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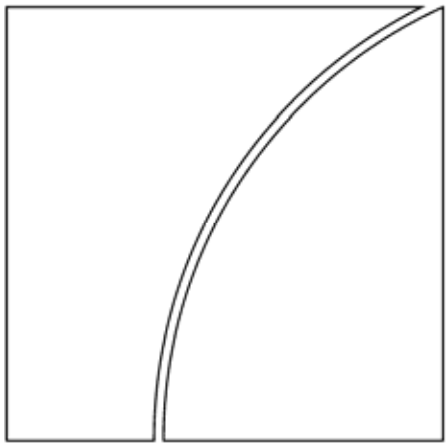

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Democracy and globalisation

by Barry Eichengreen and David Leblang

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Foreword

On 19–20 June 2006, the BIS held its fifth Annual Conference, on "Financial Globalisation", in Brunnen, Switzerland. The event brought together some 60 senior representatives of central banks, academic institutions and the private sector to exchange views on this topic. BIS Paper 32 contains the opening address by William White (Economic Adviser, BIS), the keynote speech by Stanley Fischer (Governor, Bank of Israel), the contributions to the panel on “Review of recent trends and issues in financial sector globalisation”, and the prepared remarks of the participants at the Policy Panel. The Policy Panel discussion was chaired by Malcolm D Knight (General Manager, BIS); the panellists were Vittorio Corbo (Banco Central de Chile), Raguram Rajan (IMF), Usha Torat (Reserve Bank of India) and Zdeněk Tůma (Czech National Bank).

The present Working Paper includes a paper presented at the Conference and the related discussant comments.

Abstract

The relationship between democracy and globalisation has been the focus of substantial policy and academic debate. Some argue that democracy and globalisation go hand in hand suggesting that unrestricted international transactions leads to increased political accountability and transparency. And, politically free societies are likely to have minimal restrictions on the mobility of goods and services across national borders. Others argue that the causal relationship should be reversed: democracies are more likely to have closed markets and vice versa. We examine these relationships between political democracy and trade and financial globalisation over the period 1870-2000 and treat both democracy and globalisation as both cause and effect. Our empirical strategy uses instrumental variables and estimates relationships using the Generalised Method of Moments framework. Our general findings support the hypothesis of a positive two-way relationship between democracy and globalisation.

JEL Classification Numbers: D72, P51, F02, F41, N10

Keywords: Democracy , globalisation

Conference programme

Monday, 19 June

09:00 Opening remarks: William White (BIS)

09:15 Morning Chair: Kazumasa Iwata (Bank of Japan)

Session 1: Democracy and globalisation

Authors: Barry Eichengreen (University of California, Berkeley) and David Leblang (University of Colorado, Boulder)

Discussants: Marc Flandreau (Institut d'Etudes Politiques de Paris) and Harold James (Princeton University)

11:15 **Session 2: Globalisation and asset prices**

Authors: Geert Bekaert (Columbia University)

Discussants: Alan Bollard (Reserve Bank of New Zealand) and Sushil Wadhwani (Wadhwani Asset Management)

14:15 Afternoon Chair: Lorenzo Bini Smaghi (ECB)

Session 3: Sudden stop and recovery: lessons and policies

Author: Guillermo Calvo (Inter-American Development Bank)

Discussants: Randall Kroszner (Board of Governors of the Federal Reserve System) and Takatoshi Ito (University of Tokyo)

16:15 **Session 4: Panel on "Review of recent trends and issues in financial sector globalisation"**

Lead-off presenter: Christine Cumming (Federal Reserve Bank of New York)

Other Panellists: Jose Luis de Mora (Banco Santander Central Hispano), David Llewellyn (Loughborough University) and Guillermo Ortiz (Banco de México)

19:00 Dinner

Keynote address: Stanley Fischer (Bank of Israel)

Tuesday, 20 June

09:00 Morning Chair: Donald Kohn (Board of Governors of the Federal Reserve System)

Tuesday, 20 June (cont)

Session 5: Financial globalisation, governance and the evolution of home bias

Authors:	René Stulz (Ohio State University), Bong-Chan Kho (Seoul National University) and Francis E Warnock (University of Virginia)
Discussants:	Philip Lane (Institute for International Integration Studies) and José Viñals (Banco de España)

11:00 **Session 6: Global "imbalances"**

Authors:	Ricardo Caballero (Massachusetts Institute of Technology), Emmanuel Farhi (Massachusetts Institute of Technology) and Pierre-Olivier Gourinchas (University of California, Berkeley)
Discussants:	Jeffrey Frankel (Harvard University) and Michael Mussa (Institute for International Economics)

14:00 Afternoon Chair: Malcolm Knight (BIS)

Session 7: Policy panel

Panellists:	Vittorio Corbo (Banco Central de Chile), Raghuram Rajan (IMF), Usha Thorat (Reserve Bank of India) and Zdeněk Tůma (Czech National Bank)

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Democracy and globalisation

Barry Eichengreen and David Leblang[1]

1. Introduction

Democracy and globalisation go hand in hand. So say those impressed by the opening to the world economy of the countries of Central and Eastern Europe following the demise of Soviet-led authoritarianism. And so say those impressed by the outward orientation of Latin America since the wave of democratisation that began in 1978.[2] Insofar as free international transactions benefit society as a whole, democracy that renders leaders more accountable to the citizenry should be conducive to the removal of restrictions on such transactions.[3] The democracy-globalisation nexus is further reinforced by positive feedback from economic and financial globalisation to political democratisation. The exchange of goods and services is a conduit for the exchange of ideas, and a more diverse stock of ideas encourages political competition.[4] In financially open economies, the government and central bank must be transparent in order to retain the confidence of the markets, and transparency spells doom for autocratic regimes. So say those impressed by how the difficulties of managing financial globalisation spurred the transition to a more open and competitive democratic system in Indonesia. As we document in Figure 1, there have been upward trends in globalisation and democratisation.[5] Between 1975 and 2002, there was a quadrupling in the number of democratic countries. Over the same period, global trade as a share of GDP rose from 7.7 to 19.5 per cent. The share of countries open to international capital flows, as measured by the International Monetary Fund, rose from 25 to 38 per cent. Evidently there is a powerful dynamic at work.

Of course, every causal statement in the preceding paragraph could be exaggerated or simply wrong. While one can point to cases like Central Europe where economic opening was encouraged by political democratisation, one can equally point to cases like Bolivia and Peru where democratisation has fueled a popular backlash against opening to the rest of the world. Studies like that by Yu (2005) not only reject the hypothesis that democratisation leads to openness but in fact conclude in favor of the opposite. Yu rationalises his finding by observing that concentrated interests may be better able to secure the imposition of protectionist policies in democratic political systems where they are better represented. O'Rourke and Taylor (2005) argue similarly on the basis of the Stolper-Samuelson theorem:

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[1] University of California, Berkeley and University of Colorado, Boulder, respectively. We thank Charles Boix, Ernesto Lopez-Cordoba, Chris Meissner, Kevin O'Rourke and Alan Taylor for help with data, Sudarat Ananchotikul and Zane Kelly for excellent research assistance, and Marc Flandreau, Harold James, and Helen Milner for comments.

[2] See for example Munoz (1994).

[3] See Garrett (2000) or Milner and Kubota (2005). This of course assumes the feasibility of side payments to special interests that might be adversely affected; we return to this below.

[4] In the words of Dailami (2000, p 9), this is the idea that "countries more open to international capital flows are also more open to offering political rights and civil liberties to their citizens". American political leaders are fond of making this point; Lopez-Cordova and Meissner (2005) provide some illustrative quotations from statements by recent US presidents. But the point has an esteemed political lineage, from Kant (1795) to Huntington (1991) to Przeworski et al (1996).

[5] The data underlying this figure are described below.

in countries where labour is the scarce factor of production, democratic reforms that raise labour's leverage over policy will encourage protectionism rather than opening to the rest of the world.[6] Others suggest that democratisation will not result in working class support for globalisation where domestic distortions prevent the benefits of opening from trickling down to the poor. These perspectives suggest that the relationship running from democracy to globalisation is at best ambiguous.

The same point can be made about the relationship running from openness to democratisation. While it is possible to point to cases like Indonesia where economic and financial opening and the difficulties of autocratic regimes in managing it helped to precipitate a shift to democratisation, again one can point to cases - here China is a case in point - where economic and financial opening have not obviously undermined autocratic control. Again some empirical work is consistent with this skepticism: econometric studies by Bussmann (2002), Li and Reuveny (2003) and Rigobon and Rodrik (2004) find either no impact of trade openness on democracy or even a negative relationship. Authors like Dailami (2000) caution that capital account liberalisation may limit the ability of governments to deploy redistributive taxation, regulation, and risk-sharing policies, thereby weakening support for democratic forms of governance. That there have been parallel trends in the direction of political democratisation and economic globalisation in the last quarter century is undeniable. But this does not mean that the relationship is stable or general. And correlation does not mean causation.

Still, for many people the idea that there are causal connections between globalisation and democracy is intuitively appealing. Many social scientists appear to harbor the feeling that such relationships exist. Maybe the data just require additional analysis. There are many more country cases than the examples in our lead paragraph; this suggests teasing out the causal connections using a treatment-effects approach to compare cases where there were changes in openness and changes in democratisation with cases where there were not. The preceding argument suggesting the existence of a bi-directional relationship between globalisation and democracy points to the need for an empirical strategy that accounts for the possibility of two-way causality. And there have been previous waves of democratisation and globalisation; looking over a longer period may be useful for uncovering the underlying relationship and establishing the generality - or otherwise - of the process.

In reality, there has been a great deal of work on these topics, including not a few classics. The idea that globalisation promotes the diffusion of democratic ideas goes back to Kant (1795). Authors such as Schumpeter (1950), Lipset (1959) and Hayek (1960) argued that free trade and capital flows, by enhancing the efficiency of resource allocation, raise incomes and lead to the economic development that fosters demands for democracy. Within modern political science, the connections between economic and political liberalisation is one of the foundational topics of the subfield of international political economy.

Still, none of this previous work has satisfactorily addressed the substantive and methodological issues we raise above. Most studies look only at one of the two causal connections, from democracy to globalisation or vice versa. Since they are not concerned with two-way causality, sometimes they do not even acknowledge the existence of an endogeneity problem, much less develop an appropriate instrumental variables strategy for dealing with it. They rarely acknowledge that democratisation has different dimensions and that economic globalisation entails both the globalisation of trade and the globalisation of

[6] Still others explain cases like Bolivia and Peru, where the working class appears disenchanted with globalisation, on the grounds that these economies are natural-resource rather than labour abundant and that natural resources are more complementary with capital than labour (Perry and Olarreaga 2006). We will provide some evidence relevant to this hypothesis below.

finance.[7] Few studies take advantage of the fact that there have been prior waves of globalisation and democratisation.

These observations provide the point of departure for our own analysis of democracy and globalisation. We consider two dimensions of globalisation, analysing the determinants and effects of both trade liberalisation and capital account liberalisation. We similarly consider several dimensions of democratisation, both as cause and effect. We estimate these relationships using an instrumental variables (IV) strategy that we think is a step forward relative to previous work.

To anticipate, the findings support the hypothesis of a positive two-way relationship between democracy and globalisation. Not unlike the assertions of our opening paragraph, it does in fact appear that the two variables positively influence one another, with reinforcement running in both directions. However, these effects are not uniform across time and space; in particular, the impact of democracy on globalisation varies with resource endowments and global economic conditions. General conclusions, not surprisingly, remain elusive. But the evidence here is a start.

2. Literature

Appendix Table 1 summarises the recent literature on the impact of democracy on globalisation. In a relatively early contribution, Grofman and Gray (2000) examined the impact on trade openness (imports plus exports as a share of GDP) of the number of years a country was under authoritarian rule. They report a negative effect of authoritarianism on trade. Giavazzi and Tabellini (2005), in comparison, consider a larger country sample and a different measure of democracy, drawn from the Polity data set, but report the same positive effect of democracy on trade liberalisation.[8] However, the study by Yu (2005) noted above shows that substituting a still larger country sample and minor changes in specification can reverse this result. Finally, O'Rourke and Taylor (2005) utilise historical data from the pre-1913 wave of globalisation.[9] They argue that democratisation that broadens the extent of the franchise should encourage trade openness in labour-abundant countries, since labour, which now votes, benefits from trade liberalisation, but discourage it in labour-scarce countries, following standard Stolpher-Samuelson logic. Including a democracy variable and its interaction with a measure of the land/labour ratio produces ordinary least squares regression results consistent with this supposition.

Importantly from the present point of view, none of these studies employs an instrumental variables strategy. From this point of view the recent study by Milner and Kubota (2005) is a step forward. The authors measure trade openness in a number of ways, including the unweighted average statutory tariff rate and the Sachs-Warner index of economic openness.[10] They similarly measure democracy in a number of ways: the now-standard

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[7] It should of course include the globalisation of labour, although in the most recent wave governments and their constituents have been reluctant to accommodate the pressures of globalisation that arise in this domain.

[8] Precise procedures followed in studies utilizing information from the Polity data set vary, but typically they follow Gurr et al (1990) in combining information on the competitiveness of the process for selecting the chief executive, the openness of that process, institutional constraints on the chief executive's decision making power, the competitiveness of political participation, and the existence of binding rules on political participation.

[9] Which limits their analysis to three dozen countries.

[10] As constructed originally by Sachs and Warner (1995) and updated by Wacziarg and Horn Welch (2003).

Polity index, Geddes' (1999) data on autocracy, and Przeworksi et al's (2000) dichotomous index of democratic regimes. While most of their estimates are by ordinary least squares (they argue on a priori grounds that reverse causality running from trade openness to the political regime is unlikely to be important), they also report some instrumental variables estimates. The average age of the party system and the level of secondary school completion are used as instruments for democracy. While only one regression is reported (tariff rates regressed on the Polity-based measure of democracy), the previously-reported positive effect continues to hold.

A parallel strand of work looks at the impact of democracy on financial openness. Quinn (2000), using democracy and autocracy indicators from the Polity data set and his own measure of capital account openness, finds that democracies are more likely to remove capital controls. Brune and Guisinger (2003), using an alternative measure of the dependent variable in conjunction with the democracy indicator of Przeworski et al (2000), similarly report a positive impact of democratic openness on financial openness, especially when the democratic government in power is "capital friendly" and "right leaning". Again, however, neither study acknowledges the possibility of endogeneity.[11]

Appendix Table 2 summarises recent empirical research on the effect of economic and financial globalisation on democracy. Bussmann (2001), Li and Reuveny (2003), Rigobon and Rodrik (2004), and Giavazzi and Tabellini (2005) all consider the impact of trade openness on a Polity-based measure of democratisation. Li and Reuveny report a negative impact, but questions can be raised about the adequacy of their method of dealing with the endogeneity of trade, which is by lagging the independent variable. Rigobon and Rodrik (2004), invoking identification through heteroskedasticity, similarly find a negative impact. Bussmann and Giavazzi-Tabellini, in contrast, find no impact of trade openness on democracy. Giavazzi and Tabellini rely on a difference in differences methodology; they compare countries where there were transitions to or from greater openness with countries where the regime remained unchanged instead of attempting to control explicitly for endogeneity. Bussmann instruments her trade openness variable, but questions can be raised about whether her instruments - GDP per capita, investment and government consumption - satisfy the exogeneity and exclusion restrictions.[12] Rudra (2005) argues that the effect of trade openness on democratisation is positive but contingent - that one finds a positive impact only in countries with high or rising levels of social spending (where there exists a social safety net).[13] Papaioannou and Siourounis (2005) limit their sample to initially non-democratic countries and conclude that trade openness plays a significant role in driving transitions to democracy.

