

Gutmann, Jerg; Voigt, Stefan

Working Paper

Family Types and Political Development

ILE Working Paper Series, No. 34

Provided in Cooperation with:

University of Hamburg, Institute of Law and Economics (ILE)

Suggested Citation: Gutmann, Jerg; Voigt, Stefan (2020) : Family Types and Political Development, ILE Working Paper Series, No. 34, University of Hamburg, Institute of Law and Economics (ILE), Hamburg

This Version is available at:

<https://hdl.handle.net/10419/216096>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

FAKULTÄT
FÜR RECHTSWISSENSCHAFT

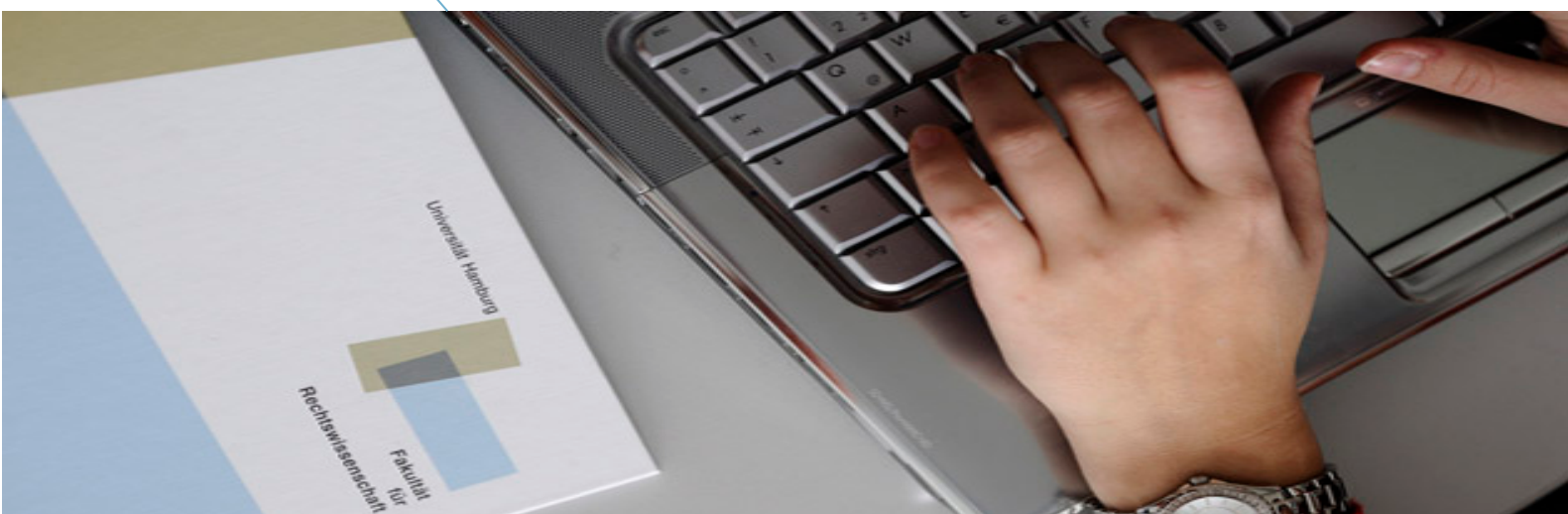
INSTITUTE OF LAW AND ECONOMICS
WORKING PAPER SERIES

Family Types and Political Development

Jerg Gutmann
Stefan Voigt

Working Paper 2020 No. 34

April 2020



NOTE: ILE working papers are circulated for discussion and comment purposes.
They have not been peer-reviewed.

© 2020 by the authors. All rights reserved.

Family Types and Political Development

April 14, 2020

Jerg Gutmann*

Stefan Voigt†

University of Hamburg and CESifo, Munich

Abstract:

Many years ago, Emmanuel Todd argued that differences in family organization – specifically the rules of inheritance, the number of generations living under one roof, and endogamous marriage – are reflected in the organization of the state. He also argued that different family types lead to different paths of economic development. Economists have long ignored these sweeping claims, but with increasing interest in the deep causes of economic development, family types have caught the attention of some economists. Here, we try to take Todd seriously and evaluate his predictions empirically. Relying on a parsimonious model with exogenous covariates, we find mixed results. On the one hand, countries in which authoritarian family types dominate have much higher levels of the rule of law and innovation than predicted by Todd. On the other, countries in which the communitarian family types dominate are characterized by racism, low levels of the rule of law, few checks on government, and late industrialization. Countries in which endogamy is frequently practiced display a high level of state fragility and have weak civil society organizations.

Keywords: Family types; family systems; family structures; ideology; state formation; constitutional structure; economic development.

JEL Codes: D10; H11; J12; K36; N30; O17; Z12.

* University of Hamburg, Institute of Law and Economics, Johnsallee 35, D-20148 Hamburg, Germany; e-mail: stefan.voigt@uni-hamburg.de and CESifo, Munich.

† Corresponding author, University of Hamburg, Institute of Law and Economics, Johnsallee 35, D-20148 Hamburg, Germany; e-mail: stefan.voigt@uni-hamburg.de and CESifo, Munich.

Family Types and Political Development

1. Introduction

In recent years, economists have become interested in identifying the “deep causes” of economic development – instead of only the proximate causes, such as investment in physical and human capital. Various aspects of geography, including the suitability of soil for planting specific crops, ruggedness of the terrain, being landlocked, climate, and the intensity of rainfall have featured prominently in this literature (Spolaore and Wacziarg 2013). An important debate ensued on whether geography has a direct influence on development or whether its effect on development was primarily mediated via institutions (see, e.g., Acemoglu et al. 2001; Rodrik et al. 2004; Sachs 2003). Others have examined the role of cultural and genetic differences within and between populations (Ashraf and Galor 2013; Spolaore and Wacziarg 2009).

