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Democracy and monarchical parliamentarism co-evolve with economic equality

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Abstract:

Do inequalities in societies provoke political revolutions and reforms of institutions? Do such changes in political institutions also affect the subsequent redistribution of wealth? Is there a "dialectic" between economic inequality and changes in political institutions? In this paper, Piketty's data on inequality and MaxRange data on political institutions are used for studying the relationship between the distribution of wealth among nations and change in political institutions. We show that economic equality is conducive to transitions to democracy. We also show that both democracy as regime type—and institutions of monarchical parliamentarism in particular—are conducive to economic equality. We conclude that not only does economic inequality delay and impede transitions to democracy, but also republics or nations with any type of non-parliamentarism are, once democratized as a consequence of revolutions, likely to be economically less egalitarian. Economic equality thus unexpectedly appears to co-evolve with the democracy of monarchy and parliamentarism rather than republic and presidentialism. However, conclusive results require more country–year case data from the Piketty et al. World Wealth and Income Database.

Keywords: institutions, equality, democracy, parliamentarism, monarchy, republic, Piketty

Introduction

This year, the world has witnessed a presidential campaign in the "world's greatest democracy." Obviously, the presidential type of democracy, of which the US is the most historically long-lasting and prominent example (Linz 1990), is not immune to democratically dubious candidates. Likewise, in the Austrian election in May this year (2016), the presidency was very close to being lost to the rightist populist candidate Norbert Hofer, and re-elections will be held on October 2.[1] Just like the American head of state, the president of Austria has strong formal prerogatives in forming the council of ministers, but, in contrast to the US, the Austrian president relies more on the country's parliament, which is why the Austrian political system can be considered presidential/parliamentary rather than presidential.[2]

Political institutions matter in the sense that they have a significant effect on policy-making processes—including those that regulate the economic activities of citizens—particularly in terms of flexibility and speed of implementation. For example, the forming of a majority government on the basis of presidential votes in one election, rather than votes for parliamentary parties in elections to an assembly, in turn forming a new, perhaps multi-party government, constrained by inter-party negotiations, may make political regimes more or less vulnerable to sudden shifts in support for policies that affect, and are affected by, the economy, in turn influencing the distribution of wealth in the longer term. There are, therefore, now reasons—now that we have historical data on national-level inequalities and political institutions for lengthier periods – to explore the extent to which they interact or co-evolve so that political institutions both affect various inequalities and are outcomes of them.

Few would say that the election of a non-democrat to a country's presidency would not affect the political rules of the game as well as the economy and opportunities for wealth creation. One implication of this is that the reverse would also be true; namely, that the head of state is not elected and that this type of regime, the monarchy, also has implications for wealth creation and economic inequality, perhaps primarily as the negation of the presidential system by means of previous revolution, but maybe also as the negation of the parliamentary system with president, such as the Austrian case. Compare, for instance, the presidential US with the

[1] The legal reason for the constitutional court was that several counting centers had begun to process postal votes on the eve of the election rather than on the day after, as Austrian electoral law requires.

[2] As is defined below (p. 10), parliamentarism is here defined as an accountability structure in which the executive function is derived from or dependent on the parliament.

two parliamentary democracies the UK and Sweden—in which the idea of a head of state taking any part in political life is entirely inconceivable. One characteristic of the democratic, parliamentary, constitutional monarchy is a degree of inertia in its policy-making—as it is carried out by party representatives reflecting assembly party proportions—including economic policy-making. Accordingly, decision-making is historically based to a higher degree on negotiation and consensus rather than on majorities in elections, even in classic two-party systems like the British.[3] Another is that in the EU, to which the UK still belongs, the negotiator at summits of the European Council is the head of government rather than a presidential head of state. The legitimacy and constraints on these two offices differ in a similar manner. The majoritarian head of state, a president, may act at international summits differently from a consensus-dependent head of government of a parliamentary monarchy. It is likely that political institutions are economically significant in the way they incorporate various degrees of inertia, constraints on executives, and institutional stability in their political decision-making. It could therefore be argued that political institutions are significant for the economy.

The institutions most economists have in mind are economic and historical, such as markets. It is less frequently argued that the variety of formal *political* institutions matters. One of the reasons that economic institutions are used in institutional analysis of political economics more than political institutions is, we believe, that institutional research has been spearheaded primarily by economists, such as the 1993 Nobel Laureate Douglass North (1990). Therefore, some important questions on the role of political institutions have never previously been considered. However, one advantage of considering political institutions is that there are much more data on political institutions than on economic institutions, and the data also refer to much longer historical periods. A lot of interesting questions about the implications of political institutions can therefore actually be answered.

In this paper, we ask whether various political institutions in fact relate to economic inequality; do *political* institutions matter? It can be argued that political change is the primary goal of the political opposition and that democracy is considered a political mechanism for policies leading to more equally distributed wealth. After all, politics is often defined as “who gets what, why and how.” But we know very little about the actual effects of

[3] Lijphart has made a classic distinction between majoritarian and consensus democracies as well as contributed to our understanding of parliamentary and presidential government, though less from an economic perspective (Lijphart 2012, 1992).

institutions. For example, do democracies inhibit economic inequality more than do other regime types, and if so, which particular democratic institutions? Conversely, one might ask whether inequality in non-democracies really provokes change that leads to the creation of democratic political institutions (democratic revolutions)? If we have correlations between the changes in several time series of inequality and institutional changes, can we therefore speak of "dialectics" between political institutions and economic performance, such as the distribution of wealth among nations? Piketty's analysis of capital and inequality is inspiring since results are provocative and data also make an inquiry possible for the whole period since the 19th century (Piketty 2014a; Atkinson and Piketty 2014). A recently published dataset on political institutions, MaxRange (Rånge and Sandberg forthcoming 2016), can help us explore the relationship between changes in inequality and changes in formal political institutions. In particular, we will show that the fundamental constitutional rules of the modern types of democracy, such as parliamentarism (versus non-parliamentarian systems such as absolutism or presidentialism), monarchy (versus republic), are surprisingly important institutions for constraining increased inequality among nations.

Previous studies

Piketty et al. opened up an new avenue of research on inequality on an international historical level on the basis of new data (Piketty 2014b; Alvaredo et al. 2013; Atkinson et al. 2011; Piketty and Saez 2006; Alvaredo et al.). Accounts have also been presented of the role of some political institutions in relation to inequality (Acemoglu and Robinson 2000; Acemoglu et al. 2005). Still, in a review of the research on inequality and political institutions, Savoia et al. remark (2010) that "empirical research is scant, and has considered inequality and political democracy as separate issues (econometric models include either the former or the latter, but not both), including the fact that they can also be intertwined." We believe this conclusion is to a large extent still valid. Political scientists and economists also define political institutions differently. For example, Savoia et al. use the term "political democracy" about what political scientists call democracy, and define it as having the following attributes: an independent judiciary, representative political institutions, regular free and fair elections, institutionalized representation of minority groups—considered "meta-institutions that provide the political environment to create economic institutions." Political scientists would not fully agree. Normally democracy, considered a combination of participation and contestation, has a number of typical characteristics (Dahl 1998, 1989, 1971), only some of which are mentioned in Savoia et al., and the "meta-institutions" are usually called "formal" institutions by political

scientists. Savoia et al.'s conclusive "punch line seems to be that high inequality is linked to unstable political systems and poor democratic development." In view of the recently skyrocketing inequalities in the world economy (Atkinson and Piketty 2014; Piketty 2014a), this punch line from 2010 sounds increasingly ominous.