A relatively sophisticated study in this vein is Lopez-Cordova and Meissner (2005), who use the gravity model to obtain instruments for trade. They regress democracy on fitted values of trade where trade is a function of population and the distance between trading partners. They also use historical data starting in 1870. In contrast to most of the studies just described, they find a positive impact of trade openness on democratisation. This positive relationship is not limited to particular "waves" of democratisation. Yu (2005) estimates similar relationships over a shorter period and obtains similar results.

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[11] This despite the fact that Quinn acknowledges the possibility of reserve causality from international financial liberalisation to subsequent democratic reversals.

[12] For example, there is a large literature in which it is argued that income levels (GDP per capita, in other words) is affected by democratisation.

[13] We find this result a bit perplexing. The positive conditioning effect of the existence of a social safety net would be easier to understand in a regression of trade openness on political variables (rather than the opposite of what we describe here), on Rodrik (1998) grounds (that, in more open economies, societies demand better-developed social safety nets).

We are aware of only two studies touching on the impact of international financial openness on democratisation. Relying on timing for identification, Quinn (2001) finds that financial openness increases the probability of transitions away from democracy. Rudra (2005) finds the opposite: a positive relationship but one that is again contingent on rising levels of social spending (paralleling her argument about the contingent effects of trade openness).

In sum, a number of studies find evidence of a positive relationship running from democracy to globalisation, although this conclusion is not unanimous and questions can be raised about methodology and therefore about the robustness of findings. As for the impact of trade openness on democracy, early studies generally reported no significant relationship, while more recent work finds in favor of a positive link. Work on the impact of financial openness on democracy is too scanty to support firm conclusions.

3. Identification

Research on the connections between democracy and economic openness is only as convincing as its identification strategy. We therefore start with a discussion of the instrumental variables used in our analysis.

Studies of the impact of trade openness on democracy have utilised the gravity model to identify the exogenous component of trade. The gravity model looks to country size on the grounds that smaller countries produce a narrower range of inputs and outputs and hence benefit from exchanging these with the rest of the world, and to distance from a country's trading partners as a measure of transport costs. If it has shown nothing else, the resulting literature has shown that size and distance are robustly related to trade. Both variables are plausibly exogenous over the annual horizon that is the focus of our analysis.[14]

A question is whether they also satisfy the exclusion restriction for valid instruments. We are not aware of arguments linking country size to democratisation. Casual empiricism does not point in one direction or the other.[15] Similarly, it is not obvious why a country's distance from the world's major markets should affect its political regime. Once again there are examples pointing in both directions.[16] All this is consistent with the idea that the basic arguments of the gravity model are plausible instruments for identifying the exogenous component of trade.[17]

One strand of literature on the political economy of capital controls argues by way of analogy with merchandise trade: small countries have the greatest difficulty in producing a diversified portfolio of financial assets and hence the greatest incentive to engage in financial trade.[18]

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[14] Alesina and Spolaore (2003) suggest reasons why trade may feed back to country size in the intermediate and long run.

[15] For every United States there is a China, and for every El Salvador there is a Togo.

[16] For every New Zealand there is a Turkmenistan.

[17] One may worry about the possibility that *who* a country trades with is a function of its political regime. Hence if the distance variable is taken as a weighted average of the distance to a country's principal trading partners, the resulting measure will have an endogenous component. We therefore compute this variable as the distance from a country to the world's other markets (weighting distance to each individual country by the latter's share in world trade rather than by its share in the subject country's trade). One may also worry that country size is endogenous with respect to the political regime (democracy comes to Czechoslovakia and the country splits into two). The response would be that such changes in country size are heavily dictated by historical factors and in the short run are few and far between.

[18] See Martin and Rey (2005) and Driessen and Laeven (2005). The second pair of authors emphasises the advantages of financial trade not just for small countries but for small developing countries in particular.

Another appeals to theories of optimal taxation, arguing that where the inflation tax is higher and fiscal imbalances are more severe the authorities will have a greater tendency to tax capital imports.[19] We are not aware of convincing evidence that democracies have lower (or higher) inflation rates or smaller (or larger) budget deficits; we take this as suggesting that inflation and budget deficits plausibly satisfy the exogeneity condition. Similarly, we have not identified a literature in which these variables independently affect the political regime and hence violate the exclusion criterion. A final strand of literature considers global determinants of countries' choice of international financial regime, pointing to peer effects (capital account openness is more likely when many other countries have opened in previous periods) and systemic-stability effects (capital account openness is less likely when there have been a large number of currency crises in previous periods).[20] Both timing and the small country assumption, which is appropriate for most of our observations, support the maintained hypothesis of the exogeneity of these instruments. And it is not clear why these variables should affect the political regime other than via policies toward the capital account (in other words, they plausibly satisfy the exclusion restriction).

We make use of this literature to identify instruments for capital account policies. Our consolidated list of candidates for instrumental variables thus includes country size, inflation, the budget deficit, the number of other countries with capital controls, and the number of other countries experiencing currency crises.[21]

The literature on democratisation provides potential instruments for the political regime. A long line of authors have argued that democratic political institutions arise in an environment where a relatively affluent and homogeneous populace has experience with or exposure to participatory politics. This observation points to the connection between democracy and the general level of economic and social development, as proxied by, *inter alia*, per capita wealth or income.[22] But we cannot use wealth or per capital income as instruments for democracy as they do not satisfy the exclusion restriction - that is, they almost certainly has an independent impact on the propensity to engage in commercial and financial trade. Recent studies of democratisation do however point to other factors playing a causal role in the emergence of democracy. Sachs and Warner (2001) and Ross (2001) have focused on countries' natural resource endowments, arguing that greater reliance on mineral exports leads to concentrated power, reducing the probability that dictatorships will become democratic. But again there may be reasons to worry about the exclusion restriction; countries specialising in the production of natural resources may be more inclined to trade, insofar as they depend and/or can afford to import a range of other goods.

Other approaches may be more promising. For example, Przeworski et al (2000) argue that transitions to democracy are more likely in former British colonies, where citizens or their forbearers had positive experience with democratic practice, and when there an increasing number of other countries in the international system are also democratic. They also argue that democratic transitions are less likely in countries with a history of frequent transitions between democracy and dictatorship, where experience with democracy has been less satisfactory.[23] This variable is also likely to satisfy the exclusion restriction for a valid

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[19] See eg Grilli (1995).

[20] See the work by Simmons and Elkins (2004).

[21] All lagged, as they typically are in empirical studies of the incidence and determinants of capital controls.

[22] This relationship has attracted an enormous amount of attention over the years - to the extent that it has its own name, "modernization theory" - and is in resurgence thanks, in part, to the contributions of Acemoglu and Robinson (2005). Precursors range from Lipset (1959) to Dahl (1989) to Huntington (1991).

[23] Country studies point in the same direction; see McLean (2006). While cast in terms of government quality, La Porta, et al (1999) also find a positive relationship between British colonial heritage and democracy;

instrument in an equation explaining economic and financial openness; we know of no study that has demonstrated a link running from regime transitions, constitutional age or systematic democratisation to globalisation.[24] These variables are also plausibly exogenous with respect to economic and financial openness: only with effort can one can construct an argument relating trade or capital market liberalisation today to prior experiences with dictatorship, constitutional age, or colonial experience.

Again, we draw on all these studies in what follows. Our instrument list for democracy is comprised of the number of other democracies in the international system, the number of prior transitions to dictatorship, the country's constitutional age, and British colonial heritage.

4. Data

We examine the relationship between democracy and globalisation in as large a sample as possible using the longest historical time series available. We use data on trade, capital controls, democracy and the requisite instruments annually for the period 1870-2000. Our sample broadens over time as a result of the existence of a growing number of independent states and greater data availability. The sample of countries for which comparable data on international trade exist begins with 14 in 1870, doubles by the end of World War I (to 28), doubles again by the end of World War II (to 56), and reaches a maximum of 156 by 1998. Our sample for capital controls expands in analogous fashion.

We measure trade openness as imports plus exports as a percentage of gross domestic product.[25] As a robustness check we also employ the dichotomous measure of trade liberalisation constructed by Sachs and Warner (1995) and extended by Wacziarg and Welch (2004). Sachs and Warner classify a country as closed if non-tariff barriers cover 40 per cent or more of trade, average tariff rates are 40 per cent or more, the black market exchange rate depreciated by 20 per cent or more relative to the official exchange rate, or a socialist economy existed. This measure is available from 1950-2000 and covers 150 plus countries.[26]

Capital controls are measured in the manner of the International Monetary Fund's *Annual Report on Exchange Arrangements and Exchange Restrictions (EAER)*, supplemented with historical sources. *EAER* seeks to capture whether there are explicit legal restrictions on capital transitions. The IMF is the source for this variable from 1950; for the period 1870-1950 we rely on the coding of Eichengreen and Bordo (2003).

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conversely, they find a negative relationship between socialist legal heritage and democracy. In addition to the findings of Przeworski, et al, evidence supporting the hypothesis that political stability is conducive to the emergence of democracy is provided by Boix and Stokes (2003) and Epstein, et al (2006), although the former measure stability in terms of the age of the country's constitution and the latter conceive of stability in terms of the country's prior transitions to dictatorship.

[24] The literature studying the "democratic peace" finds that democracies trade more with one another; this, however, is not the same as suggesting that a system comprised of more democracies will have an ever larger volume of international trade.

[25] Our primary sources for import and export data are the compilations published by Mitchell (various dates) and Banks (various dates). Gross domestic product data comes primarily from Maddison (2001), supplemented by Mitchell (various dates) and Banks (various dates). Specifics regarding the creation of the trade openness and GDP series are contained in the appendix.

[26] We are aware of the critique that the Sachs-Warner measure is dominated by the black-market-premium component. As such, it is probably best interpreted as capturing a combination of trade and exchange restrictions (in which case it is, however, still relevant to our questions).

For democracy we employ the dichotomous measure proposed by Przeworski et al (1990), who argue that a country should be regarded as democratic if governments are chosen in contested elections. This means that a country is coded as democratic if it has elections where more than one party competes and it is not the case that the same party always wins. The authors provide data for 150 countries covering 1950-1990; Boix and Rosato (2001) extend these data backward to 1800 while Cheibub and Ghandi (2005) update them through 2000.

An alternative is the age or maturity of the political regime. The dichotomous measure would code, say, Britain and Croatia as equally democratic (both would be coded "1"), notwithstanding the fact that the two countries are fundamentally different in terms of their cumulated experience with open political competition. One way of quantifying these differences is by constructing a measure of the length of time a country has been a democracy. Our measure, "Age of Democracy", counts for each country i at time t the number of uninterrupted year up to time t that country i has been democratic.

We also employ data from the POLITY project, which codes countries' level of democracy as a function of institutional rules. It is less concerned with turnover per se than Przeworski et al For sake of comparison we construct a dummy variable coded one if the POLITY score is strictly positive and zero otherwise. We also use the POLITY data set to create a measure of age of democracy in a manner similar to that described above.

POLITY is also the source of information on constitutional age. POLITY defines constitutional change as occurring either when there is a political transition or when the absolute value of the score changes by at least three points. This allows for constitutional changes in both democracies and dictatorships.

5. Methods

Estimation of instrumental variables models on a large sample of countries observed over more than a century raises the prospect of heteroscedasticity and serially correlated errors. Heteroscedasticity renders standard errors generated via textbook IV inconsistent.[27] A framework for dealing with heteroscedasticity of unknown form is provided by the Generalized Methods of Moments (GMM). We therefore estimate our IV models by GMM and report Newey-West standard errors, which are robust to heteroscedastic and serially correlated residuals.[28]

While we utilise the literatures in economics and political science to identity our lists of candidate instrumental variables, as described above in Section 3, we use statistical tests to verify their relevance (strength) and exogeneity (that they satisfy the exclusion restriction). Consider first the question of relevance and a simple regression model of the form:

$$Y = \alpha + \beta X + \varepsilon \qquad (1)$$

[27] Which would prevent us from drawing valid inferences. Utilizing robust (or heteroscedasticity-consistent) standard errors only partially solves the problem as IV estimates generated by OLS are inefficient (Baum, Schaffer and Stillman 2003).

[28] The GMM estimator is more efficient in the face of heteroscedasticity and serial correlation than standard IV estimation and, if the errors are neither heteroscedastic nor serially correlated, it fares no worse. A detailed discussion of the implementation of the Generalized Methods of Moments estimator is contained in Hayashi (2000) who develops the IV estimator within the context of GMM. In addition, several key tests important for identification within the context of instrumental variables estimation can be implemented within the context of GMM estimation, again as described by Hayashi.

where Y is the dependent variable (for example, trade) and X is the independent variable of interest that is thought to be endogenously determined (for example, democracy). An instrument for X - a variable Z (for example, colonial heritage) - is relevant if the correlation between X and Z is non-zero. (In our present example, Przeworski et al 2000 suggest that colonial heritage should be correlated with democracy.) But if the correlation between X and Z is small, then Z is a weak instrument and inferences based on IV estimation are likely biased. We rely on two tests to evaluate the relevance (or strength) of our instruments. First, we calculate an F-test for the exclusion of the instrument(s) based on the first stage regression and consider our instrument(s) valid if the F-statistic exceeds ten (the threshold suggested by Staiger and Stock 1997). Second, we use the Cragg-Donald test of the null that the model is underidentified - that Z does not sufficiently identify X. Only if the instrument(s) satisfy both tests do we proceed.

One approach to "solving" the instrument-relevance problem would be to utilise all of the variables identified in Section 3 as potential instruments for democracy. Then we would surely obtain a strong correlation between X and these Z's. But this kitchen-sink approach might well violate the assumption that the instruments Z are orthogonal - that is, uncorrelated - with the error term ε. The more instruments we use, the more likely that some of them will have an independent impact on the dependent variable. If Z is not orthogonal to ε then the model is overidentified. Hansen (1982) has developed a test of overidentifying restrictions in a GMM context - Hansen's J statistic - which we use to test the null hypothesis that the model is not overidentified.

Satisfying the requirements of instrument relevance and exogeneity is especially challenging in the context of this paper, as we are seek instruments that not only are valid over time and across country but that are also robust across various definitions of openness and democracy. Our approach is to start with a comprehensive set of instruments - those identified as theoretically relevant in the literature discussed in Section 3. Predictably, these lists generally satisfy the instrument relevance requirement but fail the test for overidentification. Using the discussion in Section 3, which points to some potential instruments as more plausibly exogenous than others, we then move to a reduced set of instruments and reexamine the relevant test statistics. The results reported below are based on these more parsimonious instrument lists.[29]

Two of our dependent variables - one measure of democracy and our measure of capital controls - are dichotomous. The standard approach in this instance, that of estimating a logit or probit model, is not appropriate; at least we are unaware of an IV estimator for a dichotomous dependent variable when the error term is serially correlated and heteroscedastic.[30] Instead, we therefore estimate linear probability models. This means that parameter estimates cannot be interpreted in terms of probabilities and predicted values may fall outside the zero-one interval.[31]

Finally, we include period fixed effects in all our specifications, in the form of dummy variables for the interwar, Bretton Woods, and post-Bretton Woods periods (the gold

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[29] These procedures did not produce a magic instrument list; that is, we found that different Z variables served as valid instruments depending on the definitions of globalisation and democracy used and the time period examined. This is not surprising: globalisation and democratisation were plausibly determined by different factors during 1870-1913, for example, as compared with the period 1970-2000.

[30] Similarly, statistical tests for instrument relevance and exogeneity analogous to those discussed above have yet to be developed in the context of logit or probit models.

[31] Note that the statistics we report for instrument relevance and exogeneity are heteroscedasticity robust so the use of GMM in the context of a discrete dependent variable does not adversely affect these important statistical tests.

standard period being the omitted alternative).[32] Period dummies pick up the possibility that there may be "waves" of democratisation (or trade opening, or capital account liberalisation) occurring simultaneously, at particular points in time in multiple countries, for reasons beyond those for which we can control.[33] Our decision to specify the period fixed effects in this way reflects our reading of the historical literatures on globalisation and democracy, much of which adopts this periodisation.

