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Economic globalization and decentralization: a centrifugal or centripetal relationship?

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Keywords**Economic Globalization, Decentralization, Regionalist voting, Regional inequality****Abstract**

One of the most significant economic trends in the last decades has been the integration of countries in international markets. What have been the consequences of global economic integration upon the territorial organization of the states? Has it contributed to centralize powers or to further decentralization? The literature so far has provided inconclusive evidence. In this paper we shed new light on the relationship between economic globalization and territorial politics by using a varied source of data such as the Regional Authority Index, and the KOF indices of globalization for the period 1970-2010. Results show that economic globalization is positively associated to decentralization, particularly in those countries with more regionalist parties and where levels of inequality are lower. Conversely, higher levels of regional inequality can revert the effect.

1. Introduction

In the last decades, two simultaneous trends have taken place that have changed the nature of the nation-state, namely globalization and decentralization. Power has migrated from central governments upwards, with the creation of international organizations, and countries have opened up their economies to more global interdependence and participation in global markets limiting the room to maneuver of national governments (Hellwig, 2014). According to the KOF indices developed by Dreher (2006) the average globalization levels have increased by 51% between 1970 and 2010¹. At the same time, there is extensive evidence showing that powers have significantly migrated from central government downwards. In their seminal study, Marks et al. (2008a) show that there has been a marked increase in the level of regional authority over the past seventy years. Of the 42 countries that they analyze for the period 1950-2006, 29 of those countries saw an increase in their levels of regional authority, while eleven saw no change, and only two increased the centralization of authority (Marks et al. 2008a: 168). Thus, both phenomena –globalization and decentralization – characterize the evolution of politics in the last decades. Yet, and although both unfold at the same time, the literature has not yet provided a clear account of how these two processes are related: are these two separate processes which just happen to take place at the same time, or is there a systematic relationship between the two of them?

This lack of empirical work is even more flagrant because a review of the theories that connect globalization with the vertical distribution of powers within states point to different, even opposite, expectations. On the one hand, globalization may result in higher levels of fiscal centralization. This is the main argument posed by Garrett and Rodden (2006), who state that if globalization makes countries more vulnerable to external shocks, then we may expect a reinforcement of macroeconomic stabilization and inter-regional risk-sharing via the enhancement of central government's fiscal authority (Garrett and Rodden, 2006: p. 278).

Alternatively, globalization may result in higher levels of decentralization (Stegarescu 2009). This may happen through different mechanisms: allocative efficiency, economic competition and demands for self-determination. On the one hand, decentralization may represent a more appropriate institutional context to cope with the increase of competition among jurisdictions for capital and foreign investment that result from economic globalization. On the other hand, globalization may increase demands for self-determination by changing the relative costs and

¹ The average KOF globalization index was 39.74 in 1970 and 60.11 in 2010, on a scale from 0 to 100.

benefits for certain territorial units to continue belonging to a nation-state. In this context, decentralization may emerge as an institutional reform implemented to appease secessionist demands.

This paper contributes to providing a better understanding of the relationship between globalization and decentralization in advanced democracies in three ways. First, it introduces a nuanced review of the causal mechanisms that, according to different strands of literature (Public Choice School, Welfare Economics, Secessionism, etc.) may drive the relationship between decentralization and globalization. Second, it provides new empirical evidence on the impact of globalization upon decentralization using a large database and new measures of decentralization and globalization. As the empirical relationship between globalization and the territorial organization of the state has been largely overlooked, empirical comparative work based in a large-N analysis exploring this question has been scarce. Using data from 78 countries for the 1970-2010 period, our empirical analyses show that globalization has a positive effect on decentralization. The effect is very robust to alternative specifications and its magnitude is moderate. Third, we provide some evidence of the contextual conditions that can amplify or mitigate this relation. More specifically, we find that the relationship between globalization and decentralization is stronger in countries where regionalist parties have a larger parliamentary representation. Likewise, the effect of globalization is weaker (or even works in the opposite direction) in contexts of high regional economic inequality. These conditions point to different political and economic incentives to decentralize when countries are exposed to global economic integration.

The paper proceeds as follows: the next section reviews the main political and economic arguments that the literature has provided linking globalization with decentralization. In section 3, we present the data and methodology that we will use to address the research question and discuss how these relate to previous comparative work. Section 4 presents the main results of the paper and section 5 tests the contextual conditions. Finally, section 6 concludes and provides some next steps for a research agenda on this topic.

2. Globalization and decentralization: a centrifugal or centripetal relationship?

The literature on the domestic consequences of globalization is extensive. However, this literature has mostly focused on the impact of globalization on national policies and economic institutions. This literature addresses how states react to globalized competition and

global economic interdependence. The main expectation is that, in order to attract capital and be more efficient in the global competition, domestic policies converge in spending cuts, lower taxes, balanced budgets, and a general weakening of the state's productive and redistributive capacity (e.g. Hays, 2003; Marshall and Fisher, 2015). The literature has also extensively studied how national institutions support the convergence process through institutional reforms that promote liberalization (Simmons and Elkins, 2004), introducing flexibility in areas such as labour markets (Mosley and Uno, 2007; Pandya 2010), or banking (Hellmann et al. 2000), among many others.

However, support for this hypothesis is mixed and many have argued that the effect of globalization has been to widen the pre-existing differences among advanced capitalist political economies (Hellwig, 2019). There is literature showing evidence that globalization can actually have the reverse effect. The so-called "compensation hypothesis" predicts that levels of social spending increase to buffer the exposure to international volatility and shocks of economic globalization (Meinhard and Potrafke, 2012; Leibrecht et al, 2011; Hwang and Lee, 2012).

Despite this abundant literature on how globalization affects domestic politics, the empirical relationship between globalization and the territorial organization of the state has been largely overlooked. Garrett and Rodden's analysis (2006) perhaps represents the most relevant work testing the direct relationship between globalization and decentralization with a systematic large-n analysis. These authors conclude that there is a small positive effect of globalization on centralization, although they acknowledge that fiscal centralization need not imply other forms of centralization and that it is compatible with cultural and political autonomy (Garrett and Rodden 2006: 278 and 283). Conversely, Stegarescu (2009) finds an effect on the opposite direction: more economic integration can increase levels of fiscal decentralization. Finally, Martinez-Vazquez and Timofeev (2009) do not find any relevant effect of economic globalization on decentralization².

This empirical uncertainty is also related to ambiguous theoretical expectations. A review of the more specific theoretical literature on the drivers of decentralization reforms and of its associated benefits can point to opposite empirical predictions. One of the reasons why the literature comes up with different expectations on the relationship between decentralization

² These authors do find an effect of social globalization on decentralization.

and globalization is that the latter has implications upon multiple dimensions (for instance, inequality, vulnerability to economic shocks or territorial tensions) and each of these dimensions may in turn have different effects upon decentralization or affect the different dimensions of decentralization (fiscal, political) differently. In other words, there are conflicting expectations about what the effect of globalization on decentralization might be, which makes the empirical predictions less straightforward and potentially shaped by the political or economic context.

In table 1 we provide a summary of the main theoretical arguments that associate globalization to (de)centralization of power. The first two arguments (allocative efficiency and productive efficiency) have a functionalist nature: globalization changes the acts of governing in different forms and decentralization may emerge as an institutional reform that allows countries to cope with the challenges posed by the new forms of governance (Jun and Wright, 1996).

