Networked Default:
Public Debt, Trade Embeddedness, and Partisan Survival in Democracies since 1870

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Abstract

Sovereign default is often associated with the downfall of incumbent governments in democratic polities. Existing scholarship directs attention to the relationship between default and domestic politics and institutions rather than the broader international environment wherein repayment and default take place. We explore the possibility that the impact of a country's decision to default on partisan survival will also be shaped by the prevalence of default amongst its peers in its local network. Illustrating this line of reasoning with international trade, our results support the argument that given networked default, voters see national default as a lost strategic opportunity to elevate a country's reputation and are more inclined to punish incumbent regimes who fail to repay. These results are inconsistent with an alternative possibility — that networked default might contribute to the decay of a repayment norm and thus provide a justifiable "excuse" for default at home. Furthermore, our results are robust to alternative measures of regime governance and entropy balancing in light of systematic differences between defaulting and non-defaulting regimes. Overall, our findings point to the political interdependence of default and repayment and the need for political scientists to take greater account of network effects in analyzing the consequences of economic misbehavior.

Keywords: sovereign default, debt crises, political survival, networks, voter behavior

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1.   *Introduction*

The literature on the political economy of sovereign default broadly accepts that such failure to meet repayment obligations is often associated with the downfall of incumbent governments in democratic polities. In exploring this and related issues, extant scholarship has focused largely on the role of domestic politics and institutions in shaping default and repayment outcomes (e.g. McGillivray and Smith 2008; Saigh 2005, 2009; Stasavage 2003; Tomz 2007; Tomz and Wright 2013). Despite the tradition focus on domestic dynamics, most authors do accept that international factors will matter: for example, interests in internationally oriented sectors will generally prefer cooperative external policies including debt repayment, whereas in cases where creditors are mostly foreign, such as in most developing countries, citizens may be more likely to favour default. Still, the precise manner in which the broader international environment wherein repayment and default take place has been comparatively under-explored. We seek to address this gap.

In this paper, we investigate the inclination of voters in borrowing countries to punish incumbents for default relative to a number of non-domestic factors. Principally, we pursue a network explanation for such variation and investigate the impact of a country's decision to default on partisan survival relative to the prevalence of default amongst its peers in its local network. Focusing on the network of export markets and controlling for a number of domestic factors such as growth and age of democratic regime, our results indicate that voters do vary in their propensity to punish incumbents for default and that voter decisions are not independent of default in a country's local network. These results underscore a lack of attention in the literature to the ways in which international networks can shape voter behaviour.

We consider two alternative possibilities. The first is that voters will focus on the way in which networked default — the degree to which default is prevalent amongst a country's partners in their local network — might contribute to the decay of a repayment norm and thus provide a justifiable "excuse" for default at home. A second possibility is that networked default could provide a government with a strategic opportunity to elevate its reputation by continuing to repay its debts despite hard times. Such reputational benefits are understood to be the result of "good" borrower behaviour whilst being financially proximate to foreign defaulters. Should the incumbent government also choose to default, voters may punish it for forgoing this strategic opportunity. These two possibilities generate competing predictions about voters' propensity to "punish the prince" for default in the presence of localised failure to repay: if the latter scenario does indeed provide a strategic repayment opportunity, we expect to find incumbent governments at greater risk of termination should they default whilst being embedded[1] in a local network characterised by default. Should the former scenario hold, we expect default in what might be called an environment of forgiveness to result in lower risk of punishment for defaulting incumbents.

Results from a series of Cox Proportional Hazards models indicate that voters do vary in their propensity to punish incumbents for default and that sovereign default by countries situated in local trade networks characterized by even small levels of default prevalence increases the risk of partisan spell termination. Our results support the view that given networked default, voters see national default as a lost strategic opportunity to elevate a

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[1] Throughout this paper we use "embeddedness" to capture the idea that some focal country sits at the intersection of a number of financial ties with other sovereignties. Note that this usage is different from Granovetter's (1985) notion of network embeddedness which represents the idea that economic action is inherently rooted in social structure. The latter usage of embeddedness is typically associated with triangulation in networks whereas we focus on exposure to default based on structural position (see section 2).

country's reputation. Those governments who repay their debt whilst exporting to defaulters enjoy a lower risk of partisan spell termination. Collectively, these result provide evidence for a reputation-based mechanism whereby incumbent regimes capitalize upon the economic instability of their peers to signal trustworthiness.

The paper is organized as follows. The next section discusses existing theory and outlines in more detail our alternative hypotheses concerning the impact of international networks on the politics of default. Section 2 discusses our data and methods. Section 3 provides our results, and a final section concludes.

2.   *Theoretical framework*

The existing literature on the political economy of default and repayment generally agrees that default is very bad news for incumbent governments (see Borenzstein and Panizza 2008). There is little agreement, however, about why this might be so. Recent literature has also focused on the domestic drivers of default (e.g., McGillivray and Smith 2008; Saiegh 2005, 2009). In doing so it assumes that decisions to repay or default in one country are independent of similar decisions elsewhere, except to the extent that foreign decisions affect the state of the domestic economy. We discuss this literature before outlining how the politics of default and repayment in one country could also depend on that of other countries in its local network.

2.1   *Domestic interests, institutions, and political punishment*

McGillivray and Smith (2008) argue that in political systems in which citizens can replace leaders at low cost – broadly, democracies[2] – sovereign default will be rare. Since a reputation for good behaviour is likely to be among the most important reasons why sovereign governments can borrow from creditors, citizens will have strong incentives to replace a political leader who defaults so as to restore the country's reputation as a trustworthy borrower. This will be true even if citizens generally favour default, as the benefits accrued from betraying a defaulting leader should trump congruence in beliefs about the appropriateness of default. The implication is that if the primary objective of incumbent governments is to retain power, democracy acts as a powerful institutional mechanism that ensures a credible political commitment to repay loans and thus makes default very rare.[3]

However, there is some evidence that rates of default among democracies, though low, are still higher than what McGillivray and Smith's theory predicts. These authors show that, as predicted, default rates are lowest for governments in which the winning coalition size (W) is largest (where W=1). But default rates on bonds and bank loans for countries with the next largest winning coalition size (W=0.75) are higher than default rates for countries with lower winning coalition sizes (McGillivray and Smith 2008: 161-2). This seems inconsistent with their general prediction, even taking into account selection effects in the data which suggest that the countries most likely to default cannot borrow in the first place.

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[2] McGillivray and Smith deploy the more precise concept of a country in which the political leadership is elected and retains power through the support of a large winning coalition (see Bueno de Mesquita et al. 2003).

[3] For a related argument focusing on the role of constitutional constraints on the sovereign, see North and Weingast (1989).

There is also evidence that voters in democratic polities vary in their propensity to punish incumbents for default. McGillivray and Smith cite the case of Argentina over 2001-2 as supporting their prediction that citizens in democracies will remove leaders who default. The Presidential incumbent, Fernando de la Rúa, was elected in December 1999 but his policy of maintaining the fixed exchange rate of the peso with the US dollar and of honouring Argentina's debt obligations became increasingly unpopular. In March 2001 the government adopted a policy of austerity led by the former neoliberal economy minister, Domingo Cavallo, resulting in a collapse of its popularity and a major victory for the opposition Justicialist (Peronist) Party in the October 2001 congressional elections. In these elections, the Peronists had openly campaigned on a policy of rejecting austerity and restructuring Argentina's debts (Tomz 2002). On 21 December 2001 de la Rúa resigned before the end of his term and the Legislative Assembly replaced him with an interim Peronist leader, Adolfo Rodríguez Saá, who promptly defaulted on the country's outstanding debt to foreign private creditors. After little more than a week in power, the Legislative Assembly replaced Saá with another centre-right Peronist figure, Eduardo Duhalde, who confirmed Saá's policy of default and who served the remainder of de la Rúa's presidential term (Tomz 2007: 12). When Argentine voters were able to choose their own President in the elections of 2003, they chose Duhalde's designated Peronist successor, Nestor Kirshner, a leader from its centre-left faction.

Kirshner presided over the substantial restructuring of Argentina's external private sector debt, though he continued Duhalde's policy of repaying IMF loans. Despite good public approval ratings, at the end of his term in 2007 Kirshner stepped aside to allow his wife, Christina Fernández de Kirshner, to run on a continuity platform; she was subsequently

elected for two consecutive terms. Thus, voters did not replace Argentine leaders who defaulted with alternatives who favoured debt repayment. Counterintuitively, since late 2001 voters elected leaders who continued policies of defaulting on and restructuring its external debts.[4]

Why might voters vary in their propensity to punish governments that default on their debts? It is a common view in the literature on sovereign borrowing that a government's willingness to repay will generally be much more important in shaping decisions whether to repay debt than ability to repay (e.g. Eaton and Gersovitz 1981; Reinhart and Rogoff 2009, ch.4; Tomz 2007). One prominent line of argument is that governments will be responsive to the preferences of their major supporting constituencies. Stasavage (2003) showed how in the aftermath of the Glorious Revolution of 1688 in England, Whig governments more consistently favoured repayment than Tory governments because the Whigs were associated primarily with the merchant and creditor classes, whereas the Tories represented landowner interests who more rarely lent to the government.