6. Results

Table 1 reports results on the impact of the dichotomous measure of democracy on trade openness. Controlling for other determinants of trade highlighted by the gravity model, the results suggest that democracies trade more than dictatorships.[34] This holds for the entire 1870-2000 period as well as for the gold standard era, the interwar period, the Bretton Woods years, and the post Bretton Woods period alike. The effect of democracy across each of these periods is positive and statistically significant.[35]

When we instead measure the political regime by the age of democracy, as in Table 2, we find a similar pattern: more mature democracies are more open to trade. We obtain this result in the full sample and for each sub-period.[36] Note that this is a generalisation of the result found previously by O'Rourke and Taylor (2006) for the gold standard era using ordinary least squares.

Tables 3 and 4 report analogous estimates for financial openness, where the dependent variable equals one in the presence of capital controls. These results again support the idea of a positive relationship running from democracy to globalisation: that is, democracies are more likely to remove capital controls. We find this for the full sample and each subperiod regardless of the measure of democracy employed, with one exception. Under Bretton Woods, democracies were more likely than dictatorships to implement capital controls. (This positive impact is statistically significant using the dichotomous measure of democracy, as in Table 3, but not when using the age of democracy, as in Table 4.[37]) This finding would appear to reflect the tendency for advanced democracies that were part of the Bretton Woods system of pegged exchange rates to use capital controls to free up monetary policy to serve constituent demands, the idea at the time being that there was a stable tradeoff

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[32] When we consider the Sachs-Warner measure of trade openness, since it exists only from 1950, we distinguish only the Bretton Woods and post-Bretton Woods periods.

[33] Another way of thinking about these period fixed effects are that they correct for the possibility of changes in the structural relationship over time.

[34] Note also that the control variables are well determined and enter with plausible signs. Greater distance from the principal markets leads to less trade; larger countries trade, more but with an elasticity closer to zero than one; more populous countries trade more; richer countries trade a smaller share of GDP, other things equal, reflecting the presence of a larger service sector.

[35] As discussed above, to properly identify the effect of democracy we had to rely on different sets of instruments in different equations. In some cases, like that of post Bretton Woods period, when we used the complete set of instruments we were unable to reject the null hypothesis of overidentification at the 0.05 percent level. Dropping instruments - either total number of other democracies or former British Colony - from this model did allow us to reject the null of overidentification but resulted in weak instruments (a F statistic below 10).

[36] These models are better identified from a statistical point of view: the specification for each subperiod passes tests for instrument relevance and exogeneity.

[37] This result should, however, be interpreted with caution, since the models in question fails the test for overidentification.

between inflation and unemployment that could be exploited by national monetary authorities. When democracies allowed their exchange rates to float following the breakdown Bretton Woods, controls were not longer required for monetary policy autonomy.[38]

Tables 5 through 8 complete the picture, with evidence on the impact of trade and financial openness on democracy. Consider first the results for the impact of trade openness on democracy (Tables 5 and 6). With a single exception - the effect of trade on the continuous measure of democracy in the Bretton Woods era - we find that trade openness promotes democracy.[39] The results (in Tables 7 and 8) for the impact of financial openness on democracy are not as strong but still point in the same direction. Using the dichotomous measure of democracy, we find that capital controls made democracy less likely during both the interwar and post-Bretton Woods periods, although we do not find a statistically significant effect when we pool all years. When we use the age of democracy (Table 8) we find that capital controls have a statistically significant and negative effect for all periods except Bretton Woods.[40]

In Table 9 we include proxies for these two dimensions of globalisation at the same time. Both retain their expected signs but they display different patterns in terms of individual statistical significance depending on how democracy is measure. Given that both are instrumented using a common set of exogenous variables the lack of individual significance is not surprising; a chi-squared test for their joint significant (at the bottom of Table 9) shows that they are jointly significant at the 0.05 level. This evidence is supportive of the idea that both aspects of globalisation matter for democracy.[41]

In sum, we find evidence of positive relationships running in both directions between globalisation and democracy.

7. Robustness

It is important to establish the robustness of such findings. We study robustness in several ways: we consider alternative measures of our dependent and independent variables; we use alternative econometric set-ups; and, perhaps most importantly, we consider alternative instruments.[42]

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[38] In addition, the idea that central banks could affect the equilibrium level of unemployment fell out of fashion as a result of accumulated experience and the growing intellectual sway of the Phelps-Friedman expectations-augmented Phillips Curve, which presumably reduced the value that some central banks attached to policy autonomy.

[39] With one exception we use a single instrument for trade in each specification. We do this because the inclusion of any of the other gravity-motivated variables (population, area, economic size) fails the overidentification test. The Bretton Woods sample in Table 6 includes both distance and area because distance by itself resulted in a situation where the model failed the test for instrument relevance (the F-statistic was 5.35 using just distance).

[40] Again, however, caution is in order as our instruments for the sample as a whole (1870-2000) fall below the cut-off of 10 (F=8.38) yet the Cragg-Donald test allows us to reject the null hypothesis that the model is underidentified.

[41] When we examine this relationship across subperiods we find a similar pattern for the interwar period and the post-Bretton Wood period. We found no statistically significant effect of trade and capital openness on democracy during the Bretton Woods period (and could not identify instruments that satisfied both relevance and exogeneity concerns). We did not estimate a similar model for the gold standard because no country had capital controls during that period.

[42] To avoid a proliferation of tables, we describe but do not print the tables associated with all of the following robustness tests. The additional results are available from the authors on request.

Alternative measures. Given the existence of alternative codings of political regimes, we substituted the POLITY measure of democracy for that of Przeworski et al We construct a dummy variable coded one if the POLITY score is strictly positive and zero otherwise. Using these data we also construct an alternative measure of the age of democracy.[43]

When we substitute the POLITY measure for the Przeworski et al measure, we obtain results substantively and statistically similar to those reported in Section 5.[44] This is true when we use democracy both as an independent and a dependent variable.

Similarly, when we substitute the Sachs-Warner measure of openness for the trade share, we continue to find that democracy has a positive impact on trade openness. This is true for both the continuous and dichotomous measures of democracy and both with and without geographical instruments (Table 10). Since the Sachs-Warner measure is only available since 1950, this test also entailed limiting the analysis to the second half of the 20th century. We also therefore reestimated the relationship using the export-plus-import share on this shorter period; again the results carry over.

Alternative econometric specifications. As a further robustness check we included a set of *n*-1 country dummy variables in the trade and age-of-democracy models estimated over the 1870-2000 period.[45] With the exception of the impact of capital controls on the age of democracy model (Table 8), our results are unchanged, although some of the point estimates are now smaller than before.[46]

We also estimated the models using standard instrumental variables, OLS, and probit-based specifications. Results using these techniques suggested the same patterns as reported above and even higher levels of statistical significance than above. For example, we found a statistically significant and negative relationship between capital controls and democracy using instrumental variables probit.[47]

Another robustness check was to focus on transitions to and from democracy rather than on the political regime at a point in time. We estimated a Markov transition model of the impact of globalisation on democratisation. This allows us to ask the question: conditional on a country being a democracy at time *t*-1, does globalisation increase (or decrease) the probability of a transition to dictatorship? It allows us to analyse within a single empirical model both the probability that a country will undergo a political transition and the probability that the existing regime will remain stable.

Denote democracy for country *i* at time *t* as *Dit* and the indicator of globalisation in country *I* at time *t* as G_{it}.[48] We can write the Markov transition model as a probit:

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[43] The dichotomous measures of democracy from Przeworski and POLITY agree 88 per cent of the time; the major disagreements arise when countries have competitive electoral systems yet do not yet meet the suffrage requirement that is part of the Przeworski, et al definition. The correlation between the age of democracy measures is 81 per cent.

[44] There is an exception: when we use the dichotomous measure of democracy based on the POLITY score we no longer find a statistically significant impact of capital controls on the probability of democracy (the parallel regression is column 2 of table 3). These results are available upon request.

[45] Adding country dummies meant that we had to drop the British colonial origin instrument.

[46] We did not include country fixed effects in the capital controls or dichotomous democracy models because there are a number of countries where the dependent variable of interest (democracy or capital controls) does not change over time. In those cases the inclusion of country dummies would result in a large number of cases being "perfectly explained".

[47] This is largely due to the fact that those models do not allow for standard errors that are auto-correlation consistent.

[48] For the ease of exposition we ignore other independent variables that may influence democracy.

$P(D_{it}) = \Phi\{\alpha_0 + \alpha_1 G_{it-1} + ß_0 D_{it-1} + ß_1 D_{it-1} G_{it-1}\}$

where $P(D_{it})$ is the probability that the country will be democratic, and Φ is the cumulative normal distribution. When a country is a dictatorship at time *t-1* (D_{it-1}=1), the impact of globalisation on the probability of democracy at time t is given by α_1. A statistically significant positive (negative) value of α_1 is interpreted as evidence that globalisation increases (decreases) the probability of a transition to democracy. Likewise, if a country is democratic at time *t*-1, a positive (negative) sum $\alpha_1 + \beta_1$ suggests that globalisation raises (reduces) democratic stability - that a country that is democratic at time *t*-1 will remain so at time at *t*. Hence each model of Markov results have two columns. The first one (denoted α) contains the coefficients when democracy at *t*-1 is equal to zero and can be interpreted in terms of transitions to/from democracy. The second (denoted α+*β*) reports the coefficients when democracy at *t*-1 is equal to one and can be interpreted in terms of democratic stability.[49]

The results, in Table 11, are consistent with earlier results. For trade openness, we find that autocracies that are more open to trade are likely to remain autocracies (the negative coefficient under α in column 1) and that democracies that are open to trade are likely to remain democracies (the positive coefficient under α + β in column 1). For financial openness (the second set of columns in table 11), we find no impact of capital controls on democracy but find that democracies that are closed to capital flows are likely to become autocracies.[50] When we include both measures of globalisation, in the third set of columns, the results become weaker.[51] These results there do not suggest consistent impact on the probability of a transition to democracy, but they do point to the conclusion that economically and financially open economies are more likely to remain democratic.

8. Contingent effects

The literature suggests a number of directions in which one might want to extend these results. For example, O'Rourke and Taylor (2005) suggest that the impact of democratisation on openness should be contingent a country's factor endowment: democratisation increases the likelihood that policy reflects the interests of workers, who now vote, and workers will prefer trade openness in labour abundant countries. It is assumed that the impact of opening on relative returns to factors of production can be predicted from the Stolper-Samuelson theorem, and that factor owners vote their interests. It is further assumed that prior to democratisation, which enfranchises labour, decision making is controlled by large landowners and wealthy capitalists.[52]

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[49] The standard errors in the α+β column are based on a Wald test of the joint significance of the two terms. A complication in estimating the Markov model is that we have two endogenous variables: the measure of globalisation and its interaction with lagged democracy. As the value of the interaction term is a function of the endogenous globalisation variable, we treat both the globalisation variable and its interaction with lagged democracy as endogenous and instrument both of them.

[50] Again, the language here is stretched as we are estimating linear probability models.

[51] Due to collinearity resulting from a common set of instruments.

[52] Verdier (1994) uses this framework to examine historical trade policy in Britain, France and the United States. Dutt and Mishra (2002) also employ a similar model and apply it trade policy across a broad cross-section of countries.

Following O'Rourke and Taylor, we therefore interact democracy with the land/labour ratio.[53] Again we use the fitted value of democracy from the first-stage regression and include democracy by itself as well as the interaction term in the second stage. Results are in Table 12.[54] While we continue to get a positive coefficient for the impact of democracy on trade, we also get negative coefficient on the interaction of democracy with the land/labour ratio. The Stolper-Samuelson interpretation, with two factors and two sectors, would be that where labour is the relatively scarce factor, it is landowners who benefit from opening, both relatively and absolutely, and labour when enfranchised is better able to vote its pocketbook. We find this pattern for the full period 1870-2000. We find it also for the 1870-1913 period on which O'Rourke and Taylor focus (although their estimates, unlike ours, are by ordinary least squares) and for the other subperiods as well. The individual coefficients are not always significant; again, this is a consequence of using an identical set of instruments to identify both of these endogenous variables; a χ^2 test shows them to be jointly significant.[55]

In Table 13 we add the capital/labour-democracy interaction.[56] Capital stocks, even more historical capital stocks, tend to be measured with error; it is thus not surprising that individual significance levels are now lower. But for the full period, democracy continues to display its positive association with trade openness. Its interaction with the land/labour ratio is again negative, while its interaction with the capital/labour ratio is positive.[57] The three variables are jointly significant at conventional confidence levels.[58] This begins to look like a specific-factors model in which land and labour are used in one sector ("agriculture") while capital and labour are used in the other ("industry"). Landowners and capitalists have opposing preferences. With which one labour sides depends on its consumption basket, and how effectively it makes its preferences felt depends on the extent of democratisation.[59] We obtain the same results for the interwar period and the Bretton Woods years (but not for the post-Bretton Woods period, when democracy is insignificant and its interaction with the land/labour ratio is positive, not negative).

Where capital is the relatively abundant factor it should prefer the removal of capital controls, which opens up opportunities for investing abroad, while where it is the relatively scarce factor it should prefer a closed capital account in order to avoid having its rate of return bid down by capital inflows. In a Heckscher-Ohlin framework, this idea builds on the well-known isomorphism between trade flows and factor flows (Mundell 1957). We therefore estimated the same equations, with interaction terms, for the determinants of capital account policies. Results are in Table 14. Reassuringly, for the full period 1870-2000 (first column) the pattern of coefficients is consistent with what we found in Table 13 for trade flows. (Recall that the

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[53] We follow O'Rourke and Taylor and standardize the land/labour ratio to mean zero. We obtained data for the land-labour ratio from O'Rourke and Taylor for the period prior to 1939 and from the World Bank's World Development Indicators for the period after 1960.

[54] Note that in this model and those that follow we treat both democracy and the interaction of democracy with the land-labour ratio (and the capital-labour ratio, below) as endogenous.

[55] That the endogenous variables are correlated with one another by construction adds to the problem of having sufficient independent variation.

[56] The models in Table 13 (and Table 14 below) include three endogenous variables: democracy and its interaction with the land/labour and capital/labour ratios.

[57] In other words, that the capital stock was not included in the previous table doesn't appear to have affected anything there.

[58] See the χ^2-tests at the bottom of the table.

[59] In general it is not possible to make reliable predictions about how factor proportions will map into preferences about trade policy in a three-factor, two-good model, as noted by O'Rourke and Taylor (2005) and shown by Thompson (1985, 1986). One must make further assumptions, like those required to obtain the specific-factors model, in order to derive unambiguous implications.

dependent variable in Table 14 is capital controls, so consistency means obtaining the opposite signs on democracy and on its interaction with the factor proportions ratios.) Democracy enters with a negative coefficient - it makes capital controls less likely. This effect is stronger in countries with high capital/labour ratios and weaker in those with high land/labour ratios. The coefficients on two of the three terms (democracy and its interaction with the capital/labour ratio) are individually significant, and the three terms (democracy and the two interactions) are jointly significant. We find the same thing for the post-1960 period (column 3). For the interwar period, in contrast, none of the effects is significant. These were years - especially the 1930s - when capital controls were almost universal; they were imposed in response to the economic crisis and the breakdown of international financial markets. It is not surprising, then, that we observe the same tendency to apply them in democracies and autocracies and in countries with very different factor proportions.

9. Conclusions and extensions

In this paper we have presented a battery of evidence suggesting positive relationships running both ways between trade and democracy, though exceptions to this generalisation appear to obtain at particular times (during the Bretton Woods period) and places (in labour-scarce countries). As in any case where positive feedbacks are present, there is the possibility of dynamic instability - that is, a positive or negative shock may send the system off in the positive or negative direction without limit. Here we offer a few speculations about this possibility.