The first argument is about globalization increasing jurisdictions' heterogeneity in the demands for public goods. In a globalised context subnational jurisdictions may interact with a broader range of governmental and non-governmental actors that participate in the acts of governing (Hueglin, 1999). Higher levels of interdependence between local, regional, national and international actors may open up opportunities for separated responses, so decentralization may help jurisdictions to respond to interactions in a more differentiated way and according to their specific policy preferences. Decentralization enhances allocative efficiency in a context in which, as a result of globalization and the increasing number of actors, preferences have become more heterogeneous³. This argument echoes one of the most theorized benefits of decentralization, namely that it brings decisions closer to the preferences of the jurisdiction's population, enhancing allocative efficiency (Oates, 1972). Bringing government closer to the people allows jurisdictions with heterogeneous preferences to manage differentiated demands for public goods by pursuing their own policy and economic strategies (Arze-del-Granado et al., 2018).

The second argument speaks to a recent literature that explores the conditions for subnational jurisdictions to benefit from the globalization of markets. Globalization facilitates access to external sources of finance through economic integration and "*as cross-border trade and*

³ Even without the requirement of heterogeneity, evidence shows that as societies have become more affluent and states have grown, regional authority has also increased (Hooghe and Marks, 2016).

financial linkages become stronger, and restrictions are removed on international trade and capital flows, subnational governments may have greater access to alternative sources of deficit financing” (De Mello (2005: 2). Borrowing from the Public Choice School (Brennan and Buchanan, 1980) and market-preserving federalism literature (see Qian and Weingast, 1997) we may expect decentralization to contribute to enhance subnational governments’ access to financial markets by promoting a cost-efficient provision of public goods. The mechanism to enhance efficiency in the provision of public goods is competition among jurisdictions: competition for capital and labor prevents local authorities from pursuing an opportunistic behavior and assures local governments’ fiscal discipline (Filippetti and Sacchi, 2016).

The third argument is related to the role of decentralization in appeasing territorial conflict in contexts where globalization increases the costs for subnational jurisdictions to remain as part of a big state. Some scholars have argued that under globalization the ideal size of the state decreases because efficiency gains from unification become smaller (Bolton and Roland, 1997). Traditionally, it has been considered that big states provide efficiency gains related to the internalization of markets and defense and that they also involve costs associated with the homogeneity that a centralized state imposes upon heterogeneous populations (Alesina and Spolaore, 1997; Desmet et al., 2011). When economic integration is low, the size of the country in equilibrium is larger, as bigger countries have bigger markets (assuming that domestic trade is always less costly than international trade). As economic integration increases, the size of the state becomes less important to access larger markets. Where populations are large and diverse, centralization involves more coordination problems and distance between the average public policy individuals prefer and the actual public policies provided. Using Barro’s (1991) words, as cited in Alesina and Spolaore (1997), “...*(a) large country is also likely to have a diverse population that is difficult for the central government to satisfy*”. Hence, as economic integration increases the costs of heterogeneity become more visible and can outweigh the benefits of keeping a larger state together. Pressures to accommodate heterogeneity may result in decentralization reforms as a way to appease conflict among strong cultural or ethnic minorities for whom the costs in heterogeneity of staying in a centralized setting are higher.

Globalization may also increase ethnic conflict through its potential asymmetric economic impact across territories. As Sambanis (2006) argues, globalization can have asymmetric shocks in a country and, in large and heterogeneous states with regional ethnic groups,

concentrated shocks might intensify conflict between them and the state. The effect of globalization might be conditional on previous levels of conflict. *“In those regions where there were positive levels of conflict previously, even if governments try to provide social insurance against globalization-related risks, separatist conflict is likely to increase since the government’s promises and programs are unlikely to be effective or credible”* (Sambanis, 2006: 224). Thus, the decrease in the efficiency gains associated with large states caused by globalization may spur demands for self-recognition in ethnically and regionally diverse countries (Sambanis and Milanovic, 2011). Political and fiscal decentralization reforms may be implemented as a solution to contain secessionist demands by ethnic minorities. Brancati (2014), however, puts this hypothesis into test and finds no effect that European economic integration has spurred electoral support for separatist parties.

Finally, the economic effects of globalization may also provide incentives to centralize authority. Higher levels of economic integration may increase a country’s vulnerability to asymmetric regional shocks. These asymmetries may in turn result in reforms aimed at increasing the mutualization of risk through redistribution (Beramendi, 2012). The latter argument – globalization increasing the incentives for centralization of power – is presented by Garrett and Rodden (2006) in their seminal research. They focus on the effect of globalization upon one form of centralization, namely fiscal centralization. These authors state that the institutional response to the increase of economic vulnerability caused by globalization is the creation of mechanisms of macroeconomic stabilization and inter-regional risk sharing, which involves a more prominent role of the central government in the economy through the centralization of fiscal authority⁴. In this case centralization represents a response to palliate the consequences of globalization upon national economies, although Garrett and Rodden acknowledge that the impact of globalization upon fiscal centralization can be compatible with simultaneous increases in subnational political autonomy (2006: 282).

[TABLE 1 ABOUT HERE]

In summary, a review of the theoretical mechanisms show that globalization can be both positively and negatively associated with decentralization, although it is the positive correlation which stands out more prominently in a review of the theoretical arguments. In

⁴ Their argument echoes Katzenstein’s (1985) foundational study on small states in open economies, which states that globalization was made politically possible in small democracies because their response to globalization was a system of based on cooperation, centralized politics and generous social protection.

the next sections we will test the relationship between globalization and decentralization and its contextual conditions using a varied source of data in 78 countries and for the period 1970-2010. The analyses provide an encompassing empirical account of the correlation between economic integration and changes in the vertical distribution of power within states as well as the contextual factors that may moderate the relationship.

3. Data and Methods

As we argued in the previous section, the most important contributions to the study of the relationship between decentralization and globalization using a large-N comparative analysis are Garrett and Rodden (2006) and Stegarescu (2009). We advance over previous empirical works by using improved measures of globalization and decentralization, by conducting the analysis over a larger sample of countries and years; and by testing for some of the contextual conditions that may moderate that relationship.

First, we use a different operationalization of globalization. Trade openness and capital account openness have been the standard proxies used to operationalize globalization in early works in the area. However, single measures used as proxies of globalization have been criticized for only tapping into a very specific dimension of the phenomenon (Gygli et al. 2019: 544). In this paper we operationalize globalization using the KOF index created by Dreher (2006), as it combines several variables that measure different aspects of globalization into a single index and has become the most extensively employed index in the literature during the last years. More specifically, we use the most updated version of the KOF economic index provided by Gygli et al. (2019), which provides a more nuanced account of economic globalization by distinguishing between trade and financial globalization and differentiating between its *de facto* and *de jure* dimensions. Note that the theoretical arguments presented in section 2 and summarized in Table 1 are associated to the *economic* kind globalization. Two of our arguments (allocative efficiency and productive efficiency) have a functionalist nature, as decentralization emerges as an institutional reform that allows countries to provide a heterogeneous response to a more varied and increasing interaction with non-government actors (allocative efficiency) as well as to increase economic efficiency to allow subnational jurisdictions to attract capital (productive efficiency). The other two arguments (ethnic conflict and mutualization of risk) are also associated to economic

openness, which according to “ethnic conflict argument” decreases the benefits for regions of remaining in a big state (so decentralization emerges to prevent ethnic conflict), and in the “mutualization argument” economic globalization is associated to the potential emergence of regional asymmetric economic shocks (so centralization increases as a way to mutualize risks).

