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INEQUALITY AVERSION, POPULISM, AND THE BACKLASH AGAINST GLOBALIZATION

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ABSTRACT

Motivated by the recent rise of populism in western democracies, we develop a model in which a populist backlash emerges endogenously in a growing economy. In the model, voters dislike inequality, especially the high consumption of "elites." Economic growth exacerbates inequality due to heterogeneity in risk aversion. In response to rising inequality, rich-country voters optimally elect a populist promising to end globalization. Countries with more inequality, higher financial development, and trade deficits are more vulnerable to populism, both in the model and in the data. Evidence on who voted for Brexit and Trump in 2016 also supports the model.

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"Let us not be naive. Today, globalization is going through a major crisis..."
Emmanuel Macron, World Economic Forum, Davos, January 2018.

"The gains from globalization are not evenly distributed." Milanović (2016, p.10).

1. Introduction

One of the defining trends of the late 2010s is the ongoing rise of populism in the West. This trend has gone hand in hand with a pushback against globalization, which is perhaps best exemplified by two momentous 2016 votes: the British vote to leave the European Union ("Brexit") and the election of a protectionist, Donald Trump, to the U.S. presidency. In both cases, rich-country electorates voted to effectively take a step back from the long-lasting process of global integration. Interestingly, they did it after seven years of economic growth. It would be easier to understand voters' frustration during an economic crisis, but at the time of these votes, both countries' unemployment rates were below 5%.

Why is this pushback against globalization happening? Why is it happening in rich countries, such as the U.S. and UK? And why is it happening when the countries' economies are strong, having grown for years? These are the questions we attempt to address.

It is common to blame the pushback on reasons outside economics, such as a cultural backlash against the ascent of progressive values (e.g., Inglehart and Norris, 2016). Another popular scapegoat is the naivité of voters who have allegedly been confused by misleading marketing campaigns and foreign hackers. We certainly admit that some voters may have made mistakes, and also that economics cannot fully explain this complex social phenomenon. But we argue that many aspects of the populist backlash, along with other patterns in the data, can also be understood in a simple economic model with rational voters.

We develop a tractable heterogeneous-agent equilibrium model in which a backlash against globalization emerges as the optimal response of rational voters to rising inequality. Income inequality within rich countries has grown substantially over the past four decades, especially at the top of the income distribution (e.g., Atkinson, Piketty, and Saez, 2011). In our model, inequality also grows over time, and also especially at the top, driven by economic growth. In other words, growth aggravates inequality, which eventually subdues globalization. Not only can the backlash happen in our model; it must. It is inevitable, just a matter of time. In the model, globalization carries the seeds of its own destruction.

Populism is a political ideology pitching ordinary people, who are viewed as homogeneous and inherently good, against established "elites," who are deemed immoral and corrupt. Anti-elitism enters our model through agents' preferences. We assume that agents dislike

inequality, which we measure by the variance of consumption shares across agents. Given our other assumptions, equilibrium consumption develops a right-skewed distribution across agents. As a result, inequality is driven by the high consumption of the rich rather than the low consumption of the poor. Aversion to inequality thus reflects envy of the economic elites more than compassion for those left behind.

Populists tend to oppose globalization. They prioritize national interests over international cooperation, strong leadership over diplomacy, and protectionism over free trade. They often advocate anti-global policies such as tariffs and immigration controls. Some researchers attribute the recent rise of populism to economic insecurity stemming from exposure to globalization. Sampson (2017) reports that 69% of the British who disliked globalization voted for Brexit in the EU referendum. Colantone and Stanig (2018a) show that support for Brexit was higher in the regions hit harder by globalization, as measured by import penetration from China. Autor et al. (2017) and Colantone and Stanig (2018b) find that imports from China boost support for populism in the U.S. and in 15 European countries. Guiso et al. (2017) use survey data to relate European voters' preference for populist parties to economic insecurity from global exposure. Guiso et al. (2018) find a strong effect of globalization on populist support in Eurozone countries. Rodrik (2018) presents similar arguments. Motivated by this evidence, we define a populist as a politician promising to reverse global integration.[1]

The globalization process is sometimes believed to be irreversible, but history suggests otherwise. For almost a century before 1914, the world went through an era of globalization that by some metrics surpassed the level observed today. This era ended during World War I and was not resuscitated until after World War II (O'Rourke and Williamson, 2001; James, 2001). Globalization became a victim of a backlash driven by a variety of grievances, including inequality. The literature warns that history could repeat itself. Rodrik (2000) argues that we cannot have all three of global economic integration, the nation state, and democratic politics. Rodrik (1997) contends that globalization creates social tensions by clashing with domestic norms and social arrangements. We focus on one tension—inequality—and formalize the fragility of globalization in an equilibrium model.

In the model, agents like consumption but dislike inequality within their own country. There are two countries, the U.S. and the rest of the world ("RoW"). Both countries grow trees producing output. Agents have heterogeneous attitudes toward risk, with U.S. agents less risk-averse than RoW agents. At the outset, the countries are economically integrated—

[1] Our definition departs from other theories of populism. For example, Guiso et al. (2017) define as populist a party that champions short-term protection policies while disregarding their long-term costs. Acemoglu, Egorov, and Sonin (2013) define populist policies as those to the left of the median voter's preferences.

there are no barriers to trade and risk is shared globally. At a given time, both countries hold elections featuring two candidates. The "mainstream" candidate promises to preserve globalization whereas the "populist" candidate promises to end it. If either country elects a populist, a move to autarky takes place. Going forward, each country consumes the output of its own tree, there is no cross-border trade, and risk is shared locally.

Markets are complete, allowing agents to contract with each other to share aggregate risk perfectly, either globally or locally. We offer two contract interpretations. Under the "finance" interpretation, agents trade stocks and bonds. Under the "labor" interpretation, agents choose jobs that give them a desired exposure to risk. Both interpretations produce identical consumption choices and identical political outcomes in equilibrium.

We first solve for optimal consumption and risk exposure under globalization. Agents who are more risk-averse choose lower risk exposures and smoother consumption plans, effectively buying insurance from less risk-averse agents. Under the finance interpretation, highly risk-averse agents hold mostly bonds whereas risk-tolerant agents adopt aggressive stock positions. Under the labor interpretation, highly risk-averse agents take safe, fixed-wage jobs whereas risk-tolerant agents act as managers or entrepreneurs: they employ risk-averse agents and bear business risk. Due to country-level differences in risk aversion, U.S. agents are more exposed to risk than RoW agents, and the U.S. runs a trade deficit with RoW. Due to individual-level differences in risk aversion, economic growth raises inequality as less risk-averse agents consume a growing share of total output.

When deciding whether to vote for the populist, U.S. agents face a tradeoff. If elected, the populist delivers lower consumption but also lower inequality to U.S. agents. Under autarky, U.S. agents can no longer borrow from RoW (under the finance interpretation) or benefit from outsourcing (under the labor interpretation) to finance their excess consumption. But their inequality drops, too, because the absence of cross-border insurance makes their risk exposures less disperse. As output grows, the marginal utility of consumption declines, and U.S. agents are increasingly willing to sacrifice consumption in exchange for more equality. In that sense, equality is a luxury good. When output grows large enough, more than half of U.S. agents prefer autarky and the populist wins the U.S. election. This is our main result: in a growing economy, the populist eventually gets elected. In our model of a democratic society that values equality, globalization cannot survive in the long run.

Globalization would survive under a social planner. The competitive market solution differs from the social planner solution due to the negative externality that the elites impose on others through their high consumption. Inspired by the social planner, we could tax the

consumption of the elites and subsidize the consumption of those left behind. But simpler and more realistic wealth redistribution policies, which do not get agents to internalize the consumption externality, fail to save globalization. We analyze a broad class of redistributive policies that transfer wealth from low-risk-aversion agents, who benefit the most from globalization, to high-risk-aversion agents, who benefit the least. Since markets are complete, these policies are equivalent to assigning higher initial endowments to high-risk-aversion agents. Starting from those modified endowments, the economy eventually reaches the point at which the populist gets elected. In that sense, simple wealth redistribution can delay the populist's victory, but cannot prevent it from happening eventually.

Our model predicts that support for populism should be stronger in countries with higher inequality, more financial development, and a lower trade balance. Looking across developed countries, we find evidence supporting these predictions. We measure the support for populism by the vote share of populist parties in recent elections, as well as by protectionist attitudes expressed in a survey of OECD households.

The model also predicts that populist voters should be more risk- and inequality-averse than mainstream voters, on average. Inequality-averse agents are "anti-elite"; they place a large weight on inequality in the consumption-inequality tradeoff. Risk-averse agents choose safe consumption plans; as a result, their consumption drops less after a move to autarky. The model suggests wealth and education as proxies for risk aversion. Like more-risk-averse agents, poorer and less-educated agents tend to benefit less from growth under globalization, and they have less to lose from the end of globalization. The model thus predicts that less-educated, poorer, and anti-elite agents are more likely to vote populist. That is indeed what we find empirically when we examine the characteristics of the voters who supported Brexit in the 2016 EU referendum and Trump in the 2016 presidential election.

The model also makes asset pricing predictions, under its finance interpretation. Upon a move to autarky, risk sharing becomes local, so the risk associated with U.S. output is borne by U.S. agents only. As these agents are less risk-averse than RoW agents, the U.S. market price of risk drops when autarky arrives. The opposite happens for RoW. As a result, the global market share of U.S. stocks rises in anticipation of the populist's victory. Consistent with this prediction, the U.S. share of the global stock market rose before the 2016 Trump election. The model also implies that U.S. bond yields should be low before the populist's victory. U.S. bonds are valuable under the threat of autarky because they deliver future consumption when its marginal utility is high. Consistent with this prediction, bond yields in the West were low, in some countries negative, when the recent populist wave began.

Agents in our model dislike inequality. Inequality aversion has its roots in Thurow (1971), who advocates the inclusion of income distribution in the utility function. According to Thurow, individuals may like equality because it helps prevent crime and preserve social stability. Wilkinson and Pickett (2009, 2018) show that less equal societies suffer from social problems such as illiteracy, crime, and poor health. They argue that inequality causes status anxiety at all income levels, including the top. In Fehr and Schmidt's (1999) model, individuals willingly give up material payoffs to achieve more equality. Alesina and Angeletos (2005) employ preferences in which agents dislike unfair outcomes. Evidence also shows that individuals dislike inequality. Morawetz et al. (1977) compare two Israeli communities and find that individuals in the more egalitarian community report being happier. Alesina, Di Tella, and MacCulloch (2004) also find that people facing less inequality are happier. Dawes et al. (2007) find experimental evidence that subjects alter others' incomes, at a personal cost, to achieve more equality. Experimental results from dictator and ultimatum games also point to egalitarian preferences. Ferrer-i-Carbonell and Ramos (2014) review the evidence on happiness and inequality and "conclude that inequality correlates negatively with happiness in Western societies." Clark and D'Ambrosio (2015) reach similar conclusions.

Our modeling of globalization differs from its treatments in labor economics and international trade. Unlike labor economics, our model features no heterogeneity in skill, but its predictions are similar in that less risk-averse agents benefit from globalization as if they were more skilled. Unlike models of international trade, our model features only one consumption good. We assume away some important aspects of globalization to emphasize the role of risk sharing, which has been unexplored in this context. Given this focus on risk sharing, explicit modeling of production or heterogeneous goods would be distracting.[2] By comparing global versus local risk sharing, our model delivers novel insights into the relations between globalization, inequality, financial development, global imbalances, and asset prices.

Heterogeneity in risk aversion has been of growing research interest.[3] Instead of interpreting it literally as representing differences in appetite for risk, we view it as reflecting frictions, such as differential access to financial instruments, that make agents heterogeneously cautious when making risky investments in financial or human capital. More cautious agents benefit less from global growth. We interpret country-level differences in risk aversion as differences in financial development. Like Gourinchas, Rey, and Govillot (2017), we assume that U.S. agents are less risk-averse than RoW agents, capturing the idea that the U.S. is

[2]Recent studies of income inequality that model production explicitly, along with heterogeneous entrepreneurial skill, include Pástor and Veronesi (2016) and Jones and Kim (2018), among others.

[3]See, for example, Dumas (1989), Chan and Kogan (2002), Gomes and Michaelides (2008), Longstaff and Wang (2012), Chabakauri (2013), Bhamra and Uppal (2014), and Garleanu and Panageas (2015).

more financially developed than RoW. In their model, as well as ours, U.S. agents effectively provide insurance to RoW agents.[4] Maggiori (2017) microfounds this asymmetry by relying on cross-country differences in financial development. In his model, the country whose financial intermediaries are less constrained behaves as if it were less risk-averse. It also runs a trade deficit, as it does in our model. Caballero, Farhi, and Gourinchas (2008) and Mendoza, Quadrini, and Ríos-Rull (2009) also link financial development to global imbalances. Pástor and Veronesi (2017) consider the political implications of time variation in risk aversion, whereas we consider the political implications of its cross-sectional variation.

Our paper is also related to the literature on financial development. A key result in this large literature is that financial development facilitates economic growth (e.g., Rajan and Zingales, 1998). In contrast, our model emphasizes the dark side of financial development: it spurs the growth of inequality, which eventually leads to a populist backlash.

2. Which Countries Are Populist?

We first present cross-country evidence showing that the support for populism is stronger in countries with larger inequality, more financial development, and lower trade balance. We focus on a recent cross-section of rich countries because the rise of populism in the West is a 2010s phenomenon and the variables of interest are highly persistent year to year. This evidence motivates our theoretical analysis in Section 3.

2.1. Data

We measure the support for populism by the vote share of populist parties in recent elections. Our set of countries includes the U.S. and all EU countries. For each EU country, we consider the most recent national parliamentary election as of January 1, 2017. The list of all elections is in Table 1. If the country's most recent election took place before the May 2014 European Parliament (EP) election, we replace the national election with the EP election in the same country to align the timing of elections as closely as possible across countries.

We obtain data on election outcomes from the ParlGov database (Döring and Manow, 2011), which contains party-by-party vote shares from parliamentary and EP elections for all EU member states and most OECD countries. To identify populist parties, we match

[4] Consistent with this mechanism, Gourinchas et al. provide empirical evidence of wealth transfers from the U.S. to RoW during recent financial crises. Unlike Gourinchas et al., we allow heterogeneous risk aversion not only across countries but also within countries, which allows us to analyze within-country inequality.

the ParlGov data to the 2014 Chapel Hill Survey of Experts (Bakker et al., 2015), which estimates the positioning of political parties on various ideological and policy issues. The data cover the views of 337 experts evaluating 268 political parties from all EU countries. We focus on the three dimensions of populism evaluated in the survey that seem the most closely related to skepticism toward globalization: (1) position toward nationalism, (2) position on immigration policy, and (3) the salience of anti-elite rhetoric.[5] We thus classify as populist the parties that experts consider to be nationalist, anti-immigrant, or anti-elite.

For each of the three dimensions of populism, individual experts rate each party on the scale of 0 to 10, with larger values indicating a more populist stance.[6] We classify a party as nationalist, anti-immigrant, or anti-elite if its average score across experts is at least six. For each election and each dimension of populism, we compute the populist vote share by adding up the vote shares of all populist parties. For example, we compute the nationalist vote share in the 2016 Irish election by adding up the 2016 vote shares of all Irish parties classified as nationalist. We report all parties' average scores in the Appendix.

The intersection of ParlGov and the Chapel Hill Survey covers the 28 EU member states. We augment this sample by adding the United States. The 2016 U.S. presidential election pitted Donald Trump against Hillary Clinton. We classify Trump as populist on all three dimensions and Clinton on none. We thus assess the U.S. populist share as equal to Trump's share of the popular vote, 46.1%, in all three dimensions.

We measure inequality by the Gini coefficient of disposable income after taxes and transfers, obtained from the OECD, and by the top 10% income share, from the World Bank. Data on financial development and trade balance also come from the World Bank. Financial development is the ratio of the country's stock market capitalization to GDP, in percent.[7] Trade balance is the balance of the country's current account, also scaled by GDP.[8] We match

[5]The remaining policy dimensions evaluated in the survey include the party's position toward ethnic minorities, environmental issues, corruption, deregulation, state intervention in the economy, wealth redistribution, improving public services vs reducing taxes, regional decentralization, urban vs rural interests, religion, liberal social lifestyle, civil liberties vs law and order, integration of asylum seekers, and peacekeeping. None of these are strongly related to globalization. Probably the closest is the position toward ethnic minorities because their members often arrive from abroad. We view the position toward ethnic minorities as a fourth dimension of populism and report the results in the Online Appendix, located on our websites. In the remainder of the paper, we refer to the Online Appendix simply as "Appendix."

[6]See the Appendix for more detail on the scoring for each of the three dimensions. The number of experts scoring each party in the 2014 survey ranges from 3 to 22, averaging 11.6.

[7]We also consider three other measures of financial development, all scaled by GDP: private credit, stock market trading volume, and the sum of stock and bond market capitalizations. The results based on these measures are similar to those reported here. For details, see the Appendix.

[8]We also consider an alternative measure of trade balance: net trade in goods and services, from the World Bank, which we scale by GDP. This measure exhibits two outliers: Luxembourg and Ireland, whose trade balances exceed 30% and 20% of GDP, respectively, likely due to the open and low-tax nature of

the timing of each variable to the corresponding election, as described in the Appendix.