A number of anthropologists argue that family types – often also referred to as family structures or family systems – are an important determinant of human development, for example in terms of fertility and education levels. Among them is Emmanuel Todd (1985) who more than thirty years ago claimed not only that family structures were extremely stable over time, but also that they would determine: (1) ideological convictions, (2) state formation, (3) constitutional structure, and (4) post-constitutional outcomes of societies. If family types were as important as Todd claims, economists interested in identifying possible transmission channels from geographic conditions to economic development would do better to take them explicitly into account.¹

Emmanuel Todd (1985) bases his typology of family systems on two core values of the French revolution, namely *liberté* and *égalité*. Drawing on Le Play (1895), he argues that liberty is determined by the relationship between fathers and their sons, whereas equality is determined by inheritance rules. If sons still live under one roof with their parents, even after getting married, their liberty is curtailed.

¹ Regarding the consequences of inheritance rules, Berkner and Mendels (1978) sum up mainstream anthropological research by stating that rules prescribing impartible inheritance (such as primogeniture or ultimogeniture) limit the number of marriages, encourage emigration of children, lead to slow population growth, and encourage the formation of the stem family where sons stay in the household of the parents after marriage. Partible inheritance, in contrast, is believed to lead to the fragmentation of land ownership, high marriage rates, rapid population growth, and the formation of nuclear families.

Whereas, if sons establish their own household, they enjoy considerably more freedom. Regarding inheritance, Todd argues that if all children receive the same proportion of the father's wealth, this fosters equality in society at large. If, in contrast, rules prevail that envision the indivisibility of the estate, this may facilitate inequality. Combining these two dimensions allows Todd to distinguish four family types (as depicted in Table 1). It should already be noted here that we are not able to distinguish between countries of the absolute and the egalitarian nuclear family type in our empirical analysis, as the dataset by Rijpma and Carmichael (2016) identifies only a handful of countries that are dominated by the absolute nuclear family type. Thus, we combine the two categories. Todd (1985) also emphasizes the similarities between both the absolute and the egalitarian nuclear family types, describing them in a single chapter under the heading “*The Two Forms of Individualism*”.

Table 1: Schematic representation of family types

		Liberty		
		Low: married son stays with parents		High: married son moves out
Equality	Low: unequal treatment of brothers	Authoritarian (e.g., Norway, Sweden, Germany, Ireland)		Absolute nuclear family (e.g., England, Canada, US)
	High: equal treatment of brothers	Endogamous community (e.g., Pakistan, Morocco)	Exogamous community (e.g., Russia, Mongolia, China)	Egalitarian nuclear family (e.g., Spain, Italy, Poland)

Todd adds a third dimension to this classification, asking whether consanguineous marriages are socially accepted or even desired. He then proposes to split the category “community” into “exogamous community” types on the one hand and “endogamous community” types on the other. In exogamous communities, marriages within the family are not accepted. In endogamous communities, marriages between cousins are accepted and often even encouraged. Both types share the equal treatment of brothers in inheritance rules, as well as the fact that sons do not move out of their parents' household after marriage. According to Todd,

a belt of countries ranging from Pakistan in the East to Morocco in the West is characterized by this family type.²

Since most economists at the time were not interested in culture and family organization, Todd's claims went largely unnoticed. It is only recently that some economists have become interested in his work. Some are studying the relevance of family types or different characteristics of families, but without reference to Todd. In an inquiry into the determinants of preferences for redistribution, Alesina and Giuliano (2011a) point out that these preferences are a central part of a person's ideology. The main focus of Todd's treatise (1985) is precisely the factors determining ideology. Among the seven categories of determinants of preferences for redistribution proposed by Alesina and Giuliano (2011a), the structure of the family is named with an explicit reference to Todd (1985). However, Alesina and Giuliano (2011a) do not consider family types in their empirical analysis. Alesina and Giuliano (2011b) also refer to Todd in their analysis of family ties, but they leave testing his hypotheses to future research. Alesina and Giuliano (2011b:832) conclude that this "is a fascinating line of research worth pursuing." Other social scientists have started to pursue this line of research and have produced fascinating results. Over the next couple of paragraphs, we briefly survey the extant literature. We begin with studies focusing on some of the deep drivers of development, such as fertility and education levels. We then turn to studies inquiring into institutional quality broadly conceived. Finally, we summarize studies that have tried to establish a connection between family organization and specific outcomes such as voter turnout.

De la Croix and Perrin (2018) explain changes in fertility levels and educational attainment in France over a number of centuries as a response to individual economic incentives. Since their model leaves them with a substantial unexplained residual, they turn to other potential explanations, such as language use, religion, elite behavior – and family structures. De la Croix and Perrin find that considering family structures adds substantial explanatory power to their empirical model.

² Todd actually introduces a third type of the community family type that he calls the "asymmetrical community type". In it, marriages between parallel cousins are a taboo, whereas cross-cousin marriages are encouraged (a parallel cousin is the paternal uncle's or the maternal aunt's child, whereas a cross-cousin is the maternal uncle's or the paternal aunt's child). The southern parts of India are an example for this family type. We subsume this type under the endogamous community category, because within-family marriage is accepted.