More generally, creditor interests – including those organized in financial sector institutions – will strongly prefer governments who pledge to meet their financial obligations. Interests associated with the traded goods sector, including firms, investors and employees, are also plausibly associated with a pro-repayment coalition because they may be concerned that national default will induce costly foreign sanctions. These might include trade protection, a reduction in trade credit, or seizure of nationals' foreign goods or assets (Bulow and Rogoff 1989). Default does seem to be associated with a substantial reduction in trade,

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[4] Voters strongly objected, however, to the government's decision to exchange US dollar savings accounts in domestic banks into depreciated pesos.

though the channel through which it does so is disputed (Borenzstein and Panizza 2008: 14-17). A number of authors have provided evidence that sanctions of these kinds tend in practice to be very limited or short-lived (e.g. Borenzstein and Panizza 2008; Tomz 2007: 232). However, internationally-oriented economic interests may still prefer not to risk provoking the ire of foreign partners and move to maintain cooperative foreign relations.

Following this logic, we would expect a debtor government to be more likely to choose to default if their political supporters judge the costs of repayment to exceed the costs of default. Repayment inevitably creates some losers, as was clear in Argentina at the turn of the last century (Frieden 1991; Tomz 2004). These can include, for example, voters and firms dependent on government support. In hard times, repaying sovereign debt can require that governments raise additional taxation and/or reduce public expenditure on other goods and services, shifting resources from citizens to foreign creditors (Tomz 2007: 16). We would expect governments to be more prone to default when their core supporters favour prioritizing domestic transfers over payments to foreigners (e.g. a left wing government supported by debtors, public sector workers, the relatively poor and the unemployed during a deep recession). Such voters may have higher discount rates than McGillivray and Smith assume — their preference for short run relief may be much stronger than any desire to restore future access of the government to credit markets. This bias may have increased over time as public sector employment and welfare transfers grew over the course of the twentieth century (Saiegh 2005). Alternatively, even voters who weight future gains more highly may be more inclined to tolerate default if they believe that creditors will be forgiving because the country is going through especially hard times, reducing the reputational cost of default.[5] In

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[5] Tomz (2007) provides a variety of evidence that investors are more tolerant of defaults during hard times. Borenzstein and Panizza (2008) find that the costs of default are significant but short lived.

both contexts, voters may be more forgiving of leaders who default, and unforgiving of

candidates seen as aligned with creditor interests and associated policies of fiscal austerity.

Governments in countries where domestic creditor interests are relatively few and

have limited political influence may also be less prone to punishment for default compared to

governments located in countries where creditor interests are more plentiful and/or

influential. Developing countries in which average income and savings are low are more

likely to fall into this category than high income countries with large middle classes and in

which creditors of the government are likely to be more numerous and well organized

(Drazen 2000: 597). In developing countries, foreign creditors are generally much more

numerous and important than domestic creditors, who tend to dominate in developed

countries (Saiegh 2005). This also implies that default might be more popular among voters

in hard times, especially if foreign creditors are perceived as associated with political rivals,

imperialists or class enemies (e.g. the Soviet default against French bond holders in 1918).

Targeted default of this kind could allow governments to claim that they are reasonably

shifting the burden of adjustment from citizens to rapacious foreign creditors.[6] Tomz (2007:

30) argues that the incentives for actors to behave rationally in international finance are

strong because the stakes are high, but citizens are more likely to be prone to nationalist bias.

As he points out elsewhere (Tomz 2004), less sophisticated voters are more likely to be

swayed by such biases and less prone to vote according to their narrow economic interest.

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[6] Some argue that selective default on sovereign debt with open capital accounts will be impossible, as foreign creditors will be able to pre-empt selective defaults by selling debt to favoured domestic residents (Broner et al. 2010; Sturzenegger and Zettlemeyer 2007). However, Tomz and Wright (2013, 264) argue that such discrimination against foreign creditors is common in practice (see also Gelpern and Setser 2004). Outright default may be more likely against foreign creditors, but when partial default against domestic creditors via unexpected inflation is taken into account there may be little difference in the effective incidence of default (Reinhart and Rogoff 2011).

Roughly, we would expect the sophistication of the average voter to rise with a country's average income.

Finally, Saiegh (2009) and Stasavage (2003) argue that the influence of creditors will depend on their ability to build cross-issue political coalitions, and that this will be easier in multi-party coalition governments rather than single-party governments. Accordingly, Saiegh finds that single-party governments are more likely to default. Partisan factors may also help to shape the likelihood of default. In a deep recession an incumbent left wing government that draws its core support from public sector workers and the unemployed might be more likely to default than would a right wing government associated with traded sector and creditor interests.

2.2   *Network interdependence and default*

The potential interdependence of democracies leads us to focus on the patterning of a country's trade ties to (non-) defaulters. We adopt a relational perspective,[7] and view the various relations between countries as conduits for the transferral of material (e.g. finance, goods and services) and informational (e.g. about changing behavioural norms) resources (Burt, 1992; see Borgatti and Lopez-Kidwell 2011: 40-54 on the Network Flow Model).

One possibility is that an increased prevalence of default within a country's local network will shape voter expectations about how default by their own government will be perceived abroad in various international spheres. Cole and Kehoe (1998) suggest that default could signal that a government is unreliable, not just in debt repayment, but in international

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[7] For overviews of this literature, see Hafner-Burton et al. (2009), Lazer (2011), Siegel (2011), Wasserman and Faust (1994), and Ward et al. (2011).

affairs more generally. Default could thus have reputational spillovers that damage a country's ability to attract international partners for trade agreements, environmental pacts, military alliances, and so on (Tomz and Wright 2013:262-263). If these reputational spillovers are sufficiently intense and dispersed, then the median voter may strongly favour repayment even as default within her country's network becomes more prevalent. The prevalence of default within a country's local network is likely to heighten the visibility of information concerning repayment failure and thus lead to more knowledgeable voters. In such circumstances the connection between the personal interests of domestic constituents who value future transactions with foreigners and voting behaviour is less likely to depend on voter sophistication (see also Tomz 2004; Curtis, Jupille, and Leblang 2013).

Tomz (2007) argues that concerns about reputational spillovers among voters are likely to be particularly intense in "stalwart" countries who tend to honour their repayment obligations in good and bad times, and who would suffer reputational losses from default irrespective of whether default is prevalent within a country's network. Voters in stalwarts replace incumbents who default because they have "squandered their reputational patrimony" (Tomz 2007:22). Reputational concerns may feature differently among voters in "fair-weather" countries who tend to pay in good times but less so in bad times, and in "lemons" who regularly default in bad times and sometimes in good times. Governments that are perceived as fair-weathers or lemons may suffer less reputational damage by defaulting when default is prevalent within their network, as such prevalence may reflect global systemic crisis. This highlights the path dependence of exports and the interconnectedness of global financial flows. Thus when default is prevalent within a country's local network, default at

home may be "excusable" (Grossman and Huyck 1988) in that it can be attributed to adverse shocks from abroad or difficult debt market conditions.

Constructivists might regard default prevalence as indicating shifts in norms of appropriate behaviour. As opposed to the consequential logic of the literature on "excusable default," this alternative view posits that voters will instead see networked defaults as indicating the erosion of a social norm regarding appropriate behaviour (i.e., "one should repay debts"), making default more socially and politically excusable.[8] This is analogous to the impact of social networks in other areas of social life (see Friedkin 2001): to the extent that significant members in a social network are seen to deviate from a hitherto well-established norm, this can make it easier for other members to break the norm and to avoid punishment (e.g. norms against bullying and torture). While voters in stalwarts may refuse to excuse any default, if reputational concerns are weaker or less widely-held, then voters in fair-weathers and lemons may find default more appealing when default is prevalent elsewhere. As such, one might expect:

Hypothesis 1: Sovereign debt default in the presence of increasing networked default will lower the risk of incumbent termination.

Yet networked defaults can also offer stalwarts and lemons a strategic opportunity to elevate their reputations. Domestic constituents who value future transactions with foreigners may be highly motivated to improve their country's reputation by signalling to domestic and international creditors that the country is exceptionally creditworthy and will continue to

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[8] On logics of consequences and logics of appropriateness, see March and Olsen (1998).

honour its financial obligations. This strategic signal will be highly credible because choosing to repay while others are defaulting will demonstrate a country's willingness to repay even in demonstrably hard times and in spite of the short run costs. If the incumbent government chooses to forgo this strategic opportunity and defaults, voters may then choose to punish it. This is an extension of Tomz's (2007: 22) observation that "political instability creates room…for reputational recovery." As such, one might expect:

Hypothesis 2: Sovereign debt default in the presence of increasing networked default will increase the risk of incumbent termination.