2.2. Election Evidence

Panels A and B of Figure 1 plot the cross-country relation between inequality and the vote share of nationalist parties, or "nationalism." The relation is positive, with the t-statistic of 2.82 for the Gini coefficient and 2.16 for the top 10% income share. A one-standard-deviation increase in the Gini (top 10% income share) is associated with a 5.8 (4.8) percentage point increase in the nationalist vote share. In the regression analysis throughout Section 2, we weight each country by its GDP.[9] But the relation is present also on an equal-weighted basis, especially among large countries. If we restrict the sample to the eight largest countries with the GDP of Poland or higher, there is a 43% (18%) simple correlation between nationalism and the Gini (top 10% income share). Across all countries, the correlations are 21% and 13%, respectively. More unequal countries exhibit more nationalism.

Panel C of Figure 1 shows a negative relation between nationalism and trade balance ($t = -4.59$). A one-standard-deviation increase in trade balance is associated with an 8.6 percentage point decrease in the nationalist vote share. Panel D shows that financial development is positively related to nationalism ($t = 2.94$). A one-standard-deviation increase in financial development is associated with a 5.2 percentage point increase in the nationalist vote share. If we equal-weight all countries, the correlations in both panels are close to zero. But after eliminating countries with GDP smaller than Poland's, the simple correlations are strong: -51% in Panel C and 48% in Panel D.

Figures 2 and 3 show similar results when we replace the vote shares of nationalist parties by those of anti-immigrant and anti-elite parties, respectively. All three measures of populism are thus negatively related to trade balance and positively related to both income inequality and financial development.

Recall that, for each country, we use either the national election or the May 2014 EP election, whichever is more recent as of January 1, 2017. For robustness, we also conduct the analysis in two other ways: by using only the national elections, and by using only the EP elections. In both cases, the results are very similar to those reported here. See the

these small economies. Due to these outliers, our figures look somewhat unbalanced when recomputed for this alternative measure, yet they lead to the same conclusions as Figures 1 through 4 reported here, with significantly negative slopes on trade balance in all four figures. For details, see the Appendix.

[9] Our sample includes countries such as Malta, Luxembourg, and Cyprus whose populations are smaller than one million. In contrast, our model features only two large countries whose interaction determines the global equilibrium. The model's predictions are thus better suited to large countries.

Appendix. In general, the advantage of using EP elections is that they take place at the same time in all EU countries. The disadvantage is that the voter turnout in EP elections is lower: 43.4%, compared to 66.1% for the national elections in our sample.

The presence of the U.S. in our sample significantly contributes to our conclusions. However, even when we exclude the U.S., the results are qualitatively similar: 11 of the 12 slopes in Figures 1 through 3 have the same signs and most remain statistically significant. See the Appendix. Overall, the electoral support for populist parties is stronger in countries with more inequality, more financial development, and larger trade deficits.

2.3. Survey Evidence

We complement our election analysis with survey evidence on attitudes toward globalization. We use data from the International Social Survey Programme (ISSP; `www.issp.org`). ISSP's cross-country surveys cover most OECD members as well as a few non-members; we use OECD countries in our analysis. We use the 2013 ISSP segment on national identity. The survey question that we find the most relevant given our focus is "Country should limit the import of foreign products." Individual responses are on the scale of 1 to 5, with higher values indicating stronger agreement. We average the individual responses within countries and interpret a higher country-level average score as stronger support for protectionism. We match these country-level protectionism scores to our 2013 data on inequality, financial development, and trade balance. See the Appendix for details.[10]

Panels A and B of Figure 4 relate inequality to the protectionism score. Cross-country regressions reveal positive relations between protectionism and both the Gini coefficient ($t = 2.65$) and the top 10% income share ($t = 3.57$). A one-standard-deviation increase in the Gini (top 10% income share) is associated with an increase of 0.18 (0.23) in the protectionism score. This result mirrors the election-based results in Section 2.2, but it is less driven by large countries. Even when the countries are equal-weighted, the correlation between inequality and protectionism is positive and high, 43% for the Gini and 45% for the top 10% income share. Citizens of more unequal countries show more support for protectionism.

Panel C of Figure 4 shows a negative relation between trade balance and the protectionism score ($t = -4.08$). A one-standard-deviation increase in trade balance is associated with a 0.25 decrease in protectionism. This result echoes the election-based results, but it is again less driven by large economies: even the equal-weighted correlation is −57%. Panel D shows

[10] Mayda and Rodrik (2005) also use the ISSP data to analyze the determinants of attitudes toward trade, but they do not relate these attitudes to inequality, trade balance, or financial development.

a positive but insignificant relation between financial development and protectionism ($t = 1.50$). A one-standard-deviation increase in financial development is associated with a 0.12 increase in protectionism. The equal-weighted correlation is close to zero when calculated across all countries, but it is 42% when calculated across the six largest countries only.

In the Appendix, we provide more detail on the ISSP, including the list of all national-identity survey questions. We also include the results based on two other survey questions that are somewhat related to globalization, and the results obtained when we exclude the U.S. from the sample. The results are qualitatively similar to those reported here.

To summarize, protectionist attitudes are stronger in countries with more inequality, larger trade deficits, and, to some extent, more financial development. The results from Sections 2.2 and 2.3 motivate our two-country model, which predicts that the support for populism is stronger in the country (U.S.) with more inequality, more financial development, and a trade deficit. In reality, the U.S. is indeed more unequal and more financially developed than the rest of the world, and it has run a trade deficit since the 1980s.

3. Model

There is a continuum of agents with unit mass spread across two countries, the U.S. and the rest of the world ("RoW"). Agents have preferences over their own consumption as well as the inequality in their own country. Agent i from country $k \in \{US, RoW\}$ has a time-separable utility function with instantaneous utility at time t given by

$$U_i\left(C_{it}, V_t^k, t\right) = e^{-\phi t}\left(\frac{C_{it}^{1-\gamma_i}}{1-\gamma_i} - \eta_i V_t^k\right) \qquad \forall i \in \mathcal{I}^k \ , \tag{1}$$

where C_{it} is the agent's consumption, V_t^k is inequality in country k, $\gamma_i > 1$ is the agent's risk aversion, $\eta_i \geq 0$ is his inequality aversion, and $\mathcal{I}^k$ is the set of agents living in country k. We measure inequality by the variance of consumption shares across agents:

$$V_t^k = \mathrm{Var}\left(\frac{C_{it}}{\overline{C}_t^k} \,|\, i \in \mathcal{I}^k\right) \ , \tag{2}$$

where $\overline{C}_t^k = \mathrm{E}^{\mathcal{I}}\left[C_{it} \,|\, i \in \mathcal{I}^k\right]$ denotes the average value of C_{it} across all agents in country k.[11] The scaling of C_{it} by $\overline{C}_t^k$ in equation (2) ensures that V_t^k is invariant to changes in average consumption so that it measures relative, not absolute, inequality.

[11] Throughout the paper, $\mathrm{E}^{\mathcal{I}}\left[.\,|\, i \in S\right]$ denotes an expected value computed across agents i in the set S.

The utility function in equation (1) increases in consumption but decreases in inequality. The idea that individuals dislike inequality is well established, but the way we model it is novel. In equilibrium, consumption shares develop a right-skewed distribution across agents. Therefore, V_t^k is driven by the right tail of the distribution, and inequality aversion can largely be thought of as anti-elitism: agents dislike being left behind the economic elites.[12] Agents effectively derive more disutility from envying the rich than from pitying the poor, similar to Fehr and Schmidt (1999).[13] Importantly, inequality aversion induces an externality: through their high consumption, elites impose a negative externality on other agents.

We assume that U.S. agents are less risk-averse than RoW agents. The technical condition that we need is for the distribution of risk aversion, γ_i, across agents to satisfy

$$\lim_{x\to\infty} \frac{\mathrm{E}^{\mathcal{I}}[e^{x/\gamma_j} \mid j \in \mathcal{I}^{RoW}]}{\mathrm{E}^{\mathcal{I}}[e^{x/\gamma_i} \mid i \in \mathcal{I}^{US}]} = 0 \ . \tag{3}$$

The simplest example of an assumption that satisfies this condition is

$$\gamma_i < \gamma_j \qquad \forall i, j : \left\{ i \in \mathcal{I}^{US},\ j \in \mathcal{I}^{RoW} \right\} \ , \tag{4}$$

so that U.S. agents are uniformly less risk-averse than RoW agents. The distributions of γ_i for the U.S. and RoW can also overlap. For example, condition (3) is satisfied when risk tolerances $\rho_i = 1/\gamma_i$ are uniformly distributed with the same lower bound for both countries but a higher upper bound for the U.S. The condition also holds if ρ_i in both countries is truncated normal, with the same truncation points and same dispersion for both countries but a higher mean in the U.S. This is the example we use in our numerical illustrations. But our propositions rely only on the weaker assumption in equation (3).

The assumption that U.S. agents are less risk-averse than RoW agents—the defining difference between the two countries—is motivated by the literature that explores risk-sharing motives to analyze global trading imbalances, especially Gourinchas, Rey, and Govillot (2017) and Maggiori (2017). Following this literature, we view the lower risk aversion of U.S. agents as a proxy for higher financial development in the U.S. In that sense, we could replace US-RoW with UK-EU (United Kingdom–European Union), as the financial system is generally considered to be more developed in the UK than in continental Europe.

The two countries grow trees which produce continuous streams of perishable output

[12] We interpret "elites" narrowly as economic elites, or the wealthy. Political scientists often think of elites more broadly as including also members of the political establishment, academia, military, etc.

[13] In Fehr and Schmidt's model, agents dislike inequality whether they are better or worse off than others, but they dislike it more if they are worse off. In our model, the agent's relative position in the income distribution does not appear in the utility function, but given the right skewness of consumption, the vast majority of agents are far behind the ultra-rich but only a bit ahead of the ultra-poor.

denoted by D_t^{US} and D_t^{RoW} at time $t \in [0, T]$. Aggregate global output, D_t, is given by

$$D_t = D_t^{US} + D_t^{RoW} \ . \tag{5}$$

We assume that $\delta_t \equiv \log(D_t)$ evolves over time by following a simple stochastic process:

$$d\delta_t = \mu_\delta \, dt + \sigma_\delta \, dZ_t \ , \tag{6}$$

where $\mu_\delta > 0$ and Z_t is a Brownian motion. We also assume, for simplicity, that each country's share of global output is constant and equal to the country's population share:

$$\frac{D_t^{US}}{D_t} = m \ , \tag{7}$$

where m is the fraction of agents living in the U.S.[14] Since the two countries' outputs are perfectly correlated, δ_t is the only state variable in this endowment economy. Even with a single shock (dZ_t), risk-sharing motives are critical due to heterogeneity in risk aversion.

We assume that markets are complete in that agents can contract with each other to fully share the risk associated with the dZ_t shock. While risk-sharing contracts between agents could take many different forms, we emphasize two plausible interpretations. Both of them lead to the same consumption choices and same political outcomes in equilibrium.

Under the "finance" interpretation, agents enter into financial contracts, trading stocks and bonds. Stocks are in positive net supply. U.S. stocks are claims to U.S. output; RoW stocks are claims to RoW output. Since the two output streams are perfectly correlated, so are the two stock prices. Bonds, which are in zero net supply, allow agents to lend to each other in a risk-free manner. If stocks exist, markets are dynamically complete because the risk associated with the single shock can be hedged by either of the two stocks.

Under the "labor" interpretation, agents share risk via labor contracts (e.g., Kihlstrom and Laffont, 1979). These contracts determine how the stream of output, which follows the process in equation (6), is shared among the working agents. An agent's wage is his share of total output. While output is exogenous, labor is necessary to distribute it across agents. Different jobs offer wage streams with different exposures to aggregate shocks. Agents choose jobs that expose them to as much risk as they consider appropriate.[15]

[14] In the Appendix, we relax this assumption by allowing the output shares to be stochastic.

[15] Consistent with this interpretation, Schulhofer-Wohl (2011) finds, by using survey data, that less risk-averse workers tend to hold jobs whose earnings carry more aggregate risk. Similarly, Calvet, Campbell, Gomes, and Sodini (2019) report that Swedish households with lower risk aversion have riskier labor incomes. Both studies interpret their findings as showing that people share risk by sorting into jobs according to risk preferences, so that risk-tolerant households self-select into risky occupations.

There are two political regimes: "globalization" and "autarky." Under globalization, there are no cross-border barriers—agents can trade freely across countries and insure each other without impediments. Under autarky, cross-border trading and contracting are not allowed—each country consumes the output of its own tree, U.S. agents insure only other U.S. agents, and RoW agents insure only other RoW agents.

From time 0 until time $\tau \in [0, T]$, the countries coexist under globalization. At the given time τ, both countries hold elections featuring two candidates. The "mainstream" candidate promises to maintain globalization through time T. The "populist" candidate promises to end it and move the country to autarky until time T. Each country's election is decided by that country's median voter. When elected, both candidates deliver on their promises. If either country elects a populist, the move to autarky occurs immediately—U.S. agents reclaim the possession of the U.S. tree (producing D_t^{US}), RoW agents reclaim the RoW tree (producing D_t^{RoW}), cross-border debts are settled, and cross-border risk sharing stops.

A country can move to autarky only if it can afford to settle its cross-border liabilities. It cannot move to autarky if doing so would reduce the other country's consumption. We thus rule out expropriation of wealth. This assumption seems plausible given our focus on the rise of populism in developed countries, in which expropriation is rare.

The same no-default assumption would rule out autarky in models with standard utility over consumption. In such models, a country would move to autarky only to increase its own consumption, which would necessitate a consumption loss for the other country. That is not true in our model, given the presence of inequality in the utility function. In our model, a move to autarky by one country increases the consumption in the other country.

3.1. Optimal Consumption

Given market completeness, we can write the optimization problem of each agent $i \in \mathcal{I}^k$ as

$$\max_{\{C_{it}\}} \mathrm{E}_0 \left[\int_0^T U_i \left(C_{it}, V_t^k, t \right) \, dt \right] \tag{8}$$

for $k \in \{US, RoW\}$, subject to the static budget constraint

$$\mathrm{E}_0 \left[\int_0^T \pi_t^k \, C_{it} \, dt \right] = w_i \ , \tag{9}$$

where w_i is agent i's initial endowment, $\mathrm{E}_0[.]$ is an expectation as of time 0, and π_t^k is the state price density for country k, which is determined in equilibrium. We normalize $\pi_0^k = 1$

and $\delta_0 = 0$ without loss of generality. Under globalization, the two countries' markets are fully integrated, so that $\pi_t^{US} = \pi_t^{RoW}$. Under autarky, the markets are segmented, so that $\pi_t^{US} \neq \pi_t^{RoW}$. The Lagrangean for the constrained optimization problem is

$$L_i = \mathrm{E}_0 \left[\int_0^T U_i \left(C_{it}, V_t^k, t \right) \, dt \right] - \xi_i \left(\mathrm{E}_0 \left[\int_0^T \pi_t^k \, C_{it} \, dt \right] - w_i \right) \ , \tag{10}$$

where ξ_i is the Langrange multiplier. The maximization is performed state by state, period by period. The first-order conditions yield agent i's optimal consumption:

$$C_{it} = e^{\frac{g_t^k - \log(\xi_i)}{\gamma_i}} \ , \tag{11}$$

where g_t^k is a simple transformation of the state price density:

$$g_t^k = -\phi t - \log \left(\pi_t^k \right) \ . \tag{12}$$

3.2. Distribution of Initial Endowments

Substituting optimal consumption from equation (11) into the budget constraint in equation (9), we can express agents' initial endowments as

$$w_i \ = \ e^{-\frac{\log(\xi_i)}{\gamma_i}} \, \mathrm{E}_0 \left[\int_0^T e^{-\phi t + \left(\frac{1}{\gamma_i} - 1 \right) g_t^k} \, dt \right] \ . \tag{13}$$

To solve the model analytically, we make technical assumptions about the distribution of w_i across agents. For any given value of y, we define $\log(\widetilde{\xi}_i) = \log(\xi_i) - y$. We then define

$$\psi_i = -\frac{1}{\gamma_i} \log \left(\widetilde{\xi}_i \right) \tag{14}$$

and assume that it is independent of γ_i.[16] Once we draw the values of ψ_i and γ_i from their assumed distributions, we combine them with the chosen value of y to construct ξ_i, which then determines the initial endowments w_i in equation (13). In Section 5.3, we vary y to examine how the distribution of initial endowments affects the equilibrium outcomes.

Heterogeneous-agent models are often amenable only to numerical solutions. We derive analytical solutions, and many propositions, under three-dimensional heterogeneity (γ_i, η_i, and ψ_i) and no assumptions about the functional forms of the distributions of the three parameters across agents. We only assume that the distribution of γ_i is bounded, $\gamma_i \in [\gamma_L, \gamma_H]$ with $\gamma_L > 1$, continuously differentiable, and that it has positive dispersion. The distributions of both ψ_i and $1/\gamma_i$ must have well-defined moment-generating functions.

[16] The independence between ψ_i and γ_i is ensured by choosing $\tilde{\xi}_i$ implied by the values of ψ_i and γ_i. Given two independent distributions of ψ_i and γ_i, the distribution of $\tilde{\xi}_i$ follows from $\log(\tilde{\xi}_i) = -\psi_i \gamma_i$.

We illustrate the model's implications in a parametric example. For each country, we choose the distribution of risk tolerance $\rho_i = 1/\gamma_i$ that is truncated normal with the same truncation points, restricting γ_i to the interval of $(2, 10)$. The standard deviation of ρ_i is also the same, 0.05, for both countries. But the means of ρ_i are different: 0.25 for the U.S. and 0.2 for RoW, so that RoW agents are more risk-averse, on average, than U.S. agents (condition (3) is satisfied). The distribution of η_i is normal truncated at zero, with the mean of 0.001 and standard deviation of 0.0003. The distribution of ψ_i is normal with standard deviation of 0.2 and the mean such that $\mathrm{E}^{\mathcal{I}}\left[e^{\psi_i} | i \in \mathcal{I}\right] = 1$. We also choose $y = 0$, $\phi = 0.02$, $\mu_\delta = 0.02$, $\sigma_\delta = 0.04$, $m = 0.2$, $\tau = 2$ years, and $T = \tau + 100$ years.