Ellul et al. (2010) focus on inheritance rules and find that stricter rules (in the sense of limiting the freedom of the testator to choose how much wealth to allocate to each heir) are associated with less investment into family firms.

Dilli (2016) asks whether family systems can explain differences in democracy levels and finds that countries characterized by a nuclear household structure are more democratic. Broms and Kokkonen (2019) ask whether differences in inheritance regimes are a good predictor for today's institutional quality. They argue that inheritance regimes favoring a single heir are conducive to the development of both private property rights and trust, which, in turn, is conducive to high quality institutions. They find support for trust being a transmission channel from non-egalitarian inheritance rules to contemporaneous institutional quality.

In their analysis of the timing of the introduction of state-run pension systems and their generosity vis-à-vis pensioners, Galasso and Profeta (2018) theorize that inheritance rules are an important explanatory factor and they argue that citizens in countries with egalitarian inheritance rules prefer more generous pension systems. The data supports this speculation. Galasso and Profeta also consider the other two dimensions of Todd's family structures and find that they are not related to differences in pension systems across countries. Moreover, Galasso and Profeta (2018) provide evidence that although citizens' preferences for the design of pension systems are determined by historical inheritance rules, these preferences are fairly stable over time, even after inheritance rules change. Therefore, survey answers by second-generation immigrants to the U.S. can be traced back to the inheritance rules in their parents' country of origin.

The effects of consanguineous marriage are analyzed by Schulz (2019) who finds that countries where it is banned display significantly higher democracy scores, higher rates of political participation, and higher institutional quality than other countries. Bonoldi et al. (2016) find that in South Tyrol (a region in Northern Italy that is influenced by both an Italian and a Germanic tradition and, thus, by competing inheritance rules), villages with a rule similar to primogeniture display higher voter turnout.

The papers surveyed so far are interested in explaining variation in a limited number of dependent variables. Other studies have used family structures as their main explanatory variable for a variety of outcomes. Duranton et al. (2009), for example, were the first to comprehensively evaluate the relevance of family systems for socio-economic characteristics of European regions, such as household size,

educational attainment, social capital, labor force participation, sectoral structure (i.e., the share of the workforce employed in manufacturing), wealth, and income inequality. In their analysis of 190 NUTS 2 regions³ in Western Europe, Duranton et al. observe a dividing line between regions characterized by the absolute nuclear family and those characterized by any other family type. The former exhibit a comparatively smaller household size, more education, higher employment rates, a more active civil society, a larger service sector, and a more dynamic economy. Duranton et al. (2009) are careful regarding the causal interpretation of their results, which are based on regression models with country fixed effects. Nevertheless, the authors speculate that family structures might not only affect these outcomes directly, but they may also have shaped other institutions in the past which, in turn, cause the contemporaneously observed outcomes.

Another strand of literature deals with the strength of family ties. Specific aspects of family types, such as consanguineous marriages and married children sharing a household with their parents, are linked to strong family ties. The most famous study on strong family ties dates back to Banfield (1958) who identifies a low level of general trust as well as of social capital as a consequence of this family type. This stream of research has recently been taken up again by Alesina and Giuliano (2014) who find that the strength of family ties is associated with lower per capita income and lower institutional quality.

Here, we use family types as an explanatory variable for four groups of outcome variables, namely: (i) ideological convictions, (ii) state formation, (iii) constitutional structure, and (iv) post-constitutional outcomes. We consider this a test of Todd's (1985) main arguments. Whereas the studies briefly summarized above focus on one or two aspects of Todd's theory at most, we offer the first comprehensive test of his far-reaching predictions. Relying on a parsimonious model that includes a set of covariates that are exogenous to family types and potentially relevant to political development, we find mixed evidence. Some of the results seem to support Todd's hypotheses about ideological convictions, state formation, and post-constitutional outcomes, but with regard to constitutional structure, no such evidence could be found. Countries where endogamous marriage is accepted (or even expected) suffer from weaker states, a finding in line with theoretical considerations about state formation. We also find that the onset of

³ An acronym for "Nomenclature of Territorial Units for Statistics" used by Eurostat. The NUTS 2 level was designed to delineate the basic regions for the application of regional policies. Each region hosts between 800,000 and 3,000,000 people. Currently Nuts 2 comprises 281 regions.

industrialization began earlier and governments have shorter tenures in countries where the nuclear family type dominates, both considerations addressing post-constitutional outcomes.

The rest of the paper is structured as follows: In Section 2, we define and categorize family systems and then move on to describe the various hypotheses linking family systems to different outcome variables. The data we draw on are described in Section 3. Section 4 contains the empirical results, and Section 5 concludes with a number of suggestions for future research.

2. Theory

2.1. The Basic Argument

Todd's (1985) main conjecture is that family structures are stable and constitute blueprints for political systems: The relationship between state authority and the individual in a country will reflect the relationship between father and son in that country's families. Rather than specifying the mechanism, which could be responsible for the mirroring of family types on the state level, Todd (1985) refers to "political thought all over the world from Confucius to Rousseau, from Aristotle to Freud" (p. 6).