It has been argued that institutions and inequality are intertwined and affected by exogenous changes in technology, trade, or demography that alter the value of factor endowments and thus change both inequality and institutions (Rogowski and Macrae 2008). Comparing the US and Sweden, Scheve and Stasavage analyzed the long-term effects of fundamental democratic institutions for the period since 1970 (Scheve and Stasavage 2009). Boix has presented a formal and theoretical account of the relationship between institutions and inequality, and of the shifting between monarchies and republics, which is particularly interesting in the context of this study (2015). Boix has also been one of the most theoretically elaborated political scientists in the field of institutions and inequality (Boix 2009, 2015). However, Boix's analyses cover historical dynamics in the longer perspective rather than the increasing inequality witnessed in recent years. Haggard and Kaufman analyzed cases of regimes in an account of democratic transition and stability in relation to inequality (Haggard and Kaufman 2012). Now, however, data access makes possible more systematic comparisons of what different political institutions may add to our understanding of the dynamics of inequality versus institutional change in political systems.

Methods

The methods chosen reflect the fact that we model interval data on economic inequality and categorical data on political institutions, both as yearly time series. Several options are available when modeling the influence of inequality on categorical data and vice versa. First, we use descriptive statistics to depict some general trends. Then, we analyze the effect of major political institutions on economic inequality in nations for longer periods, using multilevel (mixed linear) analysis. Turning to the question of how economic inequality might affect transitions in political institutions, notably into democratic regime types, we instead use a survival analysis (Cox regression).

Data

Piketty et al.'s data on capital and inequality are made available (Alvaredo et al.) on top incomes in 22 countries, covering periods that range from 15 years (China) and 30 years (Italy) to 120 years (Japan) and 132 years (Norway) (Atkinson and Piketty 2014). For seven of the 22 countries, the series starts before the First World War (1914), and for all but three

we access observations from before the Second World War. The total number of country/year observations is 1,454. Estimates of the Pareto-Lorenz coefficients (and the inverse coefficients) characterizing the fatness of the upper tail of the distribution (corresponding to the type of "inequality" analyzed in this article) in these 22 countries are provided (for further details, see Atkinson et al. 2011). Data are easily accessible as Excel files (Alvaredo et al.).

The MaxRange datasets on political institutions, on the other hand, provide information on political institutions for all countries in the world going back to 1789 on a monthly and yearly basis, and to 1600 on a yearly basis only. The yearly dataset spanning 1600 to 2014 involves over 90,000 country-year observations. Created by Max Rånge, the datasets aggregate specific attributes to create nominal and ordinal rankings of political regimes on a 1–1,000 scale (Rånge and Sandberg forthcoming 2016). In addition, to supporting a rigorous classification of democratic and nondemocratic regimes, the dataset allows researchers to exploit institutional variation and explore alternative ways of aggregating political institutions. The MaxRange monthly dataset on political institutions is by far the largest and most comprehensive political regime dataset to date, and it offers several advantages compared to other available data. The monthly dataset cannot be used here as MaxRange and Piketty data have been merged on a yearly basis for the purposes of this paper.

Features of the MaxRange dataset

The MaxRange index has 199 values on a 1–1,000 scale.[4] The score is ordinal, in the sense that the accumulation of particular attributes can be considered typical ordinal scale values—for example, differentiating all regime types, from absolutism to false, electoral, and qualified democracy, ordered in a sequence with respect to the amount of executive strength, accountability to the people, degree of centralization as well as possible interim status. The values associated with MaxRange indices imply a specific combination of dummy variables. The index can therefore also be subdivided into regime-type groups, as well as dummy (0 and 1 value) variables, denoting the presence or absence of specific institutions in a national political system. The ability to disaggregate the MaxRange scale into combinations of institutional dummy variables makes it possible to operationalize different classifications of

[4] Value 5 is omitted on the scale, since it cannot exist as type of absolutism. All these variables and categories are described in the MaxRange Codebook and Appendix (Rånge and Sandberg forthcoming 2016).

regime type or institutional configurations, as well as to analyze the temporal dynamics of specific political institutions. Approximately 95 institutional dummy variables are provided, thus offering over 8,600,000 yearly data points for the years 1600–2015 and over 57,000,000 monthly data points for the years 1789–2015.

Regime Types

In combination with other institutional components, described below, the MaxRange index values are coded within the context of regime types, so that components add information for the specification of the resulting MaxRange index value. MaxRange index values and Regime Type classifications are based on a number of criteria that are checked for consistency with documented research. These criteria are not added to each other, but are weighted or sorted in order of importance. For meeting democracy classification there are seven main criteria that together provide a definition of democracy in formal terms (Rånge and Sandberg forthcoming 2016):

1. Territorial control is the first condition: In order to have a functioning democratic government, it must exercise control over a significant part of the country (we used 2/3 of the territory as the limit). If not, the country is considered to exist under semi-anarchical or dysfunctional governance.
2. Political competition is also essential: The most important factor in a functioning democracy, according to the MaxRange index and Regime Type, is that there are at least two serious and competing political alternatives in the national elections. These alternatives must have a reasonably equal chance of gaining power and be treated equally by state agencies and fairly in media coverage. Without sufficient political competition a country can never achieve democratic standards.
3. Freedom of speech, media, assembly, etc. are critical ingredients: In order to allow and provide opportunities for fair political competition the quality of these freedoms must be acceptable. Fair and free media is also essential for the coverage of the political alternatives. Freedom of speech is essential when political alternatives compete for the votes of the electorate.
4. Electoral integrity and quality are also required characteristic of a democracy: This ensures that candidates are protected from intimidation, repression, or major obstructions in their campaigning and political work. In addition, voting secrecy is of the utmost importance and systematic electoral fraud must not exist. Here we

make a distinction between systematic actions by the state and logistic problems due to lack in communications, society or infrastructure.

5. Constitutional consensus or legitimacy of the constitution as conditional to democracy: This implies the mutual respect of the political alternatives, roles and positions after the elections. The minority must respect the majority's (the government's) right to rule in its own right as long as it follows the constitutional rules. In return the government must guarantee the minority (the opposition's) right to function as an active opposition both inside and outside the parliament. The opposition may of course use all of its constitutional mandates to obstruct/criticize the government.
6. General suffrage, as essential ingredient: There must be equal entitlement to vote for both genders from at least 21 years of age. A country may, however, be democratic if all other criteria are functioning successfully. However, qualified democracy requires general suffrage.
7. Constitutional order: the government must not violate constitutional order such as the separation of executive, legislative, and judiciary authorities. Furthermore, the government cannot make decisions that require constitutional amendment or parliamentary approval.