Our inferences about dynamics are just suggestive, given the basically static system that we have estimated.[60] But such speculations are intriguing. If the system is dynamically unstable, then we can perhaps understand how in the 1930s negative shocks to trade and democracy could send the system down toward progressively lower values of both variables, seemingly without limit (at least until the system was shocked again after World War II). Analogously, dynamic instability implies that we may now be witnessing positively reinforcing increases in globalisation and democracy that will similarly continue without limit (absent, of course, a large negative shock that sends the system off in the other direction). But if the system is stable - despite the existence of positive two-way relationships between democracy and globalisation - then we perhaps have a way of understanding how the “third wave” of democratisation after 1978 lent some encouragement to globalisation, but not without limit. We have a way of understanding how the decline in transport costs due to containerisation encouraged trade and also lent impetus to democratisation, but again only within limits. In this stable case, both democracy and globalisation eventually settle down at levels higher than prior to the shock, because there is resistance to allowing them to rise further. Some might say that this is a plausible characterisation of what we have seen in recent years.

When the bivariate relationships between two variables are both positive, undergraduates are taught to gauge stability by comparing the own effects to the cross effects. In the present context the question is whether the globalisation-as-a-function-of-democracy curve is steeper than the democracy-as-a-function of globalisation curve when plotted with democracy on the horizontal axis and globalisation on the vertical axis.[61] For illustrative purposes, we

[60] There is, of course, a lagged dependent variable in our determinants-of-democracy Markov equations, which gives the system a modestly dynamic flavor, but it does not have important implications for our story.

[61] And other variables are, naturally, held constant at their respective means.

calculated the relative slopes of the two loci for the case of trade.[62] The estimated configuration is in Figure 2.[63]

This is the stable case. Imagine a "third wave" whose effect is to increase the level of democracy associated with any level of trade. The relatively steep "predicted democracy" schedule shifts to the right (since we expect a higher level of democracy for any level of trade). The system is now off the "predicted trade" schedule, so the level of trade rises until the system is back on that curve. The higher level of trade implies a higher level of democracy, so the system now moves to the right until it is back on the "predicted democracy" schedule. But each time a variable increases again, that increase is smaller than before. Eventually the system converges on two stable, now higher, levels of democracy and trade. One could play the same game by positing instead a decline in transport costs due to the advent of containerisation that causes the relatively flat predicted-trade schedule to shift up.[64]

Taken literally, this suggests that the bivariate relationship between globalisation and democracy, while positive in both directions, has limits. Whether this is good or bad news, assuming that one prefers high values of both variables, depends on the nature of the shocks.

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[62] Using the estimates for trade from the first column of Table 1 and the estimates for democracy from the first column of Table 5. It turns out that the results are again the same when we consider our basic estimates for the impact of financial openness on democracy and of democracy on financial openness (results available from the authors on request).

[63] In the case of the democracy-as-a-function-of-globalisation schedule, this is the short-run effect. When we instead plot the long-run effect, the democracy-as-a-function-of-globalisation schedule becomes steep (the effect of an increase in globalisation is larger since the partial effect associated with the lagged dependent variable is between zero and one). The shift in the values of both variables due to a shock to either of one becomes larger in the long run, but the stability analysis remains the same, since the democracy-as-a-function-of-globalisation schedule was the steeper one before, and it is even steeper now.

[64] These results are for the entire 1870-2000 period. We obtain similar patterns - albeit with different slopes - when we examine the interwar, Bretton Woods and post Bretton Woods periods separately.

Appendix Table 1

Studies of the effect of democracy on globalisation

Author(s)/ year	Countries	Period	Dependent variable	Measure of political regime	Political control variables	Economic control variables	Instrumental variables
Grofman and Gray (2000)	31 countries	1960-95	Trade Openness (imports plus experts over GNP)	Number of years country has been authoritarian	• Proportional representation • Presidential system • Number of districts	• GDP • Population	
Fidrmuc (2001)	25 transition countries	1990-98	Liberalisation index (internal and external market liberalisation and privatisation, De Melo et al, 1996)	Lagged Democracy index (measuring political rights and civil liberties, the Freedom House)		Lagged liberalisation index	
Quinn (2000 and 2002))	80 developed and emerging markets countries	1995-97	Measures of financial openness: • Change in capital account openness (Quinn, 1997) • Change in current account openness (Quinn, 1997)	Polity index (change and level)	• Vote share of 23 Communist parties • Number of revolutions, coups, guerrilla wars (Banks, 2001)	• Level of dependent variable: Capital (or current) account openness of leading economies • Change and level of GDP • Change and level of investment • Population growth • Change and level of trade openness • Change and level of oil price • Year and country dummies	

Appendix Table 1 (cont)

Studies of the effect of democracy on globalisation

Author(s)/ year	Countries	Period	Dependent variable	Measure of political regime	Political control variables	Economic control variables	Instrumental variables
Milner and Kubota (2005)	100 Developing Countries	1970-99	Measures of trade policy: • Average statutory tariff rate • Economic liberalisation indicator (Sachs and Warner, 1995, updated by Horn, Welch and Wacziarg, 2003	Measures of democracy: • Polity index • Dictator index (Geddes, 1999) • Binary variable coding "democratic" regime (Alvarez et al, 1996, and Przeworski et al, 2000)	Internal factors: • Economic crisis dummy • Balance of payment crisis dummy • Number of years a government has been in the office External factors: • IMF agreement dummy • US exports and imports • GATT/WTO membership	Internal factors: • Log of population • Real GDP per capita External factors: • Average tariff level for all LDCs • Average level of openness (Sachs and Warner, 1995)	• Average age of the party system (Beck et al, 2001) • Level of secondary school completion among population over fifteen years (Barro and Lee, 2000)
Giavazzi and Tabellini (2005)	140 countries	1960-2000	Economic liberalisation indicator (Sachs and Warner, 1995, updated by Horn, Welch and Wacziarg, 2003)	Polity index	• A dummy for socialist legal origin interacted with the main independent variable	• Country fixed effects • Year fixed effects	
Yu (2005)	157 IMF members	1962-98	Log real bilateral exports from country i to country j	Polity index	• WTO membership indicator • Regional trade agreement dummy (FTA, GSP, NAFTA, ASEAN, etc.)	• Log GDP • Log GDP per capita • Emission level of carbon dioxide (proxy for environmental quality) • Geographical controls	• Judicial independence • Death penalty abolition

Appendix Table 2

Studies of the effect of globalisation on democracy

Author(s)/ year	Countries	Period	Dependent variable	Measure of globalisation	Political control variables	Economic control variables	Instrumental variables
Bussman (2001)	65 countries	1950-92	Polity index	Trade Openness	• British colony dummy (the Correlates of War (COW) data set) • Militarised interstate disputes	• Log real GDP per capita • Human capital (Barro-Lee, 1994) • Growth of real GDP per capita	Instruments for *Openness*, *Dispute*, and *Growth:* • Log of population • Real GDP per capita • Investment • Government consumption • Terms of trade • Capability ratio • Alliance index • Major powers dummies • Openness, Growth and Conflict in PRIE
Li and Reuveny (2003)	127 countries	1970-96	Polity index	• Trade Openness • Financial openness (Net inflows of FDI to GDP and Portfolio investment/GDP) • Democracies in the region	Lagged dependent variable	• Inflation • Log GDP per capita • Real GDP growth • Year dummies	
Lopez-Cordova and Meissner (2005)	115 countries	1870-2000	Polity index	Trade Openness	• Lagged Polity index • Log land area • Landlockedness • Common borders • Common language	• Log population • Time dummies	• Log distance • Common border dummy • Island dummy • Common language dummy

Appendix Table 2 (cont)

Studies of the effect of globalisation on democracy

Author(s)/ year	Countries	Period	Dependent variable	Measure of globalisation	Political control variables	Economic control variables	Instrumental variables
Rudra (2005)	59 LDCs (excluding Eastern and Central Europe)	1972-97	• Polity index • Political and civil liberties (the Freedom House)	• Trade Openness • Financial openness (Gross capital flows to GDP, FDI to GDP, and Portfolio flows to GDP)	• Regional Democracy • World Democracy • Social spending to total government spending • Potential Labour Power	• GDP per capita • GDP growth • Urbanisation • Inflation	Higher moments of independent variables
Papaioannou and Siourounis (2005)	92 countries that were non-democratic in 1960	1960-2000	Democratisation indicator (based on both Polity index and the Freedom of House)	• Trade Openness • Trade openness policy indicator (Wacziarg and Welch, 2003) • Permanent trade liberalisation indicator (Wacziarg and Welch, 2003)	• Years since independence • Armed conflict ending (Armed Conflict Dataset, 2003, and International Peace Research Institute, Oslo) • Religious fragmentation	• Log GDP • GDP per capita growth • Currency crisis dummy (Kraay, 2003) • Banking crisis dummy (Caprio and Klingebiel, 2003)	
Giavazzi and Tabellini (2005)	140 countries	1960-2000	Polity index	Sachs-Warner economic openness indicator	• Proportional representation • Parliamentary system	• Country fixed effects • Year fixed effects	Argue that difference-in-differences methodology controls for endogeneity
Yu (2005)	157 IMF members	1962-98	Polity index	Trade Openness	Death penalty abolition	CO2 emissions	• WTO members • Gravity Variables

Data Appendix

GDP: The majority of data comes from Maddison (2001) and is augmented with series from Banks (various years) and Mitchell (various years). To obtain a consistent series the data were converted to PPP. The converted series from Maddison were then extrapolated backwards or forwards using the growth rate from Banks or Mitchell. Where an entire series was missing in Maddison we used the series from Banks or Mitchell.

Trade openness: Data on imports and exports come from Mitchell and Banks and were converted to PPP and then divided by GDP to obtain the ratio (imports+exports)/gdp

Capital controls: Data prior to 1970 are from Bordo, Eichengreen, Klingebiel and Martinez-Peria (2001). From 1970-2000 the data comes from Ghosh, Gulde and Wolf (2002).

Population: The primary source for population is Banks (various years) augmented by data from the Penn World Table 6.1 and the World Bank's World Development Indicators.

Population density: The primary source for population is Banks (various years) augmented by data from the World Bank's World Development Indicators.

Area: The primary source for population is Banks (various years) augmented by data from the World Bank's World Development Indicators.

Urban population: The primary source for population is Banks (various years) augmented by data from the World Bank's World Development Indicators.

Inflation: Data prior to 1970 are from Bordo, Eichengreen, Klingebiel and Martinez-Peria (2001). From 1970-2000 the data comes from Ghosh, Gulde and Wolf (2002).

Government balance: Data prior to 1970 are from Bordo, Eichengreen, Klingebiel and Martinez-Peria (2001). From 1970-2000 the data comes from Ghosh, Gulde and Wolf (2002).

Democracy: We use the dichotomous measure developed by Przeworski et al (1990) who calculate it from 1950-1990. We use the coding from Boix and Rosato (2001) for the period 1800-1949 and from Cheibub and Ghandi (2005) for the period 1991-2000.

Land/labour and capital/labour ratios: We used the data from O'Rourke and Taylor (2005) for the period prior to 1960 World Bank's World Development Indicators for the period after 1960.

Table 1

Effect of democracy on trade openness 1870-2000: Dichotomous Measure of Democracy

	Full Sample	Gold Standard	Interwar Period	Bretton Woods	Post Bretton Woods
Democracy(t-1)	4.106 ***	1.616 ***	2.095 ***	3.929 ***	4.021 ***
	(0.633)	(0.283)	(0.239)	(0.459)	(0.601)
Log(Total GDP PPP(t-1))	–0.919 ***	–0.758 ***	–0.791 ***	–0.963 ***	–0.853 ***
	(0.086)	(0.068)	(0.054)	(0.065)	(0.079)
Log(Distance(t-1))	–0.783 ***	–0.025	1.244 ***	–1.364 ***	–1.022 ***
	(0.245)	(0.290)	(0.340)	(0.230)	(0.321)
Log(Country Size(t-1))	0.002	–0.188 ***	–0.240 ***	0.064	0.013
	(0.035)	(0.049)	(0.047)	(0.044)	(0.031)
Log(Total Population(t-1))	0.486 ***	0.294 ***	0.706 ***	0.457 ***	0.452 ***
	(0.078)	(0.081)	(0.091)	(0.055)	(0.076)
Interwar Period	–0.258				
	(0.223)				
Bretton Woods Period	0.893 ***				
	(0.202)				
Post Bretton Woods Period	2.781 ***				
	(0.267)				
Constant	5.527 ***	1.898	–12.251 ***	11.599 ***	9.988 ***
	(1.963)	(2.596)	(3.104)	(1.881)	(2.533)
Observations	7362	763	712	2079	3792
F	62.705	59.612	103.816	107.769	80.816
p-value	0.000	0.000	0.000	0.000	0.000
First Stage F	22.14	79.97	113.41	32.03	30.52
p-value	0.000	0.000	0.000	0.000	0.000
Cragg-Donald Under-ID Test	331.746	171.794	290.379	129.479	182.062
p-value		0.000	0.000	0.000	0.000
Hansen J Statistic	5.926	0.026	2.088	0.004	8.166
p-value	0.052	0.873	0.352	0.952	0.017
Instruments	Tot Dem Pop Den Brit Col	Tot Dem Brit Col	Tot Dem Urban Pop Brit Col	Pop Den Brit Col	Tot Dem Pop Den Brit Col

Instrumental variables regression estimated via GMM; heteroscedasticity and auto-correlation consistent

standard errors in parentheses. Instruments refer to the set of exogenous instruments used in the first stage model (Tot Dem=Number of Democracies in the Systemt-2 Pop Den=Population Densityt-2 Urban Pop=Urban Populationt-2 Brit Col=Former British Colony). The F-test refers to the F-test for the second stage model. The First Stage F is the heteroscedasticity and auto-correlation robust F-test for testing the exclusion of the instruments from the first stage; Cragg-Donald Under-ID tests the null hypothesis that the first stage is under-identified and the Hansen J Statistic tests the null that the first stage is over-identified.

* p<0.10, ** p<0.05, *** p<0.01

Table 2

Effect of democracy on trade openness 1870-2000
political regime measured by age of democracy

	Full Sample	**Gold Standard**	**Interwar Period**	**Bretton Woods**	**Post Bretton Woods**
Log(Age of Democracy(t-1))	0.891***	0.335***	0.529***	1.068***	0.899***
	(0.095)	(0.055)	(0.067)	(0.115)	(0.113)
Log(Total GDP PPP(t-1))	–0.855***	–0.645***	–0.778***	–1.039***	–0.808***
	(0.054)	(0.053)	(0.054)	(0.068)	(0.061)
Log(Distance(t-1))	–0.753***	–0.123	1.028***	–0.839***	–1.499***
	(0.170)	(0.280)	(0.345)	0.198)	(0.196)
Log(Country Size(t-1))	–0.043*	–0.215***	–0.264***	0.061	–0.017
	(0.026)	(0.051)	(0.046)	(0.037)	(0.026)
Log(Total Population(t-1))	0.376***	0.203***	0.649***	0.537***	0.375***
	(0.047)	(0.069)	(0.090)	(0.055)	(0.052)
Interwar Period	–0.225				
	(0.192)				
Bretton Woods Period	0.876***				
	(0.168)				
Post Bretton Woods Period	2.698***				
	(0.204)				
Constant	6.586***	3.137	–9.705***	7.333***	14.968***
	(1.443)	(2.468)	(3.121)	(1.681)	(1.673)
Observations	6985	763	712	2079	3351
F	81.692	65.462	110.367	112.940	98.572
p-value	0.000	0.000	0.000	0.000	0.000
First Stage F	82.45	189.47	50.21	38.90	88.78
p-value	0.000	0.000	0.000	0.000	0.000
Cragg-Donald Under-ID Test	806.351	423.095	326.647	172.323	301.549
p-value	0.000	0.000	0.000	0.000	0.000
Hansen J Statistic	0.210	0.025	8.171	0.304	8.967
p-value	0.647	0.875	0.017	0.581	0.003
Instruments	Const Age Brit Col	Tot Dem Brit Col	Tot Dem Urban Brit Col	Pop Den Brit Col	Const Age Brit Col

Instrumental variables regression estimated via GMM; heteroscedasticity and auto-correlation consistent standard errors in parentheses. Instruments refer to the set of exogenous instruments used in the first stage model (Const Age= Log(Age of the Constitution)t-2, Tot Dem=Number of Democracies in the Systemt-2 Pop Den=Population

Densityt-2 Urban Pop=Urban Populationt-2 Brit Col=Former British Colony). The F-test refers to the F-test for the second stage model. The First Stage F is the heteroscedasticity and auto-correlation robust F-test for testing the exclusion of the instruments from the first stage; Cragg-Donald Under-ID tests the null hypothesis that the first stage is under-identified and the Hansen J Statistic tests the null that the first stage is over-identified.