Throughout his book, Todd (1985) argues that family types are very stable over time, even more so than religious beliefs. Accordingly, family types will impact religious beliefs and practices, rather than the other way around. Todd, for example, argues that religion as practiced in Europe took hold predominantly in authoritarian family systems (p. 117), and that Islam was only able to spread where family structures were open to endogamy (p. 134). More recently, Todd (2019) discusses various aspects of human development by distinguishing between their stability over time. Accordingly, economic development takes 50 years to evolve, educational progress takes 500 years, and the evolution of family structures takes around 5000 years. This schematic is reminiscent of Williamson's (2000) levels of social analysis. Todd argues that religion co-evolves with family structures, but at

twice the speed of religion. Accordingly, family structures can for most purposes be considered exogenous.⁴

Todd uses his main conjecture that societal structures will mirror family structures to generate a host of hypotheses. To give them some structure, we have assigned each hypothesis to one of four groups, which we discuss over the following sections.

2.2. Effects on Ideology

Todd's (1985) book is titled "*The Explanation of Ideology*". The book's main thrust is to explain why some societies lean towards liberalism, while others prefer communism.⁵ The general argument used to explain ideological variation is that the ideological system of a society is a reflection of its family structure (p. 17).

The nuclear family types, no matter whether absolute or egalitarian, are conducive to individualism. Because children living in this family type are not expected to share a household with their parents, they experience more liberty than children living in the other family types. Todd (1985:120) argues that the resulting individualism implies more tolerance towards others and less xenophobia. In authoritarian systems, on the other hand, brothers are not considered equal and racism can be considered the mirror image of that inequality on the societal level. Todd (1985:61) conjectures that the authoritarian family's focus on household continuity often leads to racism, because it may want to preserve the status quo in a biological sense. Formulated as hypothesis #1: *Societies dominated by nuclear family types display lower levels of racism than other societies.*

Todd (1985:148) also argues that compared to the other family types the endogamous community family type grants individuals the least freedom in choice of marriage partners by subjecting this choice to customary rules. The nuclear family leaves the choice of the marriage partner to those who want to get married.

⁴ This view is not shared by all anthropologists. Goody (2000, 27), e.g., argues that Christianity changed the European family in major ways. He suggests that the behavior of Church leaders was influenced by their interest in inheriting as much property as possible and argues that not only the prohibition of endogamy, but also the Church's repudiation of adoption and making remarriage difficult were all conducive to achieving that goal. According to Goody (2000, 36), between the fifth and the eighth century, the church became the owner of more than one-third of all the arable land in the French region of Gaul.

⁵ Todd (1985:5) names seven ideologies whose prevalence he wants to explain by drawing on family structures, namely communism, liberalism, Catholicism, social democracy, Hinduism, Islam, and Buddhism.

Both the authoritarian and exogamous community family types give the parents the right to organize the lives of their children, including the choice of marriage partner. Formulated as hypothesis #2: *Members of societies dominated by the endogamous family type perceive themselves as having less control over their own lives than those in other societies.*

2.3. Effects on State Formation

In developing his arguments regarding family structures as potential determinants of state formation, Todd (1985) refers to Max Weber (1919). Weber envisioned the state as the realization of superior rationality embodied in a bureaucracy that is founded on merit only. Weber believed that the state would eventually take hold everywhere.

Todd (1985:144) points out that the Weberian view of the state relies on depersonalized relationships between the administration and the citizens. Since some family types are more compatible with such a depersonalized structure than others, one would expect societies to be differently compatible with Weber's vision of state formation. Todd predicts that exogamy leads to the development of the state, whereas endogamy leads to societies that do not rely on a state, but rather on clans and clan loyalty. Formulated as hypothesis #3: *Societies dominated by the endogamous family type are less likely to form strong state structures than other societies.* This has implications for the age of statehood (i.e., how early a state was formed), but also for the capacity and reach of the modern state.

2.4. Effects on Constitutional Structure

The main trait of the rule of law is to make everyone subject to the same laws, no matter whether they are rich or poor, young or old, politically connected or not. When brothers are not treated as equals, and if family structures are mirrored in the constitutional structure of a country, then we should expect societies subject to authoritarian family structures not to reach high rule of law levels.⁶ Under these systems, "all men are not considered equal" (1985:55). Accordingly, hypothesis #4 is: *Societies dominated by the authoritarian family type exhibit lower rule of law levels than other societies.*

6

If Todd's argument is correct, they might not even try to implement the rule of law as their ideological convictions should be highly skeptical of it.

Todd argues that authoritarian societies work by consensus (1985:74). They avoid class struggle by a vertical integration of society.⁷ Political scientists distinguish between majoritarian and consensual constitutions (see Lijphart 1999). Majoritarian constitutions are characterized by plurality rule and a dominant executive, whereas consensual constitutions are characterized by proportional representation and a more balanced relationship between the executive and legislature. Therefore, hypothesis #5 suggests that *Societies dominated by the authoritarian family type are more likely to establish consensual constitutions than other societies.*

According to Todd, a third important dimension of constitutional design is also impacted by family structures, namely the choice between a unitary or federal state structure. The scant literature on the determinants of federalism ignores family structures. Todd suggests that authoritarian family structures are incompatible with the formation of unitary states. Hypothesis #6: *Societies dominated by the authoritarian family type are more likely to be federally organized than other societies.*

2.5. Effects on Post-Constitutional Outcomes

Todd observes that nuclear family structures can produce two political models, one liberal, “the other oscillating between extremes of anarchism and militarism” (Todd 1985:103f.). Todd identifies one commonality of the two models that is actually testable: governmental instability. Under the liberal model, government turnover results from elections; in the oscillating model, it follows from military coups. In countries with authoritarian family structures, the voter would rarely change his mind, often making the same choice as in the previous election (ibid.:68). The underlying argument is that in these countries, the vertical structure of the parent-child relationship makes the young learn how to behave “correctly”, after which they hardly ever question or change their behavior. Todd’s immediate hypothesis that the proportion of swing voters is lower in these countries than in countries in which the nuclear family dominates is difficult to test because we lack sufficient data. But this hypothesis has a direct implication that can be tested. Rephrased as hypothesis #7: *Societies dominated by nuclear family types experience more frequent government turnover than societies dominated by the authoritarian family type.*

⁷ He adds the caveat that this holds only as long as relations are not embittered by internal regional conflicts and gives Belgium as a negative example.