Global output, δ_t, follows the process in equation (6). Its drift is positive ($\mu_\delta > 0$), reflecting the tendency of output to grow over time. It is thus just a matter of time before δ_t exceeds any given value with probability close to one. In some of our subsequent results, we assume "when output is large enough," by which we mean $\delta_t > \underline{\delta}$, where $\underline{\delta}$ is a result-specific threshold. This is an innocuous assumption—we simply restrict our attention to time periods t for which enough time has passed so that $\delta_t > \underline{\delta}$.

4. Globalization

We now solve for the equilibrium under globalization. Since $\pi_t^{US} = \pi_t^{RoW}$, from equation (12), we have $g_t^{US} = g_t^{RoW}$. We denote the common value of g_t^{US} and g_t^{RoW} by g_t. Since output is perishable, aggregate output equals aggregate consumption in each period:

$$D_t = \int_{i \in \mathcal{I}} C_{it} \, di \ , \tag{15}$$

where $\mathcal{I}$ is the set of all agents. Substituting for consumption from equation (11), we obtain

$$\delta_t = \log \left(\frac{\mathrm{E}^{\mathcal{I}}\left[e^{(g_t - y)/\gamma_i} \,|\, i \in \mathcal{I}\right]}{\mathrm{E}^{\mathcal{I}}\left[e^{-y/\gamma_i} \,|\, i \in \mathcal{I}\right]} \right) \ . \tag{16}$$

The equilibrium value of g_t is the unique solution to this equation. We denote this solution by $g(\delta_t)$. The basic properties of this function are derived by Veronesi (2018). He shows that $g'(\delta_t)$ is the inverse of the consumption-weighted average of agents' risk tolerance. Since this value is positive, $g(\delta_t)$ is increasing in δ_t. In addition, $g'(\delta_t)$ decreases as δ_t increases because in a stronger economy, agents with lower risk aversion consume relatively more so that their higher risk tolerance receives a larger weight in the average. Finally, $g(\delta_t) \to \infty$ as $\delta_t \to \infty$ because the marginal utility of consumption shrinks to zero when consumption is infinite.

4.1. Inequality

From equations (2) and (11), we derive the following proposition. Its proof, along with the proofs of all of our other formal results, is in the Appendix.

Proposition 1. *When output is large enough, inequality V_t^k is uniformly increasing in output δ_t, with $\lim_{\delta_t \to \infty} V_t^k = \infty$, for both countries $k \in \{US, RoW\}$. Also, V_t^k is given by*

$$V_t^k = \frac{\mathrm{E}^{\mathcal{I}}\left[e^{2\psi_i} \mid i \in \mathcal{I}^k\right]}{\mathrm{E}^{\mathcal{I}}\left[e^{\psi_i} \mid i \in \mathcal{I}^k\right]^2} \frac{\mathrm{E}^{\mathcal{I}}\left[e^{2(g(\delta_t)-y)/\gamma_i} \mid i \in \mathcal{I}^k\right]}{\mathrm{E}^{\mathcal{I}}\left[e^{(g(\delta_t)-y)/\gamma_i} \mid i \in \mathcal{I}^k\right]^2} - 1 \ . \tag{17}$$

The result that inequality grows with output would be unsurprising if we were to measure inequality in *absolute* terms, as the cross-sectional variance of consumption levels, because those levels, and differences between them, grow with the size of the economy. However, we measure inequality in *relative* terms, as the cross-sectional variance of consumption shares (equation (2)). The result is an outcome of optimal risk sharing. As the economy strengthens, agents with lower risk aversion consume an increasingly large fraction of total output. This follows from equation (11) because $g'(\delta_t) > 0$. Economic growth generates rising relative inequality due to heterogeneity in risk aversion.

Inequality is eventually driven by the right tail of the consumption distribution. Let $S_t^k = \text{Skewness}\left(\frac{C_{it}}{\overline{C}_t^k} \mid i \in \mathcal{I}^k\right)$ denote the skewness of consumption shares across agents.

Corollary 1. *When output is large enough, we have $S_t^k > 0$, S_t^k uniformly increasing in δ_t, and $\lim_{\delta_t \to \infty} S_t^k = \infty$, for both countries $k \in \{US, RoW\}$.*

Both Proposition 1 and Corollary 1 hold after output grows large enough so that the inequality (skeweness) induced by heterogeneous wealth cumulation overcomes the arbitrary inequality (skeweness) of initial endowments. Until then, the relation between growth and inequality (skeweness) is non-monotonic. For example, if higher-γ_i agents have higher initial endowments, inequality initially declines with growth while lower-γ_i agents catch up. Over time, lower-γ_i agents gradually displace higher-γ_i agents from top consumption shares. (For evidence on displacement in top wealth shares, see Gomez, 2019.) Eventually, growth boosts inequality as low-γ_i agents consume a growing share of output.

In our model, globalization per se does not increase inequality; economic growth does. But globalization contributes to inequality by permitting more extreme risk-sharing, which amplifies the distributional effects of growth. After output grows large enough, inequality is driven by the high consumption of the rich, not the low consumption of the poor. Inequality aversion is thus related more to agents' dislike of the rich than to their concern for the poor.

Figure 5 plots the substance of Proposition 1 and Corollary 1 for our example.

Corollary 2. *For output large enough, agent i's consumption share, $C_{it}/\overline{C}_t^k$, is increasing in δ_t if and only if $\gamma_i < \overline{\gamma}^k(\delta_t)$. Moreover, $\overline{\gamma}^k(\delta_t)$ is decreasing in δ_t, for $k \in \{US, RoW\}$.*

Corollary 2 shows that the benefits of growth accrue disproportionately to low-γ_i agents, and that the set of disproportionate beneficiaries shrinks as output grows over time.

That a shrinking fraction of the population benefits disproportionately from growth is not only a prediction of our model but also a feature of the data. Panel A of Figure 6 shows that the top 1% income share in the U.S. has risen sharply since the 1970s. Panel B shows that the ratios of income shares, top 1% to top 10% as well as top 0.1% to top 1%, have risen also, in a very similar fashion. The two lines plotted in Panel B track each other fairly closely, revealing the "fractal" nature of top inequality (Gabaix et al., 2016).

Panels C and D of Figure 6 are the counterparts of Panels A and B for equilibrium consumption shares generated from our model under the expected output path. The patterns in Panels C and D are strikingly similar, both to each other and to the patterns in Panels A and B. Interestingly, our model generates fractal-like dynamics of top inequality similar to those observed in the data. In contrast, many other models in the inequality literature fail to generate such dynamics, as explained by Gabaix et al. (2016).

The levels of empirical quantities in Panels A and B exceed those of model-predicted variables in Panels C and D. That is not surprising because the former measure income inequality while the latter measure consumption inequality. In Panels A and B, we plot income inequality because it is measured more precisely, and is available more easily, than consumption inequality. In Panels C and D, we plot consumption inequality because that is what our model makes predictions about. In the data, consumption inequality is lower than income inequality, but their dynamics are similar (e.g., Aguiar and Bils, 2015). It is interesting that our economic mechanism, driven by heterogeneous risk aversion, produces dynamics of top inequality similar to those in the data.

4.2. Trade Balance

Heterogeneity in risk aversion generates an imbalance between the two countries.

Proposition 2. *Under globalization, when output is large enough, the U.S. runs a trade deficit whereas RoW runs a trade surplus. That is, U.S. agents consume more than their*

tree's output whereas RoW agents consume less:

$$\int_{i\in\mathcal{I}^{US}} C_{it}\,di \;>\; D_t^{US} \tag{18}$$

$$\int_{i\in\mathcal{I}^{RoW}} C_{it}\,di \;<\; D_t^{RoW}\;. \tag{19}$$

This pattern is illustrated in Figure 7. The intuition follows from efficient risk sharing. Since U.S. agents are less risk-averse, they insure RoW agents by taking larger risk exposures. These exposures finance high consumption by U.S. agents when output is large. The opposite is true for RoW agents—their desire for smooth consumption leads them to adopt smaller risk exposures, from which they consume less. Under the finance interpretation, U.S. agents insure RoW agents by selling them bonds, and they use the funds borrowed from RoW agents to establish levered portfolio positions in stocks.[17] Under the labor interpretation, U.S. agents employ RoW agents, giving them relatively safe (e.g., fixed-wage) job contracts while retaining more risk. Both interpretations seem to fit the 2010s United States, which has sold a large amount of Treasuries, and outsourced many jobs, to RoW.

5. Backlash Against Globalization

At time τ, both countries hold elections that may result in a move from globalization to autarky. Before analyzing how agents vote, we describe the equilibrium under autarky.

5.1. Autarky

Under autarky, each country consumes its own output, so that for both $k \in \{US, RoW\}$,

$$D_t^k = \int_{i\in\mathcal{I}^k} C_{it}\,di\;. \tag{20}$$

Substituting for consumption from equation (11) and rearranging, we obtain an equation identical to equation (16) but specific to country k. We denote its solution, the equilibrium value of g_t^k, by $g^k(\delta_t)$. Similar to $g(\delta_t)$, the function $g^k(\delta_t)$ is increasing and concave in δ_t, and it diverges as $\delta_t \to \infty$. In addition, when output is large enough,

$$g^{US}(\delta_t) \;<\; g(\delta_t) \;<\; g^{RoW}(\delta_t)\;. \tag{21}$$

[17] We prove in the Appendix that U.S. agents are net borrowers whereas RoW agents are net lenders. Because of their leverage, U.S. agents benefit more from global growth than do RoW agents. We also show that U.S. agents' wealth exceeds the value of their own tree, while the opposite is true for RoW.

Recall from equation (12) that $g^k(\delta_t)$ is a simple modification of the state price density, π_t^k, which can be interpreted as the marginal utility of consumption for the representative agent in country k. Equation (21) implies that the marginal utility of U.S. agents is higher under autarky than under globalization, whereas the opposite is true for RoW agents.

Inequality under autarky obeys equation (17), except that $g(\delta_t)$ is replaced by $g^k(\delta_t)$.

Proposition 3. *For every δ_t, U.S. inequality is lower under autarky than under globalization, whereas the opposite is true for RoW inequality:*

$$V_t^{US}\left[g^{US}(\delta_t)\right] < V_t^{US}\left[g(\delta_t)\right] \tag{22}$$

$$V_t^{RoW}\left[g^{RoW}(\delta_t)\right] > V_t^{RoW}\left[g(\delta_t)\right] . \tag{23}$$

The intuition follows from risk-sharing considerations. Under globalization, U.S. agents effectively provide insurance to RoW agents. Therefore, U.S. agents' consumption paths are risky, resulting in significant dispersion in their consumption shares. Under autarky, cross-border insurance is absent, U.S. agents' consumption is less risky, and U.S. inequality is lower. For RoW agents, the same arguments apply in reverse.

Taking the finance interpretation, under globalization, U.S. agents borrow from RoW agents to finance levered stock positions. This leverage amplifies the differences in consumption shares across U.S. agents. Under autarky, cross-border leverage is absent and so U.S. consumption inequality is smaller. For RoW agents, the opposite is true. Under globalization, they hold large positions in bonds issued by U.S. agents. Given the similarity of RoW agents' holdings, the differences in their consumption shares are relatively small. Under autarky, cross-border bond holdings are absent and RoW consumption inequality is larger. Taking the labor interpretation, under globalization, U.S. agents employ RoW agents through safe job contracts, resulting in low consumption dispersion in RoW but high dispersion in the U.S. Under autarky, cross-border employment is absent, RoW agents are forced to bear more risk while U.S. agents bear less, and there is less consumption inequality in the U.S. but more in RoW. See Figure 5 for a parametric illustration.

5.2. Elections

At time $\tau \in [0, T]$, both countries vote for one of two candidates. The mainstream candidate commits to maintain globalization, whereas the populist commits to a shift to autarky, both lasting through time T. To determine who agent $i \in \mathcal{I}^k$ votes for, let U_i^G and U_i^A denote the

agent's utilities from globalization and autarky, respectively, at time τ:

$$U_i^G(\delta_\tau; k, \tau, T) = \mathrm{E}_\tau \left[\int_\tau^T e^{-\phi(s-\tau)} \left(\frac{C_{is}^{1-\gamma_i}}{1-\gamma_i} - \eta^i V_s^k \right) ds \mid \text{mainstream elected} \right] \quad (24)$$

$$U_i^A(\delta_\tau; k, \tau, T) = \mathrm{E}_\tau \left[\int_\tau^T e^{-\phi(s-\tau)} \left(\frac{C_{is}^{1-\gamma_i}}{1-\gamma_i} - \eta^i V_s^k \right) ds \mid \text{populist elected} \right] . \quad (25)$$

We assume that the agent votes for the populist candidate if and only if

$$U_i^A(\delta_\tau; k, \tau, T) > U_i^G(\delta_\tau; k, \tau, T) . \quad (26)$$

This assumption of sincere voting seems reasonable because, due to their infinitesimal size, agents cannot affect the election outcome through strategic voting.

5.2.1. Voting by U.S. Agents

When deciding who to vote for, agents assess the effects of a move to autarky on both consumption and inequality. A shift to autarky decreases the consumption of U.S. agents (compare equations (18) and (20)) but also reduces inequality (Proposition 3). This consumption-inequality tradeoff is at the heart of the voting decision of each U.S. agent.

Proposition 4. *For any U.S. agent i with $\eta_i > 0$, there exists $\overline{\delta}^i$ such that for any $\delta_\tau > \overline{\delta}^i$, the agent votes for the populist candidate.*

If δ_τ is large enough, the agent prefers autarky because the reduction in inequality more than outweighs the reduction in consumption. Lower consumption does not bother the agent much because his marginal utility of consumption is low in a strong economy (when $\delta_\tau \to \infty$, the marginal utility goes to zero). The reduction in inequality matters more because the drop in inequality, $V_\tau^{US}\left[g\left(\delta_\tau\right)\right] - V_\tau^{US}\left[g^{US}\left(\delta_\tau\right)\right]$, is bounded below as $\delta_\tau \to \infty$. Therefore, when δ_τ is large enough, the gain from a more equal society more than compensates for the loss of consumption that the agent suffers when moving to autarky.[18]

Equality can be interpreted as a luxury good in that society demands more of it when it becomes wealthier. When δ_τ increases, agents are more willing to sacrifice consumption in exchange for more equality. In the same spirit, voters might also treat culture, traditions, and other nonpecuniary values as luxury goods. If those values were to take the place of V_t^k

[18] Anecdotal evidence suggests that at least some Trump supporters accept lower consumption as a price they are willing to pay for Trump's effort to move the U.S. away from globalization, such as the tariffs he imposed in 2018: "Casey Jackson, a maintenance technician, said he would support the tariffs even if they cost him personally. "If it comes out of my paycheck, so be it," he said." (*Tariffs Trim a Factory's Profit, but Loyalty to Trump Endures*, The New York Times, July 23, 2018).

in equation (1), agents would demand more of them when they become richer.[19] Consistent with this argument, the recent rise in populism appears predominantly in rich countries. In poor countries, the marginal utility of consumption is high and agents are not willing to sacrifice consumption in exchange for equality or other nonpecuniary values.

Corollary 3. *For any δ_τ, any U.S. agent i with $\eta_i = 0$ votes for the mainstream candidate.*

This result highlights the importance of inequality aversion for our results. Agents whose η_i is zero, or small, reject populism to preserve the risk-sharing benefits of globalization. Therefore, for our following result, we assume that $\eta_i > 0$ for more than half of U.S. agents.

The U.S. election is decided by the U.S. median voter. If the fraction of U.S. agents for whom the relation (26) holds exceeds one half, the election is won by the populist and the U.S. moves to autarky. We now present our main result.

Proposition 5. *There exists $\overline{\delta}$ such that for any $\delta_\tau > \overline{\delta}$, the populist wins the U.S. election.*

In a sufficiently strong economy, the populist wins the U.S. election because the median voter values the lower inequality under autarky more than the higher consumption under globalization. The result follows from Proposition 4, in which the threshold $\overline{\delta}_t^i$ varies across agents. The median value of $\overline{\delta}_t^i$ across all U.S. agents is equal to the value of $\overline{\delta}$ in Proposition 5. This value of $\overline{\delta}$ is indicated by the vertical line in Figure 8.

Proposition 5 highlights the fragility of globalization. By permitting the broadest possible risk sharing, globalization stimulates risk taking. Differences in risk aversion lead agents to adopt different exposures to economic shocks. Agents with the largest exposures—those with the highest tolerance for risk—benefit the most from global growth, while agents with the smallest exposures benefit the least. Economic growth thus deepens the wedge between the consumption levels of agents with different risk aversions, resulting in growing inequality. Given agents' preference for equality, in a growing economy, it is just a matter of time before output grows to a level at which more than half of the agents vote populist.

Proposition 5 maps well onto the recent populist backlash in the West. Both the Trump election and the Brexit vote occurred in 2016, after decades of prosperity. The only major recession since World War II was associated with the 2008 financial crisis. The 2009–2016 period witnessed uninterrupted growth in both the U.S. and UK, indicating a large value of δ_t by 2016. The fruits of this growth were not shared equally, resulting in a steady rise of

[19] In the context of Brexit, suppose some British voters worry that immigration dilutes their country's traditional values, which they hold dear. When Britain becomes rich enough, it might decide to restrict immigration, sacrificing consumption in exchange for the reinforcement of traditional values.

inequality in both countries.[20] By 2016, inequality rose to such a level that both countries voted populist in crucial polls, our model suggests.