Other possible criteria such as social equality, level of violence, logistical/infrastructural issues, and political and legislative content (reforms) are not, in our understanding, crucial for democracy as long as the above criteria and formal requirements are met. Besides the first criterion, criteria 2–5 are used to assess the levels of democracy versus autocracy on an ordinal scale in relation to existing historical documentation.

According to MaxRange a democracy can vary between qualified or electoral depending on how well political and civil rights are otherwise upheld as documented in sources as described above. On the basis of the fulfilment of these criteria, and the institutional components described above, MaxRange data first provide a classification of a number of Regime Types (Rånge and Sandberg forthcoming 2016):

<u>Qualified democracy</u>, defined as a comparatively well-functioning democracy, in which the political leadership is both legitimate and elected in free and fair elections without serious complaints. Political and civil rights are respected, as are constitutional and legal rights.

Public administration and public authorities are politically independent. Qualified democracy requires that all seven of the criteria listed above are acceptable or of a good standard.

Electoral democracy, defined as a less well-functioning democracy. Even if the political leadership is regarded as legitimate and elections are considered to reflect the "will of the people," electoral democracy is often dominated by the leading party whose dominance in media and public opinion is strong. Political and/or civil rights are not fully protected. Constitutional rights may be violated, and the concentration of power in the government strong. Public administration and authorities are somehow linked to the dominant party. The requirements of an electoral democracy are that standards 1–4 in the list of the democracy criteria above are met even when other political or civil rights are not fully satisfied.

There are a number of intermediate regime types between qualified and electoral democracies, on the one hand, and despotism and absolutism, on the other, that are distinguished in MaxRange.[5]

[5] False democracy is considered a non-functioning democracy, but is, rather, a regime type with a pluralistic political system. False democracy does not meet 2 and 4, but must fulfill the first criterion. Criteria 3, 5, 6 and 7 are often met to a reasonable level, but differ among country cases. False authoritarianism, a de facto one-party rule established as a result of opposition boycott of the elections despite participation in parliament. False authoritarianism generally meets criteria 1, 3, 4, 6 and 7, but does not meet criteria 2 and 5. Semi-authoritarianism, defined as a repressive and strongly one-party- dominated system. Semi-authoritarianism meets criterion 1 and usually criterion 6, and can meet criterion 7, but criteria 2 to 5 have too low standards to reach democracy, however these are not totally non-existing. De facto authoritarianism is a regime type similar to the semi-authoritarian, the difference being that opposition parties are not represented at all in parliament as a result of legitimate boycott or the failure to gain any mandate. De facto authoritarianism meets criterion 1 and usually criterion 6. It can meet criterion 7. Criteria 2 to 5 have too low standards. Especially criterion 2 is also critically lower than in the semi-authoritarian case. Authoritarianism (one-party system), is defined as an aristocratic rule or a one-party system in which opposition parties are not legal or allowed to participate. Authoritarianism meets criterion 1, but totally fails in criteria 2–5. Criteria 6 and 7 cannot be met. Hierarchical authoritarianism is semi-authoritarianism combined with a dominating or overwhelming executive, either presidential or monarchical. Hierarchical authoritarianism meets criterion 1 but fails in criteria 2–5, even though meeting a low standard. Criterion 7 has sharply failed. Criterion 6 is often met. Finally, we have the autocratic forms of despotism and absolutism. Despotism is defined as authoritarianism combined with a dominating or overwhelming executive, either presidential or monarchical. Despotism meets criterion 1, but fails to meet all other criteria except for criterion 6, which can be met. Compared to hierarchical authoritarianism, criteria 2–4 are not met at all. Absolutism is a regime type in which full absolute executive and legislative power is in the hand of the executive, be it military, presidential, or monarchical, or under a prime minister. No political institutions or opposition exist (Rånge and Sandberg forthcoming

Institutional components

As mentioned, the MaxRange index values are coded on the basis the several major institutional components. These are, in order of importance: the MaxRange regime types, as described above, executive strength (vs. parliament), the accountability structure of institutions, centralization vs. decentralization (of government vs. parliament), normal vs. interim regime, and executive concentration. The regime type variable may help us indicate the extent to which regimes influence our models' dependent variables, and determine what factors influence the emergence and consolidation of regimes, such as qualified democracy (see details in Rånge and Sandberg forthcoming 2016). Some of the institutional components are of interest in the context of this paper. The first of the accountability structures, *parliamentarism*, indicates a regime defined as parliamentarian if the executive function is derived from or dependent on the parliament. As this is an accountability-based institutional structure rather than a regime type in MaxRange data, parliamentarism may occur in democracies as well as non-democracies. This structure is therefore found in several regime types classified in other datasets. *Presidential parliamentarism* defines a country's de facto character as a parliamentarian state, but adds the distinction that the president is elected directly by the people. Since the president is directly elected, however, his or her powers are weak or ceremonial. The president in a *Divided executive* structure, on the other hand, holds individual powers similar to those of a semi-presidential president (see below), except that he or she is in charge of and runs cabinet/domestic affairs.

Other accountability structures include hybrid, intermediate or interim types. In *semi-presidential* institutional accountability structures, the president controls significant powers but requires the consent and countersignature of the prime minister. On the other hand, the signature of the president is also needed for cabinet decisions. As an accountability structure, it is defined as having a president with significant strength who shares the operational control of executive and cabinet affairs. In MaxRange data, this structure is found in the Max Range regime types qualified democracy, electoral democracy, false democracy, semi-

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2016). As residuals to these classes of regimes, we also have interim and semi-anarchical regimes. Interim regimes indicate a transitional regime between various forms of other types of regimes, typically without an elected executive or elected parliament. Semi-anarchical regime, finally, indicates a non-democratic state of governmental without a single functional central government, or two or more rival regimes controlling different parts of the territory.

authoritarianism, de facto authoritarianism, and hierarchical authoritarianism. In another hybrid system, *parliamentarian presidentialism,* a de facto presidentially dominated government accountability structure exists, but it is combined with a government based on parliamentary approval and/or support. The president is more dominant vis-á-vis government and has stronger personal authority compared to the parliament. This system includes some legislative authority to rule by decree, and a significant veto on legislation. In the executive role the president is clearly in charge of running the executive or approving cabinet decisions. In the reliability test below, aspects of this accountability structure are assessed in relation to regime types defined in MaxRange and by Cheibub et al. In MaxRange, parliamentarian presidentialism is found in qualified democracy, false democracy, semi-authoritarianism, authoritarianism, and hierarchical authoritarianism. *Presidentialism* is a generic structure in which the executive of a country is vested in a (usually) directly elected president who is not dependent upon parliamentary approval. The strength of the president varies but is not relevant for determining the institutional structure. Instead, the executive strength can be measured separately. Presidentialism is found in most MaxRange regime types, such as qualified democracy, interim regime, electoral democracy, false democracy, false authoritarianism, semi-authoritarianism, de facto authoritarianism, authoritarianism, despotism, and absolutism. In *"accountable" presidentialism,* on the other hand, apart from the president, the individual ministers, including the prime minister, are accountable to the parliament and can be dismissed by it in this accountability structure. This is a rare accountability structure in MaxRange data, and is always found in the regime type qualified democracy.[6]