* p<0.10, ** p<0.05, *** p<0.01

Table 3

Effect of democracy on capital controls 1870-2000: Dichotomous Measure of Democracy

	Full Sample	Interwar Period	Bretton Woods	Post Bretton Woods
Democracy(t-1)	–0.768***	–0.782***	0.505***	–0.730***
	(0.204)	(0.300)	(0.166)	(0.148)
Interwar Period	0.455***			
	(0.066)			
Bretton Woods Period	0.917***			
	(0.053)			
Post Bretton Woods Period	0.638***			
	(0.057)			
Log(Total GDP PPP(t-1))	0.004	–0.085***	0.004	0.013**
	(0.007)	(0.023)	(0.010)	(0.006)
Log(GDP Per Capita PPP(t-1))	0.053	0.544**	–0.353***	0.005
	(0.054)	(0.241)	(0.082)	(0.035)
Systemic Crises(t-1)	0.004*	0.069***	–0.018	0.003
	(0.002)	(0.010)	(0.012)	(0.002)
Inflation(t-1)	0.000***	0.003	–0.006***	0.000***
	(0.000)	(0.002)	(0.002)	(0.000)
Government Balance(t-1)	–0.006***	–0.009	0.001	–0.006***
	(0.002)	(0.006)	(0.002)	(0.002)
Constant	–0.064	–2.949*	3.501***	0.868***
	(0.320)	(1.616)	(0.563)	(0.229)
Observations	5440	316	650	3919
F	78.858	14.891	6.276	49.884
p-value	0.000	0.000	0.000	0.000
First Stage F	19.35	8.38	18.21	35.57
p-value	0.000	0.000	0.000	0.000
Cragg-Donald	160.432	19.223	77.295	139.355
p-value	0.000	0.000	0.000	0.000
Hansen J Statistic	0.025	0.430	10.394	0.392
p-value	0.875	0.512	0.015	0.531
Instruments	Tot Dem Brit Col	Const Age Brit Col	Tot Dem Pop Den Urban Const Age	Tot Dem Brit Col

Instrumental variables regression estimated via GMM; heteroscedasticity and auto-correlation consistent standard errors in parentheses. Instruments refer to the set of exogenous instruments used in the first stage model (Const Age= Log(Age of the Constitution)t-2, Tot Dem=Number of Democracies in the Systemt-2 Pop Den=Population

Densityt-2 Urban Pop=Urban Populationt-2 Brit Col=Former British Colony). The F-test refers to the F-test for the second stage model. The First Stage F is the heteroscedasticity and auto-correlation robust F-test for testing the exclusion of the instruments from the first stage; Cragg-Donald Under-ID tests the null hypothesis that the first stage is under-identified and the Hansen J Statistic tests the null that the first stage is over-identified.

* p<0.10, ** p<0.05, *** p<0.01

Table 4

Effect of democracy on capital controls 1870-2000: political regime measured by age of democracy

	Full Sample	Interwar Period	Bretton Woods	Post Bretton Woods
Log(Age of Democracy(t-1))	–0.092***	–0.116***	–0.004	–0.260***
	(0.030)	(0.035)	(0.072)	(0.062)
Interwar Period	0.403***			
	(0.052)			
Bretton Woods Period	0.916***			
	(0.037)			
Post Bretton Woods Period	0.692***			
	(0.039)			
Log(Total GDP PPP(t-1))	0.007	–0.058***	–0.004	0.028***
	(0.007)	(0.016)	(0.013)	(0.007)
Log(GDP Per Capita PPP(t-1))	–0.054*	0.327**	–0.129	0.067
	(0.032)	(0.138)	(0.158)	(0.056)
Systemic Crises(t-1)	0.004**	0.071***	–0.009	0.002
	(0.002)	(0.007)	(0.012)	(0.002)
Inflation(t-1)	0.000***	0.002	–0.001	0.000***
	(0.000)	(0.002)	(0.001)	(0.000)
Government Balance(t-1)	–0.003**	–0.002	0.002	–0.006***
	(0.001)	(0.005)	(0.002)	(0.002)
Constant	0.500**	1.680*	1.967*	0.260
	(0.215)	(0.984)	(1.113)	(0.413)
Observations	4935	316	701	3919
F	224.128	34.859	5.690	50.756
p-value	0.000	0.000	0.000	0.000
First Stage F	53.71	59.32	26.27	21.83
p-value	0.000	0.000	0.000	0.000
Cragg-Donald Under-ID Test	391.748	150.483	42.985	91.291
p-value	0.000	0.000	0.000	0.000
Hansen J Statistic	1.060	0.131	Exactly	8.121
p-value	0.303	0.717	identified	0.004
Instruments	Const Age Brit Col	Const Age Brit Col	Tot Dem	Tot Dem Brit Col

Instrumental variables regression estimated via GMM; heteroscedasticity and auto-correlation consistent standard errors in parentheses. Instruments refer to the set of exogenous instruments used in the first stage model (Const Age= Log(Age of the Constitution)t-2, Tot Dem=Number of Democracies in the Systemt-2 Pop Den=Population Densityt-2 Urban Pop=Urban Populationt-2 Brit Col=Former British Colony). The F-test refers to the F-test for the second stage model. The First Stage F is the heteroscedasticity and auto-correlation robust F-test for testing the exclusion of the instruments from the first stage; Cragg-Donald Under-ID tests the null hypothesis that the first stage is under-identified and the Hansen J Statistic tests the null that the first stage is over-identified.

* p<0.10, ** p<0.05, *** p<0.01

Table 5

Effect of trade on democracy 1870-2000: dichotomous measure of democracy

	Full Sample	Gold Standard	Interwar Period	Bretton Woods	Post Bretton Woods
Log(Trade Openness(t-1))	0.174***	0.404***	0.208***	0.127**	0.189***
	(0.059)	(0.070)	(0.044)	(0.055)	(0.066)
Prior Transitions To Dictatorship(t-1)	0.127***	0.191***	0.022	0.135***	0.114***
	(0.014)	(0.057)	(0.038)	(0.018)	(0.014)
Log(Constitutional Age(t-1))	–0.039**	–0.211***	0.036**	–0.003	–0.051***
	(0.017)	(0.056)	(0.017)	(0.018)	(0.016)
# of Democracies in System(t-1)	0.001	0.008	–0.002	–0.018***	0.001
	(0.001)	(0.010)	(0.006)	(0.004)	(0.001)
Interwar Period	0.059				
	(0.046)				
Bretton Woods Period	–0.056				
	(0.061)				
Post Bretton Woods Period	–0.325***				
	(0.104)				
Natural Resource Exporter	0.072	2.640***	0.948***	0.129*	–0.057
	(0.060)	(0.502)	(0.224)	(0.069)	(0.047)
Socialist Legal Origin	–0.466***		–0.532***	–0.610***	–0.298***
	(0.043)		(0.048)	(0.046)	(0.067)
Latin America	–0.207***	–0.353**	–0.655***	–0.114**	–0.100
	(0.044)	(0.142)	(0.087)	(0.052)	(0.074)
Middle East	–0.656***			–0.483***	–0.571***
	(0.057)			(0.057)	(0.061)
Africa	–0.517***			–0.362***	–0.448***
	(0.052)			(0.058)	(0.079)
Asia	–0.135		0.727***	0.011	–0.149
	(0.094)		(0.278)	(0.085)	(0.118)
British Colonial Heritage	0.166***	0.831***	–0.170**	0.147***	0.109***
	(0.036)	(0.132)	(0.076)	(0.044)	(0.034)
French Colonial Heritage	0.058			–0.024	0.074*
	(0.039)			(0.051)	(0.039)
Spanish Colonial Heritage	0.028	–0.240***	0.070	–0.029	0.092*
	(0.040)	(0.090)	(0.067)	(0.048)	(0.048)
Log(GDP Per Capita PPP(t-1))	0.156***	0.228***	0.156***	0.135***	0.161***
	(0.035)	(0.027)	(0.028)	(0.035)	(0.042)
Growth Rate(t-1)	0.035	–0.228	0.019	–0.117	0.044
	(0.104)	(0.486)	(0.165)	(0.179)	(0.134)

Table 5 (cont)

Effect of trade on democracy 1870-2000: dichotomous measure of democracy

	Full Sample	Gold Standard	Interwar Period	Bretton Woods	Post Bretton Woods
Urban Population (t-1)	–0.081	0.901**	0.985***	0.106	–0.213**
	(0.109)	(0.458)	(0.254)	(0.151)	(0.089)
Population Density (t-1)	–0.000	–0.000	–0.002***	0.000	0.000
	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
Constant	–0.025	0.250	0.178	0.518***	–0.354*
	(0.059)	(0.263)	(0.179)	(0.123)	(0.196)
Observations	6837	741	727	2010	3371
F	79.606	38.408	297.287	110.162	120.391
p-value	0.000	0.000	0.000	0.000	0.000
First Stage F	17.63	23.07	27.73	13.04	23.07
p-value	0.000	0.000	0.000	0.000	0.000
Cragg-Donald Under-ID Test	63.927	19.440	10.576	23.739	32.829
p-value	0.000	0.000	0.001	0.000	0.000
Hansen J Statistic	Exactly	Exactly	Exactly	Exactly	Exactly
p-value	identified	identified	identified	identified	identified
Instruments	Dist	Dist	Dist	Dist	Dist

Instrumental variables regression estimated via GMM; heteroscedasticity and auto-correlation consistent standard errors in parentheses. Instruments refer to the set of exogenous instruments used in the first stage model (Dist=Log(Average Distance from the Rest of the World)t-2). The F-test refers to the F-test for the second stage model. The First Stage F is the heteroscedasticity and auto-correlation robust F-test for testing the exclusion of the instruments from the first stage; Cragg-Donald Under-ID tests the null hypothesis that the first stage is under-identified and the Hansen J Statistic tests the null that the first stage is over-identified.

* p<0.10, ** p<0.05, *** p<0.01

Table 6

Effect of trade on democracy 1870-2000: political regime measured by age of democracy measure

	Full Sample	Gold Standard	Interwar Period	Bretton Woods	Post Bretton Woods
	b/se	b/se	b/se	b/se	b/se
Log(Trade Openness(t-1))	0.692***	1.537***	0.378**	0.101	0.773***
	(0.206)	(0.295)	(0.149)	(0.093)	(0.221)
Prior Transitions To Dictatorship(t-1)	0.211***	0.353	–0.155*	0.064	0.204***
	(0.045)	(0.218)	(0.084)	(0.050)	(0.047)
Log(Constitutional Age(t-1))	0.071	–0.644***	0.416***	0.180***	0.065
	(0.059)	(0.227)	(0.055)	(0.037)	(0.054)
# of Democracies in System(t-1)	–0.003	0.032	–0.026*	–0.036***	–0.005
	(0.004)	(0.039)	(0.015)	(0.010)	(0.004)
Interwar Period	0.612***				
	(0.169)				
Bretton Woods Period	0.282				
	(0.229)				
Post Bretton Woods Period	–0.693*				
	(0.377)				
Natural Resource Exporter	0.274	10.091***	1.726**	0.060	–0.225
	(0.225)	(2.041)	(0.778)	(0.123)	(0.170)
Socialist Legal Origin	–1.790***		–1.735***	–1.899***	–1.336***
	(0.137)		(0.113)	(0.129)	(0.213)
Latin America	–1.123***	–1.356**	–2.274***	–1.186***	–0.691***
	(0.147)	(0.548)	(0.233)	(0.168)	(0.243)
Middle East	–2.574***			–2.262***	–2.247***
	(0.199)			(0.162)	(0.212)
Africa	–2.049***			–1.729***	–1.646***
	(0.188)			(0.166)	(0.266)
Asia	–0.670**		0.799	–0.858***	–0.588
	(0.340)		(0.898)	(0.193)	(0.404)
British Colonial Heritage	0.514***	3.749***	–0.023	0.508***	0.307**
	(0.138)	(0.529)	(0.216)	(0.131)	(0.127)
French Colonial Heritage	0.334**			0.108	0.388***

Table 6

Effect of trade on democracy 1870-2000:
political regime measured by age of democracy measure

	Full Sample	Gold Standard	Interwar Period	Bretton Woods	Post Bretton Woods
	(0.144)			(0.113)	(0.143)
Spanish Colonial Heritage	0.148	–1.154***	0.515***	–0.055	0.481***
	(0.133)	(0.320)	(0.179)	(0.144)	(0.154)
Log(GDP Per Capita PPP(t-1))	0.609***	0.647***	0.305***	0.257***	0.685***
	(0.123)	(0.107)	(0.098)	(0.065)	(0.138)

Table 6 (cont)

Effect of trade on democracy 1870-2000:
political regime measured by age of democracy measure

	Full Sample	Gold Standard	Interwar Period	Bretton Woods	Post Bretton Woods
Growth Rate(t-1)	–0.060	–0.731	0.072	–1.044**	–0.034
	(0.346)	(1.881)	(0.429)	(0.472)	(0.430)
Urban Population (t-1)	–0.313	3.055*	3.036***	1.060***	–0.794**
	(0.398)	(1.713)	(0.725)	(0.396)	(0.336)
Population Density (t-1)	–0.000	–0.002	–0.004***	0.002***	0.001*
	(0.001)	(0.003)	(0.002)	(0.001)	(0.000)
Constant	–0.828***	1.402	0.838**	1.516***	–2.059***
	(0.210)	(1.041)	(0.426)	(0.405)	(0.645)
Observations	6837	741	727	2010	3371
F	90.953	22.317	188.483	136.517	122.069
p-value	0.000	0.000	0.000	0.000	0.000
First Stage F	17.63	23.07	27.73	26.07	23.97
p-value	0.000	0.000	0.000	0.000	0.000
Cragg-Donald Under-ID Test	63.927	19.440	10.576	72.571	32.829
p-value	0.000	0.000	0.001	0.000	0.000
Hansen J Statistic	Exactly	Exactly	Exactly	1.765	Exactly
p-value	identified	identified	identified	0.184	identified
Instruments	Dist	Dist	Dist	Dist Area	Dist

Instrumental variables regression estimated via GMM; heteroscedasticity and auto-correlation consistent standard errors in parentheses. Instruments refer to the set of exogenous instruments used in the first stage model (Dist=Log(Average Distance from the Rest of the World)t-2, Area=Log(Country Area (sq miles)t-2). The F-test refers to the F-test for the second stage model. The First Stage F is the heteroscedasticity and auto-correlation robust F-test for testing the exclusion of the instruments from the first stage; Cragg-Donald Under-ID tests the null hypothesis that the first stage is under-identified and the Hansen J Statistic tests the null that the first stage is over-identified.