Naturally, this is just a model. We do not expect real-world voters to solve the complicated problem in equation (26), or to understand that autarky restricts risk sharing. But voters might behave as if they followed this mechanism. They might understand that autarky will hurt the rich more than the poor. Rural British voters might understand that Brexit will hurt Londoners more than them, and they might be fine with that.

5.2.2. Who Votes for the Populist?

We now analyze the cross section of U.S. agents' voting preferences.

Proposition 6. *Agents with higher values of γ_i and η_i are more likely to vote populist.*

The expression "more likely" should be interpreted as follows. Holding η_i and ψ_i constant, there exists a threshold $\overline{\gamma}$ such that agent i votes populist if and only if $\gamma_i > \overline{\gamma}$. Similarly, holding γ_i and ψ_i constant, there exists a threshold $\overline{\eta}$ such that agent i votes populist if and only if $\eta_i > \overline{\eta}$. Given the randomness in γ_i, η_i, and ψ_i, populist voters tend to exhibit more aversion to both risk and inequality, as illustrated in Figure 9.

The result that high-η_i agents vote populist is straightforward. Recall that a move to autarky benefits U.S. agents by reducing within-U.S. inequality but hurts them by reducing their consumption. In this consumption-inequality tradeoff, higher-η_i agents put a larger weight on inequality, which makes autarky more appealing to them.

The result that high-γ_i agents vote populist follows from their optimal choice of smooth consumption plans. Equation (11) shows that the equilibrium consumption of higher-γ_i agents is less sensitive to changes in g_t^k. As a result, such agents suffer a smaller drop in consumption when the global value g_t changes to the local value g_t^{US}, where $g_t^{US} < g_t$ (equation (21)). Since higher-γ_i agents are better insured against the adverse consumption consequences of a shift to autarky, they are more likely to vote populist.

The model produces a negative relation between γ_i and wealth at time τ. Lower-γ_i agents choose larger risk exposures, so they gradually accumulate more wealth than higher-γ_i agents. The negative relation between γ_i and wealth is not perfect, but it becomes stronger as time passes and the effect of initial endowments dwindles. The model thus suggests wealth as a

[20] For example, the top 10% income share rose from 34.2% in 1980 to 47.0% in 2014 in the U.S., and from 28.4% in 1979 to 40.0% in 2014 in the UK, according to the World Inequality Database.

natural empirical proxy for risk aversion.[21] Panel C of Figure 9 shows that there are wealthy voters who vote populist, as well as poor voters who vote mainstream, but on average, mainstream voters are wealthier. They also consume more than populist voters, on average, and suffer larger drops in consumption upon a move to autarky (Figure 10).

5.2.3. Voting by RoW Agents

Proposition 7. *RoW agents never elect the populist candidate.*

To understand this result, recall that a move to autarky would increase not only RoW's inequality (Proposition 3) but also its consumption. Consumption would rise because under globalization, RoW agents consume less than their tree's output, whereas under autarky, they consume all of it (compare equations (19) and (20)). But this increase in RoW consumption would come at the expense of U.S. consumption, and we rule out expropriation.

5.3. Redistribution

According to Proposition 5, U.S. voters eventually put an end to globalization. While globalization is fragile in a democracy, it would be resilient in a benevolent dictatorship. A social planner would eschew autarky because of its inefficient risk sharing. The social planner's problem is intractable, but we know its solution differs from our competitive market solution due to a consumption externality caused by the presence of inequality in the utility function. By consuming a lot, the elites raise inequality, imposing a negative externality on others. The planner can overcome this externality by constraining agents' consumption plans.

In the absence of a social planner, could we save globalization by redistributing wealth across agents? Specifically, if agents were offered a third voting option—a candidate offering to not only preserve globalization but also redistribute wealth from the rich to the poor—would they take it over autarky? For many redistributive policies, the answer is no.

Proposition 8. *For any lump-sum tax policy $\{\mathcal{T}_{i,t}\}$ such that $\int \mathcal{T}_i(\delta_t)di = 0$, there exists a redistribution of the endowments at time 0 that achieves the same consumption plans.*

In other words, any state-contingent lump-sum redistributive tax policy is equivalent to a redistribution of initial endowments. This claim follows from market completeness. Under

[21] Evidence indeed suggests that wealthier people tend to be less risk-averse. For example, Graham, Harvey, Puri (2013) survey U.S. CEOs and find that they are much less risk-averse than the general population.

redistribution, agent i's static budget constraint can be written as

$$\mathrm{E}_0\left[\int_0^T \pi_t^k\, C_{it}\, dt\right] = w_i + \mathrm{E}_0\left[\int_0^T \pi_t^k\, \mathcal{T}_{it}\, dt\right] \ . \tag{27}$$

Any redistributive policy $\{\mathcal{T}_{i,t}(\delta_t)\}$ can thus be implemented at time 0 by augmenting agent i's initial endowment with $\tilde{w}_i = \mathrm{E}_0\left[\int_0^T \pi_t^k\, \mathcal{T}_{it}\, dt\right]$. It is easy to verify that $\int \tilde{w}_i di = 0$.

Proposition 8 is in fact more general than stated. It applies not only to lump-sum taxes but also to any other redistributive policy that does not affect the equilibrium value of π_t^k. One example is a flat income tax. As we show in the Appendix, such a tax affects agents' optimal risk exposures but not their equilibrium consumption or π_t^k.

Building on Proposition 8, we ask whether globalization can be saved by redistributing wealth from low-γ_i agents, who benefit the most from globalization, to high-γ_i agents, who benefit the least. Recall from Section 3.2 that, for tractability, we restrict the distribution of initial endowments w_i to those described by equation (13), which can be rewritten as

$$w_i \quad = \quad e^{\psi_i}\, \mathrm{E}_0\left[\int_0^T e^{-\phi t + \left(g_t^k - y\right)/\gamma_i - g_t^k}\, dt\right] \ . \tag{28}$$

We can pick any value of y and any distribution of ψ_i whose mean is $\mathrm{E}^{\mathcal{I}}\left[e^{\psi_i} | i \in \mathcal{I}\right] = 1/\mathrm{E}^{\mathcal{I}}\left[e^{-y/\gamma_i} | i \in \mathcal{I}\right]$. Equation (28) shows that by increasing the value of y, we redistribute wealth from low-γ_i agents to high-γ_i agents. This fact is also apparent from Panel A of Figure 11: as y increases, so does the correlation between γ_i and w_i. The most relevant type of redistribution—from the wealthy to the poor—can thus be implemented by varying y.

Because all of our prior results are independent of y, they hold for any redistribution captured by different values of y. We formalize this statement in the following corollary.

Corollary 4. *Suppose that the mainstream candidate promises to not only preserve globalization but also implement a redistributive policy that is equivalent to a change in y. For any y, there exists $\overline{\delta}$ such that for any $\delta_\tau > \overline{\delta}$, the populist candidate wins the U.S. election.*

This class of redistributive policies thus cannot prevent the breakdown of globalization. Panel B of Figure 11 shows that increased redistribution implies a higher value of the threshold $\overline{\delta}$ from Proposition 5. Therefore, increased redistribution makes it less likely that the populist gets elected at any given time τ. But for any finite redistributive policy y, when τ is large enough, $\delta_\tau > \overline{\delta}$ holds almost surely. In that sense, redistribution can "delay" the election of the populist but cannot prevent it from happening eventually.

Corollary 4 is noteworthy because redistribution is often proposed as a remedy for the inequality caused by global trade. It is commonly argued that to obtain the first-best solution,

we should preserve globalization and make transfers from the beneficiaries of globalization to those adversely affected by it.[22] This argument has some merit in the context of our model because redistribution can reduce the probability of the populist getting elected, for any given τ. But it also has limitations because for any given finite redistributive policy y, there exists τ large enough that the populist almost surely gets elected. A related point is made by Musto and Yilmaz (2003), who show in a different setting that agents can trade away the effects of redistributive policies by trading in complete markets.

The mainstream candidate could save globalization by levying a Pigouvian tax on consumption, taxing agents based on their contribution to inequality (i.e., taxing those who consume a lot and subsidizing those who consume little). A progressive consumption tax with agent-specific rates could address the externality by distorting agents' first-order conditions. Of course, such a tax would be difficult to implement in practice. Progressive income taxation could also in principle address the externality. Whereas a flat income tax does not affect the equilibrium state price density, heterogeneity in the tax rates does, as we show in the Appendix. The design of optimal tax policies is beyond the scope of this paper.

To summarize, globalization cannot be saved by offering rich-to-poor redistribution as the third voting option, unless the redistribution is of a specific form that internalizes the consumption externality. Examples that do not work are lump-sum redistribution, flat income tax, and redistribution captured by changing y. Examples of policies that might potentially work are progressive consumption and income taxes with specific agent-tailored rates. In reality, voters are often offered only two options, such as "Remain" or "Leave" in the case of the Brexit referendum, and Trump or Clinton in the case of the 2016 U.S. election.

5.4. Interpretation: Background Risk and Unfair Inequality

We assume that risk aversion γ_i exhibits heterogeneity across agents, without modeling the source of this heterogeneity. One potential source is heterogeneous exposure to background risk. This agent-specific risk, which is uninsurable and outside our model, is usually associated with shocks to the agent's labor income, proprietary income, or real estate. Higher exposure to background risk can be interpreted as higher risk aversion with respect to other independent risks, under plausible conditions (Gollier and Pratt, 1996). For example, Heaton and Lucas (2000) analyze the impact of background risk on asset allocation, both empirically and theoretically in an intertemporal model with CRRA utility. They find that agents facing

[22] For example, Rodrik (1997, page 73) argues that "If the external risks that buffet national economies and workers were fully observable, a set of transfers contingent on the realization of the shocks would work best. But the world is obviously too complicated for first-best solutions..."

more background risk allocate less to risky stocks, as if they were more risk-averse.

Why do some agents face more background risk than others? Frictions may reduce the ability of some agents to avoid idiosyncratic shocks. Agents who are less able to insure against such shocks face more background risk and effectively have higher γ_i's. These agents may have limited access to various types of insurance, such as financial instruments, political connections, health insurance, and unemployment insurance. Financial instruments help smooth out wealth shocks, political connections help contain regulatory risk, health insurance helps suppress health shocks, and unemployment insurance helps with employment shocks. Low-γ_i agents may have access to all of these, whereas high-γ_i agents may not.

High-γ_i agents might view their lack of access as "unfair," resulting from their underprivileged position in society. Under this interpretation, high-γ_i agents lag behind the elites (i.e., low-γ_i agents) because of differential access to hedging opportunities. In that sense, inequality caused by heterogeneous exposure to background risk is "unfair inequality." This interpretation strengthens our motivation for inequality aversion. While agents might be tolerant of inequality caused by differential effort or skill, they might be less tolerant of inequality resulting from differential opportunities. It is easy to see how such inequality could trigger populist backlash, as it does in our model.

5.5. Interpretation: Risk versus Intertemporal Substitution

Given the CRRA specification of preferences over consumption in equation (1), γ_i can be interpreted not only as risk aversion but also as the inverse of the elasticity of intertemporal substitution. In other words, high-γ_i agents are unwilling to substitute consumption not only across states but also over time. Therefore, we can interpret our results also through the lens of intertemporal substitution. We do that next.[23]

Agents trade to smooth their consumption paths across time. At time 0, they face a stream of output that is expected to grow. High-γ_i agents have a strong preference to bring some of the high future consumption to the present, so they strike deals that allow them to consume more earlier and less later. In contrast, low-γ_i agents defer their consumption. Over time, the consumption shares of low-γ_i agents rise while those of high-γ_i agents fall. As before, low-γ_i agents grow wealthy while high-γ_i agents remain poor in comparison.

At election time, agents know that if they elect the populist, their consumption will drop.

[23] A natural way of disentangling the effects of risk aversion and intertemporal substitution is to replace CRRA by Epstein-Zin preferences in equation (1). Alas, the equilibrium then becomes intractable.

They trade so that higher-γ_i agents, who are less willing to substitute intertemporally, experience a smaller consumption drop than lower-γ_i agents. Higher-γ_i agents are thus more willing to vote populist. This result mirrors Proposition 6, but here it emerges from intertemporal smoothing rather than risk aversion. We emphasize the risk-sharing perspective because it motivates cross-country differences in γ_i in the international finance literature, it builds on the background risk interpretation in Section 5.4, and it matches the evidence of more risk-averse households choosing safer jobs and safer financial investments.

5.6. Model Extensions

In the Appendix, we extend the model in four different ways. First, we allow the countries' output shares to fluctuate over time, departing from equation (7). Second, we let the countries' population shares vary over time. Third, we assume that a move to autarky reduces subsequent output, either by destroying capital or by lowering the long-term growth rate of output. Finally, we assume that a shift to autarky makes output more volatile. In all four extensions, our main results, including Proposition 5, continue to hold.

The extensions also yield additional insights. The first extension shows that the populist victory in the U.S. is more likely after a decline in the U.S. share of global output. When RoW grows relative to the U.S., U.S. agents have more RoW risk to share, which deepens U.S. inequality. Autarky, in which RoW risk is no longer shared, then becomes more appealing. In recent decades, the U.S. share of global output indeed shrank, in part due to the fast growth of China. China grew even during the 2008 crisis, which impoverished the West.

The second extension shows that immigration from RoW to the U.S. makes the populist victory in the U.S. more likely. Intuitively, when the mass of U.S. agents increases, autarky becomes more attractive to U.S. agents because they have more other U.S. agents to share local risk with. In reality, though, the role of immigration in the populist backlash is more likely driven by cultural reasons that are outside our model.

The third extension shows that the prospect of lower output in autarky does not discourage agents from voting populist. A loss of output implies lower consumption but also lower inequality because it hurts the rich more than the poor. Interpreting the 2016 EU referendum through our model, British voters understood that Brexit would reduce their consumption, but it was a price they were willing to pay for lower UK inequality. They accepted that Brexit would weaken the City of London because, given its riches, a weaker London implies lower UK inequality. More generally, when output is large enough, the median voter welcomes its

reduction because the resulting decrease in inequality outweighs the decline in consumption. This holds even if we remove autarky from the model. When inequality grows large enough, agents find it optimal to destroy some capital to bring inequality down.

6. Asset Prices

Under its finance interpretation, the model makes interesting predictions for stock and bond prices. The state price density under globalization is $\pi_t = e^{-\phi t - g(\delta_t)}$, which follows immediately from equation (12). Applying Ito's Lemma, we obtain

$$\frac{d\pi_t}{\pi_t} = -r(\delta_t)\,dt - \sigma_\pi(\delta_t)\,dZ_t\ , \tag{29}$$

where

$$r(\delta_t) = \phi + g'(\delta_t)\,\mu_\delta - \frac{1}{2}\left(g'(\delta_t)^2 - g''(\delta_t)\right)\sigma_\delta^2 \tag{30}$$

$$\sigma_\pi(\delta_t) = g'(\delta_t)\,\sigma_\delta\ . \tag{31}$$

The dependence of the interest rate, $r(\delta_t)$, on δ_t is unclear as the interplay between intertemporal substitution (the term that involves μ_δ) and precautionary savings (the term that involves σ_δ^2) is complicated. But the price of risk, $\sigma_\pi(\delta_t)$, always decreases with δ_t because $g''(\delta_t) < 0$. When δ_t is high, the price of risk is small because a large amount of consumption is attributed to low-γ_i agents who demand low compensation for risk.

Under autarky, equations (30) and (31) look identical, except that the common values $g(\delta_t)$, $r(\delta_t)$, and $\sigma_\pi(\delta_t)$ are replaced by the country-specific values $g^k(\delta_t)$, $r^k(\delta_t)$, and $\sigma_\pi^k(\delta_t)$. To help us understand how the price of risk depends on the trading regime, we show that[24]

$$(g^{US})'(\delta_t) \ < \ g'(\delta_t) \ < \ (g^{RoW})'(\delta_t)\ . \tag{32}$$

From equations (31) and (32), we immediately obtain the following proposition.

Proposition 9. *The U.S. market price of risk, σ_π^{US}, is lower under autarky than under globalization, for any δ_t. The opposite is true for RoW.*

Consider the risk associated with the output of the U.S. tree. Under globalization, this risk is borne by both U.S. and RoW agents, whereas under autarky, it is borne by U.S. agents only. Since these agents are less risk-averse than RoW agents, they demand lower

[24] While equation (32) appears to hold generally, we can prove the first inequality, $(g^{US})'(\delta_t) < g'(\delta_t)$, only in the special case when the distribution of γ_i satisfies equation (4). Our proofs of the other two inequalities, $(g^{US})'(\delta_t) < (g^{RoW})'(\delta_t)$ and $g'(\delta_t) < (g^{RoW})'(\delta_t)$, are fully general (see the Appendix).

compensation for risk. The same arguments, but in reverse, hold for RoW. Proposition 9 is illustrated in Panel A of Figure 12 for a range of values of δ_t.

6.1. Stock Prices

The market price of country k's stock is the present value of dividends from country k's tree:

$$P_t^k = \mathrm{E}_t \left[\int_t^T \frac{\pi_s^k}{\pi_t^k} D_s^k \, ds \right] . \tag{33}$$

Proposition 10. *For $t < \tau$, an increase in δ_t leads to an increase in the global market share of U.S. stocks, $P_t^{US}/(P_t^{US} + P_t^{RoW})$.*

When δ_t increases, so does the probability of $\delta_\tau > \overline{\delta}$ in Proposition 5, which increases the probability of the populist's victory. This victory reduces the discount rate for U.S. stocks but raises it for RoW stocks (Proposition 9). As the market anticipates this outcome, the global market share of U.S. stocks rises. Panel B of Figure 12 visualizes Proposition 10 in the context of our example. Consistent with this prediction, the global share of the U.S. market rose before Trump's election, as we show in the Appendix. We do not emphasize this evidence, though, because stock prices move also for many reasons outside our model.