Monarchical parliamentarism, a hybrid category of accountability structure, exists when the executive is shared between a monarch with limited executive power and a government based on parliamentary approval. Usually, the monarch does not take any active part in cabinet affairs but is in charge of appointing the prime minister. Situations in which the monarch does play a more active role are marked by a distinctive accountability structure. Monarchical parliamentarism may exist in qualified, electoral and false democracies, in the MaxRange

[6] A few rare accountability structures are also given a separate classification, such as *council parliamentarian.* In this accountability structure, chairmanship in government rotates and/or is based on a variety of parliaments representing different groups. This is also a rare structure, and it is always a qualified democracy. *Constitutional executive,* another rare accountability structure, can be found in the regime type qualified democracy, in which the constitution stipulates which parties will participate in the government.

regime type variable. Another hybrid, *semi-parliamentarism*, implies a parliamentarian government appointed by an institution (e.g., a foreign power) outside the parliament that is responsible to it. Yet another accountability structure, the *monarchical regime,* is characterized by a government that is vested directly or indirectly in the monarch. In this structure, however, the monarch's constitutional powers are usually limited. When the monarch possesses stronger authority this is defined as a separate regime type. Monarchical regimes can be found in false democracies, semi-authoritarianism, hierarchical authoritarianism, authoritarianism, despotism, and absolutism.[7]

The Max Range index values reflect legislative as opposed to executive powers associated with exclusive versus conditional powers. Exclusive and conditional executive powers as values on this variable are mainly related to those between the president or regent and the head of the council of ministers in order to define the various institutional conditions of semi-presidential systems. Conditional executive powers versus parliament are also considered, when relevant, as is more often the case in authoritarian systems, when coding this variable. Values of this variable are simply indirectly, directly and undefined. As an institutional component in defining regime types and MaxRange index values, we also have the head-of-state component, which can have the values republic, monarchy, or undefined. How each index value is translated from the various combinations of institutions is shown in the Appendix. First, the ordinal scale of level of democracy is established for each country-year or country-month case. Second, the executive strength is coded on an ordinal scale. Third, the institutional structure of the country-year or country-month case is decided on the basis of

[7] A colony is a structure of accountability in which the territory is controlled by an executive appointed by a foreign nation, that is, a *colonial structure.* Colonial structure may exist in the regime types false democracy, colony and despotism. *Military structure* is a structure in which the executive is vested in the military, officially or unofficially. The military controls the government as a junta, or by controlling the prime minister or president. Where a monarch exists, militarism is in place if he has a limited role. Militarism resembles an interim structure when the military has delegated executive powers to a civilian government. Whether the institutional structure is interim or military is dependent upon whether the government represents a broad political base and/or constitutional restoration has begun. In general, periods of martial law are counted as military accountability structures. Military accountability structure may occur in a military regime, interim regime, despotism, and absolutism. In addition, in the *party regime* we find a general secretary of a party central committee is in significant control of executive power. In *presidential, party or undefined regimes*, it is however irrelevant whether the executive is presidential or party-based, therefore it is undefined. In the *presidential or monarchical regimes,* as in the previous structure, it is irrelevant in a presidential or monarchical regime whether the executive is presidential or monarchical.

historical data. Fourth, the degree of centralization is established. Finally, the question of normal vs. interim regime is considered. On the basis of these five ordinal scales, a hierarchy of possible regime types is established and used as a coding scheme.[8] Furthermore, several other traits are also observed, such as the election of the head of state (republic vs. monarchy).

These institutional component values make it possible to analyze the historical dynamics of separate political institutions, something which is critical to our understanding of nation-building processes, transitions, democratizations, revolutions, reversals, path dependencies, and the historical dynamics of political institutions in general.

Do democracies inhibit economic inequality more than other regime types, and if so, which democratic institutions are particularly responsible for this inhibition?

Max Range data allow us to separate the time series in Piketty's inequality data into regime type subgroups. First, we see that the skyrocketing inequality of the past few decades is appearing in a small number of democracies, rather than non-democratic regimes, as measured in Piketty data (figure 1). But prior to this trend, ever since the late 1960s or early 1970s, non-democracies have predominated among the most unequal societies.

Figure 1 about here.

Figure 2 about here.

Figure 2 illustrates the overall picture for all regime types coded in the MaxRange dataset. Note that in the cases available in Piketty data, in the past few years there have been dramatic increases in inequality among the democracies, while previously there were peaks in inequality particularly among electoral democracies. Electoral democracies—rather than

[8] As the number of possible combinations of these five ordinal scales by far exceeds the number of observed combinations, the coding scheme is collapsed into the simpler 1-1,000 index scale presented in Appendix and the Codebook.

absolutism, despotism or other types of non-democratic regimes—are the regimes in which we find the most extreme examples of inequality. In case of the qualified democracies, some country cases are worth noting (Figure 3).

Figure 3 about here.

Figure 3 suggests that in the previous century, inequality first decreased from the initially high levels of inequality, such as prevailed in the US in the early 1900s. Lower general levels of inequality are shown in the general trend until the 1970, though India and Germany provide examples of continuing high levels of inequality. Later in last century, inequality began to increase again. The democratization of Indonesia produced an astonishing peak in democratic inequality in 2000, followed by a sharp decline in its subsequent year as a democracy due to missing data, as can be seen in the figure (figure 3). The oil-rich Norway has also been increasingly unequal in the early 21th century, as are several other countries, such as the US and Germany. A group of nations were democratized later in the early 20th century, such as India, Indonesia, and South Africa, and these nations also exhibit declining inequality after their democratization (due to missing data, as mentioned, in the case of Indonesia).

So how do various political institutions relate to economic inequality? Obvious they do matter, but it is not a simple dichotomy between democracies and non-democracies or even among groups of regime types. Inequality increases in most regime types. Rather, some residual country-year cases seem influential for the statistics on regime type subgroups.

Table 1 about here.

Obviously, as seen in the correlations above, inequality as measured by Piketty et al. correlates most strongly and statistically significantly with electoral democracy. Superficially democratized nations (both false and electoral democracies) are among the world political regimes with significantly higher inequality since the early 20th century. Qualified democracy, on the other hand, refers to the regime types with the highest significant negative correlation

with inequality, with control for year. There is thus a leap from false and electoral to qualified democracy in terms of inequality; inequalities in the former are reduced in the latter.