The KOF economic globalization index, based on Keohane and Nye (2000), characterizes globalization as “*long distance flows of goods, capital and services as well as information and perceptions that accompany market exchanges*” (Dreher, 2006: 1092). The new KOF economic globalization index is a composite measure of two subindices: trade globalization and financial globalization⁵. We use the general KOF economic index as the main independent variable. However, as trade and financial openness may have different effects upon some of the theoretical mediating variables between globalization and decentralization (such as economic shocks or interregional inequalities), we also run the analyses separately for the specific components of the general index in order to explore whether the effect varies across different dimensions of economic integration.

A potential limitation in The KOF index, as many other globalization indices, is that it measures globalization at the national level, which overlooks within country variation in the exposure to and regulation of trade and financial openness and often disregards the geographical distribution of interdependences (Martens et al. 2015, quoted Gygli et al. 2019: 549). National measures of globalization may hinder significant asymmetries in the regional intensity of globalization that are important to understand its impact upon decentralization. However, the advantages of using KOF economic globalization index clearly offset its potential limitations, as it provides data for the largest number of countries and years (it ranges from 1970 to 2010). Descriptive statistics of these indices are presented in table A.1 in the Appendix, alongside all variables employed in the paper.

A second empirical advancement of this paper over previous analyses in the area is that we explore the association between globalization and the *institutional* dimensions of

⁵ Trade globalization aggregates *de facto* trade globalization, which measures the exchange of goods and services over long distances (exports and imports of goods and exports and imports of services, both measured as a share of GDP) and *de jure* trade globalization, which captures policies that promote trade exchange between countries. Financial globalization encompasses *de facto* financial globalization measured by capital flows and stocks of foreign assets and liabilities and *de jure* financial globalization, measured by the openness of a country to international financial flows and investments (Gygli et al. (2019)).

decentralization. We operationalize decentralization using Hooghe et al.'s (2016) Regional Authority Index (RAI). This index -initially created by Hooghe et al. (2008)- measures the authority of regional governments in 81 democracies or quasi-democracies over the period 1950-2010. Regional authority is operationalized along ten dimensions, so it not only captures the extent to which subnational governments exercise formal authority, but also whether they can effectively exercise those powers (Marks et al., 2008b). In this paper we operationalize decentralization using the RAI index and its two main different components (self-rule and shared-rule). Garrett and Rodden (2006) and Stegarescu (2009) use subnational expenditure and revenues to measure a country's level of fiscal decentralization. These measures were very popular in the studies on decentralization of the nineties and early 2000s (see, for example, Lane and Ersson (1999), Castles (1999), or Fisman and Gatti (2002), among others). However, as Schakel (2008) argues, fiscal indicators fail to capture subnational authorities' decision making powers and they do not differentiate between decision-making authority and subnational powers over policy implementation. By using the RAI index we purport to provide a more encompassing operationalization of decentralization.

We estimate three different types of econometric models. First, our main specification is a time series cross sectional fixed effects model, in which we explore within-country variation. This model allows us to capture whether changes in levels of exposure to economic globalization are associated with a variation in levels of regional authority. Secondly, we replicate this model using panel-corrected-standard-errors and country fixed-effects, as Beck and Katz (1996) propose. This model corrects for the problems that might arise in panels with time and panel correlated errors. Thirdly, we use time-series-cross-sectional models with random effects that allow us to explore between-country variation. These models capture whether countries that are more globalized are also the ones that have higher further levels of regional authority, as opposed to within-country increases in (de)centralization that are captured in the fixed-effects models. We also run a series of robustness checks, described below, by including a first-order autoregressive term and lagged dependent variables.

We also run the models with and without covariates. Although models with covariates represent our baseline specification, by running the models without covariates we can test how parsimonious the results are and show that our results do not depend on the inclusion of a specific set of covariates. This is even more important as we have included a set of covariates similar to Garrett and Rodden's models. Accordingly, we can more confidently state that any difference between their conclusions and ours is essentially the result of our

improved measures of decentralization and globalization and are not driven by the addition of spurious third variables. Specifically, our models include the area of the country, the total population, the urban population, the level of GDP per capita (in its logged form), and a measure of how democratic the country is⁶.

Finally, the mechanisms whereby globalization may have an effect upon decentralization are processes which may take some time to unfold. In order to capture these dynamics, avoid endogeneity concerns, and show that this is a sequential process, we use a lagged measure of globalization.⁷

4. The relation between economic globalization and decentralization

In this paper we explore whether levels of economic globalization, defined as countries' degree of integration in the global economy, is associated to their level of (de)centralization. Countries might face an institutional dilemma. According to the theoretical arguments reviewed above, they may have incentives to decentralize as the devolution of power to smaller units may allow for a more flexible specialization to compete in the global economy, alongside satisfying political incentives for self-determination and demands for secession. Yet the increase in volatility in the global economy might also give national governments incentives to centralize fiscal authority in order to mutualize risks through redistribution. We have remained neutral in terms of which effect can be stronger and left it as an empirical question that we address in this analysis.

Table 2 presents the main results of the paper by regressing the Regional Authority Index on the KOF Economic Globalization index (above panel). We include the three types of estimations described above: fixed-effects, panel-series-cross-sectional with country effects and random effects models. In addition, to show that the results are not driven by the inclusion of specific covariates, we present the results with and without control variables. Finally, as we argued above, we expect the effect of globalization to unfold over time, so we introduce the KOF Economic Globalization index in the models with a lag of a year. A

⁶ We take this variable from Teorell et al. (2018), which combine Freedom House and Polity indices and create a *democracy* measure that ranges from 0 to 10.

⁷ Tests using the STATA command *varsoc* that provide the Akaike Information Criterion (AIC), the Schwartz-Bayesian Information Criterion (SBIC), the final prediction error (FPE), and the Hannan and Quinn information criterion (HQIC) show overwhelmingly that for most panels the most efficient structure is to use one lag. Notwithstanding this, we have run robustness tests using larger lags, such as five and ten years, that would capture an impact of globalization on decentralization that takes longer to deploy its effects, and the results remain significant.

lagged independent variable allows us to rule out whether the potential relationship between decentralization and globalization is spurious (due to the fact that the two processes could take place simultaneously due to an omitted variable). In addition, the temporal lag also reduces the risk of endogeneity and reverse causality⁸.

Results show a remarkable positive effect of globalization upon decentralization: when countries open up and integrate globally, the Regional Authority Index exhibits a significant increase. The effect is remarkably high and stable and it is robust to the inclusion of fixed effects and covariates. Table 2 shows that the results hold in all specifications. The inclusion of control variables reduces the magnitude of the effects of globalization, but there are no relevant changes in the results between models without covariates and their inclusion. The coefficients of the globalization lagged variables suggest that the institutional effects of globalization unfold over a period of time. In other words, changes in the vertical distribution of powers follow after countries open up and integrate in the global economy.