6.2. Bond Prices

At time $t < \tau$, consider two zero-coupon risk-free bonds maturing at time $t' > \tau$. The "U.S. bond" pays one unit of consumption good in the U.S. at time t'; the "RoW bond" does the same in RoW.

Proposition 11. *For $t < \tau$, an increase in δ_t leads to a decrease in the yield of the U.S. bond but an increase in the yield of the RoW bond.*

An increase in δ_t makes it more likely that $\delta_\tau > \overline{\delta}$, in which case autarky arrives at time τ (Proposition 5). Upon a shift to autarky, country k's state price density jumps from π_τ to π_τ^k, where $\pi_\tau^k/\pi_\tau = e^{g(\delta_\tau) - g^k(\delta_\tau)}$. Given equation (21), a move to autarky increases state prices in the U.S. but decreases them in RoW. The reason is that a move to autarky decreases U.S. agents' consumption, thereby increasing their marginal utility of consumption. Buying the U.S. bond allows U.S. agents to postpone consumption until after time τ when its marginal utility is higher. Since an increase in δ_t makes autarky more likely, it makes the U.S. bond more valuable, reducing its yield. The same arguments, in reverse, apply to RoW.

Panel C of Figure 12 visualizes Proposition 11. When δ_t is low, markets expect globalization to continue beyond time τ, resulting in similar bond yields in both countries. When δ_t grows, a move to autarky becomes more likely; the U.S. bond thus becomes more valuable and the RoW bond less so. When δ_t grows so much that a shift to autarky is all but certain, the U.S. bond's price rises so much that its yield turns negative. This happens because the U.S. bond guarantees a unit of consumption in a future state in which the marginal utility of consumption is very high. This prediction fits the observation that bond yields in the West were low, in some cases negative, when the recent populist wave began.

7. Who Are the Populist Voters?

In this section, we examine the characteristics of populist voters. The model predicts that agents with higher aversions to risk and inequality are more likely to vote populist. We test these predictions in two settings. In Section 7.1, we analyze the characteristics of the British voters who supported Brexit in the 2016 referendum. In Section 7.2, we examine which Americans voted for Trump in the 2016 presidential election. Of course, we expect neither Brexit nor Trump to fit our model perfectly, or even well; such complex phenomena cannot be captured by a parsimonious economic model. We simply want to see whether there are any traces of our mechanism in the data, beyond the cross-country results discussed earlier. The evidence presented here is only suggestive. Our primary contribution is theoretical.

7.1. Evidence from the Brexit Referendum

We obtain data from the British Election Study (BES, `www.britishelectionstudy.com`). We use the BES panel study dataset, which consists of responses to an online survey conducted between 2014 and 2018 in 13 waves. We use data primarily from wave eight, which was conducted shortly before the EU referendum (between May 6 and June 22 of 2016) on 33,502 respondents. We also add data from other waves, as described in the Appendix.

The left-hand side variable in our regressions is a dummy variable that we call *SupportForBrexit*. This variable is equal to one if the respondent either voted to "Leave the EU" in the referendum or expressed the intent to do so. The variable is equal to zero otherwise.

Our first proxy for risk aversion is *Income*, an integer between 1 and 15 indicating the income range of the respondent's household income. We use income as a proxy for wealth, which is motivated as a proxy for risk aversion in Section 5.2.2. Our second proxy, *Will-*

ingnessToTakeRisk, is an integer between 0 and 3 summarizing the response to the question "Generally speaking, how willing are you to take risks?". Our third proxy, *Education*, is equal to one if the respondent's education extends beyond high school and zero otherwise. Education is a suitable proxy because it captures the mechanism through which risk aversion affects the voting decision in our model. What causes low-γ_i agents to vote mainstream is that their consumption drops more than that of high-γ_i agents after a move to autarky. A good proxy for γ_i should thus capture the extent to which the agent's consumption suffers from a move to autarky. Education seems to be a good fit, under the model's labor interpretation, because better-educated agents are more likely to rise to managerial positions and other jobs heavily exposed to global growth. Like low-γ_i agents, better-educated agents tend to benefit more from growth under globalization, so they suffer a larger drop in consumption when autarky arrives. Better-educated agents are less likely to vote populist not because they know better but because they have more to lose when globalization ends.

Another argument supporting education as a proxy for γ_i is that the two concepts are linked in models of human capital investment. Because investment in education is risky, lower-γ_i agents are more likely to undertake it. Shaw (1996) establishes a negative relation between education and risk aversion, both theoretically and empirically.

Income and education can also be motivated as proxies for risk aversion is by relying on the background risk interpretation from Section 5.4. Higher-income agents are likely to have better access to financial instruments, political connections, and other opportunities to hedge background risk; as a result, such agents are effectively less risk-averse. Better-educated agents may have better knowledge of what the various hedging opportunities are and how they can be used; therefore, they too are effectively less risk-averse.

Our first proxy for inequality aversion is *Income*. Lower-income households are likely to dislike inequality more because it makes their income handicap more pronounced. Our second proxy, *InequalityBad*, is an integer between 1 and 3, constructed from the responses to two questions: "Do you think the difference in incomes between rich people and poor people in the UK today is larger, smaller, or about the same as it was 20 years ago?", followed by "And do you think this is a good thing, a bad thing, or haven't you thought about it?" We view respondents as inequality-averse if they perceive a rise in inequality and dislike it, or if they perceive a fall in inequality and like it.[25] Our third proxy is the left-right orientation, *LeftRight*, which ranges from 0 (extreme left) to 10 (extreme right).

[25]The correct answer to the first question is "Larger," as UK inequality has risen. For example, the top 10% income share rose from 38% in 1994 to 40% in 2014, according to the World Income Database. Among the 68,625 survey respondents in our sample, 43% said "Larger," 7.5% said "About the same," and only 3% said "Smaller" (the remaining respondents either said "Don't know" or did not respond).

The variable *Religious* is equal to one if the respondent reports having a religious affiliation and zero otherwise. Like *Income*, we use *Religious* to proxy for both risk aversion and inequality aversion. As for risk aversion, Scheve and Stasavage (2006) emphasize the insurance role of religion. Based on their finding that more religious individuals prefer less social insurance, they argue that religious people feel better insured against adverse life events. More religious people thus effectively behave similar to higher-γ_i agents. In our model, higher-γ_i agents vote populist because they are better insured against the autarky-induced drop in consumption. In the same spirit, religious people might vote populist because they feel better insured against adverse consequences of a shift to autarky. As for inequality aversion, it seems plausible that religious people care more about equality. Religions often emphasize the need for fairness while encouraging followers to care less about mammon.[26]

Our three remaining proxies for inequality aversion aim to capture the fact that η_i is driven largely by the envy of the rich. In the model, a move to autarky reduces inequality mostly by cutting the consumption of the rich. Applying the model to the EU referendum, high-η_i agents vote for Brexit because they derive utility from the reduced consumption of London's bankers and oligarchs. Our first proxy for the envy of the rich, *PoliticiansFavorTheRich*, measures the extent to which the respondent agrees with the statement "Politicians only care about people with money." *LawFavorsTheRich* is based on the extent to which the respondent agrees with "There is one law for the rich and one for the poor." *DoNotTrustExperts* is based on the extent to which the respondent agrees with "I'd rather put my trust in the wisdom of ordinary people than the opinions of experts." All three variables take integer values from 1 ('Strongly disagree') to 5 ('Strongly agree'). Finally, we include controls for the respondent's age, gender, ethnic minority status, and feminist attitude. The details about all of our variables are in the Appendix.

Table 2 shows the results from the logit regression of *SupportForBrexit* on our right-hand-side variables.[27] Agents with higher incomes and more education are less likely to support Brexit, consistent with the model. Interpreting the evidence through the lens of our model, higher-income and better-educated agents oppose Brexit not because they are

[26]For example, Christianity, Britain's majority religion, preaches: "Again I tell you, it is easier for a camel to pass through the eye of a needle than for a rich man to enter the kingdom of God." (Matthew 19:24). Islam, Britain's second most popular religion, preaches: "Those who give away their wealth by night and day, secretly and openly, will have their reward with their Lord. They will feel no fear and will know no sorrow." (Quran 2:274). Guiso, Sapienza, and Zingales (2003) report mixed results on the relation between religion and attitudes toward inequality. They find that Catholics, Jews, and Muslims report being less willing to accept income inequality to provide incentives, while Protestants and Hindus are more willing. Similarly, people raised religiously as well as those currently religious are less willing, while people attending religious services regularly are more willing to do the same. Some of these relations are statistically insignificant.

[27]The results based on probit estimation are very similar, as we show in the Appendix.

better-informed but because they suffer a larger drop in consumption under Brexit.

Agents who report higher *WillingnessToTakeRisk* show more support for Brexit. This evidence may appear inconsistent with the model, but it is hard to interpret, for several reasons. First, the effects of autarky are predictable in the model, whereas those of Brexit are uncertain. More risk-tolerant agents may support Brexit for reasons outside our model. Second, in our complete-markets model, agents share all risk efficiently. In equilibrium, high-γ_i agents effectively buy insurance from low-γ_i agents. If asked whether she is willing to take risk, a high-γ_i agent in our model could respond yes because she is well insured.[28] If we take the model seriously, it is unclear whether *WillingnessToTakeRisk* is a sign of risk tolerance or risk aversion. Third, willingness to take risk is domain-specific. Weber et al. (2002) assess risk-taking in five domains (financial, safety, recreational, ethical, and social decisions) and find that respondents' degree of risk taking varies strongly across domains: a person highly risk-averse in one domain may be risk-seeking in others. This evidence undermines the usefulness of *WillingnessToTakeRisk* for our study. Finally, γ_i need not be risk aversion; it can also be interpreted as the elasticity of intertemporal substitution (Section 5.5). In any event, the economic significance of *WillingnessToTakeRisk* is weak; it explains only 0.2% of the variance in *SupportForBrexit*, whereas *Income* explains 2% and *Education* 9%. A one-standard-deviation change in *Education* (*Income*; *WillingnessToTakeRisk*) affects *SupportForBrexit* by 0.63 (0.32; 0.08) in a simple regression.

The support for Brexit is stronger among religious respondents, consistent with the model. Brexit support is also stronger among right-wing respondents. If these are less inequality-averse then the coefficient on *LeftRight* goes against the model's prediction. However, the left-right orientation may be more closely related to compassion for the poor than to the envy of the rich. It may also be determined by many non-economic influences. Survey evidence reveals a complicated relation between the left-right orientation and attitudes toward inequality (Alesina, Di Tella, and MacCulloch, 2004). After controlling for *LeftRight* and *Religious*, *InequalityBad* is positively related to *SupportForBrexit*, consistent with the model. This relation vanishes after adding our "anti-elite" proxies, suggesting that the role of *InequalityBad* is driven by the envy of the rich, again consistent with the model.

All three measures of the envy of the rich exhibit strong positive relations to *SupportForBrexit*. In the all-inclusive specification, a one-standard-deviation change in *PoliticiansFavorTheRich* (*LawFavorsTheRich*; *DoNotTrustExperts*) is associated with a change in *Sup-*

[28]For example, consider two agents with different risk aversions who both own sailboats. The more risk-averse agent has insured her boat for its full value whereas the less risk-averse agent has no insurance. If asked whether they are willing to take risk, the more risk-averse agent might say "yes, I'm willing, because I'm perfectly insured," whereas the less risk-averse agent might say "no because I have no insurance."

portForBrexit of 0.32 (0.08; 0.75). This evidence is consistent with the model. The strong estimated roles of *PoliticiansFavorTheRich* and *LawFavorsTheRich* are also consistent with the unfair inequality interpretation from Section 5.4, whereby voters dislike the fact that the elites can reduce their background risk via political connections.

Finally, to the extent that lower-income people dislike inequality more (e.g., Fehr and Schmidt, 1999), the previously-discussed negative relation between *SupportForBrexit* and *Income* also supports the model's prediction regarding inequality aversion.

7.2. Evidence from the Trump Election

On the campaign trail before the 2016 U.S. presidential election, Donald Trump promised to put "America first," pull the U.S. out of international agreements, build a wall on the border with Mexico, impose tariffs, restrict immigration, etc. We thus interpret a vote for Trump as a vote to pull back from globalization.

We use data from the 2016 Cooperative Congressional Election Survey (CCES; Ansolabehere and Schaffner, 2016). This survey of U.S. voters is similar to the BES but less comprehensive in terms of the questions asked. For example, unlike the BES, the 2016 CCES contains no direct questions about attitudes toward the elites, risk, or inequality.

The left-hand side variable in our regressions is *SupportForTrump*: a dummy variable equal to one if the respondent voted for Trump in the 2016 election and zero otherwise. On the right-hand side, we use variables similar to those from the BES whenever available. *Income* takes integer values from 1 to 16 depending on the income range of the respondent family's annual income. *Education* takes integer values from 1 to 6 depending on the highest level of education completed. *Religious* takes integer values from 0 to 3 depending on the importance of religion in the respondent's life. We include controls for the respondent's age, gender, and ethnicity. Finally, because Trump was the nominee of the Republican party, we add a control for the dummy variable indicating whether the respondent thinks of herself as a *Republican*. For more detail about all of our variables, see the Appendix.

Table 3 shows that both *Income* and *Education* are negatively related to *SupportForTrump*. While *Income* is significant in Panel A, where we control for *Republican*, it is insignificant in Panel B, where we do not. *Income* squared is significantly negatively related to *SupportForTrump* in both panels. When we include both *Income* and its square, the former enters positively and the latter negatively, indicating a nonlinear relation. Apart from that, the results are similar to those in Table 2. Interpreting them through our model, higher-income

and higher-education voters behave as if they were less risk-averse: they oppose Trump because they suffer a larger drop in consumption when a move to autarky happens.

More religious people are more likely to vote for Trump. This result echoes Table 2 and is consistent with the model. If we view Republicans as less inequality-averse, then the positive slope on *Republican* goes against the model's prediction. However, many Republicans must have voted for Trump regardless of their attitude toward inequality because Trump was their party's nominee. In addition, the Republican-Democrat divide in the U.S. is well known to be related to many non-economic variables that are outside our model.

8. Conclusions

We highlight the fragility of globalization in a democratic society that values equality. In our model, a pushback against globalization arises endogenously, and inevitably, as a rational voter response to growing inequality. Of course, our parsimonious model cannot fully capture the complexity of issues involved in the rise of Trump or Brexit. Many forces outside the model, economic and non-economic, must have also played a role. Abstracting from such forces allows us to connect several prominent phenomena—a backlash against globalization, rising inequality, global imbalances, and differences in financial development—through a simple but powerful economic mechanism. Our frictionless, complete-markets model can serve as a rational benchmark for contemplating the long-term survival of globalization.

Countries with high inequality, high financial development, and trade deficits are especially vulnerable to anti-global backlash, according to the model. Both the U.S. and Britain fit the bill; perhaps it is no coincidence they chose Brexit and Trump. In the model, the backlash occurs when inequality grows large enough. Since inequality tends to rise with economic growth, the model helps us understand how Brexit and Trump could happen in good times, after seven years of growth. Funke, Schularick, and Trebesch (2016) show that far-right populism tends to rise after financial crises, and Algan et al. (2017) blame the recent rise of populism on the Great Recession. We speculate that crises might elevate aversion to inequality, especially if voters feel, as many did during the 2008 crisis, that elites' high incomes have not been earned fairly. The model's extensions imply the backlash is more likely when there is immigration and when the rest of the world grows faster. China's rapid growth in recent decades may thus have also spurred populism in the West.

A key lesson from the model is that if policymakers want to save globalization, they must keep inequality in check. They have several options, none of which are easy to implement.

They could introduce distortive taxation, such as a progressive consumption tax, that would internalize the consumption externality. Or they could eliminate cross-country differences in financial development, which would remove international imbalances. Another option is to reduce the heterogeneity in risk aversion across agents. While innate risk preferences may be immutable, effective risk preferences depend also on the amount of uninsurable background risk that agents face. Policies that improve agents' ability to insure against such risk—for example, by providing health insurance to agents who lack it—could effectively reduce some of the largest risk aversion values in the population.

Our model is related to two well-known theories of the dynamics of inequality. Kuznets (1955) suggests that inequality first rises due to industrialization but then falls after industries attract much of the rural labor force. Piketty (2014) argues that inequality naturally rises because the rate of return on capital exceeds the rate of economic growth, and it falls as a result of state intervention or conflict. Unlike Kuznets or Piketty, we have a formal model. Our model also predicts a rise and fall in inequality, but the mechanism is different—inequality first rises as a consequence of heterogeneous exposure to global growth, but then it falls as a result of political decisions that reverse global integration.

The political decisions that reduce inequality in our model could also take other forms. Some of the largest historical reductions in inequality were caused by violent political events such as wars and revolutions (Scheidel, 2017). While Scheidel describes the effects of violence on inequality, our mechanism can deliver reverse causality in which rising inequality causes violence. When inequality grows large enough, inequality-averse agents find it optimal to upset the elites by destroying some of the endowment, as we show in one of our model extensions. Such destruction reduces inequality because it hurts the rich more than the poor.[29] Our model thus highlights perils beyond a possible reversal of globalization. The model's broader implication is that when inequality grows large enough, it becomes unsustainable because agents take political action to reduce it, even at the expense of efficiency.

