\omega^t}{\mu^t} > 1$, which implies that the denominator is always positive too. As a consequence, $\frac{\mathrm{d}r}{\mathrm{d}\omega^t} < 0$: the equilibrium interest rate is decreasing in income inequality.

Proposition 2. *All else equal, the unequal country has a positive and the equal country a negative net foreign asset position.*

$$NFA_U^* > 0, \quad NFA_E^* < 0 \quad \text{iff} \quad \omega_U^t > \omega_E^t$$

It follows from Proposition 1 and Lemma 2. With international mobility of capital, and assuming as in the closed-economy case that debt supply is determined by top earners' Euler equations, Proposition 1 states that the equilibrium global interest rate will be in between the two closed economy ones (specifically, $r_U < r_W < r_E$ since the global share of endowment accruing to top earners will be in between E's and U's). Furthermore, from Lemma 2, we know that debt supply is increasing in the interest rate. This inevitably translates into a decrease of debt supply in E, and viceversa. The effect of the new interest rate in relaxing/tightening the borrowing constraint further reinforces this dynamics. We can define the current account as the change in debt flows:

$$CA^i = \mu^t \Delta d_i^t + \mu^b \Delta d_i^b$$

So, for U, we will have:

$$CA^U = \mu^t \left(\frac{y^t \xi(r_W) - 1}{1 - W\xi(r_W)} - \frac{y^t \xi(r_U) - 1}{1 - r_U \xi(r_U)} \right) + \mu^b \left(-\frac{\phi y^b}{r_W} + \frac{\phi y^b}{r^U} \right)$$

where both terms are positive: the first from Lemma 2 and the second since it simplifies to $\frac{\phi \omega^b}{\mu^b r_W r_U}(r_W - r_U) > 0$.