These two alternative hypotheses represent different understandings about the way that international networks might shape the politics of repayment and default in individual polities. There is a third alternative, that defaults in other countries have no effect on the risk of incumbent termination above and beyond their impact on the domestic economy. If both hypotheses 1 and 2 are rejected, we can be more confident that the propositions discussed in the existing literature (see section 2.1) are the primary drivers of political outcomes.

We focus on trade – export markets in particular – as the crucial link between countries in the international network on the grounds that trade relations will be relatively transparent to voters compared to other candidate ties, such as financial links.[9] The effect of default via trade relations should also be more intensely felt and more visible than those from

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[9] Since missing data can easily lead to erroneous specifying network boundaries, the generally better availability of trade data (compared to data on, for example, financial links) provides additional advantages, though we are well aware that data missingness is a problem here too. Joint-membership in international organizations is another commonly analysed network tie in international relations (Hafner-Burton et al. 2009). However, IGO ties are arguably more likely to affect elite attitudes rather than voter attitudes to default.

other inter-societal connections, such as language or religion. Rose (2005) finds that Paris Club debt reschedulings led to a decline in bilateral trade of approximately eight percent per year, and that this effect persisted for a period of 15 years. Borensztein and Panizza (2010) use industry-level data to show that defaults are particularly costly for export-oriented industries. Default may also affect the availability of trade credit as well as other forms of credit, harming both exporters and non-exporters (Areta and Hale 2008; Zymek 2012).

3.   *Data and method*

To test our hypotheses we use a new long-term historical data set from 1870 to 2009. We provide our sample and summary statistics in the Appendix. Our dependent variable is the longevity of political parties in office. We follow others in constructing a yearly indicator of "incumbent spells" based on the partisan affiliation of the chief executive (Crespo-Tenorio, Jensen, and Rosas 2014; Lin and Guillén 1988). This *Partisan spells* indicator measures when incumbent political parties, not individual leaders, lose office. It allows us to take into account institutional features, such as term limits and fixed vs. endogenous electoral cycles, which would otherwise make comparison between parliamentary and presidential regimes difficult.

We identify the chief executive by cross-checking information from Archigos (Goemans, Gleditsch, and Chiozza 2009) and rulers.org, a website that lists heads of state and government since the early 18th century.[10] In systems with both a prime minister and a president or monarch, we identify the chief executive by using the coding rules provided in the Database of Political Institutions (Beck, Clarke, Groff, Keefer, and Walsh 2001). These

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[10] Left-censoring does not compromise our analysis since these sources contain information about partisan survival prior to 1870 reflected in our partisan spell indicator.

rules code a system as presidential if the president can veto legislation and the parliament needs a supermajority to override the veto, or if the president can appoint and dismiss the prime minister and dissolve parliament and call for new elections. We adapt this scheme to identify the chief executive in settings where a monarch is present, using information provided in the Comparative Constitutions Project, a cross-national historical dataset of written constitutions (Elkins, Ginsburg, and Melton 2012).[11]

To identify partisan affiliation we use information from a number of sources.[12] The measurement of partisan spells is often fairly straightforward for both parliamentary and democratic executive-dominated systems. However, in parliamentary systems we code partisan spells as ending when the composition of governing coalitions changes even if the chief executive remains unchanged, such as Britain in 1931 and West Germany in 1966. Figure 1 provides the basic structure of our data for the case of Britain since 1929. The horizontal shaded bars represent the duration of unique partisan spells in Britain and the varying colours portray the party in office
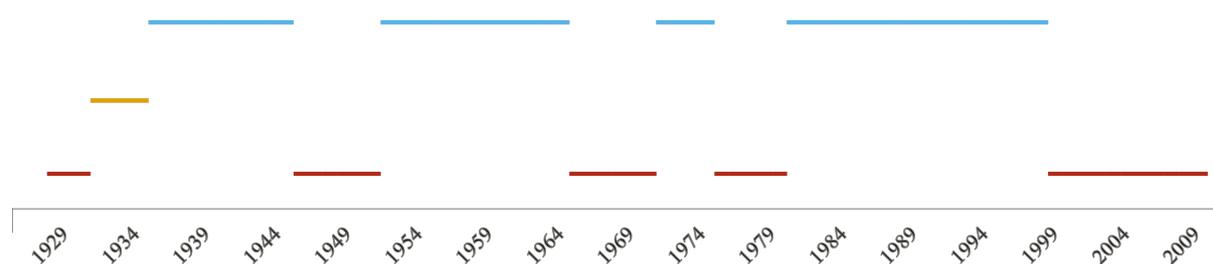
Figure 1. *Partisan Spell Termination in Britain, 1929 – 2009.* Partisan colours are blue (Conservative; Top), red (Labour; Bottom) and yellow (National Labour; Middle).

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[11] In cases where there was uncertainty or no clear institutional framework, we also cross-checked our coding by consulting with country experts.

[12] Beck, Clarke, Groff, Keefer and Walsh 2001; Elkins, Ginsburg, and Melton 2012; Mackie and Rose 1990, Nohlen 2005, Nohlen, Gotz, and Hartmann 2001, and Vanhanen 2000.

We classify a borrower as having defaulted if the government failed to fulfil its payment obligations to pay the principal or interest due to creditors on a due date or within the specified grace period. We also include instances of debt rescheduling where the terms are less favourable than the original obligation. We restrict our attention to a particular type of default, namely, default on debt to private creditors. We code a country-year as "1" when an incumbent spell experiences a debt crisis and "0" otherwise, with some spells experiencing multiple crises. We use data from Reinhart and Rogoff (2009) (R&R) to construct a list of all known defaults from 1824 to 2010.

Disputes with creditors can sometimes span decades, such as Soviet Russia's default following the 1917 revolution, which holds the record of 69 years. At the time of writing, Argentina's dispute with creditors following its 2001 default, which was the largest in history until Greece's restructuring in 2012, continues. However, it would be a considerable stretch to suggest that a span of several decades constitutes a crisis. Given our interest in the immediate consequences of default, we restrict our analysis to the year in which a borrower defaulted.

The R&R measure yields 187 defaults in all countries, democratic or otherwise. In our sample, defaults episodes occurred in every decade and were most prevalent during 1932 when 12 countries failed to fulfil their payment obligations. Yet default does not occur with great frequency in democratic countries (that is, where the Polity IV measure of democracy is greater than five for the full incumbent spell) (McGillivray and Smith 2008). In our sample of 56 democracies, for which we have complete data for all our variables, the R&R measure yields 38 defaults.

Our sample includes 562 partisan spells in democratic countries. Thirty four of these democratic partisan spells (6.0 percent) experienced a default. India (1950 – 1977), Sri Lanka (1979 – 1981), and Uruguay (1985 – 1990) all experienced multiple defaults in the same partisan spell, with India experiencing three defaults and Sri Lanka and Uruguay each experiencing two.

Endogeneity raises complications for our analysis. Defaults tend to occur during periods of economic and political instability and the relationship between default episodes and political survival could be driven by a common shock, such as political upheaval that alters national preferences for repaying debt and for retaining the incumbent leader, a plunge in output, or fluctuations in the global credit cycle. Selection on such unobservables would necessitate instrumental variables-based (IV) estimation. We do not know of a term that satisfies the exclusion restriction of IV – that is, a covariate that strongly affects the probability of default but that, conditional on the other regressors, does not affect incumbent survival. When the exclusion restriction is not satisfied, IV estimation will produce estimates that are both inconsistent and inefficient, and thus should be avoided. As a second-best strategy, we lag the default variable by one year to avoid simultaneity bias and later assess whether our results are robust to selection on observables using entropy balancing.