[29]This result is somewhat reminiscent of Ljungqvist and Uhlig (2015), who find that in the Campbell-Cochrane habit model, government interventions that destroy part of the endowment can improve welfare. Alesina and Perotti (1996) show empirically that high income inequality causes socio-political instability. High inequality leads to political instability also in the model of Acemoglu and Robinson (2001).

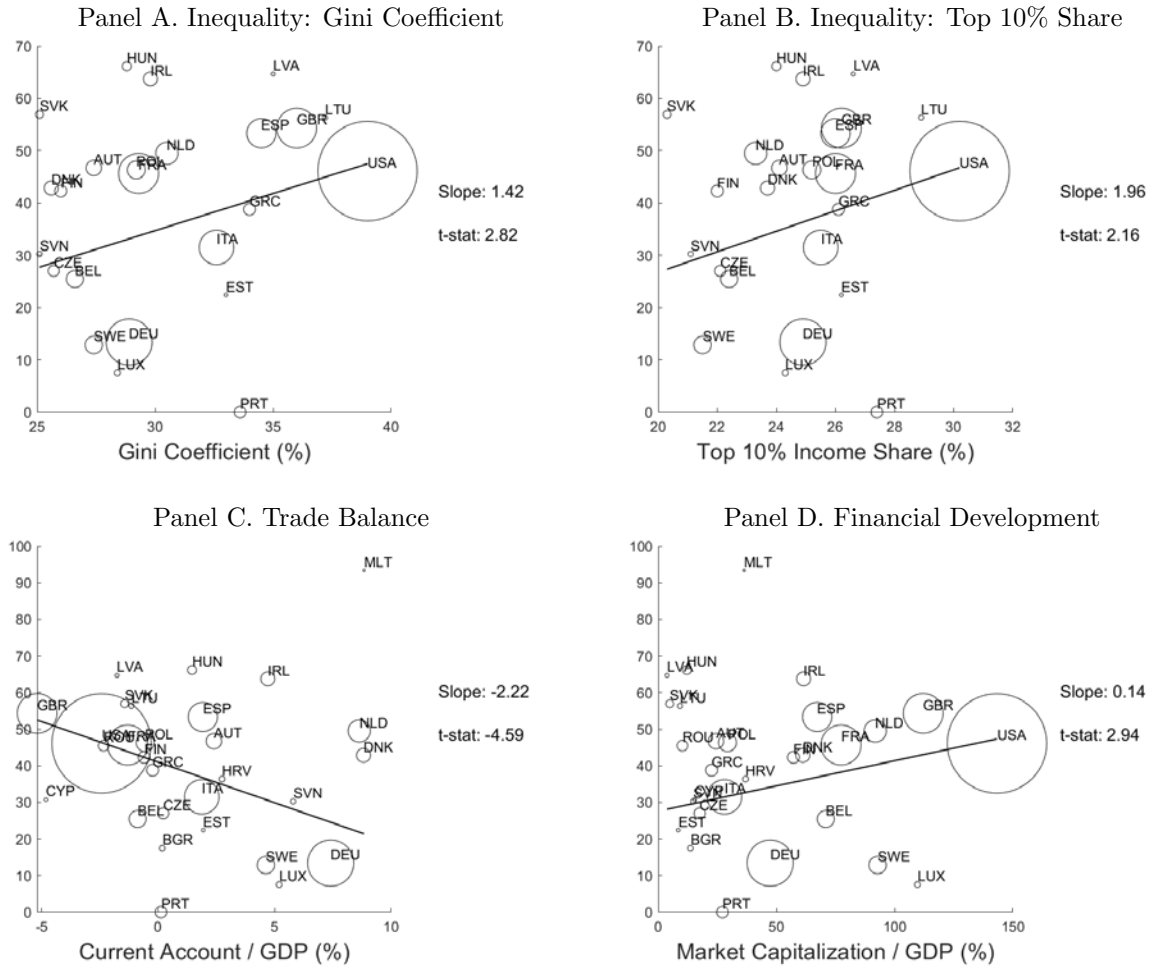

Figure 1. Vote Share of Nationalist Parties. This figure plots the election vote share of the parties we classify as nationalist, in percent. For each country, we use either the most recent national parliamentary election as of January 1, 2017 or the same country's May 2014 European Parliament election, whichever occurs later. The vote share is plotted against country-level measures of the Gini coefficient of disposable net income (Panel A), the share of income going to the top 10% of earners (Panel B), the current account balance as a fraction of GDP (Panel C), and the ratio of stock market capitalization to GDP (Panel D). The circle around each country's observation has an area proportional to the country's GDP. The slope and its t-statistic are from the GDP-weighted cross-country regression.

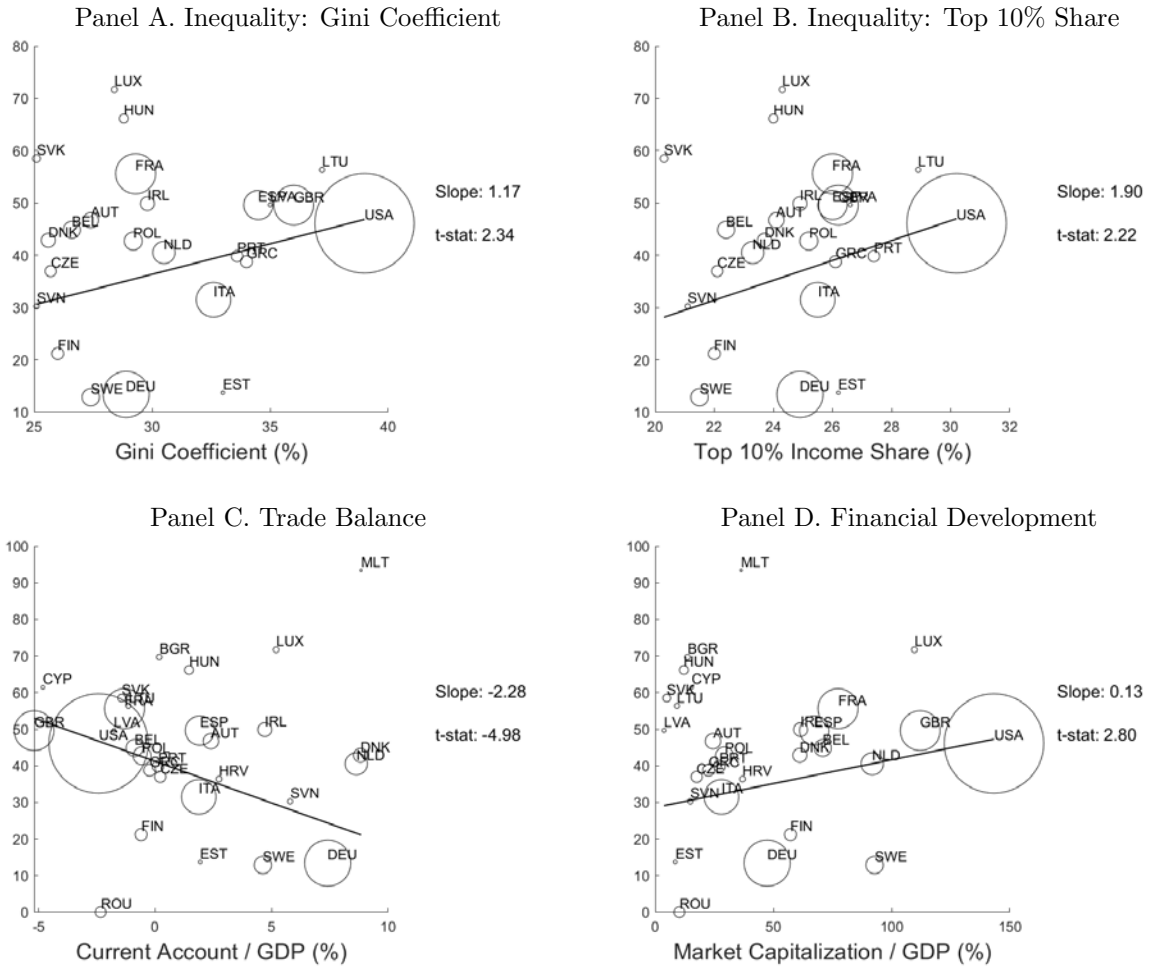

Figure 2. Vote Share of Anti-Immigrant Parties. This figure plots the election vote share of the parties we classify as anti-immigrant, in percent. For each country, we use either the most recent national parliamentary election as of January 1, 2017 or the same country's May 2014 European Parliament election, whichever occurs later. The vote share is plotted against country-level measures of the Gini coefficient of disposable net income (Panel A), the share of income going to the top 10% of earners (Panel B), the current account balance as a fraction of GDP (Panel C), and the ratio of stock market capitalization to GDP (Panel D). The circle around each country's observation has an area proportional to the country's GDP. The slope and its t-statistic are from the GDP-weighted cross-country regression.

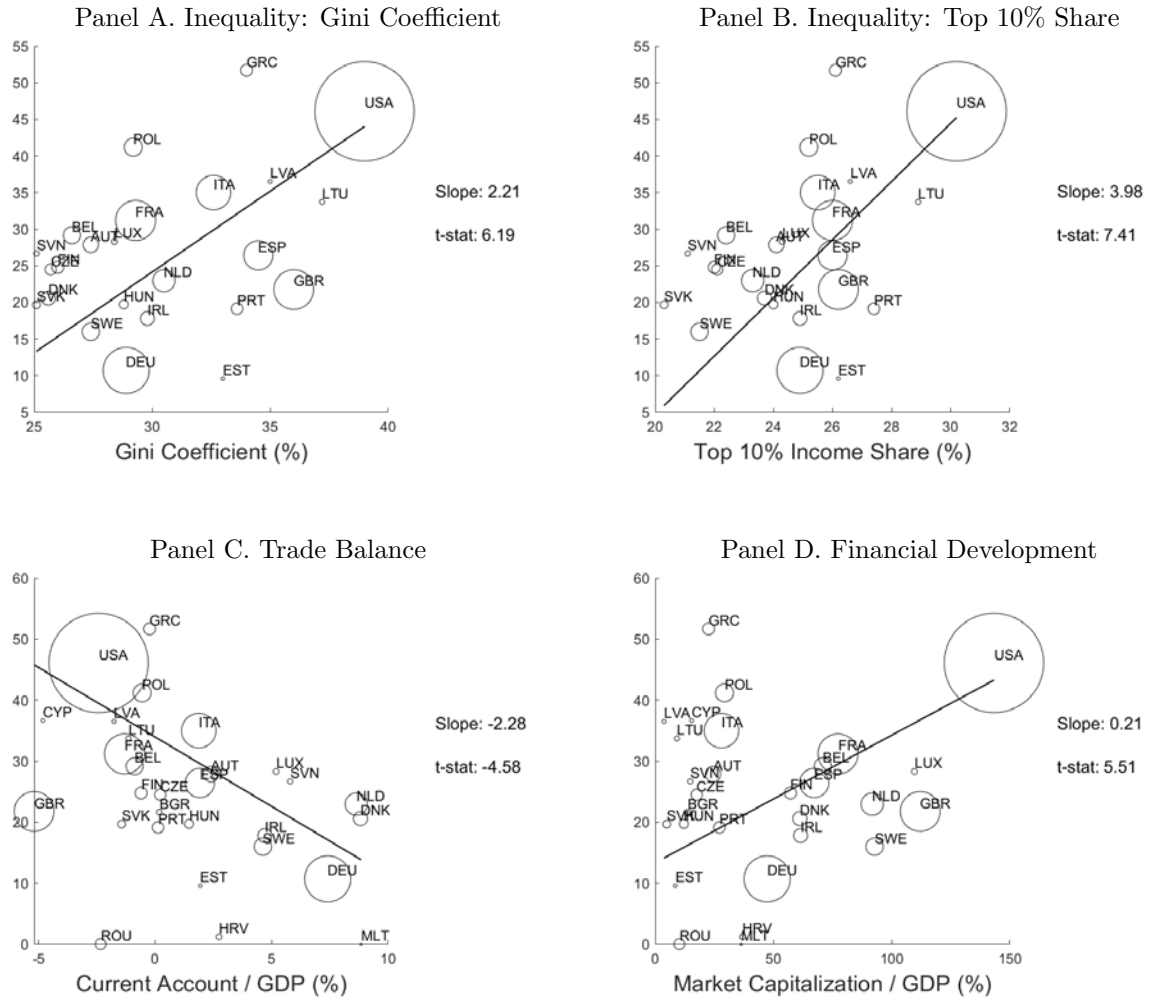

Figure 3. Vote Share of Anti-Elite Parties. This figure plots the election vote share of the parties we classify as anti-elite, in percent. For each country, we use either the most recent national parliamentary election as of January 1, 2017 or the same country's May 2014 European Parliament election, whichever occurs later. The vote share is plotted against country-level measures of the Gini coefficient of disposable net income (Panel A), the share of income going to the top 10% of earners (Panel B), the current account balance as a fraction of GDP (Panel C), and the ratio of stock market capitalization to GDP (Panel D). The circle around each country's observation has an area proportional to the country's GDP. The slope and its t-statistic are from the GDP-weighted cross-country regression.

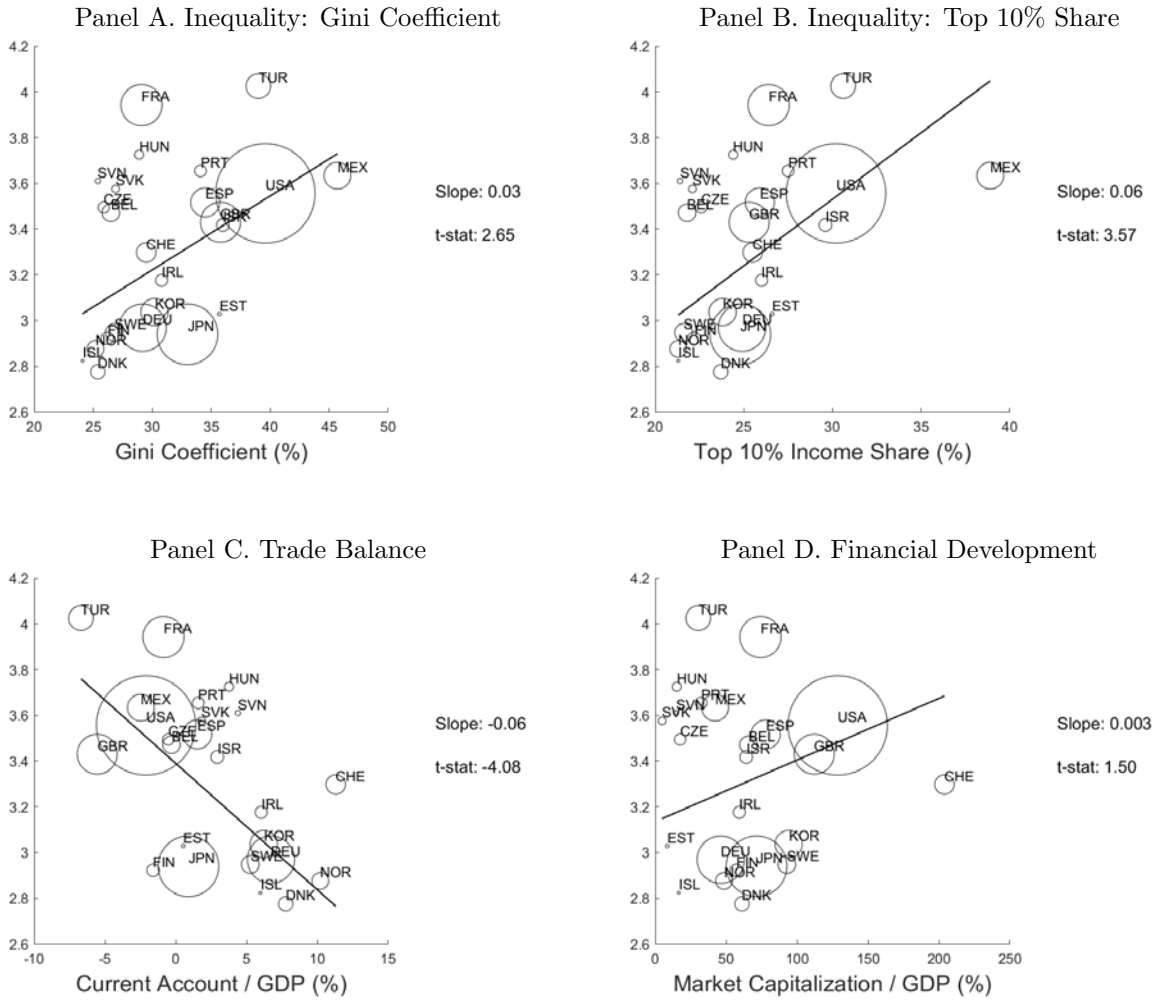

Figure 4. Support for Protectionism. This figure plots the extent to which the country's respondents in the 2013 ISSP survey agree with the statement "Country should limit the import of foreign products." The survey responses range from 1 to 5, with 5 indicating "agree strongly" and 1 "disagree strongly," so that a higher score indicates stronger support for protectionism. The country-level score is the average of all individual responses in the country. This score is plotted against country-level measures of the Gini coefficient of disposable net income (Panel A), the share of income going to the top 10% of earners (Panel B), the current account balance as a fraction of GDP (Panel C), and the ratio of stock market capitalization to GDP (Panel D). The circle around each country's observation has an area proportional to the country's GDP. The slope and its t-statistic are from the GDP-weighted cross-country regression.