MaxRange data allow for further specifications, since not only regime types are coded but also their constituent institutional elements. We may therefore further scrutinize specific institutions among all regimes and among all qualified democracies with respect to how they correlate with inequality, controlling for years (see Table 2).

Table 2 about here.

In this second table we obtain precise information about exactly what institutions among various regime types are correlated with inequality. Partial correlation coefficients (with control for years) show that the institutions most negatively correlated with economic inequality in the whole sample of country-years are parliamentarism (-0.307***) and monarchy (-0.235***). The institutions most positively correlated with inequality are: presidentialism (0.252***) and republic (0.218***).

The same exercise among the qualified (full) democracies shows that the institutions negatively correlated with inequality, with control for years, are: monarchy (-0.363***) and parliamentarism (-0.225***). Likewise, the institutions most positively correlated with inequality among qualified democracies, with control for years, are: republic (0,363***) and presidentialism (0,334***). Obviously parliamentarian systems and monarchies, both among qualified democracies and among all regime types, are those with significantly more economic equality, and political republics and regimes based on presidentialism have significantly higher economic inequality. In fact, if we cross-compare democracies and parliamentarian systems, divided into monarchies and non-monarchies, the data suggest a pattern in which these institutions play fundamental roles. If we look at the upper left diagram in figure 4, we see that in non-parliamentarian systems, non-democratic monarchies (in blue) have, in recent decades, higher than average inequality values on Piketty's Pareto-Lorenz coefficient (the horizontal line indicates the mean of the median values for the whole time series, all Piketty country-years included). Citizens of non-democratic monarchies should therefore be more dissatisfied with the distribution of wealth than citizens of non-democratic republics (in blue in the upper right diagram), which in recent decades exhibit less economic

inequality. Unexpectedly, democratized non-parliamentary non-monarchies (i.e. presidential parliamentarism, divided executive, semi-presidentialism, parliamentarian presidentialism, presidentialism, “accountable” presidentialism, council parliamentarian, and constitutional executive parliamentarian non-democracies lumped together) in the upper right diagram in figure 4 (in green) are those regime types in which we observe the skyrocketing inequality figures the last few decades. Democratizing non-democratic monarchies by republican revolution without introducing parliamentarism may increase total wealth, but may also lead to very high increases in economic inequality, according to recent Piketty data.

The other institutional path from non-democratic monarchy to democracy is adopting parliamentarism (lower left diagram, in green). In democratic parliamentarian systems, in which monarchy was never abolished, we observe the lowest levels and slower increases in economic inequality. This is a counter-intuitive result, as we might expect that the undemocratic institutions of royalty and non-elected heads of state would also imply inequality in other respects, or at least that the opposite would be true; we would expect that in a republic it would be easier to take policy measures to combat inequalities.

Non-monarchical parliamentarian systems (lower right diagram) exhibit great oscillations from higher to lower inequality levels among both democratic (green) and non-democratic countries (blue). In recent decades there are only democratic parliamentarian non-monarchies among Piketty data country cases. Among these country cases, median figures of inequality are higher than average. This again demonstrates the perils of inequality in republican democratic states.

Figure 4 about here.

In the past few decades—in which previous figures showed increasing inequalities in some countries and regime types—certain types of institutions have constrained inequality, namely, monarchy and parliamentarism combined. If we look at the group of countries in the upper-right diagram showing non-parliamentary democracies, we can see why. Indonesia in particular, but also Argentina, Colombia, Indonesia, Ireland, South Korea, Switzerland, Taiwan, and the US, all are non-parliamentarian democracies that exhibit higher than average median Pareto-Lorenz coefficient (see figure 5a).

Figure 5 about here.

In the lower diagram (5b), we see inequality figures for parliamentarian democracies. Austria, Canada, Norway and the UK have higher than average median Pareto-Lorenz coefficient for some of the years in 21th century. (Norway exhibits very high values for some of the years of the inequality coefficient.) Monarchical parliamentarian Denmark, Japan, New Zealand, Spain and Sweden are all comparatively modest in levels of inequality.

Further, we can regress parliamentarism and monarchy on the inequality measure provided in Piketty data. We also include the combined parliamentarism and monarchy dummy. Using multilevel analysis, assuming a hierarchy of the countries included in Piketty data at one level, and under them years (with 10 year lags)[9] we get the following results (table 3).

Table 3 about here.

Our fixed and random effect model of inequality includes both monarchy and parliamentarism, both of which are shown to be associated independently with a statistically significant increase in inequality, while the combined monarchy and parliamentarism regime type instead are shown to strongly and significantly reduce inequality. This is an important discovery in our view. Descriptively, it is supported by the following figure 6.

Figure 6 about here.

As we would expect, (democratic) monarchical parliamentarism persistently exhibits a lower level of economic inequality than do other political regime types. The only exception is a year

[9] As a consequence of the multilevel method the analysis is relieved of assumptions of homogeneity of regression slopes or intercepts, independent errors, or imputation.

in the late 1950s, after World War I. It is also obvious that by and large the past few decades' skyrocketing inequality figures do not belong to the monarchical parliamentary systems.

To summarize, the first question we ask, "How do various political institutions relate to economic inequality?" shows, somewhat surprisingly, that the superficially democratic regimes (false and electoral democracies) are the ones with the most inequalities, rather than the more expected regime types of despotism and absolutism. Full or qualified democracy is the regime type that has a statistically significant correlation with equality. Our question "Do some of these political institutions allow for more or promote more economic inequality than do others?" needs therefore to be answered affirmatively. Among all regime types, as well as among the qualified democracies, monarchy and parliamentarism combined are the most strongly correlated with economic equality, controlling for years.

Does inequality provoke change leading to the creation of democratic political institutions?

Since we now know that inequality is typical of superficial (false or electoral) democracy, while equality is most strongly associated with full (qualified) democracy, we might hypothesize that inequality in fact provokes processes that will engender transitions into the institutions or regime types of qualified democracies. The question is, therefore, whether this proposition also can be tested on Piketty et al. and MaxRange data. We suggest a survival analysis (a Cox regression) for this purpose. Survival analysis is generally defined as a set of methods for analyzing data where the outcome variable is the time until the occurrence of an event of interest—in this case the transition into qualified democracy as measured in MaxRange data. In this case the time to this transition, or the survival time for non-democracies, is measured in years. Political regime types and institutions are thus followed over a specified time period, to identify the time at which the transition to qualified democracy occurs.[10]

There are several reasons for not using a linear regression to model the survival time as a function of a set of predictor variables. Most importantly, such a regression cannot effectively handle the censoring of observations (when the information about their survival time is

[10] We are here inspired by institutional survival reasoning in political science (Linz 1990; Cheibub 1999; Przeworski 2000).

incomplete, such as when nations have never undergone a transition into a qualified democracy at the end of the time series. This is the case for many of the countries in the world, and therefore also in the MaxRange dataset.)