[TABLE 2 ABOUT HERE]

Next, we explore the magnitude of the effect of economic globalization upon decentralization. Figure 1 plots the variation of Regional Authority Index for different levels of Economic Globalization. Based on model 2.5 (TSCS with fixed effects and covariates), figure 1 exhibits the predicted Regional Authority Index values for a range of economic globalization levels. The effects are highly significant, but of a moderate magnitude: a transition from a country with low levels of economic globalization such as Colombia in 2010 (KOF index=42, a standard deviation below the sample's mean), to a country with high levels of economic globalization such as New Zealand in 2010 (KOF index=72, a standard deviation above the sample's mean) predicts an increase in the level of Regional authority of around 1.5. This is equivalent to the differences in the levels of Regional Authority between Australia and Argentina or United States and Italy in that same year. As said, these are modest effects, which acknowledge that decentralization is a complex process that might be caused by a variety of factors, with globalization being just one of them.

[FIGURE 1 ABOUT HERE]

The theoretical arguments that connect decentralization with globalization essentially refer to the implications of *economic* global integration. However, integration can be both in global

⁸ In the Appendix, we explore further the causality concerns. We run an instrumental variable analysis where we use as instruments of globalization the geographic distance to London and the British colonial past. Results remain robust to this specification.

markets of goods and services or global financial markets. To explore whether the impact of globalization on decentralization is driven by a specific dimension, table 3 extends the analyses by using the KOF Trade Globalization index and the KOF Financial Globalization Index⁹. Table 3 shows that both dimensions of economic integration have a significant impact on regional authority. Results seem to support that trade globalization has a somewhat larger impact, as the coefficient is higher, but we cannot conclude that the effect of globalization is channeled through a particular dimension of economic globalization.

[TABLE 3 ABOUT HERE]

To improve the robustness of the results, we run further analyses including autoregressive error terms and a lagged dependent variable. Table 4 displays the first set of robustness checks. Although Fisher tests rule out of the presence of unit roots¹⁰, the table shows that the results are robust to the inclusion of an autoregressive error term. The economic globalization variable keeps in all models its magnitude and levels of significance. Table A.3 in the Appendix also shows that results hold if the series are presented in first differences.

[TABLE 4 ABOUT HERE]

Table 5 displays the second set of robustness checks, which introduce the lagged Regional Authority Index. The inclusion of lagged dependent variables does not modify the conclusions of the previous tables. As expected, the size of the coefficient decreases, as the lagged dependent variable absorbs part of the effect of the globalization variable, and the significance of the coefficients also decreases slightly. Nonetheless, levels of significance remain in the fixed-effects and panel corrected standard errors models, and only lose significance in the random-effects models. This reinforces the robustness of the results. We also address the possibility of reverse causality and omitted variable bias in the Appendix and

[TABLE 5 ABOUT HERE]

Results so far have shown that economic globalization has a positive effect on average levels of regional authority. We now disaggregate our dependent variable and account for the impact of globalization on its two dimensions: self-rule and shared-rule. The self-rule index measures the authority exercised by a regional government exclusively over those who live in

⁹ In both cases we use the “*de facto*” versions. For more details, see Gygli et al. (2019).

¹⁰ Dickey-Fuller tests -reported in the Appendix (table A.2)- reject the null hypothesis of all panels containing unit roots.

its territory, whereas the shared-rule index measures the authority exercised by subnational governments (or their representatives) in the country as a whole (Marks et al., 2008b). While the former captures the level of independent authority of subnational governments to rule over their territory without the interference and participation of the central government (consistent with layer-cake models of federalism such as the American model), the latter captures the ability of regional government of co-exercising power at the national level and getting involved in the national political life (as in marble cake models of federalism, such as the German one). By replicating the previous models using each specific sub-measure, we aim to explore separately the effect of globalization upon increasing or decreasing regional authority to self-govern and its effect upon the level of co-decision-making by subnational authorities.

Table 6 displays the results. The most important conclusion is that we find positive and significant effects of globalization on both dimensions of decentralization. Perhaps this is not very surprising, given that the correlation between the two dimensions (self-rule and shared-rule) is large¹¹. However, the magnitude of the effects shows that globalization has a stronger impact on the self-rule dimension than on the shared-rule. This follows from the review of the theoretical arguments, as some of the benefits associated with decentralization – such as allowing subnational governments to manage differentiated demands for public goods or compete for capital – require significant levels of independent subnational authority (self-rule).

[TABLE 6 ABOUT HERE]

5. Testing for the contextual conditions

Once we have shown that there is a strong and robust positive relationship between globalization and decentralization, in this section we explore empirically two variables that may moderate that relationship: demands for regional authority and regional inequalities.

First, and consistent with our theoretical framework, if globalization has an impact on decentralization by spurring self-determination demands, we should observe that globalization has a stronger effect on decentralization in those countries where regionalist demands for authority are more intense. To test this we operationalize demands for regional

¹¹ The correlation is 0.67 for the sample of our analysis.

authority as the electoral vote share of regionalist parties¹², taken from Teorell (2018). By interacting this variable with the Economic Globalization measure, we will explore whether the effect of globalization upon decentralization is moderated by demands for regional authority. We replicate this interaction in the three models that we have introduced in the previous empirical section.

Secondly, we test whether economic contextual conditions may moderate the effect of globalization upon decentralization. In the theoretical section we argued that globalization facilitates access to external sources of finance and decentralization could facilitate subnational jurisdictions' access to capital by promoting higher economic efficiency and competition. Yet globalization may also expose countries to a more volatile economic environment and provide incentives for centralization of fiscal authority that allows for a redistributive mechanism to be implemented. Accordingly, we expect the relationship between globalization and decentralization to be moderated by the country's potential regional economic vulnerability. Globalization might provide certain benefits that are better achieved if territorial inequality is low. However, the positive effect of globalization upon decentralization should be mitigated where levels of regional inequality are high, as regional inequalities may increase the need for centralized redistributive institutions (and in turn for centralized fiscal authority).

To test this second contextual argument we include in our econometric models Selway's measure of cross-cuttingness between income and geography (*income-geography overlap*). This measure was developed by Selway (2011) using survey data and it captures the extent to which the income cleavage overlaps with geography in each country¹³. We use this variable as a proxy of regional economic inequality: when the index score is low it means that the distribution of income is independent from the territory (so regional inequality is low), whereas the index score is high if income and geography cleavages overlap, meaning that the distribution of income is not independent from geography (so regional inequalities are more pronounced). Income is correlated to demand for social spending, and this is why we use Selway's measure operationalize regional variation in demand for social policy and redistribution. In this case, as the variable is time-unvarying, we cannot run models with fixed effects, so we run the panel corrected standard errors without unit effects, and a cross-

¹² The results are robust to the use of electoral share of ethnic parties or ethnic fractionalization.

¹³ Selway's index is in fact a measure of cross-cuttingness between income and geography. In other words, the original variable measures, in a range from 0 to 1, the extent to which the distribution of income is independent from the geographic distribution of citizens. To ease the interpretation, we have taken the additive inverse of the measure (1-crosscuttingness) to have a measure of overlap between both.

sectional time-series FGLS regression alongside the TSCS random effects model that we have already been using in previous analyses.

Table 7 displays the results of the empirical test of the contextual arguments. In the panel above, it can be seen that the interaction between globalization and regionalist vote is systematically positive and significant across the six models. As the interactions do not show the significance for different levels of the independent variable (Brambor et al., 2006), figure 2 presents the marginal effect of globalization for different values of regionalist vote share (simulations taken from model 7.5). It can be seen that globalization has a positive impact on decentralization across the whole range of regionalization levels. The default effect of globalization is positive, even in contexts with low levels of regionalism. However, as regionalist vote increases, the positive impact of globalization upon decentralization is amplified. On average, the effect of globalization upon decentralization is twice as much in a country where regionalist parties are strong compared to one where there are no regionalist parties.