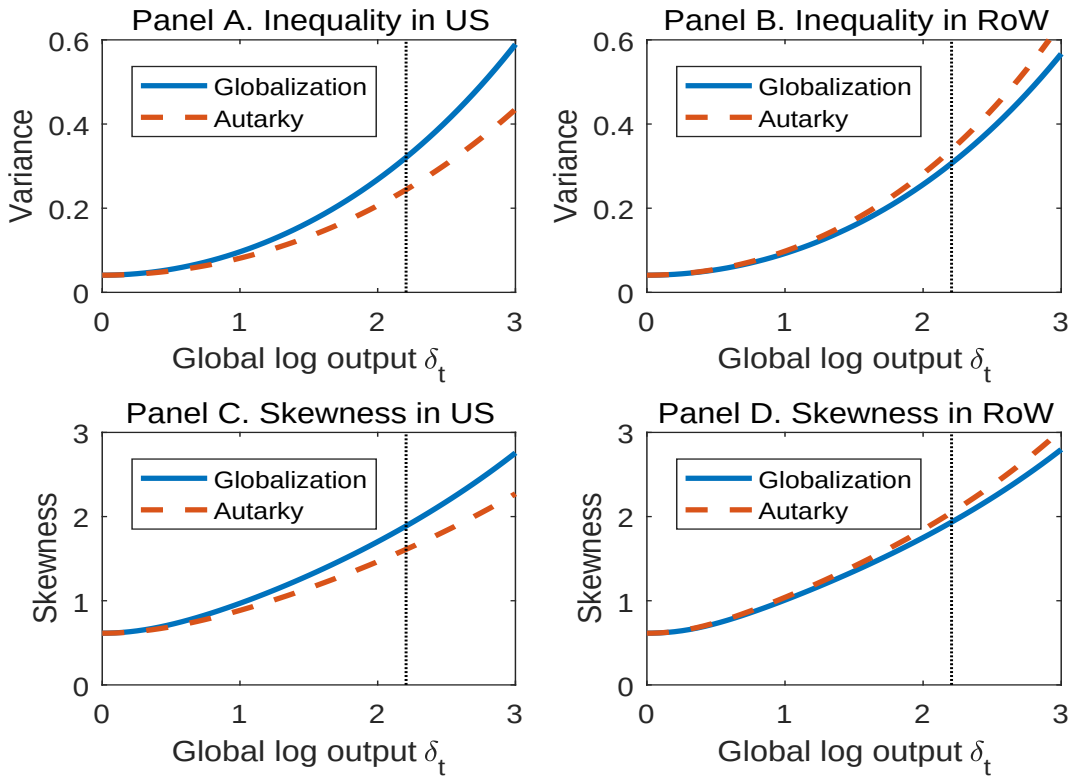

Figure 5. Inequality and Skewness of the Consumption Distribution. This figure plots V_t^k and S_t^k as a function of δ_t for $k \in \{US, RoW\}$, under globalization (solid line) and autarky (dashed line).

Figure 6. Top Shares and Their Ratios: Data vs. Model. Panel A plots the annual time series of the top 1% income share in the U.S. Panel B plots the time series of top income share ratios, namely top 1% to top 10% (solid line) and top 0.1% to top 1% (dashed line), in the U.S. Both series are based on income net of taxes and transfers from the World Inequality Database. Panels C and D plot analogous quantities for equilibrium consumption shares generated under the expected path from our model (i.e., setting $dZ_t = 0$ in equation (6)), starting at time 0.

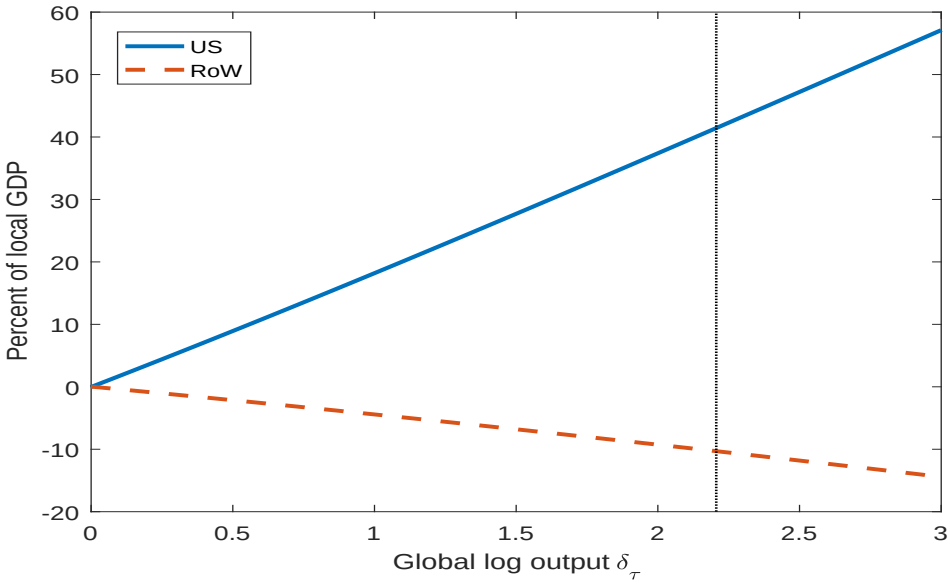

Figure 7. Trade Balance. This figure plots the trade balances of the two countries, as a percentage share of local GDP, against δ_t.

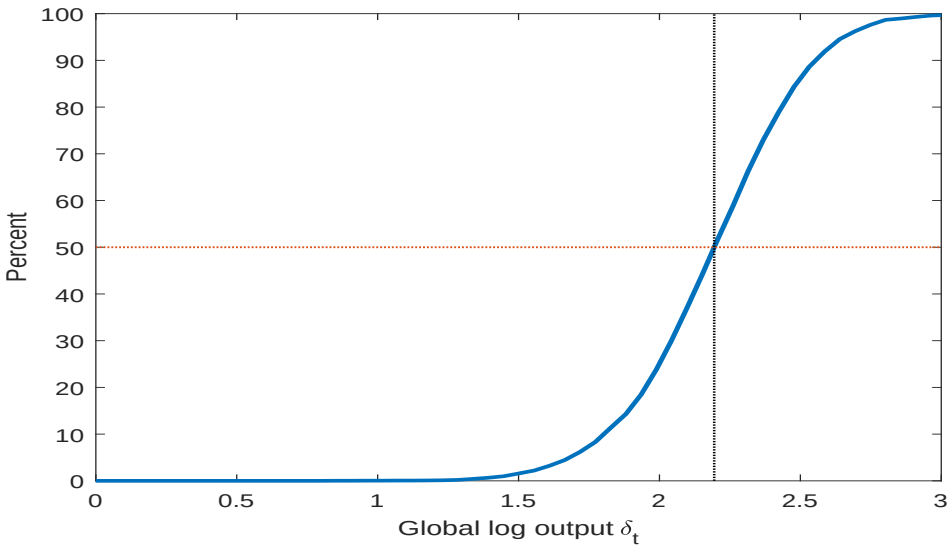

Figure 8. The Populist Vote Share. This figure plots the fraction of U.S. agents voting for the populist candidate, in percent. The vertical line denotes $\bar{\delta}$ from Proposition 5.

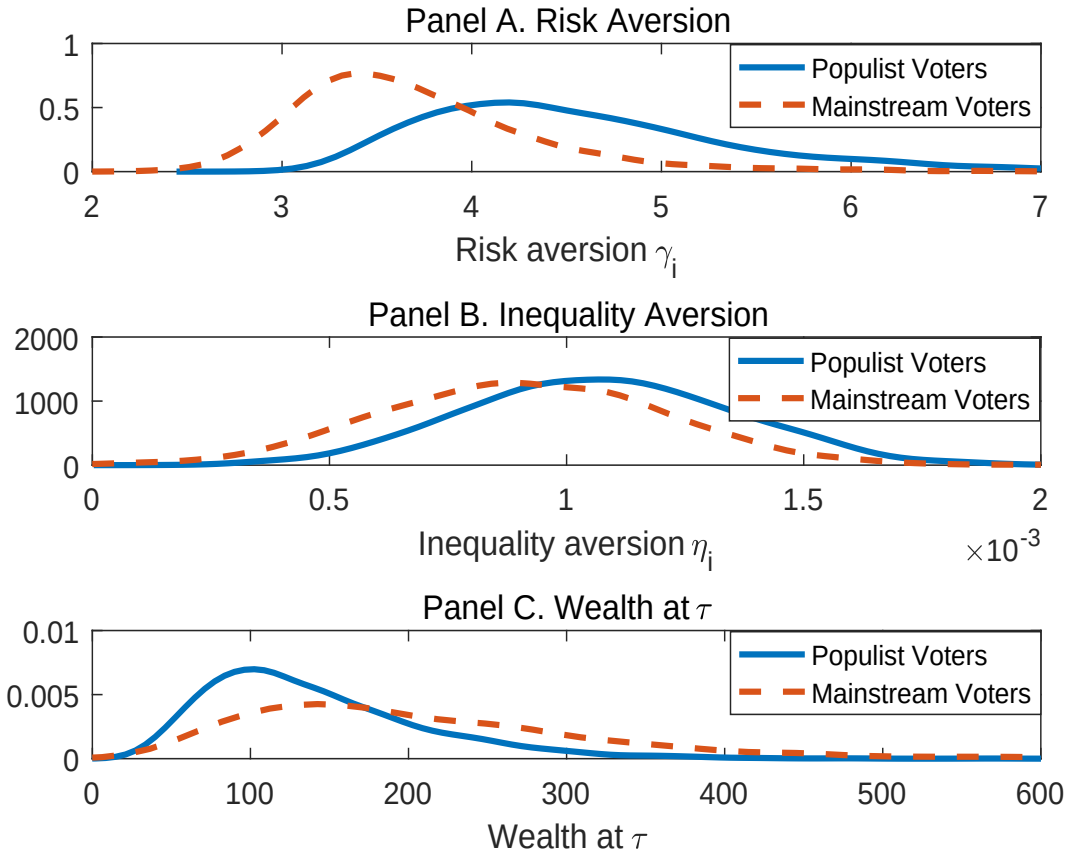

Figure 9. Characteristics of Populist and Mainstream Voters. This figure plots the distributions of γ_i (Panel A), η_i (Panel B), and wealth at the time of the election (Panel C) across populist voters (solid line) as well as mainstream voters (dashed line).

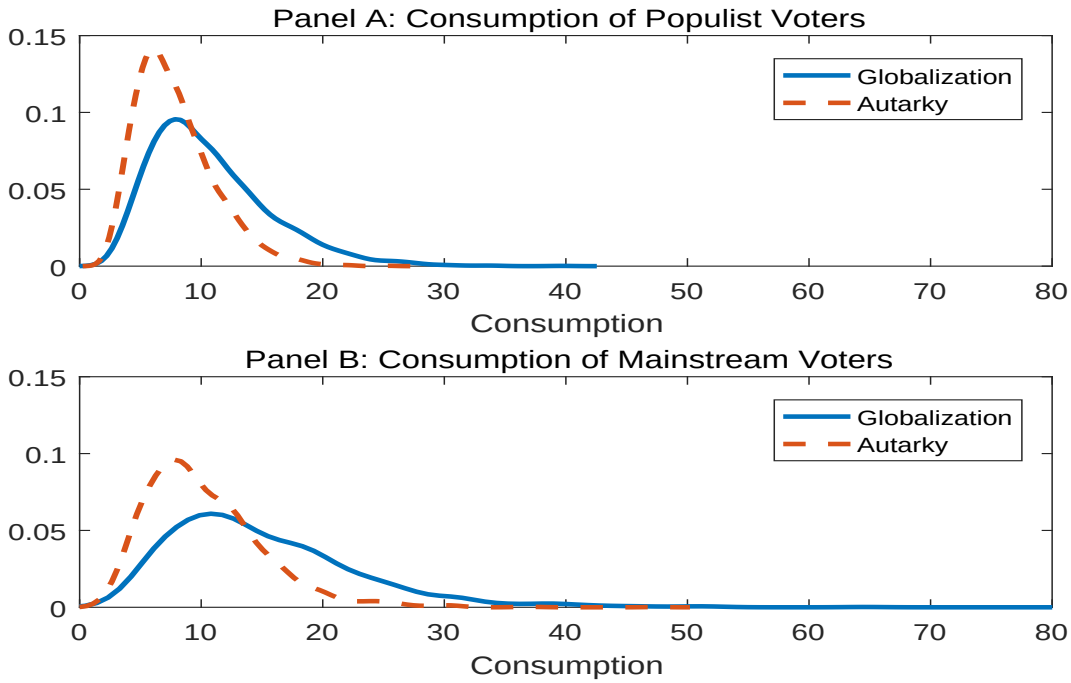

Figure 10. The Distribution of Consumption. This figure plots the distribution of consumption at time τ across populist voters (Panel A) and mainstream voters (Panel B) under two regimes: globalization (solid line) and autarky (dashed line). The value of δ_τ is such that one half of U.S. agents favor each regime.

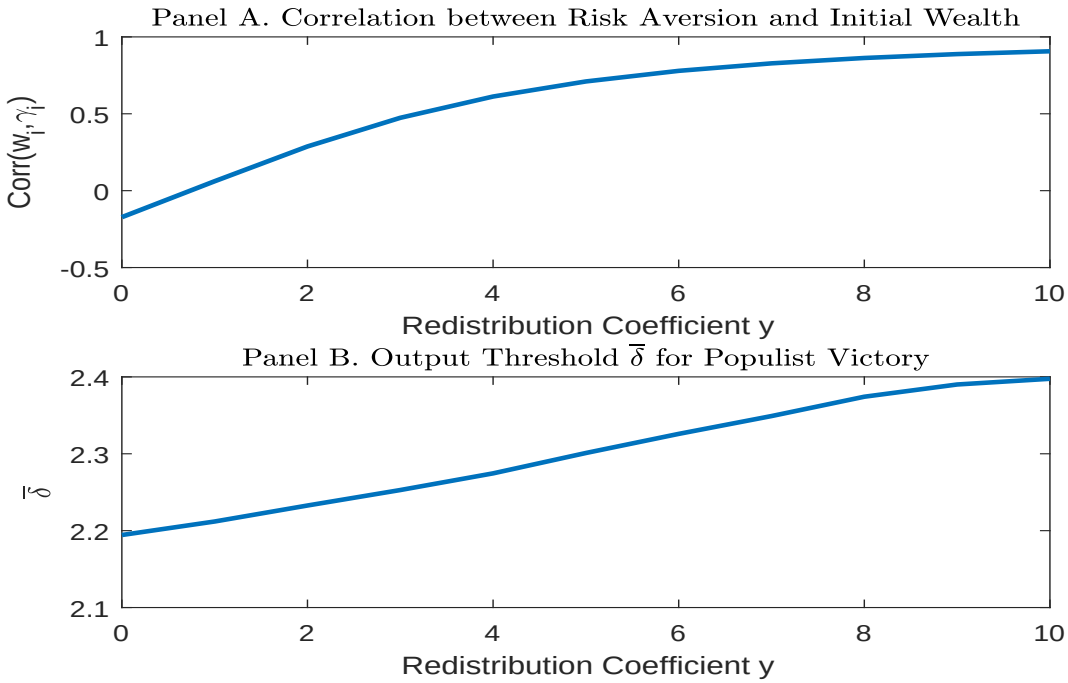

Figure 11. The Effects of Redistribution. This figure plots the correlation between risk aversion γ_i and initial endowment w_i across U.S. agents (Panel A) and the threshold $\overline{\delta}$ from Proposition 5 (Panel B) for different values of the redistribution coefficient y.

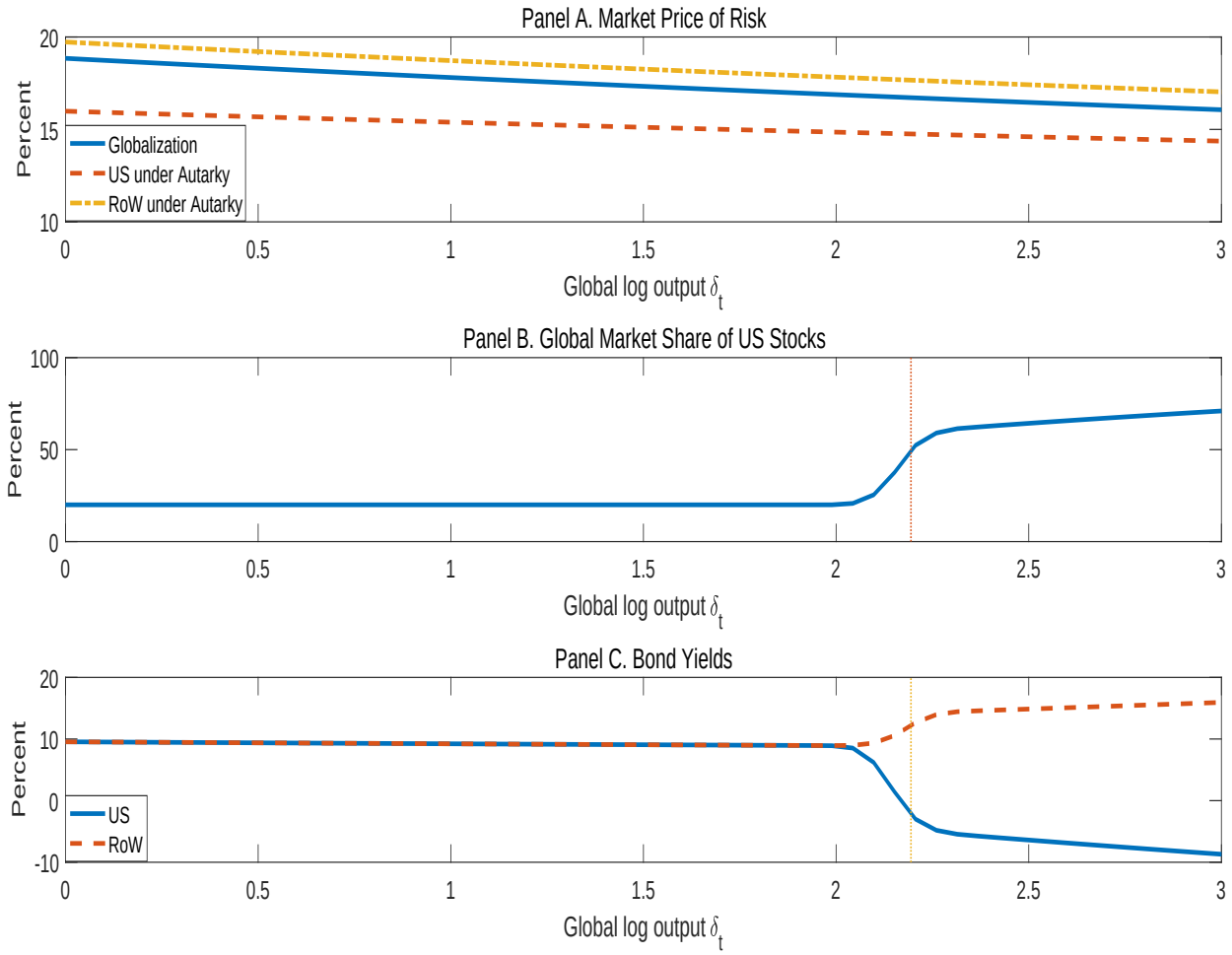

Figure 12. Asset Pricing Implications. This figure plots asset pricing quantities as a function of δ_t at time $t = \tau - 2$ years. Panel A plots the market prices of risk, σ_π^{US} and σ_π^{RoW}, under globalization (solid line) and under autarky (dashed and dash-dot lines, respectively). Panel B plots the global market share of U.S. stocks, $P_t^{US}/(P_t^{US} + P_t^{RoW})$. Panel C plots the yields on U.S. and RoW 10-year zero-coupon bonds. The vertical line in Panels B and C denotes the threshold $\overline{\delta}$ from Proposition 5.