It is well known that one of the first measures used by would-be autocrats to expand their power is to weaken civil society (Gutmann and Voigt 2020). Todd (1985:103) observes that countries in which nuclear family systems prevail are not dominated by totalitarian ideologies or political forms that try to eliminate civil society. Phrased as hypothesis #8: *Societies dominated by nuclear family types have a more vivid civil society than other societies.*

We want to conclude this *tour d'horizon* of the political and social consequences of family types with a number of possible consequences that might be of direct relevance for economic development. The nuclear family structure makes people more mobile, as they do not stay in their parents' household after getting married. A higher degree of mobility can have important consequences, such as faster urbanization, faster industrialization, a more efficient match of labor with physical capital, etc. Formulated as hypothesis #9: *Societies dominated by nuclear family types are industrialized earlier than other societies.*

Closely related, but not identical: Family structures characterized by households of three or more generations are unlikely to be very innovative. If married children remain under the tutelage of their parents, the parents are likely to influence many important decisions. Given that older people have a lower propensity to innovate, innovativeness in such societies should be lower. And again, framed as hypothesis #10: *Societies dominated by nuclear family types are more innovative than other societies.*

Finally, Todd (1985) claims that in countries where the authoritarian family structure dominates people learn to accept inequality in interpersonal relations. Yet, Todd observes that “ironically, the economic structure of countries with an authoritarian family system is almost always relatively egalitarian” (ibid., 61). The mechanism through which this unexpected result is achieved is the conservation of peasant holdings via primogeniture. This prevents a high number of property owners with parcels so small that they cannot live from the proceeds of the land from being forced to sell their land to capitalists. In other words: primogeniture prevents a capitalist concentration in the countryside. Formulated as hypothesis #11: *Societies dominated by the authoritarian family type are characterized by lower levels of income inequality than societies dominated by communitarian or nuclear family types.*

3. Data

Testing the various hypotheses derived from the arguments of Todd (1985) empirically presupposes data on the prevalent family structures in a society. Recently, a dataset on family characteristics was introduced by Rijpma and Carmichael (2016). In addition to the original codings by Todd, they rely on the Ethnographic Atlas first published by Murdock (1967). It contains detailed information on 1,267 societies. To aggregate information from these societies to the nation state level, Rijpma and Carmichael follow a procedure implemented by Bolt (2012). Matching the data from Todd and Murdock, Rijpma and Carmichael find that 49 out of 102 countries can be measured consistently across the two data sources. This is less than half of all possible cases. Rijpma and Carmichael then try to identify the relative strengths and weaknesses of the information provided by the two datasets and utilize this to create a consolidated (or as they call it, hybrid) dataset covering 162 countries. To better understand the characteristics of the typology we are relying on, we compare it to other measures of the dominant family structures in nation states. Schulz (2019) provides information on the practice of cousin marriage, which we can easily compare to the hybrid family types by Rijpma and Carmichael (2016). To compare our data on family types with that of Alesina et al. (2015), we rely on their main indicator for family ties: Based on the World Values Survey and the European Values Study, we measure the share of the population above the age of 18 who are still living with their parents.

To test the many hypotheses introduced above, we rely on a number of dependent variables from multiple data sources. We use survey responses from the World Values Survey and the European Values Study to measure the population share that would not like to have neighbors of a different race, as well as the average perception in the population of being in control of one's own life. From the Polity IV project, we use the State Fragility Index and its two sub-indicators that measure a state's legitimacy and effectiveness. Indicators for the rule of law and government effectiveness come from the World Bank's Worldwide Governance Indicators.⁸ Data on a country's federal organization and electoral system is taken from Norris (2015). From the V-DEM dataset (version 9), we use the Core Civil Society Index, which is a measure of the robustness of civil society. We use information from the Archigos dataset (version 4.1) to construct an indicator for the frequency of political

⁸ Gutmann and Voigt (2018) show that this indicator is largely consistent with one that is constructed from a clear theoretical concept of the rule of law, suggesting that it is a reasonable indicator to work with if country or time coverage is a concern.

leadership turnover, i.e., the mean length of leadership spells in a country. Data on income inequality before and after government transfers is from Solt's (2016) Standardized World Income Inequality Database. Data on political veto players comes from both Henisz and the Database of Political Institutions. To measure the historical adoption of new technologies, we rely on data from Comin et al. (2010). Data on the historical timing of industrialization, defined as the year in which employment in industry exceeded that in agriculture, comes from Bentzen et al. (2013).

Table 2 shows the descriptive statistics for our dependent variables and the indicators for family types. Surprisingly, the authoritarian family type is associated with the weakest family ties, even though this family type is characterized by adult sons living with their parents. It is, therefore, reassuring that the endogamous community family type, which shares this characteristic, exhibits the strongest family ties. This may suggest that endogamy is conducive to sons living under one roof with their parents. Regarding the practice of cousin marriage, as measured by Schulz (2019), it is not surprising that the endogamous community family type exhibits significantly more cousin marriages than any other family type, but it is followed by the exogamous community type (and the African/Anomic family types), which suggests that comparisons among community family types are not a good way to identify the consequences of endogamy.