[TABLE 7 ABOUT HERE]

[FIGURE 2 ABOUT HERE]

Table 7 also displays in the panel below the models that include the interactions of the *income-geography overlap* variable with the globalization measures. The interactions between regional inequality and globalization is negative and highly significant in the fixed effects and the time series cross-sectional models (only the random effects models yield insignificant effects). This result provides indicative evidence that in contexts of high levels of regional inequality globalization is associated to centralization.

Following again Brambor et al.'s (2006) guidelines, in figure 3 we plot the marginal effect of economic globalization for the whole range of regional inequality values (model 7.10). It can be seen that, consistently with the theoretical expectations, when regional inequality is low (when the income-geography overlap is low) globalization does encourage decentralization. However, as inequality increases, the effect reverts and the effect of globalization operates in the opposite direction. In contexts with high levels of inequality, globalization is negatively associated to decentralization, a finding that corresponds with the expectation that where regional inequalities are high, countries will have more incentives to centralize fiscal authority in order to alleviate the potential negative economic effects of globalization. The results provide a more nuanced picture of the impact of globalization on decentralization:

depending on levels of regional inequality, global economic integration is associated to centrifugal, but also centripetal, dynamics. Beramendi's (2007, 2012) has provided evidence showing that interregional inequality may result in the development of *more* decentralized systems of redistribution, so the empirical findings of the paper suggest that further empirical research is needed to provide a more nuanced account of the relationship between globalization regional inequalities and decentralization.

[FIGURE 3 ABOUT HERE]

6. Summary and concluding remarks

Globalization and decentralization represent two of the most important sources of transformation of the nation-state during the last decades. Power has migrated from central governments upwards, with the creation of international organizations and economic integration, as well as downwards, with the worldwide devolution of decision-making powers to regional and local governments. Although these two processes have unfolded simultaneously, the literature has not yet provided a clear account of how they are related: do they just happen to take place at the same time or is there a systematic relationship between the two of them? This paper answers this question by providing a systematic theoretical review of the arguments that connect globalization with (de)centralization and by developing an encompassing empirical analysis of the relationship between the two. In doing so, it contributes to advancing a literature in which the empirical comparative work has remained virtually absent.

Using data from 78 countries for the 1970-2010 period, our empirical findings show that integration in global markets encourages a process of institutional adaptation by which countries are more likely to devolve decision-making powers to regions. Second, we have explored empirically the contextual conditions whereby globalization can yield the aforementioned results. We find that while regionalism and ethnic diversity can spur demands for decentralization in the face of globalization, high levels of (regional) inequality can actually generate the reverse effect, as inequality is associated to more centralized territorial structures.

Further research can build on the results presented here and expand the theoretical and empirical analysis in several ways. First, future theoretical work should try to provide a more systematic and parsimonious account of the different ways in which globalization might be

related to decentralization, including a separate set of mechanisms for each type of decentralization (political vs fiscal) and different dimensions of economic globalization. Second, further empirical tests of the theoretical mechanisms would help us to have a better understanding on whether, for instance, it is allocative efficiency or productive efficiency what drives the positive relation between globalization and regional authority.

Third, in our analysis we have tested separately two contextual variables – the demand for regional authority and regional inequalities – as moderating variables of the effect of globalization upon decentralization. Yet further analysis could explore the way in which both variables reinforce each other. Additional contextual and institutional variables that can amplify or mitigate the effects of globalization on the territorial structure of the state could also be explored in future works. Of particular interest would be to capture the effects of the so-called Great Recession upon decentralization in a context of hyperglobalization, as qualitative analyses show that the economic crisis has resulted in the recentralization of certain policy areas and the establishment of limits to units' capacity to generate debt.

Altogether, this paper has shed light on the relation between two of the most important processes of the last four decades in world politics. States have increasingly integrated in global markets, allowing power to either migrate to international organizations or simply be constrained by international economic dynamics. At the same time, many countries have transferred power downwards and increased the fiscal authority of regions. This paper has shown that globalization and decentralization are more than just two simultaneous processes that unfold during the same period. They are two dynamic processes that are positively associated.