As outlined in section 1, our main interest is to assess how a country's evolving network ties condition the effect of default on incumbent survival. Here we capture network influence relative to a country's embeddedness in an export market network characterized by countries in sovereign default via a measure of immediate network exposure (see Valente 2005). In the present scenario, network exposure represents the share of a country's total exports in a given year which go to defaulting sovereignties. Formally, default exposure via export markets $E_{c(t)}$ is given by

$$E_{ct} = \frac{\sum\limits_{j}^{n-1} w_{cjt} y_{jt}}{\sum w_{ct}}$$

(1)

where c is the focal country, w is the weighted $n*n$ adjacency matrix representing exports in year t, y is a vector of binary values indicative of which countries default, j is one of the n-1 other countries in the network, w_{cj} is the scalar representing exports from c to j and the denominator is c's total exports in year t. Exposure is lagged by two years in order to avoid simultaneity bias and to situate exposure prior to any subsequent default by the focal country. Figure 2 provides a visual representation.
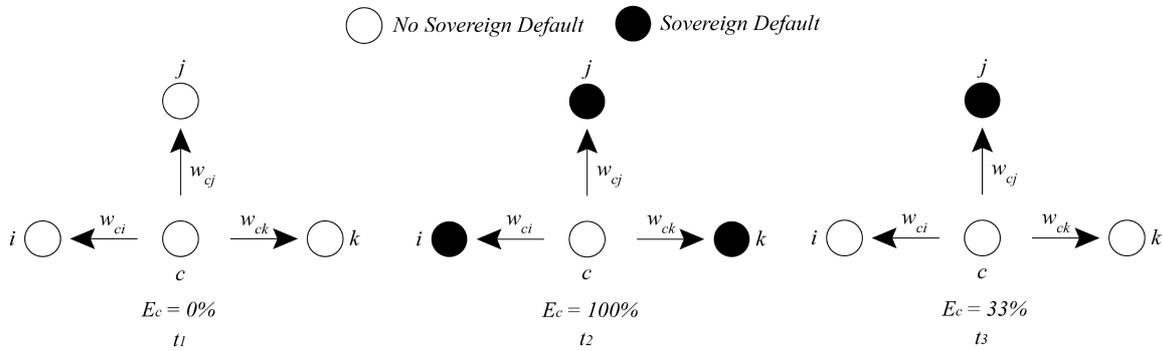

Figure 2 (Default Export Market Exposure): Here E_c varies over time as a function of the number of a country's export markets that experience sovereign default. w_{ci} is the focal country c's exports to country i. To ease interpretation, it is assumed that all exports in this scenario are equivalent and that they sum to 100.

To construct the exposure measure we use the Correlates of War Project Trade Data Set 3.0 (Barbieri and Keshk 2012), which reports aggregate trade flows (measured in millions of nominal US dollars) annually for the period 1870 – 2009. We use these data to create the variable *Default Export Market Exposure*, the percentage of a country's total exports that go to export markets that default in a given year. To test our hypotheses we use this network

variable to create an interaction term with the R&R measure of default. This interaction term

permits us to assess the conditional effect of default across various levels of export market

exposure on the expected rate of incumbency survival.

We include control variables for the degree of democracy, age of the democracy,

economic growth, GDP per capita, and the cumulative number of default-episodes. We use

the cumulative democracy score from Polity IV, which in our sample runs from 6 to 10, with

higher values indicating greater democracy (Marshall, Jaggers and Gurr 2011). We control for

age of the democracy because more entrenched regimes may be more likely to survive

defaults, and because more "mature" regimes tend to behave more aggressively toward

external creditors (Enderlein, Müller, and Trebesch 2012). The Maddison project provides

data on economic growth. Growth is a crucial control variable since we seek to account for its

confounding effect on default and partisan spell termination. Data on GDP per capita from

the Maddison project are also included to control for the level of development.

We estimate a series of Cox proportional hazard models to discern the impact of our

explanatory variables on the expected length of a partisan spell for an incumbent party. Since

the occurrence of partisan spell termination within a country is an event that occurs more than

once we use a conditional elapsed time model with stratification (Box-Steffensmeier and

Jones 2004).[13] This model is capable of addressing the possibilities that partisan spells

develop sequentially and that their timing is different across occurrences (or strata).[14] We test

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[13] As opposed to gap time, which examines the likelihood of an event occurring since the last event, elapsed time allows us to frame our results as how likely a partisan spell termination is in a specific year.

[14] Hausmann tests indicate the baseline hazard varies across each stratum, which supports our model specification. When we account for unobserved heterogeneity by adding a country-specific frailty term to the model, we find the estimated frailty parameter to be insignificant, with plots of the frailty estimates showing no significant variation across countries.

for non-proportional hazards but find no violation of this assumption. We use simulations to interpret our findings (King, Tomz and Wittenberg 2000; Gandrud 2013).

4.   *Results*

Table 1 provides the results in the form of coefficients for different models of incumbency survival from 1870 to 2009. Model 1 is our baseline model in which we exclude the interaction term. We then introduce the interaction term in subsequent models. Positive coefficient values suggest an upward shift in the hazard value (i.e., an incumbent party faces greater risk of partisan spell termination). Negative coefficient values imply the reverse.

[INSERT TABLE 1 HERE]

The results from Model 1 suggest that countries with a greater degree of democracy are likely to experience shorter incumbent spells while incumbency survival is prolonged in richer countries and those with more mature democratic institutions. These results hold for most of our subsequent robustness checks. Turning to sovereign default we find the estimate to be positive and significant, suggesting that incumbent governments that default are more likely to experience a partisan spell termination. While this result suggests default may exert an unconditional effect, we find less support for this inference when we use alternative measures of regime governance to capture democracies (see below).

When we introduce the network exposure variable we find the effect of default to be conditional on the prevalence of default within a country's local network of export markerts. The results from Model 2 indicate the coefficient on *Default Export Market Exposure* is negative and significant, while the interaction term is positive and significant.

Still, considerable caution is warranted when interpreting interaction effects in nonlinear models. A significant coefficient on the interaction term is "neither a necessary nor

sufficient condition" for identifying the presence of a substantively important interactive

relationship (Berry, DeMerritt and Esarey 2010, 25). The preferred method to interpret the

effect of interaction terms is through graphical presentation of the relationship between

changes in the variables constituting the interaction term and the outcome of interest

(Brambor, Clark, and Golder 2006; Berry, Golder, and Milton 2012). We therefore plot the

simulated hazard ratios for non-defaulters and the marginal effect for defaulters as *Default*

Export Market Exposure varies from its observed minimum to its maximum values; the

median line summarizes the central tendency from the simulations. The ribbon represents the

middle 95% of 1,000 simulations and the density of the ribbon indicates the set of values with

the highest probability. We also include a density plot of the distribution of the *Default*

Export Market Exposure variable. Both figures have been split up along the range of fitted

values to ease interpretation.

[INSERT FIGURE 3 HERE]

Figure 3, which uses the results from Model 2, shows that a non-defaulter embedded

in an export market network of defaulters experiences a lower risk of termination. There are a

sizeable number of observations that fall in the range of statistical significance. We find in

our sample that roughly 52 percent of country-year observations for incumbent governments

see some degree of exposure to default via their ties to export markets. Risk ratios, which

compare the estimated hazard rate of a non-defaulter experiencing "high" exposure to default

in its export market network against the hazard rate of non-defaulters experiencing "low"

exposure to defaults in its export market network, provide a sense of the magnitude of the

effect plotted in Figure 2. [15] When compared to a non-defaulter with low exposure to

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[15] "High" and "low" values of the *Default Exposure Export Markets* variable correspond to the 95th and 5th percentiles in the sample (all other covariates are held constant at their mean).

networked default, a non-defaulter with high exposure (set at one standard deviation above the mean) would be expected to see its risk of termination decline by 19 percent (the risk ratio is 0.81 with the 95 percent confidence interval spanning from 0.61 to 0.99). Consistent with hypothesis 2, voters may be rewarding incumbent governments for the reputational benefits that accrue from non-default in an environment where default is prevalent among their export markets.

[INSERT FIGURE 4 HERE]

Figure 4 shows that when compared to a non-defaulter with low exposure to default in its export market network, a defaulting government sees a significant change in its risk of termination as its exposure to default in its export market network increases. There are a fairly sizeable number of observations – roughly 30 percent - that fall in the range of statistical significance. When comparing a defaulter with high exposure to networked default to a non-defaulter with low exposure, the one experiencing default is 5.48 [1.92, 16.80] times more likely to suffer a partisan spell termination (95 percent confidence intervals in brackets).

While these results are revealing, the most critical comparison is between defaulters and non-defaulters experiencing "high" exposure to default in their trade networks. When comparing two governments facing high exposure, the one experiencing default is 6.67 [2.52, 18.40] times more likely to suffer a partisan spell termination than a government that continues to honour its repayment obligations. When compared to those governments that default, governments that honour their repayment obligations appear to be rewarded with a longer hold on political power when default is prevalent among their network of export markets. This result is consistent with hypothesis 2, that default may be viewed by voters as a squandered strategic opportunity to build reputation, and inconsistent with hypothesis 1 (that network defaults make default at home more excusable).

A possible economic explanation of this result is that networked default is the result of global systemic crisis, implying a collapsing world economy and falling exports at home. Such a large propensity for incumbent punishment in the wake of default may be attributed to the incumbent government worsening an already poor economic situation. We controlled for GDP growth to partially address confounding of this explanation. In Model 3, we introduce a measure of exports receipts. However, we lack a measure of GDP that provides the same metric as the Correlates of War Project Trade Data Set. We thus follow Tomz (2007) and normalize export receipts by population using data from the Maddison project. That our results are robust to inclusion of this additional control variable suggests that voters are likely punishing incumbent governments for reasons that go beyond worsening export performance.