Table 1
Elections in Our Sample

This table reports the dates of the national elections in our sample. For each country, we use its most recent national election as of January 1, 2017 as long as it occurred in or after May 2014. If the national election occurred before May 2014, we replace it by the May 2014 European Parliament election in the same country.

Country	National Election Date	European Parliament Election Used? (Y/N)
Austria	2013-09-29	Y
Belgium	2014-05-25	N
Bulgaria	2014-10-05	N
Croatia	2016-09-11	N
Cyprus	2016-05-22	N
Czech Republic	2013-10-25	Y
Denmark	2015-06-18	N
Estonia	2015-03-01	N
Finland	2015-04-19	N
France	2012-06-17	Y
Germany	2013-09-22	Y
Greece	2015-09-20	N
Hungary	2014-04-06	Y
Ireland	2016-02-26	N
Italy	2013-02-25	Y
Latvia	2014-10-04	N
Lithuania	2016-10-09	N
Luxembourg	2013-10-20	Y
Malta	2013-03-09	Y
Netherlands	2012-09-12	Y
Poland	2015-10-25	N
Portugal	2015-10-04	N
Romania	2016-12-11	N
Slovakia	2016-03-06	N
Slovenia	2014-07-13	N
Spain	2016-06-26	N
Sweden	2014-09-14	N
United Kingdom	2015-05-07	N
United States	2016-11-08	N

Table 2
Determinants of the Support for Brexit

This table reports the slope coefficients from a cross-sectional logit regression. The left-hand-side variable is the support for Brexit among the respondents to the British Election Survey. The right-hand-side variables are listed in the first column. The intercept is included in the regression. The t-statistics are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Income	-0.09			-0.06			-0.06	-0.06
	(-27.04)			(-15.04)			(-7.86)	(-7.28)
Education		-1.27		-1.22			-0.65	-0.55
		(-60.29)		(-44.27)			(-12.57)	(-9.83)
WillingnessToTakeRisk			0.11	0.21			0.17	0.20
			(7.86)	(10.97)			(4.98)	(5.54)
Religious					0.31	0.15	0.16	0.11
					(8.52)	(3.43)	(3.16)	(2.07)
LeftRight					0.44	0.47	0.45	0.42
					(47.88)	(41.71)	(35.20)	(31.07)
InequalityBad					0.12	-0.04	-0.03	-0.02
					(3.40)	(-0.89)	(-0.62)	(-0.37)
PoliticiansFavorTheRich						0.29	0.27	0.30
						(10.82)	(8.73)	(9.34)
LawFavorsTheRich						0.11	0.07	0.08
						(3.71)	(1.92)	(2.17)
DoNotTrustExperts						0.78	0.68	0.66
						(36.94)	(27.76)	(25.90)
Minority								-0.54
								(-5.53)
Age								0.01
								(4.23)
Gender (Male)								-0.14
								(-2.55)
Feminist								-0.36
								(-11.47)
Observations	31095	40783	40890	25328	15631	13953	10838	10370
R^2	0.02	0.09	0.002	0.11	0.21	0.35	0.36	0.38

Table 3
Determinants of the Support for Trump

This table reports the slope coefficients from a cross-sectional logit regression. The left-hand-side variable is the support for Donald Trump in the November 2016 presidential election. Panel A controls for whether the survey respondent self-identifies as Republican; Panel B does not. The right-hand-side variables are listed in the first column. The intercept is included in the regression. The t-statistics are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
			Panel A. Controlling for Republican Dummy				
Republican	3.06	3.06	3.06	3.05	2.92	2.92	2.86
	(95.92)	(95.93)	(95.83)	(94.51)	(94.66)	(89.32)	(84.45)
Income	-0.02		0.06	0.10		0.11	0.08
	(-4.64)		(3.86)	(6.41)		(6.70)	(4.82)
Income^2		-0.002	-0.01	-0.01		-0.005	-0.004
		(-5.72)	(-5.11)	(-4.85)		(-4.43)	(-3.80)
Education				-0.27		-0.26	-0.24
				(-28.72)		(-27.31)	(-23.82)
Religious					0.40	0.37	0.46
					(37.84)	(32.59)	(37.82)
Minority							-1.28
							(-34.04)
Age							0.01
							(14.76)
Gender (Male)							0.57
							(21.14)
Observations	40445	40445	40445	40445	45209	40426	40426
R^2	0.32	0.32	0.32	0.33	0.34	0.35	0.40
			Panel B. No Control for Republican Dummy				
Income	-0.001		0.10	0.14		0.15	0.12
	(-0.27)		(7.30)	(10.42)		(10.52)	(8.15)
Income^2		-0.0004	-0.01	-0.01		-0.01	-0.01
		(-2.10)	(-7.58)	(-7.22)		(-6.36)	(-5.43)
Education				-0.28		-0.27	-0.25
				(-35.71)		(-33.09)	(-28.58)
Religious					0.53	0.51	0.61
					(58.25)	(52.02)	(57.66)
Minority							-1.59
							(-47.71)
Age							0.01
							(14.54)
Gender (Male)							0.47
							(20.32)
Observations	40456	40456	40456	40456	45222	40437	40437
R^2	0.00	0.0001	0.001	0.03	0.08	0.10	0.19

REFERENCES

Acemoglu, Daron, and James A. Robinson, 2001, A theory of political transitions, *American Economic Review* 91, 938–963.

Aguiar, Mark, and Mark Bils, 2015, Has consumption inequality mirrored income inequality?, *American Economic Review* 105, 2725–56.

Alesina, Alberto, and George-Marios Angeletos, 2005, Fairness and redistribution, *American Economic Review* 95, 960–980.

Alesina, Alberto, Rafael Di Tella, and Robert MacCulloch, 2004, Inequality and happiness: are Europeans and Americans different? *Journal of Public Economics* 88, 2009–2042.

Alesina, Alberto, and Roberto Perotti, 1996, Income distribution, political instability, and investment, *European Economic Review* 40, 1203–1228.

Algan, Yann, Sergei Guriev, Elias Papaioannou, and Evgenia Passari, 2017, The European trust crisis and the rise of populism, *Brookings Papers on Economic Activity* 2, 309–400.

Ansolabehere, Stephen and Brian F. Schaffner, 2016, Cooperative Congressional Election Study, Common Content. Release 2: August 4, 2017. Cambridge, MA: Harvard University, `http://cces.gov.harvard.edu`.

Atkinson, Anthony B., Thomas Piketty, and Emmanuel Saez, 2011, Top incomes in the long run of history, *Journal of Economic Literature* 49, 3–71.

Autor, David, David Dorn, Gordon Hanson, and Kaveh Majlesi, 2017, Importing political polarization? The electoral consequences of rising trade exposure, Working paper.

Bakker, Ryan, Erica Edwards, Liesbet Hooghe, Seth Jolly, Jelle Koedam, Filip Kostelka, Gary Marks, Jonathan Polk, Jan Rovny, Gijs Schumacher, Marco Steenbergen, Milada Vachudova, and Marko Zilovic, 2015, *1999–2014 Chapel Hill Expert Survey Trend File, Version 1.1.* University of North Carolina, Chapel Hill. `www.chesdata.eu`.

Bhamra, Harjoat S., and Raman Uppal, 2014, Asset prices with heterogeneity in preferences and beliefs, *Review of Financial Studies* 27, 519–580.

Caballero, Ricardo J., Emmanuel Farhi, and Pierre-Olivier Gourinchas, 2008, An equilibrium model of global imbalances and low interest rates, *American Economic Review* 98, 358–93.

Calvet, Laurent E., John Y. Campbell, Francisco J. Gomes, and Paolo Sodini, 2019, The cross-section of household preferences, Working paper.

Chabakauri, Georgy, 2013, Dynamic equilibrium with two stocks, heterogeneous investors, and portfolio constraints, *Review of Financial Studies* 26, 3104–3141.

Chan, Yeung Lewis, and Leonid Kogan, Catching up with the Joneses: Heterogeneous preferences and the dynamics of asset prices, *Journal of Political Economy* 110, 1255–1285.

Clark, Andrew E., and Conchita D'Ambrosio, 2015, Attitudes to income inequality: experimental and survey evidence, *Handbook of Income Distribution* Vol. 2, 1147–1208.

Colantone, Italo, and Piero Stanig, 2018a, Global competition and Brexit, *American Political Science Review* 112, 201–218.

Colantone, Italo, and Piero Stanig, 2018b, The trade origins of economic nationalism: Import competition and voting behavior in Western Europe, *American Journal of Political Science*, forthcoming.

Dawes, Christopher T., James H. Fowler, Tim Johnson, Richard McElreath, and Oleg Smirnov, 2007, Egalitarian motives in humans, *Nature* 446, 794–796.

Döring, Holger and Philip Manow, 2011, Parliament and government composition database (ParlGov), Working paper, University of Bremen. `www.parlgov.org`.

Dumas, Bernard, 1989, Two-person dynamic equilibrium in the capital market, *Review of Financial Studies* 2, 157–188.

Fehr, Ernst, and Klaus M. Schmidt, 1999, A theory of fairness, competition, and cooperation, *Quarterly Journal of Economics* 114, 817–868.

Ferrer-i-Carbonell, Ada, and Xavier Ramos, 2014, Inequality and happiness, *Journal of Economic Surveys* 28, 1016–1027.

Funke, Manuel, Moritz Schularick, and Christoph Trebesch, 2016, Going to extremes: Politics after financial crises, 1870-2014, *European Economic Review* 88, 227–260.

Gabaix, Xavier, Jean-Michel Lasry, Pierre-Louis Lions, and Benjamin Moll, 2016, The dynamics of inequality, *Econometrica* 84, 2071–2111.

Garleanu, Nicolae, and Stavros Panageas, 2015, Young, old, conservative, and bold: The implications of heterogeneity and finite lives for asset pricing, *Journal of Political Economy* 123, 670–685.

Gollier, Christian, and John W. Pratt, 1996, Risk vulnerability and the tempering effect of background risk, *Econometrica* 64, 1109-1123.

Gomes, Francisco, and Alexander Michaelides, 2008, Asset pricing with limited risk sharing and heterogeneous agents, *Review of Financial Studies* 21, 415–448.

Gomez, Matthieu, 2019, Displacement and the rise in top wealth inequality, Working paper.

Gourinchas, Pierre-Olivier, Helene Rey, and Nicolas Govillot, 2017, Exorbitant privilege and exorbitant duty, Working paper, 2017.

Graham, John R., Campbell R. Harvey, and Manju Puri, 2013, Managerial attitudes and corporate actions, *Journal of Financial Economics* 109, 103–121.

Guiso, Luigi, Helios Herrera, Massimo Morelli, and Tommaso Sonno, 2017, Demand and supply of populism, Working paper.

Guiso, Luigi, Helios Herrera, Massimo Morelli, and Tommaso Sonno, 2018, Global crises and populism: the role of Eurozone institutions, Working paper.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales, 2003, People's opium? Religion and economic attitudes, *Journal of Monetary Economics* 50, 225–282.

Heaton, John, and Deborah Lucas, 2000, Portfolio choice in the presence of background risk, *Economic Journal* 110, 1–26.

Inglehart, Ronald, and Pippa Norris, 2016, Trump, Brexit, and the rise of populism: Economic have-nots and cultural backlash, Working paper, University of Michigan.

James, Harold, 2001, *The End of Globalization: Lessons from the Great Depression*, Harvard University Press, Cambridge, MA.

Jones, Charles I., and Jihee Kim, 2018, A Schumpeterian model of top income inequality, *Journal of Political Economy*, forthcoming.

Kihlstrom, Richard E., and Jean-Jacques Laffont, 1979, A general equilibrium entrepreneurial theory of firm formation based on risk aversion, *Journal of Political Economy* 87, 719–748.

Kuznets, Simon, 1955, Economic growth and income inequality, *American Economic Review* 45, 1–28.

Ljungqvist, Lars, and Harald Uhlig, 2015, Comment on the Campbell-Cochrane habit model, *Journal of Political Economy* 123, 1201–1213.

Longstaff, Francis A., and Jiang Wang, 2012, Asset pricing and the credit market, *Review of Financial Studies* 25, 3169–3215.

Maggiori, Matteo, 2017, Financial intermediation, international risk sharing, and reserve currencies, *American Economic Review* 107, 3038–71.

Mayda, Anna Maria, and Dani Rodrik, 2005, Why are some people (and countries) more protectionist than others? *European Economic Review* 49, 1393–1430.

Mendoza, Enrique G., Vincenzo Quadrini, and Jose-Victor Rios-Rull, 2009, Financial integration, financial development, and global imbalances, *Journal of Political Economy* 117, 371–416.

Menzly, Lior, Tano Santos, and Pietro Veronesi, 2004, Understanding predictability, *Journal of Political Economy* 112, 1–47.

Milanović, Branko, 2016, *Global Inequality: A New Approach for the Age of Globalization*, Harvard University Press, Cambridge, MA.

Morawetz, David, et al., 1977, Income distribution and self-rated happiness: some empirical evidence, *Economic Journal* 87, 511–522.

Musto, David K., and Bilge Yilmaz, 2003, Trading and voting, *Journal of Political Economy* 111, 990–1003.

O'Rourke, Kevin H., and Jeffrey G. Williamson, 2001, *Globalization and History: The Evolution of a Nineteenth-Century Atlantic Economy*, MIT Press, 2001.

Pástor, Ľuboš, and Pietro Veronesi, 2016, Income inequality and asset prices under redistributive taxation, *Journal of Monetary Economics* 81, 1–20.

Pástor, Ľuboš, and Pietro Veronesi, 2017, Political cycles and stock returns, NBER WP.

Piketty, Thomas, 2014, *Capital in the 21st Century*, Harvard University Press, Cambridge.

Rajan, Raghuram G., and Luigi Zingales, 1998, Financial dependence and growth, *American Economic Review* 88, 559–586.

Rodrik, Dani, 1997, *Has Globalization Gone Too Far?*, Institute for International Economics, Washington, DC.

Rodrik, Dani, 2000, How far will international economic integration go? *Journal of Economic Perspectives* 14, 177–186.

Rodrik, Dani, 2018, Populism and the economics of globalization, *Journal of International Business Policy* 1, 12–33.

Sampson, Thomas, 2017, Brexit: the economics of international disintegration, *Journal of Economic Perspectives* 31, 163–84.

Scheidel, Walter, 2017, *The Great Leveler: Violence and the History of Inequality from the Stone Age to the Twenty-First Century,* Princeton University Press.

Scheve, Kenneth, and David Stasavage, 2006, Religion and preferences for social insurance, *Quarterly Journal of Political Science* 1, 255–286.

Schulhofer-Wohl, Sam, 2011, Heterogeneity and tests of risk sharing, *Journal of Political Economy* 119, 925–958.

Shaw, Kathryn L., 1996, An empirical analysis of risk aversion and income growth, *Journal of Labor Economics* 14, 626–653.

Thurow, Lester C., 1971, The income distribution as a pure public good, *Quarterly Journal of Economics* 85, 327–336.

Veronesi, Pietro, 2018, Heterogeneous households under uncertainty, Working paper.

Weber, Elke U., Ann-Renée Blais, and Nancy E. Betz, 2002, A domain-specific risk-attitude scale: Measuring risk perceptions and risk behaviors, *Journal of Behavioral Decision Making* 15, 263–290.

Wilkinson, Richard, and Kate Pickett, 2009, *The Spirit Level: Why More Equal Societies Almost Always Do Better*, Penguin, London.

Wilkinson, Richard, and Kate Pickett, 2018, *The Inner Level: How More Equal Societies Reduce Stress, Restore Sanity and Improve Everyone's Well-being*, Penguin, London.