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FIGURE 1

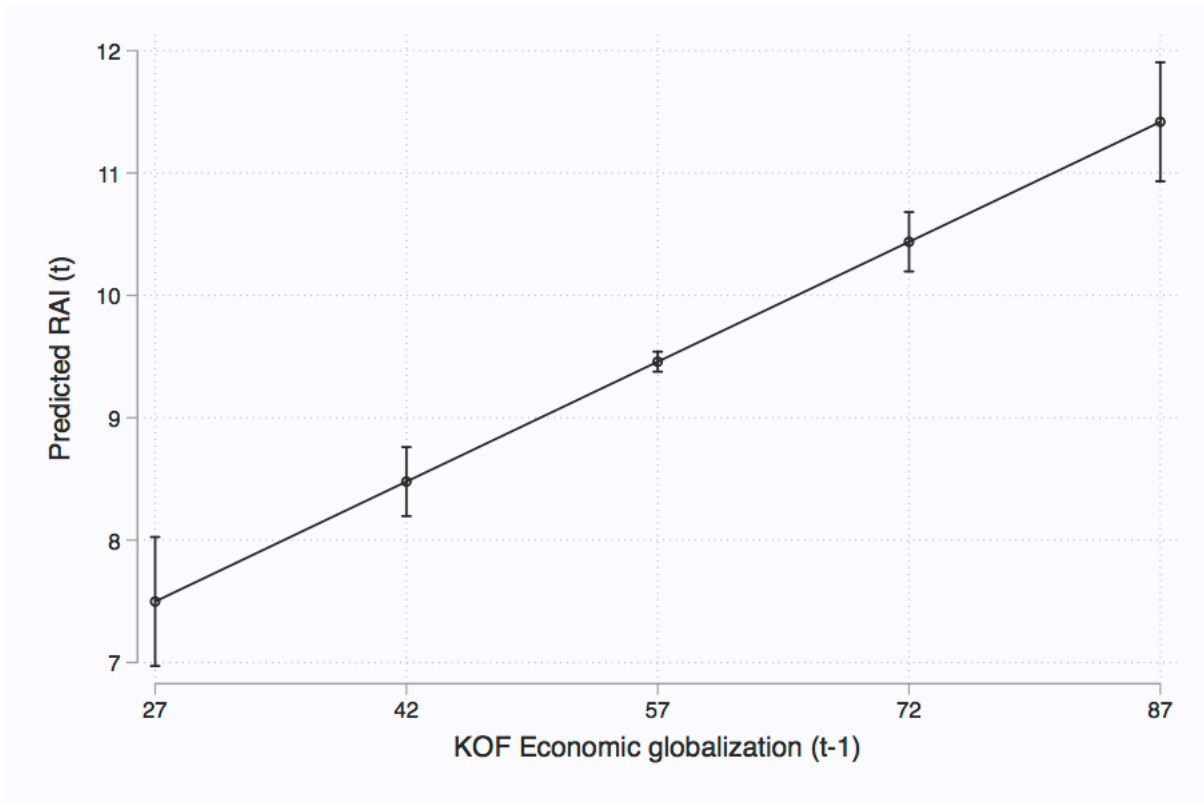


FIGURE 2

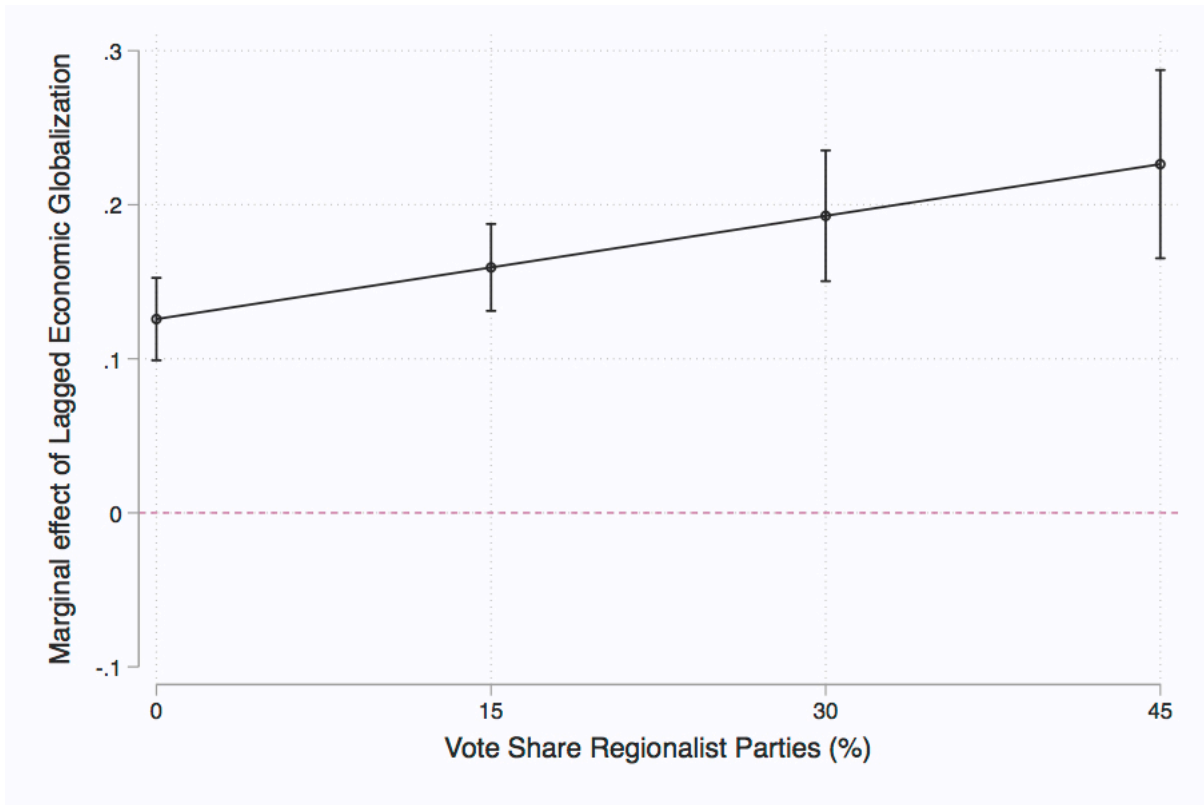


FIGURE 3

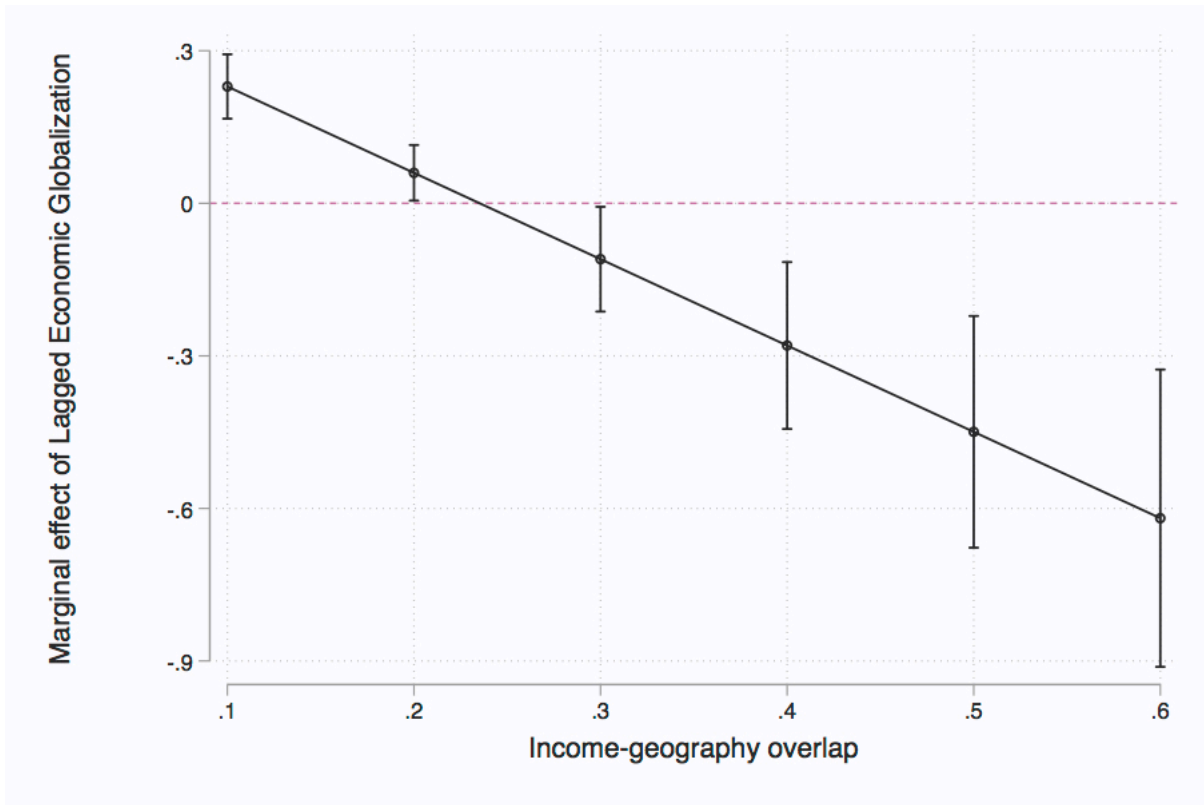


Table 1. Theoretical mechanisms that relate globalization and decentralization

Argument	Implications of Globalization	Benefits of De(centralization)	Predicted Relationship
Allocative efficiency	Increases heterogeneity in the demand of public goods, as higher interdependence between governmental and non-governmental actors	Decentralization allows higher allocative efficiency	Positive
Productive efficiency	Globalization facilitates access to external sources of finance through economic integration	Decentralization increases higher economic efficiency and enhances fiscal discipline to allow jurisdictions to attract capital	Positive
Ethnic conflict	Globalization increases the costs and reduces the benefits for minorities to stay in big states	Decentralization allows countries to appease the secessionist demands of ethnic or cultural minorities	Positive (self-rule)
Mutualization of risk	Globalization increases vulnerability to economic shocks	Centralization of fiscal authority allows for a stronger redistributive role of the central government	Negative

Table 2: Globalization and Regional Authority

	Dependent variable: Regional Authority Index					
	(2.1)	(2.2)	(2.3)	(2.4)	(2.5)	(2.6)
	TSCS Random- Effects	TSCS Fixed- Effects	PCSE + country dummies	TSCS Random- Effects	TSCS Fixed- Effects	PCSE + country dummies
KOF Economic Globalization Index	0.151*** (0.00642)	0.152*** (0.00644)	0.152*** (0.00645)	0.0379*** (0.00950)	0.0385*** (0.00957)	0.0385*** (0.00785)
COVARIATES	NO	NO	NO	YES	YES	YES
Observations	2,381	2,381	2,381	1,408	1,408	1,408
R-squared		0.194	0.942		0.233	0.977
Number of countries	77	77	77	74	74	74