We also perform some additional checks to assess whether our results hold when we use alternative measures of regime governance. We consider in Model 4 a sample of democracies as defined by Boix, Miller, and Rosato (2013), and in Models 5 and 6 a sample of regimes with larger winning coalitions (W >= 0.75) as defined by Bueno de Mesquita, Smith, Siverson, and Morrow (2003; hereafter BDM2S2).[16] Plots show that the magnitude and significance of the conditional effect of default in each of these models is essentially the same as in those reported earlier (see Appendix Figures A1-A3). It is also worth noting that these plots show that default has no significant unconditional effect when we consider these alternative measures of regime governance.

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[16] The Polity and Boix, Miller, and Rosato (2013) measures are used as control variables in Models 5 and 6, respectively.

4.1   *Non-random selection*

Our analysis could face selection bias. If we assume that political actors seek to retain power and that these actors suspect that they would not survive the political costs of default, then incumbents will perhaps gamble for resurrection and delay default as long as possible. If default means that political actors lose their hold on office, then these actors will rarely default in "good times." The sample of defaults we observe may then be instances where a government is so entrenched that it can survive default, or economic conditions are so poor that it cannot fulfil its payment obligations and is almost certain to lose its hold on office. However, as noted above, recent research reveals that defaults against foreigners can also be politically popular in democracies and that borrower lemons may also default in good times (Tomz 2002, 2007; Saiegh 2005, 2009; Enderlein, Müller, and Trebesch 2012). In either case, the sample of defaulters and non-defaulters may be systematically different.

If governments that suffer default differ systematically on observed covariates from those that do not, then this introduces problems of covariate balance and covariate overlap. We find imbalance to exist for four covariates – degree of democracy, age of the democracy, economic growth, and the cumulative number of default episodes. We find incumbent spells that eventually experience a default start with significantly less democratic and less mature regimes, weaker growth, and more past default episodes, than do crisis-free spells.[17] We use entropy balancing to achieve covariate balance in our sample (Hainmueller 2012).[18] This procedure balances the means between defaulting and non-defaulting incumbent spells, but

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[17] The values for default versus non-default spells are as follows: (1) Democracy: 7.93 and 8.89 (p<.01); (2) Age of Democracy: 13 and 29.09 (p<.01); (3) Growth: -0.534 and 2.08 percent (p<.05); and (4) Previous Default Episodes: 4.06 and 1.79 (p<.01). We do not consider information across all years in the spell since this would include values that change partly as a result of a crisis.

[18] Entropy balancing has the advantage of not losing unmatched observations, which is why we opted for it over coarsened exact matching. However, entropy balancing does not solve selection on unobservables, which, as discussed above, would necessitate instrumental variable-based (IV) estimation.

some minor imbalance remains in variance and skewness (see Appendix Table A3). We thus include all of the control variables in our estimation.

As the weights obtained from the entropy balance estimation change across country panels, we are unable to use an elapsed time repeated events Cox model. We opt instead for a logit model and use a count of the previous number of partisan spell terminations to account for repeated events. We also include the country-specific number of years since the last partisan spell termination, its square, and its cube, in order to control for temporal dependence in the data.[19] We provide the coefficients from the models in Table 2.

The results from entropy balancing confirm our previous findings. Following simulation procedures outlined in Berry, Golder, and Milton (2012), Figure 5 plots the expected change in the probability of experiencing a partisan spell termination when a country defaults, conditional on varying levels of *Default Export Market Exposure*, while holding other variables at their means. The results from entropy balancing indicate that default has a positive and significant effect on the likelihood of partisan spell termination for higher values of *Default Export Market Exposure*. While the range of statistical significance where countries experience some exposure to default via their export markets is fairly substantial, unsurprisingly, there is much greater uncertainty regarding the simulated marginal effect as the density of observations decreases in the tail of the distribution. However, this range constitutes less than one percent (0.94) of the total distribution and only 0.4 percent of the distribution where there is some exposure to default in the export market network. Overall, these results are consistent with the argument that voters inflict greatest

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[19] Although the logit model captures conditional gap time rather than elapsed time, we opt for a logit model for ease of interpretation. We obtain similar results when we use a Poisson model that captures elapsed time.

punishment on governments experiencing default in the context of greater exposure to default in their export market network.

5.   *Conclusion*

We have argued that the existing literature on the political economy of sovereign default underplays the importance of the environment in which decisions about repayment and default take place. Our results show that the inclination of voters in borrowing countries to punish incumbent governments for default varies relative to the prevalence of default amongst its peers in its local trade network. These results support the general claim of Hafner-Burton et al. (2009: 585) that "[j]ust as democracies display distinct conflict and alliance behavior, democratic institutions are likely to influence both engagement with international networks and the effects of those networks on domestic politics."

We also elaborated and tested different ways in which such networks might matter for the politics of sovereign default. We found little evidence for the first possibility, that voters might perceive networked default as eroding a repayment norm and providing a justifiable excuse for default. By contrast, we found considerable support for an opposing hypothesis, that networked default provides governments with a strategic opportunity to elevate its reputation by persisting with repayment *and* that governments that forsake this opportunity are at significantly greater risk of electoral punishment. Voters typically punish democratic governments for default, but they do so more consistently in the presence of networked default.

Our findings support the view that reputation matters in political decisions concerning repayment and default. Contrary to consequentialist and constructivist arguments about

excusable default, we find little evidence that default in a country's international network reduces the costs of default for incumbents. Voters appear to think strategically, taking into account how the external context of such important decisions shapes the costs and benefits of repayment and default by their home government. This is consistent with the intuition from everyday life that economic decisions of great consequence are often shaped by our understandings of how others respond to similar pressures or opportunities.[20] It also reinforces and extends the argument of McGillivray and Smith (2008) that democracy is a powerful constraint against default. Democracies appear not to be swayed by "bad" behaviour elsewhere in a country's international network; on the contrary, bad behaviour elsewhere appears to reinforce the tendency of voters to eject leaders who misbehave economically.

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[20] Examples include decisions about the purchase and sale of significant assets such as housing.

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Table 1. Cox Proportional Hazard Models of Sovereign Default and Partisan Spell Termination, 1870 - 2009

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Sovereign Default (t-1)	1.22***	0.70*	0.70*	0.07	0.25	-0.04
	(0.34)	(0.41)	(0.41)	(0.44)	(0.40)	(0.42)
Default Export Market Exposure (t-2)		-0.09 *	-0.09 *	-0.04	-0.07*	-0.07 *
		(0.05)	(0.05)	(0.03)	(0.04)	(0.04)
Sovereign Default*Default Export Market Exposure (t-2)		0.53 **	0.53 **	0.65 **	0.62 ***	0.55 ***
		(0.25)	(0.25)	(0.29)	(0.18)	(0.16)
Polity Democracy Score	0.15 ***	0.14 ***	0.14 ***		0.15 ***	
	(0.05)	(0.05)	(0.05)		(0.02)	
Age of Democratic Regime (Polity)	-0.01 ***	-0.01 ***	-0.01 ***		-0.01 ***	
	(0.00)	(0.00)	(0.00)		(0.00)	
Boix Democracy						1.52 ***
						(0.21)
Age of Democratic Regime (Boix)				-0.01 ***		-0.01 ***
				(0.00)		(0.00)
GDP Growth (t-1)	0.01	0.01	0.01	0.01	-0.01	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
GDP Per Capita (Log)	-0.34 ***	-0.34 ***	-0.33 **	-0.24 **	-0.41 ***	-0.28 ***
	(0.13)	(0.12)	(0.15)	(0.12)	(0.11)	(0.10)
Previous Sovereign Defaults (t-1)	0.01	0.01	0.01	0.00	0.03	0.03
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Exports Per Capita (Log)			0.00			
			(0.05)			
Democratic Criterion	Polity Score > 5	Polity Score > 5	Polity Score > 5	Boix Democracies	Winning Coalition > 0.74	Winning Coalition > 0.74
Events (Partisan Spell Terminations)	490	490	490	519	542	542
Observations	2654	2654	2654	2823	3766	3766
AIC	563	562	564	742	705	716
p-value for Global Test of PHA	1.00	1.00	1.00	1.00	1.00	1.00