Table 6 (cont)

Effect of trade on democracy 1870-2000:
political regime measured by age of democracy measure

	Full Sample	Gold Standard	Interwar Period	Bretton Woods	Post Bretton Woods
* p<0.10, ** p<0.05, *** p<0.01					

Table 7

Effect of capital controls on democracy 1870-2000: dichotomous measure of democracy

	Full Sample	Interwar Period	Bretton Woods	Post Bretton Woods
	b/se	b/se	b/se	b/se
Capital Controls(t-1)	0.134	–0.345**	0.872	–0.292*
	(0.164)	(0.153)	(0.800)	(0.154)
Prior Transitions To Dictatorship(t-1)	0.080***	0.088*	0.035	0.101***
	(0.014)	(0.049)	(0.067)	(0.011)
Log(Constitutional Age(t-1))	–0.004	0.100***	0.071	–0.011
	(0.012)	(0.021)	(0.096)	(0.009)
# of Democracies in System(t-1)	0.004***	–0.017	–0.014	0.003***
	(0.001)	(0.018)	(0.010)	(0.000)
Interwar Period	0.010			
	(0.089)			
Bretton Woods Period	–0.092			
	(0.164)			
Post Bretton Woods Period	–0.212			
	(0.158)			
Natural Resource Exporter	–0.018			–0.022
	(0.041)			(0.031)
Socialist Legal Origin	–0.427***			–0.381***
	(0.065)			(0.049)
Latin America	–0.219***	–0.544***	0.531	–0.227***
	(0.047)	(0.112)	(0.488)	(0.044)
Middle East	–0.705***		–0.894*	–0.697***
	(0.064)		(0.479)	(0.048)
Africa	–0.618***			–0.587***
	(0.060)			(0.044)
Asia	–0.389***			–0.420***
	(0.050)			(0.040)
British Colonial Heritage	0.187***	–0.213**	0.439	0.166***
	(0.032)	(0.099)	(0.505)	(0.027)
French Colonial Heritage	0.025			0.053*
	(0.038)			(0.028)
Spanish Colonial Heritage	0.074*	0.317***	–0.229*	0.011
	(0.044)	(0.081)	(0.121)	(0.047)
Log(GDP Per Capita PPP(t-1))	0.057***	0.045**	0.083**	0.023***
	(0.008)	(0.019)	(0.033)	(0.008)
Growth Rate(t-1)	0.007	0.382	–0.668	0.081
	(0.117)	(0.302)	(0.692)	(0.103)

Table 7 (cont)

Effect of capital controls on democracy 1870-2000: dichotomous measure of democracy

	Full Sample	Interwar Period	Bretton Woods	Post Bretton Woods
Urban Population (t-1)	–0.043	0.769*	–0.895	–0.167**
	(0.087)	(0.402)	(0.684)	(0.071)
Population Density (t-1)	0.000***	–0.002***	0.002**	0.000***
	(0.000)	(0.001)	(0.001)	(0.000)
Constant	0.119	0.621	–0.274	0.536***
	(0.076)	(0.518)	(0.961)	(0.194)
Observations	4783	382	597	3472
F	128.107	16.898	68.469	192.239
p-value	0.000	0.000	0.000	0.000
First Stage F	16.08	198.77	1.18	14.13
p-value	0.000	0.000	0.3182	0.000
Cragg-Donald Under-ID Test	74.809	142.674	8.081	71.832
p-value	0.000	0.000	0.152	0.000
Hansen J Statistic	2.250	Exactly	5.481	3.073
p-value	0.325	identified	0.241	0.215
Instruments	Tot Cr Inf Gov Bal	Tot Cr	Ec Size Tot Cr Tot Cap Inf Gov Bal	Tot Cr Tot Cap

Instrumental variables regression estimated via GMM; heteroscedasticity and auto-correlation consistent standard errors in parentheses. Instruments refer to the set of exogenous instruments used in the first stage model (Tot Cr=Total Number of Global Crisest-2, Inf=Inflationt-2, Gov Bal=Government Surplus/Deficitt-2, Ec Size=log(GDPt-2), Tot Cap=Total Number of Countries with Capital Controlst-2). The F-test refers to the F-test for the second stage model. The First Stage F is the heteroscedasticity and auto-correlation robust F-test for testing the exclusion of the instruments from the first stage; Cragg-Donald Under-ID tests the null hypothesis that the first stage is under-identified and the Hansen J Statistic tests the null that the first stage is over-identified.

* p<0.10, ** p<0.05, *** p<0.01

Table 8

Effect of capital controls on democracy 1870-2000: political regime measured by age of democracy

	Full Sample	Interwar Period	Bretton Woods	Post Bretton Woods
	b/se	b/se	b/se	b/se
Capital Controls(t-1)	–1.406**	–1.406**	5.969	–1.113*
	(0.683)	(0.683)	(4.310)	(0.656)
Prior Transitions To Dictatorship(t-1)	0.136***	0.136***	–0.140	0.135***
	(0.044)	(0.044)	(0.203)	(0.031)
Log(Constitutional Age(t-1))	0.220***	0.220***	0.958**	0.231***
	(0.038)	(0.038)	(0.467)	(0.027)
# of Democracies in System(t-1)	0.005**	0.005**	–0.051	0.007***
	(0.002)	(0.002)	(0.046)	(0.002)
Interwar Period	1.074***	1.074***		
	(0.303)	(0.303)		
Bretton Woods Period	2.067***	2.067***		
	(0.635)	(0.635)		
Post Bretton Woods Period	1.647**	1.647**		
	(0.641)	(0.641)		
Natural Resource Exporter	–0.155	–0.155	2.735	–0.077
	(0.145)	(0.145)	(1.712)	(0.096)
Socialist Legal Origin	–1.531***	–1.531***	–2.681***	–1.738***
	(0.202)	(0.202)	(1.006)	(0.174)
Latin America	–1.072***	–1.072***	1.814	–1.194***
	(0.144)	(0.144)	(1.949)	(0.135)
Middle East	–2.678***	–2.678***	–2.376*	–2.672***
	(0.230)	(0.230)	(1.369)	(0.161)
Africa	–2.053***	–2.053***	–3.197**	–2.223***
	(0.185)	(0.185)	(1.578)	(0.145)
Asia	–1.691***	–1.691***	–1.205*	–1.795***
	(0.173)	(0.173)	(0.729)	(0.126)
British Colonial Heritage	0.659***	0.659***	0.979	0.430***
	(0.123)	(0.123)	(1.093)	(0.088)
French Colonial Heritage	0.262**	0.262**	2.020	0.159*
	(0.124)	(0.124)	(2.220)	(0.094)
Spanish Colonial Heritage	0.062	0.062	–0.040	0.073
	(0.156)	(0.156)	(0.622)	(0.143)
Log(GDP Per Capita PPP(t-1))	0.163***	0.163***	0.125	0.125***
	(0.029)	(0.029)	(0.173)	(0.032)
Growth Rate(t-1)	0.346	0.346	-0.626	0.291
	(0.280)	(0.280)	(2.161)	(0.262)

Table 8 (cont)

Effect of capital controls on democracy 1870-2000: political regime measured by age of democracy

	Full Sample	Interwar Period	Bretton Woods	Post Bretton Woods
Urban Population (t-1)	–0.532*	–0.532*	–0.334	–0.631**
	(0.302)	(0.302)	(1.593)	(0.247)
Population Density (t-1)	0.002***	0.002***	0.005**	0.002***
	(0.000)	(0.000)	(0.002)	(0.000)
Constant	–0.250	–0.250	–4.367	1.514*
	(0.272)	(0.272)	(4.705)	(0.825)
Observations	5341	5341	839	3472
F	120.951	120.951	18.445	288.049
p-value	0.000	0.000	0.000	0.000
First Stage F	8.38	221.47	1.48	11.09
p-value	0.000	0.000	0.219	0.000
Cragg-Donald Under-ID Test	53.847	53.847	10.260	26.390
p-value	0.000	0.000	0.016	0.000
Hansen J Statistic	2.926	2.926	1.678	0.396
p-value	0.232	0.232	0.432	0.529
Instruments	Tot Cr Tot Cap Ec Size	Tot Cr	Tot Cr Tot Cap Ec Size Inf Gov Bal	Tot Cr Tot Cap

Instrumental variables regression estimated via GMM; heteroscedasticity and auto-correlation consistent standard errors in parentheses. Instruments refer to the set of exogenous instruments used in the first stage model (Tot Cr=Total Number of Global Crisest-2, Inf=Inflationt-2, Gov Bal=Government Surplus/Deficitt-2, Ec Size=log(GDPt-2), Tot Cap=Total Number of Countries with Capital Controlst-2). The F-test refers to the F-test for the second stage model. The First Stage F is the heteroscedasticity and auto-correlation robust F-test for testing the exclusion of the instruments from the first stage; Cragg-Donald Under-ID tests the null hypothesis that the first stage is under-identified and the Hansen J Statistic tests the null that the first stage is over-identified.

* p<0.10, ** p<0.05, *** p<0.01

Table 9

Effect of trade and capital controls on democracy 1870-2000:

	Age of Democracy	Dichotomous Measure of Democracy
Log(Trade Openness(t-1))	0.097	0.074***
	(0.064)	(0.019)
Capital Controls(t-1)	–1.200*	–0.123
	(0.632)	(0.201)
Prior Transitions To Dictatorship(t-1)	0.139***	0.109***
	(0.044)	(0.014)
Log(Constitutional Age(t-1))	0.207***	–0.024*
	(0.040)	(0.012)
# of Democracies in System(t-1)	0.004	0.002**
	(0.003)	(0.001)
Interwar Period	1.044***	0.122
	(0.294)	(0.089)
Bretton Woods Period	1.846***	0.145
	(0.590)	(0.184)
Post Bretton Woods Period	1.298**	–0.073
	(0.612)	(0.190)
Natural Resource Exporter	–0.112	–0.017
	(0.149)	(0.051)
Socialist Legal Origin	–1.659***	–0.393***
	(0.185)	(0.065)
Latin America	–1.063***	–0.182***
	(0.139)	(0.042)
Middle East	–2.631***	–0.692***
	(0.225)	(0.065)
Africa	–2.031***	–0.523***
	(0.188)	(0.059)
Asia	–1.595***	–0.334***
	(0.181)	(0.057)
British Colonial Heritage	0.649***	0.211***
	(0.120)	(0.032)
French Colonial Heritage	0.267**	0.086**
	(0.121)	(0.037)
Spanish Colonial Heritage	0.102	0.057
	(0.149)	(0.047)
Log(GDP Per Capita PPP(t-1))	0.237***	0.098***
	(0.051)	(0.015)
Growth Rate(t-1)	0.168	0.063
	(0.301)	(0.110)

Table 9 (cont)

Effect of trade and capital controls on democracy 1870-2000:

	Age of Democracy	Dichotomous Measure of Democracy
Urban Population (t-1)	–0.548 *	–0.136
	(0.301)	(0.093)
Population Density (t-1)	0.002 ***	0.000 **
	(0.000)	(0.000)
Constant	–0.414 *	0.040
	(0.249)	(0.076)
Observations	5127	5127
F	136.481	115.754
p-value	0.000	0.000
First Stage F: Trade	131.12	131.12
p-value	0.000	0.000
First Stage F: Capital Controls	12.79	12.79
p-value	0.000	0.000
Cragg-Donald Under-ID Test	45.514	45.514
p-value	0.000	0.000
Hansen J Statistic	Exactly	Exactly
p-value	Identified	Identified
Instruments	Tot Cr Ec Size	Tot Cr Ec Size

χ^2-test for joint significance of trade and capital control terms in column 1: 7.00 ($p<0.0302$)

χ^2-test for joint significance of trade and capital control terms in column 2: 16.56 ($p<0.0000$)

Instrumental variables regression estimated via GMM; heteroscedasticity and auto-correlation consistent standard errors in parentheses. Instruments refer to the set of exogenous instruments used in the first stage model (Tot Cr=Total Number of Global Crisest-2, Ec Size=log(GDPt-2)). The F-test refers to the F-test for the second stage model. The First Stage F is the heteroscedasticity and auto-correlation robust F-test for testing the exclusion of the instruments from the first stage; Cragg-Donald Under-ID tests the null hypothesis that the first stage is under-identified and the Hansen J Statistic tests the null that the first stage is over-identified.

* p<0.10, ** p<0.05, *** p<0.01

Table 10

Effect of democracy on trade openness 1950-2000: Alternative (Sachs-Warner) Measure of Opennes

	Dichotomous Measure of Democracy	Age of Democracy
Democracy(t-1)	0.094***	0.023*
	(0.036)	(0.013)
Years Closed	0.002***	0.002***
	(0.000)	(0.000)
Log(Distance(t-1))	–0.036	–0.021
	(0.024)	(0.023)
Log(Country Size(t-1))	–0.003	–0.002
	(0.002)	(0.002)
Log(Total Population(t-1))	–0.001	–0.000
	(0.003)	(0.003)
Log(Total GDP PPP(t-1))	–0.001	–0.000
	(0.003)	(0.004)
Post Bretton Woods Period	–0.023***	–0.028***
	(0.009)	(0.008)
Constant	–4.056***	–4.219***
	(0.842)	(0.829)
Observations	3096	3096
F	5.780	5.444
p-value	0.000	0.000
First Stage F	18.70	18.04
p-value	0.000	0.000
Cragg-Donald Under-ID Test	190.297	212.152
p-value	0.000	0.000
Hansen J Statistic	0.183	4.104
p-value	0.912	0.128
Instruments	Pop Den Const Age Urban	Pop Den Const Age Urban

Instrumental variables regression estimated via GMM; heteroscedasticity and auto-correlation consistent standard errors in parentheses. Instruments refer to the set of exogenous instruments used in the first stage model (Const Age= Log(Age of the Constitution)t-2, Pop Den=Population Densityt-2 ,Urban Pop=Urban Populationt-2 The F-test refers to the F-test for the second stage model. The First Stage F is the heteroscedasticity and auto-correlation robust F-test for testing the exclusion of the instruments from the first stage; Cragg-Donald Under-ID tests the null hypothesis that the first stage is under-identified and the Hansen J Statistic tests the null that the first stage is over-identified.