<<< Table 2 around here >>>

As control variables, we use the set of standard indicators employed by Spolaore and Wacziarg (2013) to explain long run development: latitude, population adjusted state antiquity, the share of tropical land area, and dummy variables that indicate whether the country is landlocked and whether it is an island. Moreover, we add control variables for the ruggedness of a country's landscape, its distance to the next coastline (Giuliano and Nunn 2018), as well as an indicator of linguistic fractionalization (Desmet et al. 2012).

Some of the hypotheses introduced by Todd aim at the comparison between two specific family types, such as "the nuclear family type does better than the authoritarian type." Our analysis follows a systematic approach in that we control for the same set of family types and control variables for all dependent variables. The fact that the estimated models differ only in terms of their dependent variable and the corresponding sample size ensures an easy interpretation of the results as well as their comparability across models. Countries coded as having an "African"

family type or an “anomic” family type form the omitted category.⁹ The absolute and egalitarian nuclear family types are combined in one binary variable (simply labeled nuclear). The authoritarian family type is represented by another dummy variable. The large number of countries dominated by a communitarian family type are split up according to the permissibility of endogamy, resulting in endogamous and exogamous communitarian family types. However, it should be noted that cousin marriage is practiced somewhat frequently in both family types according to the data by Schulz (2019).

4. Testing Todd

4.1 Family Types and Ideology

Table 3 shows that there is significantly less racism in countries with a nuclear family structure. This is in line with our first hypothesis. An unexpectedly strong association exists between racism and the communitarian family types. Both, the endogamous as well as the exogamous communitarian family type are associated with significantly more racism than our reference category. Hypothesis #2 states that people living in countries dominated by the endogamous family type will perceive themselves as having less control over their own lives. This is not confirmed by our results, which indicate that none of the family types exert an unusual influence on an individual’s perception of how much control they have over their own life.

<<< Table 3 around here >>>

4.2 Family Types and State Formation

The results in Table 4 refer explicitly to Todd’s argument that endogamous family structures are an obstacle to state formation. Two aspects can be separated here: The time period the current state has existed without interruption (state antiquity), and the contemporaneous fragility of the state. For the uninterrupted existence of a state as such, we find no support for the argument that endogamy is a hindrance. Countries dominated by nuclear or authoritarian family types exhibit the earliest

⁹ Todd (1985:25f.) describes the African family type as being based on unstable household forms. The anomic family type is characterized by a substantial discrepancy between rules and practiced family organization (ibid., 171).

state formation, followed by communitarian family types, which in turn formed states earlier than countries of the African and anomic family type.

Moving from state antiquity to contemporaneous state fragility, we find that nuclear and authoritarian family types are the least fragile and that states dominated by the endogamous communitarian family type are also more fragile than others. The difference between endogamous and exogamous community family types is not statistically significant, but it should be kept in mind that exogamous community types have the second highest levels of practiced endogamy, as illustrated in Table 2 above. Regarding contemporaneous government effectiveness, the communitarian family types are again the worst performing. It is worth noting that governments of countries with authoritarian family structures have by far the most effective governments. A possible interpretation of this finding is that it is easier for a government to be effective if the acceptance of (state) authority is the norm. Overall, the empirical evidence is consistent with hypothesis #3. Although societies practicing endogamy were not later in forming states, they have not managed to bring about strong states with a high degree of legitimacy as well as effectiveness.

<<< Table 4 around here >>>

4.3 Family Types and Constitutional Structure

Table 5 shows our results for different aspects of constitutional structure. For the rule of law, we observe a similar pattern as before: Nuclear and authoritarian family types outperform the reference category, and communitarian family types underperform the reference category. Interestingly, authoritarian family types perform much better than all other family types, which contradicts Todd's prediction, as spelled out in hypothesis #4. One could speculate that the acceptance of authority might not only be favorable for government effectiveness, but also for high levels of the rule of law.

<<< Table 5 around here >>>

Although countries with authoritarian family structures are not significantly more likely to have a proportional electoral system, they clearly exhibit a higher level of checks and balances than other countries, which is consistent with hypothesis #5. Finally, federalism is not statistically associated with any particular family type, which is inconsistent with hypothesis #6.

A familiar pattern is emerging as countries dominated by communitarian family types have the lowest number of political veto players. Todd expected citizens of countries with an exogamous communitarian family structure (such as Russia, Hungary, or Bulgaria) to be prone to a socialist ideology.¹⁰ However, he did not explicitly claim any association between the exogamous communitarian type and constitutional choice. Yet, we also find lower levels of the rule of law as well as fewer veto players in these countries.

4.4 Family Types and Post-Constitutional Outcomes

Todd predicted that countries characterized by a nuclear family type exhibit earlier industrialization, more frequent government turnover, and a more vivid civil society. Table 6 shows that only hypothesis #9, regarding the timing of industrialization, finds support in the data. The countries characterized by the endogamous communitarian type are again noteworthy. Their governments stay in power the longest, they have the weakest civil society, and industrialization happened significantly later than in countries that are not of the community family type. Again, the community family type appears to be linked to adverse outcomes in development.