*** p < 0.01, ** p < 0.05, * p < 0.1
Robust standard errors in parentheses

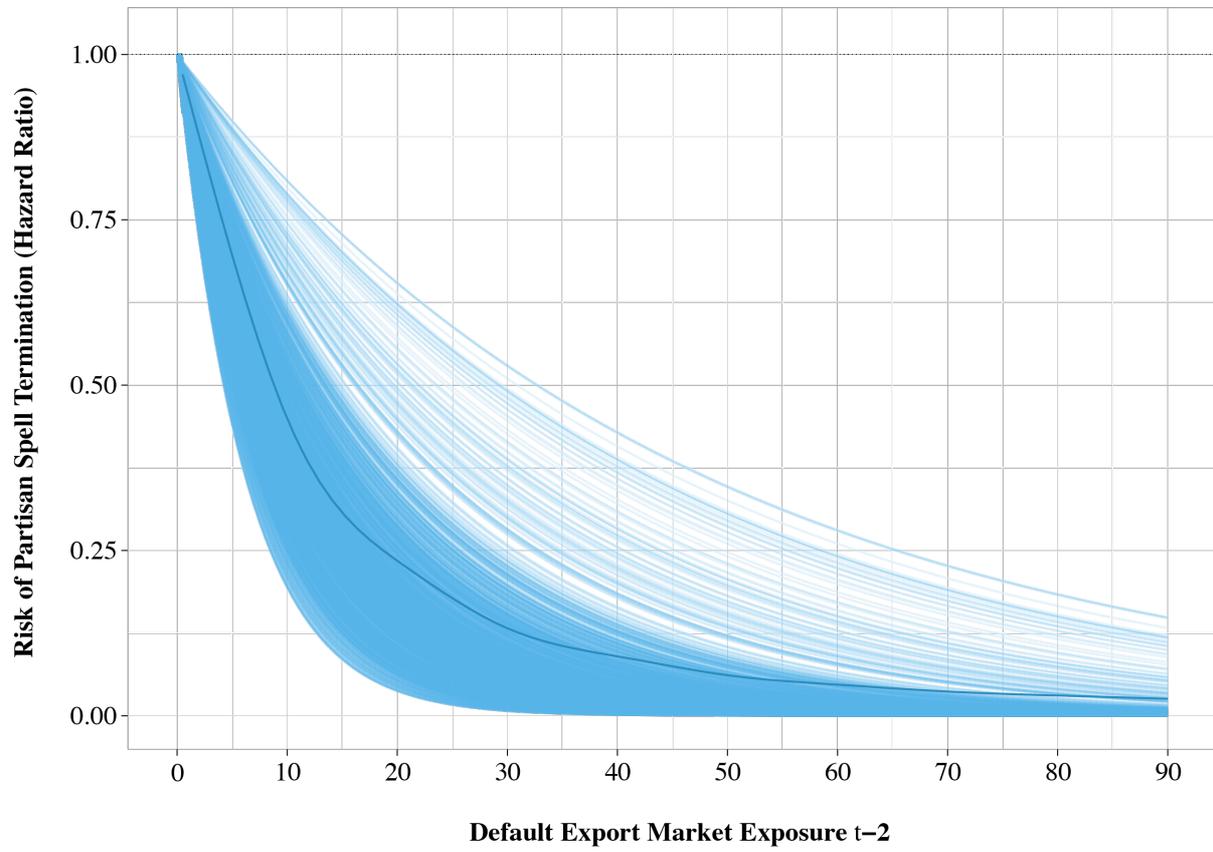**Figure 3.** *Hazard Ratio of Default Export Market Exposure for Non-Defaulters.*

Figure 4. *Marginal Effect of Sovereign Default Conditional on Default Export Market Exposure.*
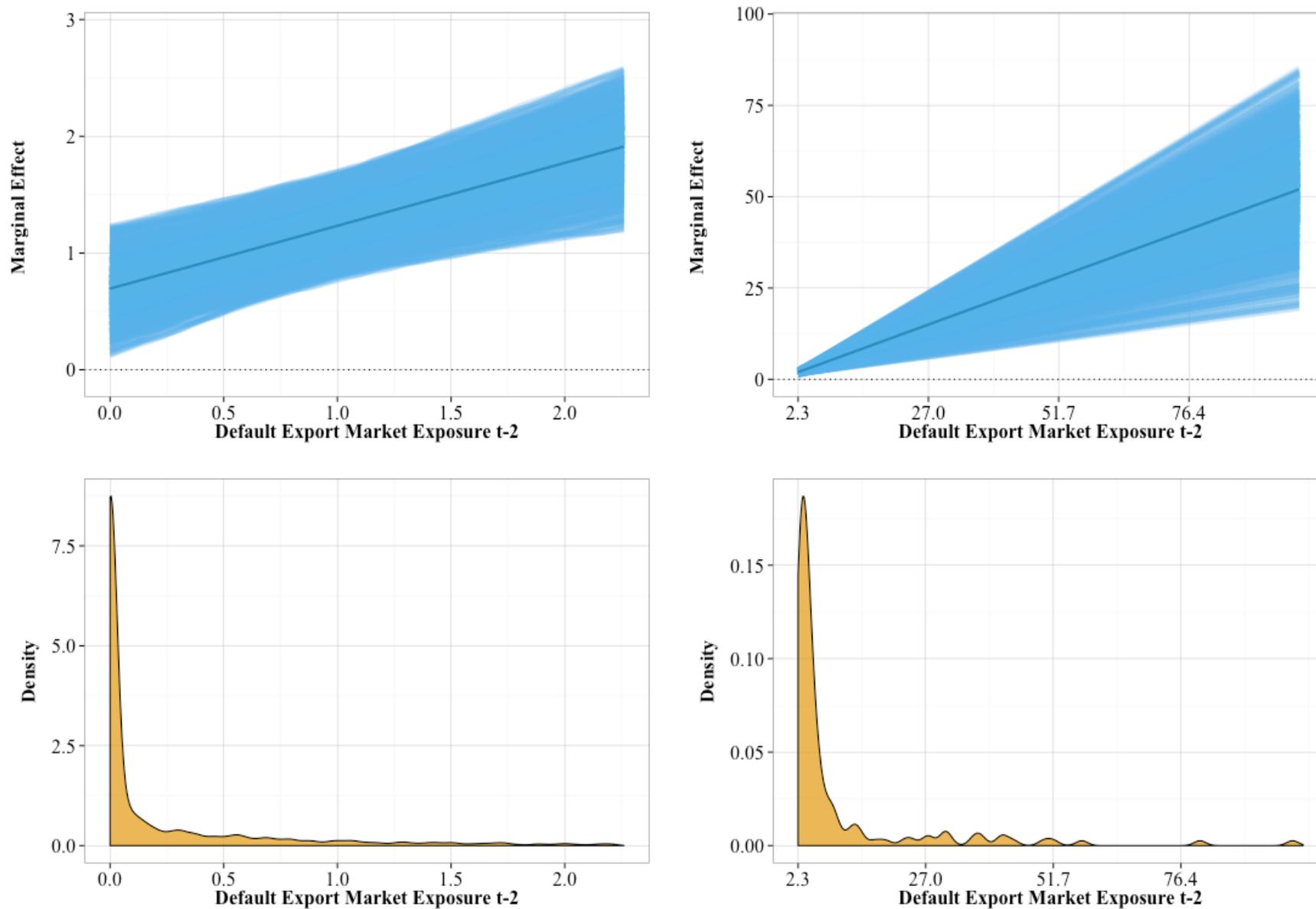
Table 2. *Entropy Balancing Logit Model of Sovereign Default and Partisan Spell Termination, 1870 - 2009.*

Variables	
Sovereign Default	0.980**
	(0.423)
Default Export Market Exposure	-0.154**
	(0.0647)
Sovereign Default * Default Export Market Exposure	0.0523
	(0.0950)
Democracy	-0.118
	(0.197)
Age of Democracy	-0.0157
	(0.0132)
GDP Growth	-0.0295
	(0.0273)
Log GDP Per Capita	-0.00426
	(0.455)
Previous Sovereign Defaults	-0.000509
	(0.0982)
Previous Partisan Spell Terminations	0.0277
	(0.0205)
Years Since Last Partisan Spell Termination	0.0568
	(0.112)
Years Since Last Partisan Spell Termination ^ 2	-0.000475
	(0.00381)
Years Since Last Partisan Spell Termination ^ 3	-2.09e-06
	(3.03e-05)
Constant	-0.814
	(3.057)
Observations	2,654