We learn from statistics textbooks that, unlike ordinary regression models, in estimating model parameters survival methods correctly incorporate information from both censored and uncensored observations, and that we can then estimate two functions that are dependent on time, the survival function and the hazard functions. The survival and hazard functions are key concepts in survival analysis for describing the distribution of event times. The survival function gives, for any given time, the probability of surviving (or not experiencing an event) up to that time. Since we are interested here in the probability of a regime's survival as non-democratic regime, the survival analysis produces probabilities, for every year, of a regime's survival as non-democracy. The hazard function gives the likelihood per unit time that a transition to democracy will occur, given that a particular country has survived as a non-democracy up to that particular year. It is also of great interest to us to describe the relationship of a factor of interest (e.g. "treatment" in the form of levels of inequality or institutional covariates).

Table 4 about here.

The survival analysis, in this case a Cox regression, produces estimates of coefficients that are somewhat different from those of ordinary least squares regressions. Negative coefficients (B values<0) are associated with decreased hazard rates and increased survival time probabilities, in this case for non-democracies, such as the negative coefficient (-0.377***) for Piketty et al.'s inverted Pareto-Lorenz coefficient, increasing with higher inequality. The higher the economic inequality in the countries represented in Piketty data, the more likely the survival of non-democracies. The Exp (B) indicates the same thing differently: the hazard ratio of inequality in leading to democracy is 0.686. Since this figure is less than 1, higher economic inequalities (as measured in Pareto-Lorenz coefficients) increase the hazard ratio of democratization to non-democracies. Aid agencies involved in supporting democracy should therefore also be interested in narrowing inequality gaps in recipient countries.

We also see that parliamentarism, as opposed to various types of non-parliamentarism, has a negative and significant coefficient (-0.912***) and therefore also an Exp (B) below 1. This indicates that in fact being a non-democratic parliamentarian system also increases the survival time of non-democracy. Parliamentarism seems to relax forces of opposition to non-democracy. The opposite is true for monarchy. Monarchy reduces the survival time of non-democracy, however, with non-significant coefficients.

The hypothesis that democratic revolutions are more likely in non-democratic nations with higher economic inequalities does not find support in this analysis. On the contrary, economically more equal non-democracies democratize more likely than nations with higher economic inequality, and even more so if they are also parliamentarian.

A dialectics between political institutions and economic performance, such as the distribution of wealth among nations?

Dialectics is a Hegelian and Marxian term for major shifts in dominance with interaction over time. Shifts in dominance are also what coevolution may produce as this term is used by evolutionary economists. Can we observe coevolution between inequality and institutions or institutional change, such that increasing inequalities are provoking democratic transitions? As we notice from the analysis in this paper, inequality does not entail higher rates of democratic transitioning. The opposite is true: the more economic equality, the higher the rate of transition into democracy. Likewise, the more democracy in the world, the more equality among nations. In particular, the combination of monarchy and parliamentarism co-evolves with economic inequality, as revealed by Piketty et al. data merged with MaxRange data. So, what we notice from descriptive, multilevel and survival analyses is, rather, the tendency for economic equality, democracy and in particular parliamentary monarchy to correlate and interact with each other for long periods in a number of nations of the world. This result indicates that revolutions against monarchy and introduction of republics may not necessarily pay in terms of inequality. Presidential democracies are also less economically equal than parliamentarian ones. The dialectic opposite seems also be true: the more economic inequality, the less the tendency to democratize, and from that to become economically more equal. Further data from the Piketty et al. World Wealth and Income Database will help us to make more conclusive analyses in the future, however.

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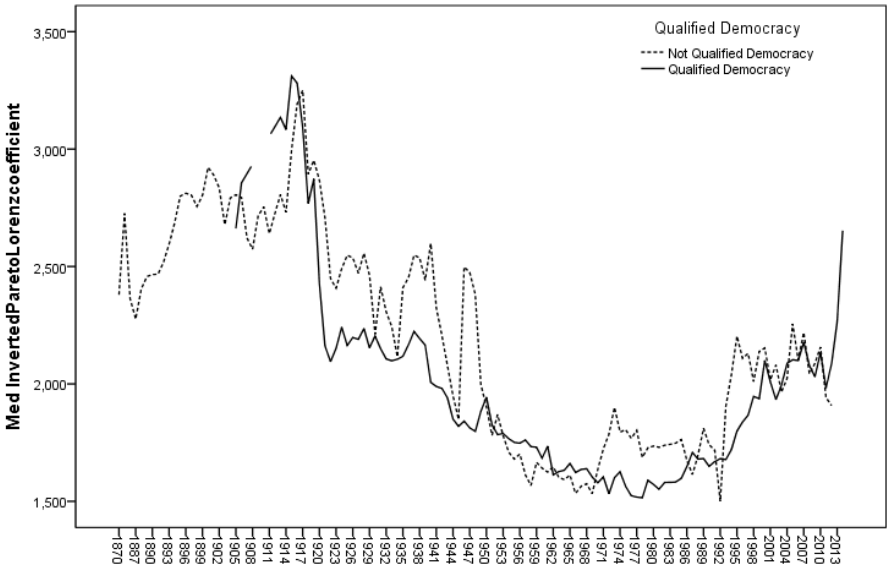
Figure 1. Democracies with currently skyrocketing economic inequality (Median of the Inverted Pareto-Lorenz Coefficients), 1870–2012).



Note: the higher the Pareto-Lorenz coefficient the more inequality (median values).

Figure 2. Piketty mean inequality values among regime types, 1870-2012.

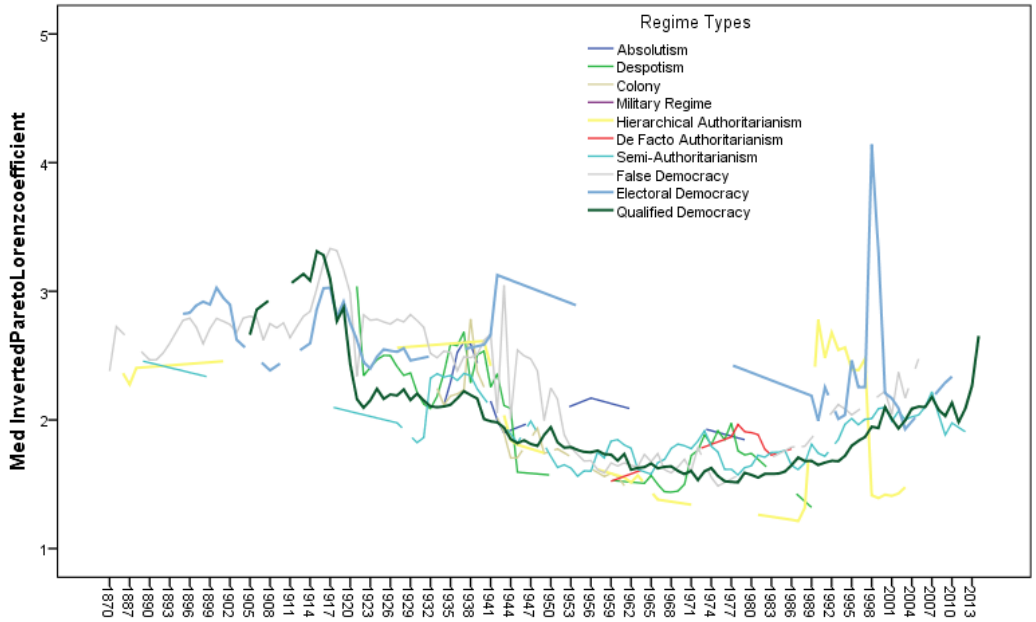


Figure 3. Piketty inequality value for qualified democracies.