<<< Tables 6 and 7 around here >>>

The validity of Todd's claim that nuclear family types are conducive to innovation can be judged based on the results presented in Table 7. The columns show measures of technology adoption from 3,000 years ago to the present (ordered from left to right). Indeed, nuclear families outperform the reference category of African and anomic family types, but only in modern times. More importantly, countries dominated by the nuclear family type were significantly lagging behind the rest of the world in technology adoption 2,000 years ago, and having caught up are now significantly outperforming other countries. In spite of these impressive developments in nuclear family type countries, the authoritarian family type shows even more innovativeness and consistently outperformed nuclear family types over the last 2,000 years. Communitarian family types show a particularly interesting time trend. They were highly innovative until the middle ages, but completely lost

¹⁰ Trying to make sense of the combination between the endogamous community family type on the one hand and preferences in favor of socialism in the Muslim world on the other, Todd (1985, 146f.) remarks that Islam only recognizes two levels of integration, namely the family and the community of all believers – the *ummah*. These being the constraints, Arab socialism would be unique in attempting to erect a type of socialism without the state.

this advantage over the time period between 1500 and 2000AD. These findings are reminiscent of a “reversal of fortunes” that has been addressed with regard to the Muslim world under headings such as “what went wrong?” (Lewis 2002; see also Kuran 2011). In his book, Lewis (2002) recounts the well-known story that the Muslim world used to be leading in innovation and technology but refused to adopt technologies developed elsewhere, which caused its relative decline over the last five centuries. Kuran (2005, 2011) attributes responsibility for the relative economic decline of the Middle East to the absence of the concept of a corporation, which enjoys legal personhood. If societies are used to organizing transactions within extensive family networks, this might explain resistance to the idea of economic partnerships in which a transaction partner is substitutable via the tradability of shares. The resulting small scale and brief lifespan of companies would have proved detrimental to the way European innovation evolved during the industrial revolution. Consistent with our previous findings, communitarian family types show the lowest levels of contemporaneous innovativeness and technology adoption. In sum, hypothesis #10 is supported by our findings in the sense that societies in which the nuclear family type dominates are more innovative than other societies. However, societies in which the authoritarian family type dominates are even more innovative.

<<< Table 8 around here >>>

Table 8 assesses the veracity of Todd’s claim that the authoritarian family type is linked to less income inequality than the nuclear family type or the community family types. This prediction by Todd is indeed borne out by the data, but only after income is redistributed by the state. Countries of the authoritarian family type show the lowest levels of post-redistribution income inequality. This means that countries dominated by the authoritarian family type use the state to reduce income inequality more than any other family type. The fact that the explanatory power of our model is much higher for inequality after government transfers than before government transfers is not surprising. Family types are more suitable for predicting political institutions and policies than mere market outcomes. In conclusion, hypothesis #11 is also supported by the data.

5 Conclusion and Outlook

In economics, a search for the deep determinants of economic development began a number of years back (Spolaore and Wacziarg 2013). Geographical factors played a central role in this quest. Simultaneously, a discussion regarding the relevance of culture emerged (e.g., Gorodnichenko and Roland 2016, 2017). This study adds to our understanding of the deep roots of development by analyzing the association between family types and four groups of outcome variables, namely: (1) ideological preferences, (2) state formation, (3) constitutional choice, and (4) post-constitutional outcomes. The hypotheses we test here are all derived from the arguments of Todd (1985). Many of Todd's sweeping claims cannot be corroborated by our systematic empirical analysis.

Most of the hypotheses regarding the authoritarian family type were refuted. In theory, this family type embodies values that promote little personal freedom and accept inequality. These values are the polar opposites of those promoted by the French revolution: individual freedom and equality for all. However, our results show that people in countries dominated by the authoritarian family type are more innovative, and have managed to implement both higher levels of the rule of law and more effective governments than the nuclear family types. Countries in which the authoritarian family type dominates also achieve the lowest level of post-redistribution income inequality.

The second noteworthy observation is that the two communitarian subcategories (endogamous and exogamous) have a number of outcomes in common: both are associated with more racism, low levels of the rule of law, few checks on government, and late industrialization. The advantage these countries originally enjoyed in innovation has turned into a disadvantage in the present. There are two outcome variables for which the endogamous community family type performs significantly worse than the exogamous community type: state fragility and civil society.

We had to make a number of assumptions in our analysis. Future research might attempt to address some of them. Coding countries as having a single, dominant family structure, for example, is convenient, but not necessarily accurate. In a more recent book, Todd (1990) himself codes European regions individually and identifies six different family types in different parts of France alone. Family structure heterogeneity within a specific country constitutes an opportunity, because it allows us to test whether different family structures lead to significantly

different economic or cultural outcomes, while formal institutions are uniform across the country. It could, hence, be interesting to extend the analysis of Duranton et al. (2009) and ask if regions with different family structures are inhabited by people with different attitudes. One could even think of a regression discontinuity design, if sharp borders between different family types can be identified. In the literature, a “sharp” border that is mentioned time and again is that between Göttingen and Calenberg (both located in lower Saxony, Germany; see Berkner 1976). Others have criticized the coding of the family structures *tout court* (e.g. Szołtysek and Poniat 2018). Taking that criticism seriously, one might want to inquire into the effects of family structures relying on alternative data sources.