Robust standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Figure 5. *Marginal Effect of Sovereign Default Conditional on Default Export Market Exposure – Entropy Balancing Logit Estimate*.
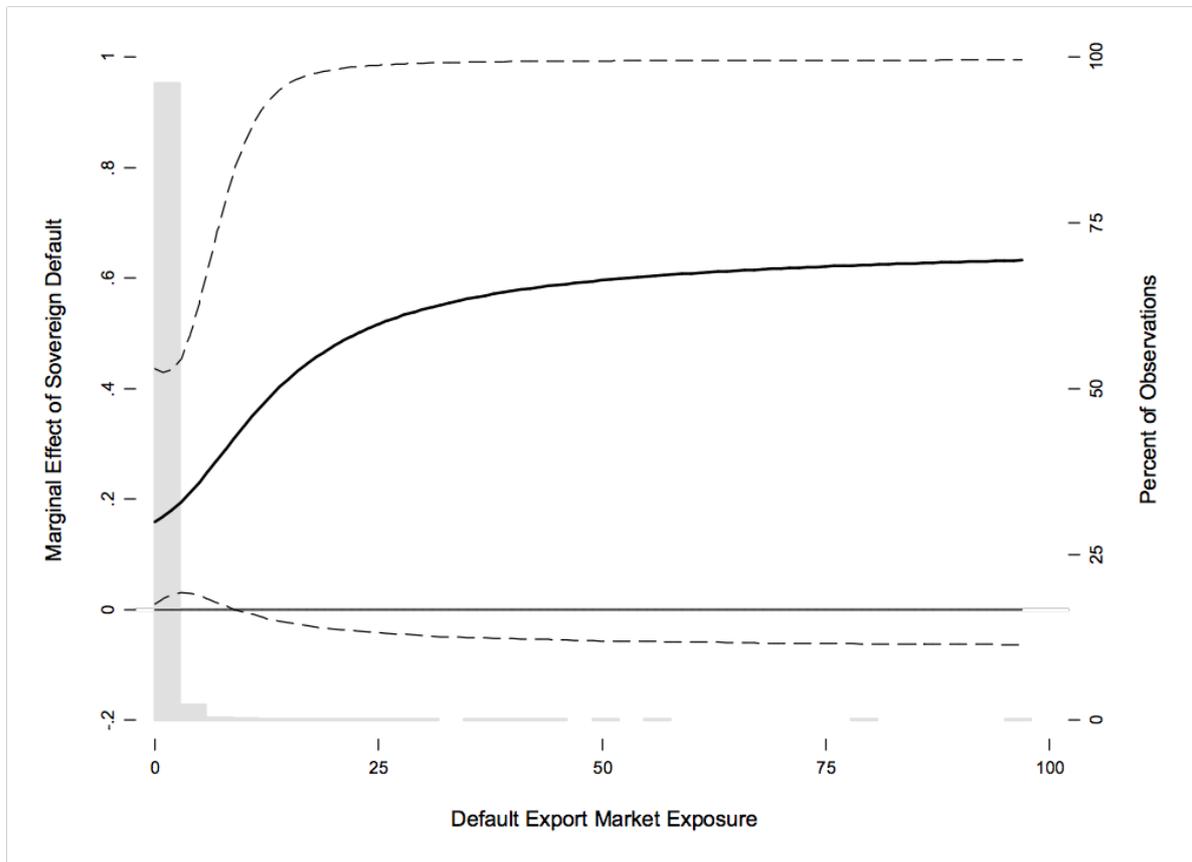
The solid line represents the simulated marginal effect. The dashed lines represent the upper and lower 95 percent confidence intervals.

Appendix

Table A1 provides the sample of countries.

1. Argentina
2. Australia
3. Austria
4. Belgium
5. Bolivia, Plurinational State Of
6. Brazil
7. Canada
8. Chile
9. Colombia
10. Denmark
11. Dominican Republic
12. Ecuador
13. El Salvador
14. Finland
15. France
16. Germany
17. Ghana
18. Greece
19. Guatemala
20. Honduras
21. Hungary
22. India
23. Indonesia
24. Ireland
25. Italy
26. Japan
27. Kenya
28. Korea, Republic Of
29. Malaysia
30. Mauritius
31. Mexico
32. Netherlands
33. Nicaragua
34. Nigeria
35. Norway
36. Panama
37. Paraguay
38. Peru
39. Philippines
40. Poland
41. Portugal
42. Romania
43. Russian
44. Federation
45. South Africa
46. Spain
47. Sri Lanka
48. Sweden
49. Switzerland
50. Taiwan, Province Of China
51. Thailand
52. Turkey
53. United Kingdom
54. United States
55. Uruguay
56. Venezuela, Bolivarian Republic Of
57. Zambia

Table A2 provides summary statistics.

Table A2 — Descriptive Statistics (*n* = 2654)

	Mean	*sd.*
Default Export Market Exposure	0.70	4.00
Democracy Score	9.03	1.33
Age of Democratic Regime	37.08	38.42
GDP Growth	2.28	4.78
GDP Per Capita (1990 Int$; Log)	8.74	0.83
Previous Sovereign Defaults	1.70	2.36
Exports Per Capita (Log; Millions of Current$)	-8.07	2.69