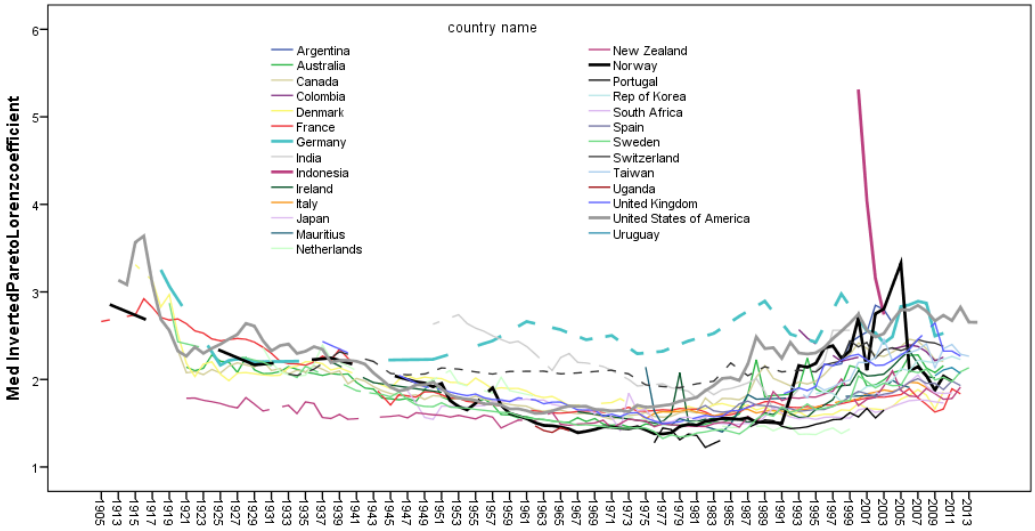


Figure 4. Cross-examining how monarchy, parliamentarism and democratization interrelate with economic inequality since the late 19th century

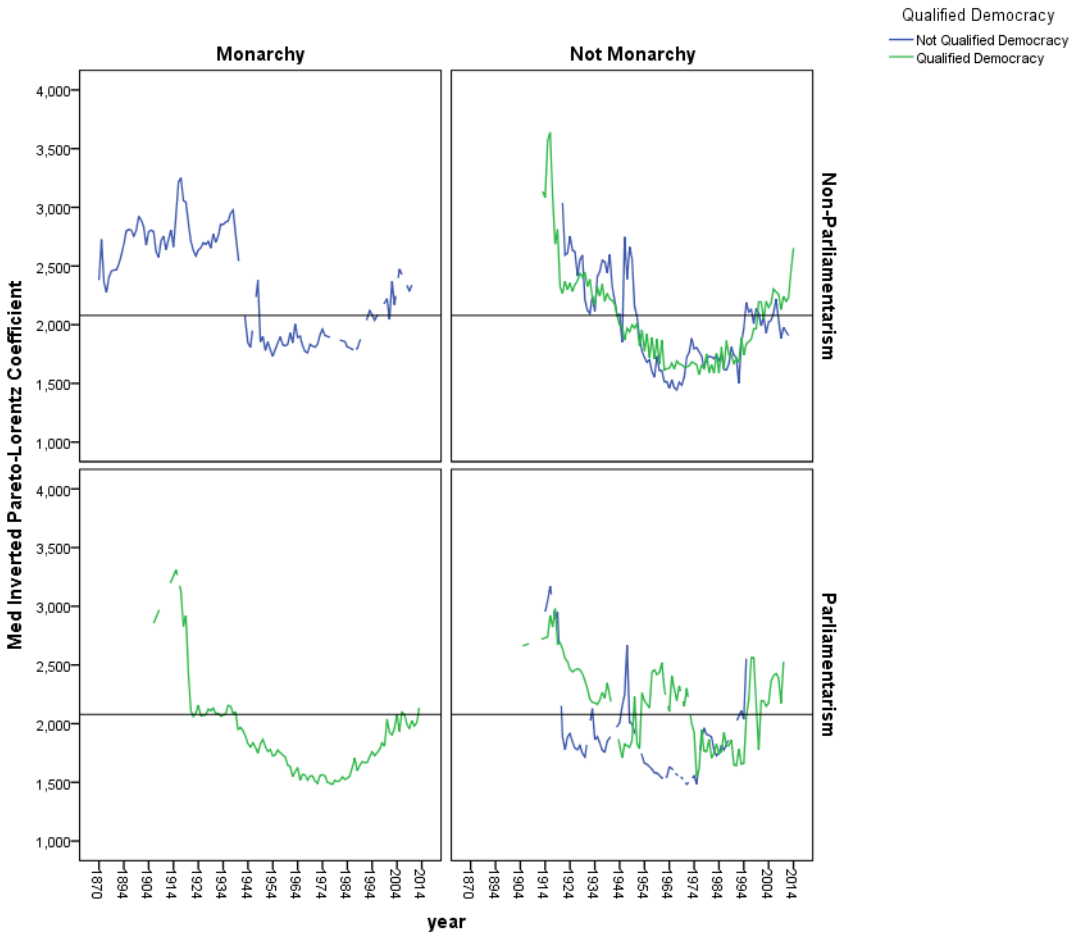


Figure 5. Inequality in democratic non-parliamentarian versus parliamentarian democracies, 2000-2014.