* p<0.10, ** p<0.05, *** p<0.01

Table 11

Effect of trade and capital account policies on democracy, 1870-2000: Markov Models

	Trade		Capital Controls		Trade & Cap Cont	
	α	α+β	α	α+β	α	α+β
Log(Trade Openness(t-1))	–0.022** (0.009)	0.029*** (0.007)			–0.041 (0.027)	0.050** (0.023)
Capital Controls(t-1)			0.014 (0.039)	–0.122* (0.07)	0.064 (0.049)	–0.10 (0.079)
Log(GDP Per Capita PPP(t-1))	0.000 (0.003)	0.018*** (0.003)	–0.003 (0.004)	0.004** (0.002)	–0.004 (0.006)	0.033*** (0.011)
Growth Rate(t-1)	–0.089** (0.035)	0.318*** (0.083)	–0.128** (0.053)	0.322*** (0.098)	–0.153*** (0.057)	0.343*** (0.118)
Urban Population (t-1)	0.118*** (0.041)	0.057** (0.023)	0.042 (0.031)	–0.031 (0.024)	0.114** (0.053)	0.079 (0.058)
Population Density (t-1)	0.000** (0.000)	0.000 (0.001)	0.000 (0.000)	–0.000 (0.001)	0.000 (0.000)	–0.000 (0.001)
Prior Transitions To Dictatorship(t-1)	–0.002 (0.003)		–0.004 (0.003)		–0.003 (0.004)	
Log(Constitutional Age(t-1))	–0.008*** (0.002)		–0.016*** (0.004)		–0.020*** (0.005)	
# of Democracies in System(t-1)	0.000 (0.000)		0.000 (0.000)		–0.000 (0.000)	
Interwar Period	–0.023*** (0.008)		–0.026 (0.016)		–0.058*** (0.019)	
Bretton Woods Period	–0.019** (0.008)		0.046 (0.045)		–0.024 (0.049)	
Post Bretton Woods Period	–0.022** (0.010)		0.038 (0.042)		–0.061 (0.048)	
Natural Resource Exporter	–0.015* (0.008)		–0.013 (0.009)		0.018 (0.018)	
Socialist Legal Origin	–0.007 (0.011)		–0.019 (0.014)		0.007 (0.026)	
Latin America	0.004 (0.010)		–0.012 (0.010)		0.036 (0.023)	
Middle East	–0.057*** (0.009)		–0.050*** (0.016)		–0.028 (0.018)	
Africa	–0.006 (0.019)		–0.051*** (0.014)		0.021 (0.047)	
Asia	–0.020* (0.012)		–0.015 (0.017)		0.055 (0.038)	

Table 11 (cont)

Effect of trade and capital account policies on democracy, 1870-2000: Markov Models

	Trade		Capital Controls		Trade & Cap Cont	
	α	α+β	α	α+β	α	α+β
British Colonial Heritage	0.028*** (0.008)		–0.004 (0.011)		0.022 (0.019)	
French Colonial Heritage	–0.011 (0.007)		–0.017 (0.012)		–0.034** (0.015)	
Spanish Colonial Heritage	0.003 (0.008)		–0.009 (0.012)		–0.014 (0.014)	
Constant	0.012 (0.014)	0.889*** (0.022)	0.057*** (0.018)	1.05*** (0.043)	0.039* (0.021)	0.930*** (0.062)
Observations	6837		4804		4468	
F p-value	7632.449 0.000		5218.815 0.000		2812.100 0.000	
First Stage F: Trade p-value	627.76 0.000				204.44 0.000	
First Stage F: Trade*Democracy p-value	289.19 0.000				114.10 0.000	
First Stage F: Capital Controls p-value			15.72 0.000		15.43 0.000	
First Stage F: Capital Con*Demo p-value			13.68 0.000		12.25 0.000	
Cragg-Donald Under-ID Test p-value	88.790 0.000		19.071 0.000		10.081 0.006	
Hansen J Statistic p-value	0.306 0.858		0.002 0.966		0.258 0.611	
Instruments	Dist Area Pop Ec Size		Inf Gov Bal Ec Size		Dist Area Ec Size Inf Gov Def	

Instrumental variables regression estimated via GMM; heteroscedasticity and auto-correlation consistent standard errors in parentheses. Instruments refer to the set of exogenous instruments used in the first stage model (Dist=log(Average Distance)t-2, Inf=Inflationt-2, Gov Bal=Government Surplus/Deficitt-2, Ec Size=log(GDPt-2), Pop=Log(Population)t-2) Area=Log(Country Size)t-2. The F-test refers to the F-test for the second stage model. The First Stage F is the heteroscedasticity and auto-correlation robust F-test for testing the exclusion of the instruments from the first stage; Cragg-Donald Under-ID tests the null hypothesis that the first stage is under-identified and the Hansen J Statistic tests the null that the first stage is over-identified.

* p<0.10, ** p<0.05, *** p<0.01

Table 12

Democracy, land-labour ratios and trade openness

	Whole Sample	**Gold Standard**	**Interwar Period**	**1960-2000**
Democracy(t-1)	1.146*	1.281***	1.403	1.822***
	(0.670)	(0.485)	(7.563)	(0.516)
Democracy*Land-Labour Ratio(t-1)	–1.054**	–0.222	–0.051	–0.519
	(0.515)	(0.252)	(5.119)	(0.401)
Log(Distance(t-1))	–0.605**	–0.071	0.714	–1.324***
	(0.252)	(0.365)	(4.001)	(0.222)
Log(Country Size(t-1))	–0.035	0.079*	–0.084	–0.053**
	(0.027)	(0.045)	(0.656)	(0.025)
Log(Total Population(t-1))	0.227***	0.174***	0.327	0.314***
	(0.068)	(0.067)	(0.207)	(0.049)
Log(Total GDP PPP(t-1))	–0.556***	–0.740***	–0.682***	–0.639***
	(0.085)	(0.056)	(0.075)	(0.054)
Interwar Period	0.141			
	(0.280)			
Bretton Woods Period	0.449			
	(0.313)			
Post Bretton Woods Period	1.513***			1.223***
	(0.455)			(0.123)
Constant	5.439***	1.728	–5.767	11.757***
	(1.925)	(3.185)	(37.681)	(1.826)
Observations	5676	621	506	4502
F	68.114	74.516	42.580	92.958
p-value	0.000	0.000	0.000	0.000
Joint $\chi 2$ test: Democracy, LLR & Interaction	41.40	18.76	17.62	58.52
p-value	0.000	0.000	0.000	0.000
First Stage F: Democracy	85.28	96.27	47.20	117.79
p-value	0.000	0.000	0.000	0.000
First Stage F: Democracy*LLR	86.30	398.68	40.74	115.03
	0.000	0.000	0.000	0.000
Cragg-Donald Underid Test	122.966	257.183	1.184	243.674
p-value	0.000	0.000	0.277	0.000

Table 12 (cont)

Democracy, land-labour ratios and trade openness

	Whole Sample	**Gold Standard**	**Interwar Period**	**1960-2000**
Hansen J Statistic p-value	Exactly Identified	Exactly Identified	Exactly Identified	Exactly Identified
Instruments	Pop Den Brit Col	Sum Trans Brit Col	Tot Dem Brit Col	Pop Den Brit Col

Instrumental variables regression estimated via GMM; heteroscedasticity and auto-correlation consistent standard errors in parentheses. Both Democracyt-1 and Democracy*Land-Labour Ratiot-1 are considered endogenous variables. Instruments refer to the set of exogenous instruments used in the first stage model (Pop Den=Population Densityt-2, Brit Col=Former British Colony). The F-test refers to the F-test for the second stage model. The First Stage F is the heteroscedasticity and auto-correlation robust F-test for testing the exclusion of the instruments from the first stage; Cragg-Donald Under-ID tests the null hypothesis that the first stage is under-identified and the Hansen J Statistic tests the null that the first stage is over-identified.

* p<0.10, ** p<0.05, *** p<0.01

Table 13

Democracy, capital-labour ratios, land-labour ratios and trade openness

	Whole Sample	Gold Standard	Interwar Period	1960-2000
Democracy(t-1)	8.522***	7.416***	2.487***	2.791
	(3.140)	(2.075)	(0.956)	(5.997)
Democracy*Land-Labour Ratio(t-1)	–1.086	–7.883***	–1.078	7.826
	(1.206)	(2.638)	(0.668)	(10.714)
Democracy*Capital-Labour Ratio(t-10)	1.938*	22.840**	0.782	3.600***
	(1.051)	(9.088)	(1.052)	(0.886)
Log(Distance(t-1))	–1.368*	4.313***	1.711***	–0.589
	(0.757)	(1.623)	(0.641)	(1.069)
Log(Country Size(t-1))	0.120	–0.185	–0.033	–0.247
	(0.133)	(0.163)	(0.152)	(0.218)
Log(Total Population(t-1))	0.983***	–0.396	0.314***	0.749***
	(0.242)	(0.327)	(0.108)	(0.201)
Log(Total GDP PPP(t-1))	–1.797***	–0.777***	–0.743***	–1.184***
	(0.357)	(0.146)	(0.064)	(0.355)
Interwar Period	–0.050			
	(0.480)			
Bretton Woods Period	1.253*			–2.040
	(0.656)			(1.283)
Post Bretton Woods Period	3.762***			
	(1.016)			
Constant	9.779*	–27.607**	–13.968**	9.043
	(5.787)	(11.481)	(5.738)	(11.184)
Observations	5106	543	467	3941
F	9.150	8.516	50.177	9.425
p-value	0.000	0.000	0.000	0.000
First Stage F: Democracy	5.02	64.42	109.80	86.19
p-value	0.002	0.000	0.000	0.000
First Stage F: Democracy*KL Ratio	32.17	24.37	41.41	54.26
p-value	0.000	0.000	0.000	0.000
First Stage F: Democracy*LL ratio	23.57	249.90	138.93	45.31
p-value	0.000	0.000	0.000	0.000
Joint $\chi 2$ test: Democracy, Ratios & Interactions	19.62	13.55	29.12	28.12
p-value	0.0002	0.004	0.000	0.000

Table 13 (cont)

Democracy, capital-labour ratios, land-labour ratios and trade openness

	Whole Sample	**Gold Standard**	**Interwar Period**	**1960-2000**
Joint $\chi 2$ test: Democracy, KL Ratio & Interaction	19.24	13.08	9.70	3.12
p-value	0.000	0.001	0.008	0.210
Joint $\chi 2$ test: Democracy, LL Ratio & Interaction	7.40	13.45	7.83	28.81
p-value	0.025	0.001	0.020	0.000
Cragg-Donald Underid Test	46.228	17.232	49.638	1.696
p-value	0.000	0.000	0.000	0.193
Hansen J Statistic	Exactly Identified	Exactly Identified	Exactly Identified	Exactly Identified
p-value				
Instruments	Tot Dem Const Age Brit Col	Sum Trans Const Age Brit Col	Sum Trans Const Age Brit Col	Sum Trans Const Age Brit Col

Instrumental variables regression estimated via GMM; heteroscedasticity and auto-correlation consistent standard errors in parentheses. Democracyt-1, Democracy*Capital-Labour Ratiot-1 and Democracy*Land-Labour Ratiot-1 are considered endogenous variables. Instruments refer to the set of exogenous instruments used in the first stage model (Const Age=log(Constitutional Age)t-2, Sum Trans=Total Number of Transitions to Autocracy for Country it-2, Urban=Urbanisation-t-2, Brit Col=Former British Colony). The F-test refers to the F-test for the second stage model. The First Stage F is the heteroscedasticity and auto-correlation robust F-test for testing the exclusion of the instruments from the first stage; Cragg-Donald Under-ID tests the null hypothesis that the first stage is under-identified and the Hansen J Statistic tests the null that the first stage is over-identified.

* p<0.10, ** p<0.05, *** p<0.01

Table 14

Democracy, capital-labour ratios, land-labour ratios and capital controls

	Whole Sample	Interwar Period	1960-2000
Democracy(t-1)	–0.811***	–7.753	–0.542**
	(0.299)	(127.240)	(0.227)
Democracy*Land-Labour Ratio(t-1)	0.187	–0.535	0.135
	(0.153)	(11.516)	(0.234)
Democracy*Capital-Labour Ratio(t-1)	–0.649***	4.522	–0.525***
	(0.200)	(82.739)	(0.157)
Interwar Period	0.328***		
	(0.076)		
Bretton Woods Period	0.686***		
	(0.146)		
Post Bretton Woods Period	0.395**		–0.147*
	(0.201)		(0.076)
Log(Total GDP PPP(t-1))	0.011	–0.490	0.014
	(0.014)	(7.341)	(0.011)
Log(GDP Per Capita PPP(t-1))	0.375***	4.345	0.242**
	(0.137)	(70.991)	(0.103)
Systemic Crises(t-1)	0.005	0.146	0.005**
	(0.003)	(2.000)	(0.002)
Systemic Capital Controls(t-1)	0.004*	–0.087	–0.001
	(0.002)	(2.220)	(0.002)
Inflation(t-1)	0.000***	0.054	0.000***
	(0.000)	(0.879)	(0.000)
Government Balance(t-1)	–0.010**	–0.083	–0.009**
	(0.004)	(1.355)	(0.004)
Constant	–2.617***	–26.203	–0.702
	(0.990)	(434.670)	(0.837)
Observations	4045	241	3317
F	54.220	0.364	24.276
p-value	0.000	0.951	0.000
First Stage F: Democracy	11.39	4.15	14.45
p-value	0.000	0.007	0.000
First Stage F: Democracy*KL Ratio	23.75	50.61	28.16
p-value	0.000	0.000	0.000

Table 14 (cont)

Democracy, capital-labour ratios, land-labour ratios and capital controls

	Whole Sample	**Interwar Period**	**1960-2000**
First Stage F: Democracy*LL Ratio	20.95	255.25	10.62
p-value	0.000	0.000	0.000
Joint χ2 test: Democracy, Ratios & Interactions	15.03	0.05	15.11
p-value	0.00	0.9972	0.002
Joint χ2 test: Democracy, KL Ratio & Interaction	15.03	0.04	13.75
p-value	0.001	0.979	0.018
Joint χ2 test: Democracy, LL Ratio & Interaction	7.46	0.02	8.18
p-value	0.024	0.987	0.017
Cragg-Donald Underid Test	64.029	0.006	42.833
p-value	0.000	0.940	0.000
Hansen J Statistic	Exactly	Exactly	Exactly
p-value	Identified	Identified	Identified
Instruments	Tot Dem Const Age Brit Col	Tot Dem Const Age Brit Col	Tot Dem Const Age Brit Col

Instrumental variables regression estimated via GMM; heteroscedasticity and auto-correlation consistent standard errors in parentheses. Democracyt-1, Democracy*Capital-Labour Ratiot-1 and Democracy*Land-Labour Ratiot-1 are considered endogenous variables. Instruments refer to the set of exogenous instruments used in the first stage model (Const Tot Dem=Total Number of Democracies in the Systemt-2, Pop Den=Population Densityt-2, Urban=Urbanisation-2, Brit Col=Former British Colony). The F-test refers to the F-test for the second stage model. The First Stage F is the heteroscedasticity and auto-correlation robust F-test for testing the exclusion of the instruments from the first stage; Cragg-Donald Under-ID tests the null hypothesis that the first stage is under-identified and the Hansen J Statistic tests the null that the first stage is over-identified.