Figure A1. *Marginal Effect of Sovereign Default Conditional on Default Export Market Exposure – Boix Democracies.*
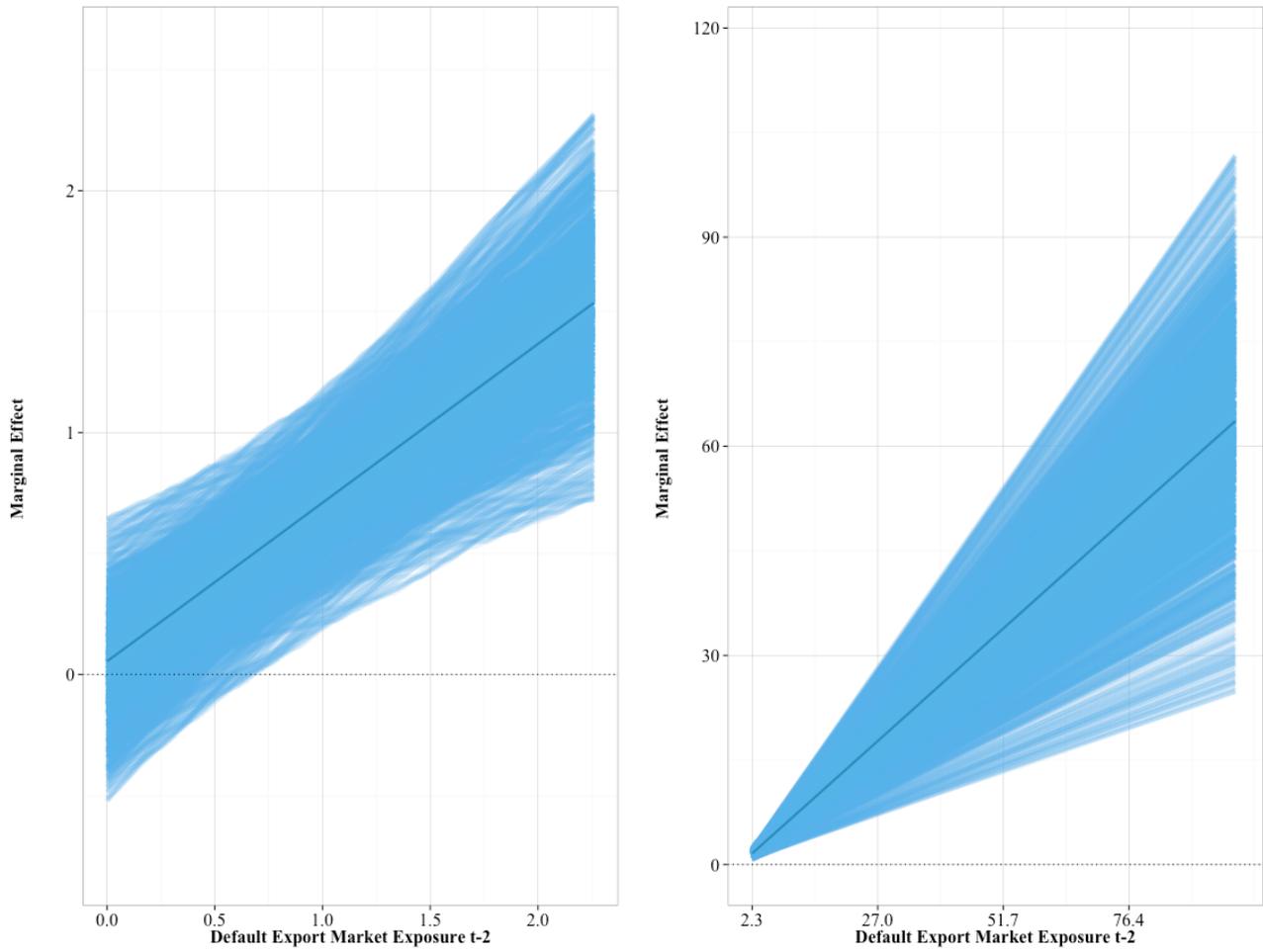
Figure A2. *Marginal Effect of Sovereign Default Conditional on Default Export Market Exposure – Winning Coalition >.074 and Polity Democracy.*
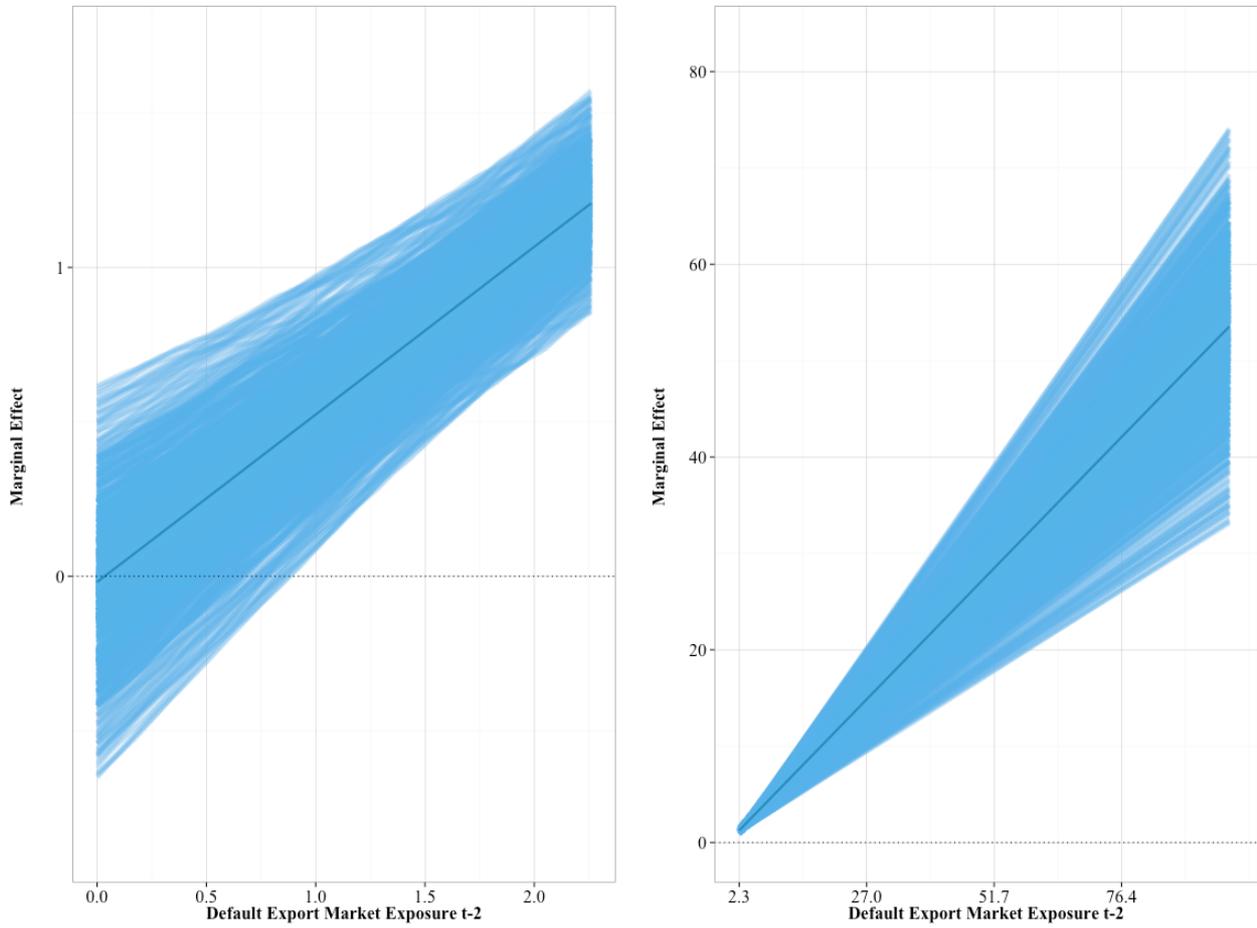
Figure A3. *Marginal Effect of Sovereign Default Conditional on Default Export Market Exposure – Winning Coalition >.074 and Boix Democracy.*
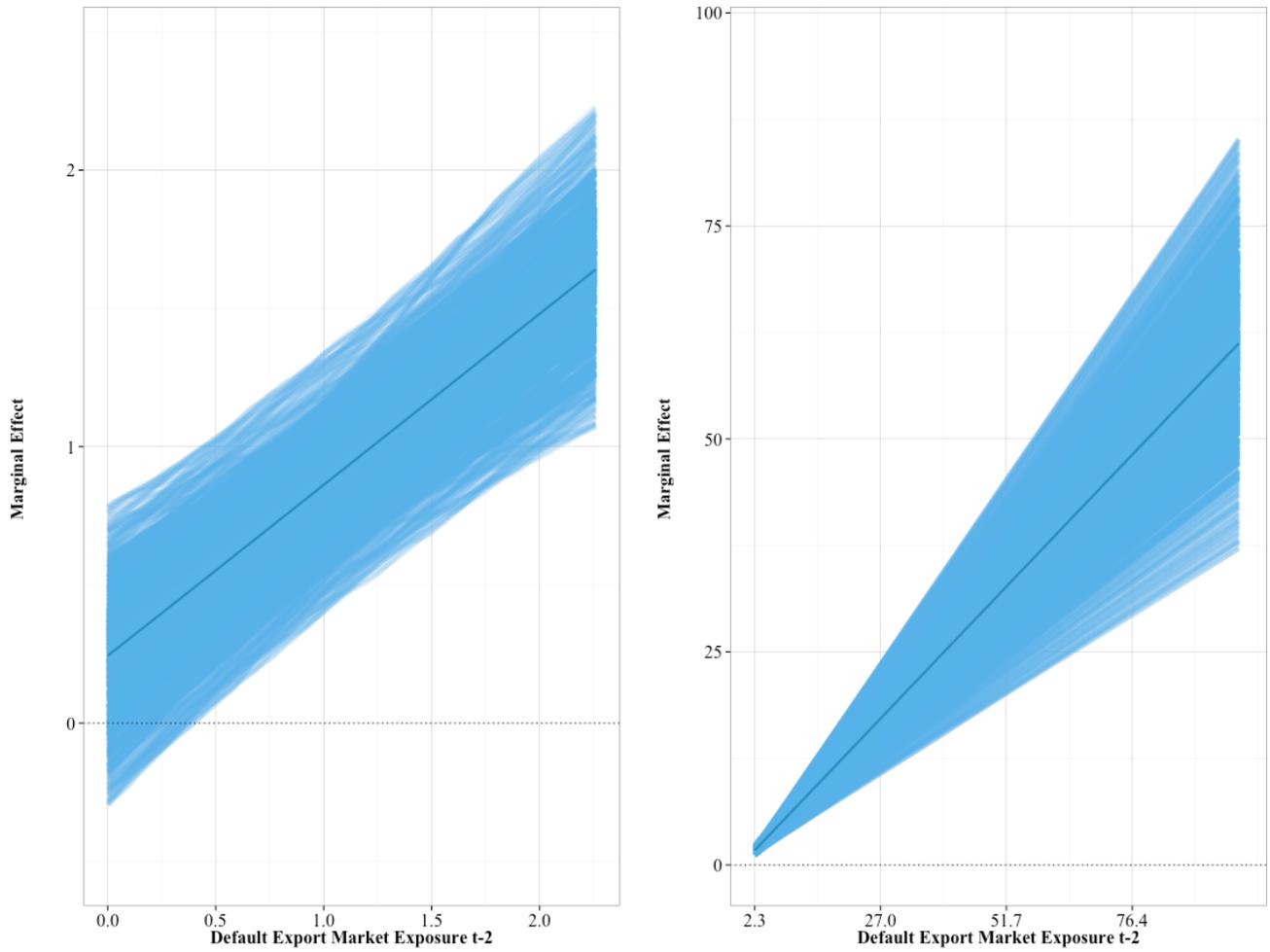
Table A3 provides summary statistics of the balance between the "treated" (sovereign default) and "control" (tranquil) units in the pre-weighted data set, and then in the post-weighted data set. The reduction of the imbalance between treatment and control units is substantively large. Since the difference in means for all covariates is essentially eliminated in the weighted data set, we conclude that the balancing procedure produced greater covariate balance.

Table A3. *Balance Statistics*.

Democracy

Data	Treatment Mean	Treatment Variance	Treatment Skewness	Control Mean	Control Variance	Control Skewness
Pre-Weighting	7.895	1.935	-0.05448	9.043	16.66	4.228
Post-Weighting	7.895	1.931	-0.05448	7.895	1.931	0.1684

Age of Democracy

Data	Treatment Mean	Treatment Variance	Treatment Skewness	Control Mean	Control Variance	Control Skewness
Pre-Weighting	13.26	192.5	1.181	37.42	1486	1.649
Post-Weighting	13.26	192.55	1.181	13.28	228.5	2.658

Growth

Data	Treatment Mean	Treatment Variance	Treatment Skewness	Control Mean	Control Variance	Control Skewness
Pre-Weighting	0.4797	27.55	0.06288	2.303	22.7	1.182
Post-Weighting	0.4797	27.55	0.06288	0.4797	32.43	-1.841

Previous Defaults

Data	Treatment Mean	Treatment Variance	Treatment Skewness	Control Mean	Control Variance	Control Skewness
Pre-Weighting	3.921	6.885	-0.1132	1.663	5.455	1.457
Post-Weighting	3.921	6.885	-0.1132	3.92	8.13	0.1028

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