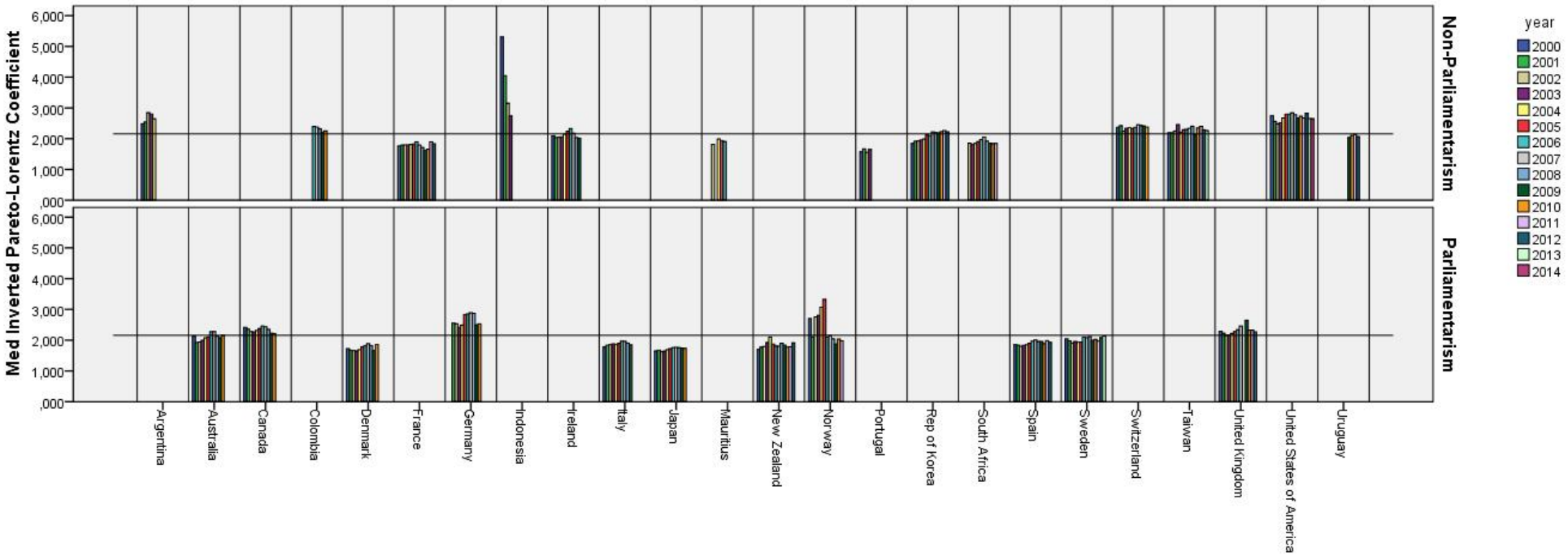


Figure 6. Inequality in monarchical parliamentarism versus all other types of political regimes.

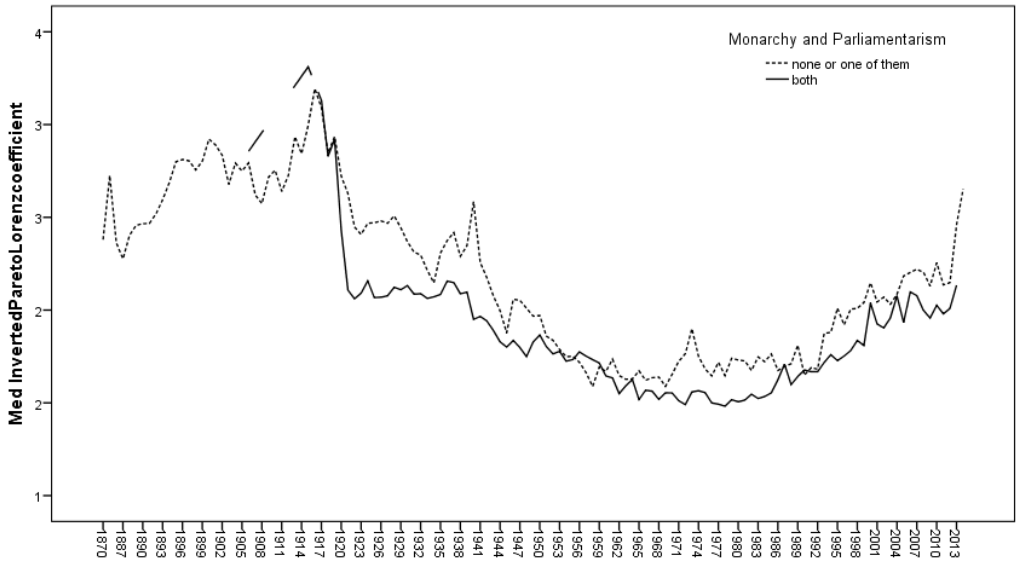


Table 1. Partial correlation between MaxRange regime type dummies and the Piketty et al. inequality coefficient, controlling for years.

Regime type (dummy) correlations with inequality (inverted Pareto-Lorenz Coefficients)	*Partial correlation (with control for year)*
Qualified Democracy	-0.219***
Electoral Democracy	0.204***
False Democracy	0.145***
Semi-Authoritarianism	-0.014
Hierarchical Authoritarianism	0.050*
Military Regime	-0.030
Colony	0.020
Despotism	0.028
Absolutism	0.017

Table 2. Partial correlation between MaxRange institutional dummies and inequality for all regime types and for qualified democracies, controlling for years.

Examples of MaxRange institutional (dummy) variables correlated with inequality (inverted Pareto-Lorenz Coefficients)	*Partial correlation (with control for year) for all regime types*	*Partial correlation (with control for year) for qualified democracies*
Parliamentarism	-0.307***	-0.225***
Presidential Parliamentarism	-0.031***	-0.043
Divided Executive	-0.078**	-0.114***
Semi-Presidentialism	-0.060*	-0.067*
Parliamentary Presidentialism	-0.115***	-0.091**
Presidentialism	0.252***	0.334***
Monarchical Regime	0.103***	No cases
Constitutional Executive Strength	-0.152***	0.140***
Republic	0.218***	0.363***
Monarchy	-0.235***	-0.363***

Table 3. Multilevel analysis of monarchy. parliamentarism and their combination on the equality measure in Piketty data (1869–2013)

Estimates of Fixed Effects[a]

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	1,874236	,073020	,000	25,668	,000	1,874086	1,874386
Monarchy	,503398	,163340	,000	3,082	,000	,503388	,503409
Parliamentarism	,013433	,023384	,000	,574	,000	-,006326	,033191
Monarchy * Parliamentarism	-,780666	,140662	,000	-5,550	,000	-,780671	-,780660

a. Dependent Variable: Inverted Pareto-Lorentz Coefficient.

Note: hierarchical linear regression with random intercept (for all three parameters) and random slopes (for monarchy and monarchy*parliamentarism) using AR(1) autoregressive repeated covariance method on yearly data.

Table 4. Cox regression of inequality. parliamentarism and monarchy on the survival of non-democracy.

Omnibus Tests of Model Coefficients[a]

-2 Log Likelihood	Overall (score)			Change From Previous Step			Change From Previous Block		
	Chi-square	df	Sig.	Chi-square	df	Sig.	Chi-square	df	Sig.
14600,818	198,726	3	,000	166,704	2	,000	166,704	2	,000

a. Beginning Block Number 2. Method = Enter

Variables in the Equation

	B	SE	Wald	df	Sig.	Exp(B)	95,0% CI for Exp(B)	
							Lower	Upper
InvParLorCoefficient	-,377	,089	18,041	1	,000	,686	,576	,816
Parliamentarism	-,912	,091	100,793	1	,000	,402	,336	,480
Monarchy	,150	,085	3,085	1	,079	1,162	,983	1,373

Note: bootstrap (1000 samples) produces exactly the same coefficients but slightly better significance (.061) for monarchy. Exp(B) is the predicted change in the hazard of democratizing among non-democracies for each unit increase in the covariate.