* p<0.10, ** p<0.05, *** p<0.01

Figure 1

Evolution of globalisation and democracy

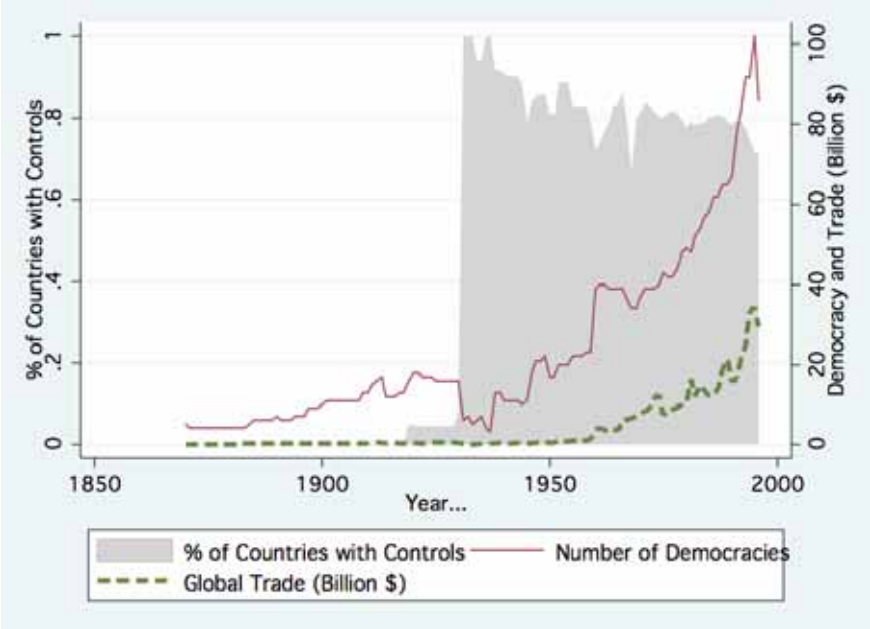
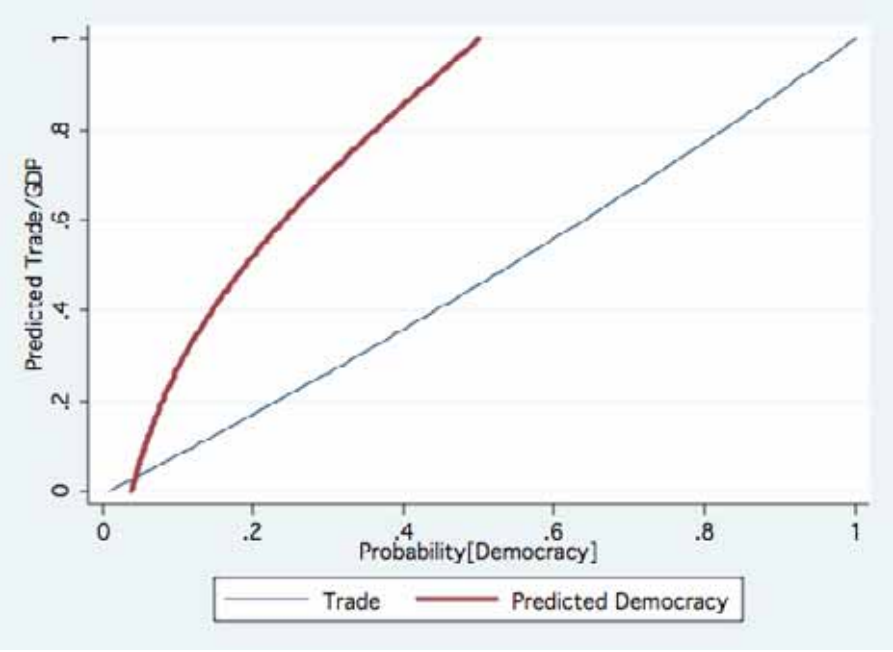


Figure 2

Estimated relationships between trade and democracy

(Democracy is on the horizontal axis, trade on the vertical)



Note: to generate these relationships we took the estimate impact of democracy on trade (Table 1) and obtained the predicted values holding all other variables at their means. We then took the exponent and standardised these values so that they run between 0 and 1. Similarly, we took the estimated the impact of trade on democracy (Table 5) and obtained the predicted probability of democracy. (We standardised the actual values of trade openness so that it ranges between 0 and 1.)

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Comments on "Democracy and globalisation" by Barry Eichengreen and David Leblang

Harold James[65]

Eichengreen and Leblang provide generally comforting findings, namely that increased trade and financial openness raises the expected level of democratization; and that there is also a causal mechanism working in the other direction, producing a virtuous cycle of openness and political accountability, Even better news: the virtuous cycle enhances stability. The analysis supports the view of Margaret Thatcher in the 1980s, when she looked at the beginning of economic liberalization in China and political liberalization in the Soviet Union, and commented that it didn't matter where you begin: in the end one sort of liberalization will lead to the other. How nice.

Some commentators today are concerned that modern Russia and modern China look quite different from each other. Others are worried that the paradigm has changed: that there is less interest in financial liberalization (maybe in the wake of the Asia crisis of 1997-8), and that there is a new turn to authoritarianism and/or populism. Still more are deeply worried that the paradigm might change in the future.

Is it helpful to take a large number of data points of measurements of democratization and liberalization, both commercial and financial, and attempt to establish correlations? Even if there is a general association, does the finding matter – since we may be interested in the one or two exceptions, which can become terrifying and dangerous, rather than the overall positive trend. To take an analogy, aircraft engineers were right to conclude that mostly the world's first jet passenger airplane, the Comet 1, would fly: but that correlations isn't relevant, since a small number of flights actually ended in crashes. So, in analyzing the likely dangers, we might want to focus on the political economy of exceptional cases, rather than on what is normal. One really bad crisis case, say in Argentina or Russia, can produce general and bad effects.

The paper makes an interesting set of parallels between political economy arguments about trade and financial openness. It is not clear that this parallel can be easily made, and there are some commentators (notably Jagdish Bhagwati and Joseph Stiglitz) who defend trade openness but are deeply worried by the potentially destabilizing effects of financial openness. To make the parallel convincing, it would I think have been helpful if Eichengreen and Leblang had measured trade and financial openness in a comparable way. Instead, they give an indication of policy in respect to capital account openness (absence of capital controls), and a measure of the volume of trade in relation to NI. The appropriate and better comparison would have been to examine policy in parallel: the absence of capital controls, and of quantitative trade restrictions; or the extent of financial in- and outflows, and the trade quotas. The first set of comparisons would deal with policy, which is a direct outcome of a political situation (and might be expected to reflect democratization); the second deal with observed outcomes, which sometimes tend to undermine policy. There can, for instance, be substantial financial inflows even in the presence of some capital controls. China, to take the most obvious example, controls capital movements, but has become a major exporter of capital.

[65] Princeton University

A second worry about the parallels between different types of regime is that there are many sorts of democracy, and that it may be unhelpful to think of them all as similar. In particular, some sorts of democracy work well with internationalism (this is the origin of the democratic peace argument originally made by Kant, to which Eichengreen and Leblang refer). These democracies could be described as rule-based democracies or as liberal democracies. But other types of democracy assert national separateness and the need for solidarity in the face of a hostile or threatening international order. One of the characteristics of this democratic (majoritarian) vision is that it often links an international order that is perceived as hostile and threatening with the interests in the domestic order of minority groups (often, but not always, ethnic groups: Jews in interwar Europe, or modern Russia; Chinese in Indonesia, Malaysia or the Philippines). There is a clear link in this debate between politics and the stance toward financial openness: a demand for (harsh) capital controls is usually the consequence of the identification of internationally minded domestic minorities.

A third concern I had with the paper was the tendency to treat all eras equally as sources of equally valid data that might reflect on the democratization-openness relation. The use of the Stolper-Samuelson theory for explaining modern political development is in particular quite problematical: it is an interesting extension of David Ricardo's conceptualization of different returns in the world of early nineteenth century Britain, when it made sense to speak of particular interests that were tied to returns from labour, land or capital. But as societies become more prosperous, the connections of factors to interests becomes much more complicated: to take two obvious developments, which occurred in rich societies in the nineteenth century: workers will have retirement plans and will save, and thus have an increased interest in financial returns; and people who derived income from capital bought rural retreats (land). By the end of the twentieth century, those dependent on incomes from capital were substantially poorer than the superstar recipients of "earned" income: soccer or music stars, or chief executives. Eichengreen and Leblang rightly say that the Stolper-Samuelson theory does not work well as an interpretation of interwar trade policy. It is even less probable that it can explain much today.

This worry is a more general one: there seem to be particular effects of what might be called *Zeitgeist*. One phenomenon that is often observed is how in the interwar era, financial crisis (following from financial openness) destroyed democracy in many European and South American countries. The causal mechanism worked in many ways: one obvious one was that financial crisis produced new strains on government finance (governments were unable to fund their debt, and needed to implement drastic economy measures in order to retain confidence; such measures alienated voters, who looked for populist and nationalist solutions). In the 1980s, however, financial openness (in the sense of capital inflows, NOT of the abandonment of capital controls) undermined military dictatorships in South America and communist dictatorships in Central Europe. Here the mechanism is analogous to the interwar one (but running in an opposite direction) : the dictatorships were assumed to be politically stable, hence to be suitable borrowers; but the burden of debt service strained the legitimacy of the regime.

Recent experience seems to produce echoes of both the 1980s and the interwar experience. One general conclusion might be that financial crises tend to discredit the regime that is in power at the time, and that is held to be responsible for the policies that led to the crisis. A second is that global capital markets and the availability of capital make borrowing an attractive political option to buy short term popularity – whether the borrower is a dictatorship or a democracy – and thus that financial globalization can (in the absence of countervailing controls) promote the fiscal overstretch of some large borrowers. My conclusion would be that the next set of crises is likely to produce a reaction of the type already evident in some South American countries in which there will be an association of democracy (but of a radical, nationalistic and populist variety) against liberalism, openness and internationalism. How sad.

An alternative way of thinking about the crucial issues raised by this interesting paper would be to think of two alternative world views. In the first, there is widespread acceptance of the rules that hold a globalised world together – rules about the trade regime, about monetary relations, abut principles of corporate governance or banking regulation that can be applied across national boundaries. In the second, these rules are all reinterpreted, not as the expression of a general interest, but as arbitrary rules promoted to favour particular interests in particular states. Democracies should be about rules, and that is the reason to expect that they will more often than not hold the first view; but the effects of violent shocks or disturbances in a world governed by a very complex set of rules and conventions is to highlight arbitrariness and to breed resentment. In that case, democracies may well try to reinvent rules in their advantage: a disruptive action that is often so disruptive that it leads to an erosion or even an overthrow of democracy. Even if some principles of formal democracy are still left, there is still a massive setback for the classical liberal values.

Comments on "Democracy and globalisation" by Barry Eichengreen and David Leblang

Marc Flandreau[66]

Can democracy and globalisation have mutually reinforcing effects? The first promotes individual and collective freedom and fulfilment by insuring adequate representation in the polity. The second fosters individual and collective welfare by insuring that economies make a more effective use of their scarce resources. To a very large extent, therefore, democracy and globalisation are among the best things that today's world has to show. And good things should go together, shouldn't they? Just like X-Files' Lieutenant Mulder, this is something we would "want to believe".

The paper by Eichengreen and Leblang provides an excellent foray in the intriguing nexus of links that may exist between democracy and globalisation. Using a stunning 130 years, 150 countries database, it comes out with a forceful message. Democracy and globalisation are mutually reinforcing, but the relation between the two is by no means explosive: in short, do not count on mere "market" forces to promote good politics and good economics and happiness on earth.

One striking feature of the paper is its deliberate a-theoretical approach. Apart from a brief detour through the Stolper-Samuelson theorem towards the end of the paper, the authors do not provide theoretical arguments on why democracy should promote globalisation and why globalisation should promote democracy. Their attitude instead, is resolutely empiricist: given more than a century of individual countries' experience with globalisation and democracy and given existing views on the factors that correlate with both globalisation and democracy, can one design an adequate instrumental variable estimation of a simple two equations system featuring democracy and globalisation as its two left hand side variables? The answer, Eichengreen and Leblang argue, is yes. This is the substance of their article.

Therefore, to do justice to their effort, one must start with covering the authors' methodology. As I understand it, the strategy they adopt is to look for "consensus instruments". First they

[66] Institut d'Etudes Politiques de Paris.

survey existing theories that posit a link between certain variables (say geography) and certain indicators of democracy or globalisation. Second, in order to meet the exclusion restriction for adequate instruments for one variable (say, globalisation) they rule out from each list, factors that have been reported, or assumed, to "cause" the other variable as well (in this case, democracy). They end up this exclusion exercise with size and distance as instruments for trade openness (their first measure of globalisation); size, inflation, government deficit, number of countries with capital controls and number of countries with currency crises as instruments for capital account liberalisation (their second measure of globalisation); And finally, number of prior transitions to dictatorship, constitutional age, colonial heritage, natural resource endowments, and geography as instruments for democratisation measured using the POLITY index.

The next stage is to provide a bunch of regressions that pool together the entire period under study. There are 14 countries at the beginning of the period, 28 in 1914, 56 in 1939 and 156 in 1998. The benchmark results are derived from panel regressions with random effects and time effects. Results show that instrumented "globalisation", other things being equal, has a positive and significant impact on democracy and, conversely, instrumented democracy has a positive and significant impact on "globalisation" (measured in two alternative ways). A series of additional regressions, dubbed "robustness checks" provide further evidence from alternative specifications.

One particularly intriguing section of the paper is one where the authors use their econometric results to provide an analysis of dynamic stability. If democracy increases globalisation and globalisation increases democracy, then the case may be that dynamics are *explosive* with countries becoming ever more (or less) democratic and open without any equilibrium being reached. However, estimates suggest that such is not the case, with exogenous positive shocks to globalisation or democracy pushing countries towards only higher *equilibrium* values.

While I commend Eichengreen and Leblang for the breadth and scope of their study, I have some reservations on the methodology they have adopted. First, I think that they move beyond the "consensus" view approach regarding the relevance of instruments, to provide more formal tests of the quality of the choices they make, using for instance Hausman exogeneity tests. While the limits of such tests are well known, they provide an objective benchmark against which popular impressions may be gauged. Another useful exercise would be to try and relate the results more systematically to earlier research. Compared to previous work, the authors have both increased the sample under study and modified the estimation technique. It would be important to know whether the difference in results arises principally from better data or better econometrics.

Discussion of the sample also raises an important point. The data for the early period (1870-1914) is predominantly European. This may explain the positive association that the authors find between globalisation and democracy, since the period before 1914 witnessed remarkable democratic transformation at the same time when trade openness reached all century highs. After 1914 however, this European bias of the sample gets smaller, and this may have an impact too. One should also recall that there is an inherent selection bias in the historical sample, since democratic countries have tended to produce earlier, more detailed economic data, and this may have an impact on the results as well.

In the same vein, one would have liked that the authors report more extensive evidence for successive sub-periods. As a first approximation the evolution of democracy over the course of the last century has been upwards, with a partial overall reversal in the 1930s and some individual trajectories that do not conform to this general pattern. On the other hand, trade globalisation is conventionally described as U-shaped: very high one century ago, collapsing in the interwar, and soaring again after WWII. The time dummies the authors have included in their regression take care of these different trends, although a case could be made that the

contrasted records of trade integration and democracy is really what the paper should be about.

This matter becomes particularly important when it comes to dynamics. Talking of stability and instability really takes us at the heart of essential historical, economic, and political processes which the authors recognise they have in mind. At the same time, much of the system "dynamics" have been evacuated from the regression analysis by introduction of the time dummies. Another aspect of systemic stability that the authors do not discuss explicitly is the question of spatial correlation. They suggest that finding evidence of explosive two ways causality between globalisation and democracy would provide some clues on historical processes such as the implosion of free trade in the interwar. Yet the model they have in mind does not really allow for system-wide dynamics, as it does not account for externalities. In effect, evidence of explosive dynamics would suggest, not a world *system* oscillating between open-democratic and closed-undemocratic arrangements, but rather individual *economies* experiencing these oscillations, with the exact number of economies being located in one or the other equilibrium being a matter of luck. Alternatively, the authors may want to consider more explicitly the possibility of feed-backs from individual experiences to system-wide outcomes - but then, their econometric methodology, which ignores spatial correlation, is inadequate.

I conclude with a few historical notes. Thinking of specific historical examples, it is hard to see an obvious link between globalisation and democracy. Take 19th century liberalisation for instance. Its expansion is conventionally associated with the signing of the 1860 Anglo-French treaty between England - hardly a "democratic" country - and France - then an autocratic regime. Similarly, the reflux of trade liberalisation occurred in France at the end of the 19th century when democracy was at a high point, with this country being one of the few countries on earth with full enfranchisement of male citizens. Similarly, in the mid 19th century, one of the leading countries in terms of empowerment of the people - the United States of America - had a strikingly low trade openness ratio. It compared to that of the world's leading autocracy - Russia (Accominotti and Flandreau 2006). Autocracy in Russia did not stand in the way of globalisation. In fact, Russia started opening in the late 19th century at a time when its secret police was remote from even thinking of changing its abominable methods. Closer to us, the US has remained until a quarter century ago a largely closed economy with imports and exports representing a tiny fraction of its GDP. Few will dispute that it remained a vibrant democracy all along. Arguably, the current backlash against civil liberties that followed September 11 is the product of some of the challenges that globalisation has created.

The previous list of anecdotal evidence is not meant to stand in the face of Eichengreen and Leblang's more encouraging results. I, just as they do, want to believe. But these are caveats that suggest that, as long as we do not have a fully fledged theory of why and when globalisation should cause democracy to expand and vice versa, any empirical pattern we think to discern between democracy and globalisation is little more than history.

Reference

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