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 3: Globalization and Regional Authority

	Dependent variable: Regional Authority Index					
	(3.1)	(3.2)	(3.3)	(3.4)	(3.5)	(3.6)
	TSCS Random- Effects	TSCS Fixed- Effects	PCSE + country dummies	TSCS Random- Effects	TSCS Fixed- Effects	PCSE + country dummies
KOF Economic Globalization (Trade) Index	0.0903*** (0.00524)	0.0932*** (0.00525)	0.0932*** (0.00685)	0.0342*** (0.00596)	0.0360*** (0.00602)	0.0360*** (0.00556)
COVARIATES	NO	NO	NO	YES	YES	YES
Observations	2,696	2,696	2,696	1,898	1,898	1,898
R-squared		0.108	0.926		0.305	0.968
Number of countries	78	78	78	74	74	74
	(3.7)	(3.8)	(3.9)	(3.10)	(3.11)	(3.12)
KOF Economic Globalization (Finance) Index	0.0765*** (0.00356)	0.0768*** (0.00357)	0.0768*** (0.00352)	0.0201*** (0.00437)	0.0206*** (0.00440)	0.0206*** (0.00434)
COVARIATES	NO	NO	NO	YES	YES	YES
Observations	2,619	2,619	2,619	1,869	1,869	1,869
R-squared		0.154	0.928		0.301	0.967
Number of countries	76	76	76	73	73	73

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 4: Models with AR(1)

	Dependent variable: Regional Authority Index					
	(4.1) TSCS Random- Effects	(4.2) TSCS Fixed-Effects	(4.3) PCSE + country dummies	(4.4) TSCS Random- Effects	(4.5) TSCS Fixed-Effects	(4.6) PCSE + country dummies
KOF Economic Globalization Index	0.0516*** (0.00838)	0.0206** (0.00906)	0.0496*** (0.00976)	0.0330*** (0.00940)	0.0248*** (0.00816)	0.0214** (0.00972)
AR1	YES	YES	YES	YES	YES	YES
COVARIATES	NO	NO	NO	YES	YES	YES
Observations	2,656	2,579	2,656	1,898	1,824	1,898
R-squared			0.636			0.843
Number of countries	77	77	77	74	74	74

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 5: Models with Lagged Dependent Variable

	Dependent variable: Regional Authority Index					
	(5.1) TSCS Random- Effects	(5.2) TSCS Fixed-Effects	(5.3) PCSE + country dummies	(5.4) TSCS Random- Effects	(5.5) TSCS Fixed-Effects	(5.6) PCSE + country dummies
KOF Economic Globalization Index	-0.000248 (0.00152)	0.0121*** (0.00264)	0.0121*** (0.00153)	0.00288 (0.00379)	0.00895** (0.00441)	0.00895* (0.00506)
LDV	YES	YES	YES	YES	YES	YES
COVARIATES	NO	NO	NO	YES	YES	YES
Observations	2,645	2,645	2,645	1,893	1,893	1,893
R-squared		0.871	0.989		0.823	0.992
Number of countries	77	77	77	74	74	74

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 6: Globalization and Dimensions of Regional Authority

	Dependent variable: Self Rule Index					
	(6.1) TSCS Random- Effects	(6.2) TSCS Fixed-Effects	(6.3) PCSE + country dummies	(6.4) TSCS Random- Effects	(6.5) TSCS Fixed-Effects	(6.6) PCSE + country dummies
KOF Economic Globalization Index	0.123*** (0.00462)	0.124*** (0.00464)	0.124*** (0.00598)	0.0537*** (0.00738)	0.0540*** (0.00749)	0.0540*** (0.00612)
COVARIATES	NO	NO	NO	YES	YES	YES
Observations	2,656	2,656	2,656	1,898	1,898	1,898
R-squared		0.217	0.921		0.299	0.954
Number of countries	77	77	77	74	74	74
	Dependent variable: Shared Rule Index					
	(6.7) TSCS Random- Effects	(6.8) TSCS Fixed-Effects	(6.9) PCSE + country dummies	(6.10) TSCS Random- Effects	(6.11) TSCS Fixed-Effects	(6.12) PCSE + country dummies
KOF Economic Globalization Index	0.0250*** (0.00227)	0.0250*** (0.00228)	0.0250*** (0.00261)	0.0108*** (0.00303)	0.0113*** (0.00307)	0.0113*** (0.00271)
COVARIATES	NO	NO	NO	YES	YES	YES
Observations	2,656	2,656	2,656	1,898	1,898	1,898
R-squared		0.045	0.915		0.086	0.964
Number of countries	77	77	77	74	74	74

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 7: Globalization and Regional Authority. Contextual Conditions

	Dependent variable: Regional Authority Index					
	(7.1) TSCS RE	(7.2) TSCS Fixed-Effects	(7.3) PCSE + country dummies	(7.4) TSCS RE	(7.5) TSCS Fixed-Effects	(7.6) PCSE + country dummies
Economic Globalization	0.132*** (0.00711)	0.133*** (0.00711)	0.133*** (0.00514)	0.126*** (0.0130)	0.130*** (0.0130)	0.130*** (0.0123)
Regionalist parties vote share	-0.744*** (0.161)	-0.741*** (0.162)	-0.741*** (0.116)	-0.574*** (0.158)	-0.576*** (0.157)	-0.576*** (0.118)
Interaction	0.00842*** (0.00214)	0.00838*** (0.00215)	0.00838*** (0.00157)	0.00765*** (0.00208)	0.00774*** (0.00208)	0.00774*** (0.00159)
COVARIATES	NO	NO	NO	YES	YES	YES
Observations	1,153	1,153	1,153	878	878	878
R-squared		0.304	0.971		0.295	0.979
Number of countries	35	35	35	35	35	35
	(7.7) TSCS RE	(7.8) PCSE	(7.9) FGLS	(7.10) TSCS RE	(7.11) PCSE	(7.12) FGLS
Economic Globalization	0.328*** (0.0515)	0.328*** (0.0330)	0.175*** (0.0248)	0.399*** (0.0596)	0.399*** (0.0309)	0.102*** (0.0244)
Income-Geography Overlap	-17.41 (17.81)	-17.41* (9.509)	-71.95** (27.99)	71.19*** (20.50)	71.19*** (9.063)	-37.29 (25.79)
Interaction	-1.228*** (0.307)	-1.228*** (0.174)	-0.0962 (0.143)	-1.698*** (0.336)	-1.698*** (0.148)	-0.204 (0.130)
COVARIATES	NO	NO	NO	YES	YES	YES
Observations	2,139	2,139	2,139	1,536	1,536	1,536
R-squared		0.228			0.443	
Number of countries	60	60	60	58	58	58

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

ONLINE APPENDIX

Table A.1 Descriptive Statistics

Variable	Mean	Standard deviation
Regional Authority Index	8.946	9.627
Self-rule Index	7.077	7.022
Shared rule Index	1.868	3.330
KOF Economic Globalization index	58.840	14.90
KOF Trade Globalization index	50.517	21.306
KOF Financial Globalization index	51.486	21.613
Area (WDI)	954516.2	2421172
Urban population (WDI)	64.816	19.153
Population (IMF)	28.777	49.331
Ln GDPpc	9.689	0.798
Democracy index	7.978	2.557
Regionalist parties vote share	3.637	7.283
Income-Geography Overlap	0.19	0.082

Table A.2: Fisher-type unit-root test for Regional Authority Index

<i>Test</i>	<i>Null Hypothesis</i>	<i>Statistic</i>	<i>p-value</i>
Augmented Dickey-Fuller tests	Ho: All panels contain unit roots	228.83***	0.0002
Phillips-Perron test	Ho: All panels contain unit roots	196.51**	0.0262

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

Table A.3: First-Differences Models

	Dependent Variable: Δ Regional Authority Index		
	(A3.1) TSCS RE	(A3.2) TSCS Fixed-Effects	(A3.3) PCSE + country dummies
Lagged Regional Authority	-0.110*** (0.00876)	-0.211*** (0.0120)	-0.211*** (0.0486)
Δ Economic Globalization	-0.000972 (0.00993)	-0.000626 (0.00967)	-0.000626 (0.00843)
Lagged Econ. Globalization	0.00499 (0.00401)	0.0105** (0.00449)	0.0105** (0.00457)
COVARIATES	YES	YES	YES
Observations	1,771	1,771	1,771
R-squared		0.168	0.265
Number of countries	74	74	74

Standard errors in parentheses, *** p<0.01, ** p<0.05, *

Instrumental Variable Analysis

We have argued in the paper that the possibility of reverse causality is minimized with the use of lagged values of the globalization index. However, we also address this problem by instrumenting the levels of globalization. More specifically, we use the distance to London and whether the country has a British colonial past as instruments for globalization. The underlying logic of this instrument is that countries that Western countries or those that have been part of the colonial networks of Britain will tend to have opened to international trade earlier and will have more globalized economies today. We run the model with and without covariates. Results in table A.4 show that the main results of the paper hold. The two coefficients of globalization are highly significant with $p < 0.01$, indicating that globalization leads to reforms of the vertical distribution of powers that deepen decentralization.

Table A.4: Instrumental variable analysis

	Dependent variable: Regional Authority Index	
	(A4.1)	(A4.2)
KOF Economic Globalization Index	-0.0017*** (0.0001)	1.473** (0.732)
FIXED-EFFECTS	YES	YES
COVARIATES	NO	YES
Observations	2,633	1,835
R-squared	0.2557	0.4933
Distance to London (First Stage)	0.396*** (0.026)	0.042*** (0.022)
British Colony (First Stage)	0.396*** (0.026)	0.042*** (0.022)
COVARIATES	NO	YES
Observations	1,958	1,835
R-squared	0.9733	0.8948

Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Conditional Effects: Democracy and Economic Growth

Further robustness tests show that the effect of globalization is not an artifact of democracy. As democracy and decentralization can be correlated, our results might be capturing a policy diffusion that is bringing a coalition of “ideologically similar” countries to institutionally homogenize and economically integrate themselves.¹⁴ Therefore, we replicate the analysis in table A.4. interacting the lagged globalization with a lagged measure of democracy. We use the combined Freedom House and Polity taken from Teorell et al. (2018), that measures *democracy* from 0 to 10 and that was included as a covariate in all models from the paper. It can be observed that the interaction is negative and significant. This actually means that globalization has a stronger effect on decentralization when the country is less democratic. However, once the conditional effects are simulated (see figure A.1 based on model A5.2) we can see that globalization is still significant for all democratic levels. Thus, the effects are not just driven by the most democratic countries of our sample.

Finally, in table A.6 we also show that the effect of globalization is not contingent on economic growth. Given that our data only cover until 2010, we might wonder if the effect of globalization on regional authority is still displayed in times of economic crisis. Although we cannot test this with data from the Great Recession, these concerns are dissipated by showing in table A.6 that in our sample globalization does not significantly reduce or increase its effect depending on the economic situation.

¹⁴ This point was rightly raised by a reviewer, to whom we appreciate the suggestion.

Table A.5: Economic Globalization and Regional Authority conditional on democratic levels

	Dependent variable: Regional Authority Index		
	(A5.1) TSCS RE	(A5.2) TSCS Fixed-Effects	(A5.3) PCSE + country dummies
Economic Globalization	0.773*** (0.142)	0.785*** (0.144)	0.785*** (0.160)
Democracy (FH_Polity)	0.127*** (0.0285)	0.130*** (0.0287)	0.130*** (0.0318)
Economic Globalization * Democracy (FH_Polity)	-0.00677** (0.00296)	-0.00705** (0.00298)	-0.00705** (0.00325)
COVARIATES	YES	YES	YES
Observations	1,898	1,898	1,898
R-squared		0.316	0.968
Number of countries	74	74	74

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Figure A.1: Marginal effect of globalization conditional on democracy

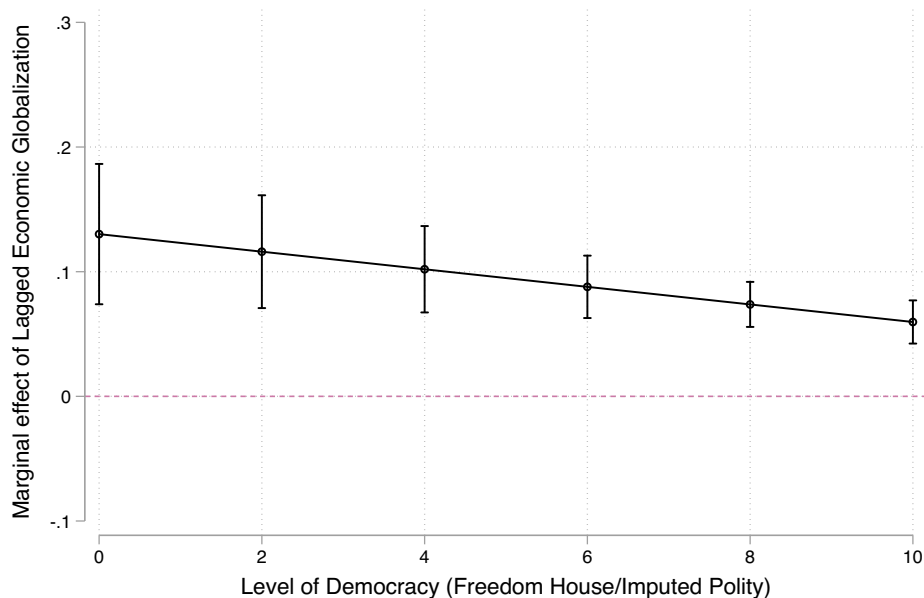


Table A.6: Economic Globalization and Regional Authority conditional on Economic Growth

	Dependent variable: Regional Authority Index		
	(A5.1) TSCS RE	(A5.2) TSCS Fixed-Effects	(A5.3) PCSE + country dummies
Economic Globalization	0.0365*** (0.00969)	0.0371*** (0.00974)	0.0371*** (0.00780)
GDP growth	-0.0340 (0.0418)	-0.0359 (0.0414)	-0.0359 (0.0437)
Economic Globalization *GDP growth	0.000869 (0.000718)	0.000893 (0.000712)	0.000893 (0.000670)
COVARIATES	YES	YES	YES
Observations	1,395	1,395	1,395
R-squared	-	0.238	0.978
Number of countries	74	74	74

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1