References

- Acemoglu, D., S. Johnson and J. A. Robinson (2001), The colonial origins of comparative development: An empirical investigation, *American Economic Review* 91(5): 1369–1401.
- Alesina, A., and P. Giuliano (2011a), Preferences for redistribution, In *Handbook of social economics* (Vol. 1, pp. 93–131), North-Holland: Elsevier.
- Alesina, A., and P. Giuliano (2011b), Family ties and political participation, *Journal of the European Economic Association*, 9(5): 817–839.
- Alesina, A. and P. Giuliano (2014), Family ties, In *Handbook of economic growth* (Vol. 2, pp. 177–215), North-Holland: Elsevier.
- Alesina, A., Y. Algan, P. Cahuc and P. Giuliano (2015), Family values and the regulation of labor, *Journal of the European Economic Association*, 13(4): 599–630.
- Ashraf, Q. & O. Galor (2013), The ‘out of Africa’ hypothesis, human genetic diversity, and comparative economic development, *American Economic Review* 103(1): 1–46.
- Banfield, E. C. (1958), *The Moral Basis of a Backward Society*, New York: The Free Press.
- Bentzen, J. S., N. Kaarsen & A. M. Wingender (2013), *The timing of industrialization across countries*, Mimeo.
- Berkner, L. K. (1976), Inheritance, land tenure and peasant family structure: A German regional comparison, in: Goody, J. R., Thirsk, J., & Thompson, E. P. (eds.), *Family and inheritance: Rural Society in Western Europe, 1200-1800*, Cambridge: Cambridge University Press.
- Berkner, L., & Mendels, F. (1978), Inheritance Systems, Family Structure and Demographical Patterns in Western Europe, 1700-1900, In: Charles Tilly (ed.): *Historical Studies of Changing Fertility*, Princeton: Princeton University Press, 209–223.
- Bertocchi, G. (2006), The law of primogeniture and the transition from landed aristocracy to industrial democracy, *Journal of Economic Growth*, 11(1): 43–70.
- Bonoldi, A., Dalle Nogare, C., & Potrafke, N. (2016), *Voter turnout and inheritance rules: Evidence from a border region*, Mimeo.
- Broms, R., & Kokkonen, A. (2019), Inheritance regimes: Medieval family structures and current institutional quality, *Governance*, 32(4): 619–637.
- Comin, D., W. Easterly & W. Gong (2010), Was the wealth of nations determined in 1000 BC? *American Economic Journal: Macroeconomics* 2(3): 65–97.
- De La Croix, D., & Perrin, F. (2018), How far can economic incentives explain the French fertility and education transition? *European Economic Review*, 108: 221–245.
- Desmet, K., I. Ortuño-Ortina & R. Wacziarg (2012), The political economy of linguistic cleavages, *Journal of Development Economics* 97(2): 322–338.
- Dilli, S. (2016), Family systems and the historical roots of global gaps in democracy, *Economic History of Developing Regions*, 31(1): 82–135.
- Duranton, G., Rodríguez-Pose, A., & Sandall, R. (2009), Family types and the persistence of regional disparities in Europe, *Economic Geography*, 85(1): 23–47.

- Ellul, A., Pagano, M. and F. Panunzi (2010), Inheritance law and investment in family firms, *American Economic Review*, 100(5): 2414–50.
- Galasso, V. and P. Profeta (2018), When the State Mirrors the Family: The Design of Pension Systems, *Journal of the European Economic Association*, 16(6): 1712–1763.
- Giuliano, P. and N. Nunn (2018), Ancestral characteristics of modern populations, *Economic History of Developing Regions* 33(1): 1–17.
- Goody, J. (2000), *The European Family*, Oxford: Wiley-Blackwell.
- Gorodnichenko, Y. and G. Roland (2016), *Culture, institutions and democratization*, NBER Working Paper 21117.
- Gorodnichenko, Y. and G. Roland (2017), Culture, institutions, and the wealth of nations, *Review of Economics and Statistics* 99(3): 402–416.
- Gutmann, J. and S. Voigt (2018), The rule of law: Measurement and deep roots, *European Journal of Political Economy* 54: 68–82.
- Kuran, T. (2005), The absence of the corporation in Islamic law: Origins and persistence, *The American Journal of Comparative Law* 53(4): 785–834.
- Kuran, T. (2011), *The long divergence: How Islamic law held back the Middle East*, Princeton: Princeton University Press.
- Le Play, F. (1895), *L'organisation de la famille selon le vrai modèle signalé par l'histoire de toutes les races et de tous les temps*, Paris: Mame Publishers.
- Lewis, B. (2002), *What Went Wrong? The Clash Between Islam and Modernity in the Middle East*, New York: Oxford University Press.
- Lijphart, A. (1999), *Patterns of Democracy – Government Forms and Performance in Thirty-Six Countries*, New Haven and London: Yale University Press.
- Murdock, G. P. (1981), *Atlas of world cultures*, Pittsburgh: University of Pittsburgh Press.
- Norris, P. (2015), *Democracy cross-national data*, V4.0, Available at: www.pippanorris.com/data.
- Rijpm, A., & Carmichael, S. G. (2016), Testing Todd and Matching Murdock: Global data on historical family characteristics, *Economic History of Developing Regions*, 31(1): 10–46.
- Rodrik, D., A. Subramanian & F. Trebbi (2004), Institutions rule: The primacy of institutions over geography and integration in economic development, *Journal of Economic Growth* 9(2): 131–165.
- Sachs, J. D. (2003), *Institutions don't rule: Direct effects of geography on per capita income*, NBER Working Paper 9490.
- Schulz, J. F. (2019), *Kin Networks and Institutional Development*, Mimeo.
- Solt, F. (2016), The standardized world income inequality database, *Social Science Quarterly* 97(5): 1267–1281.
- Spolaore, E. and R. Wacziarg (2009), The diffusion of development, *The Quarterly Journal of Economics* 124(2): 469–529.

Spolaore, E. and R. Wacziarg (2013), How Deep Are the Roots of Economic Development? *Journal of Economic Literature* 51(2): 325–369.

Szolysek, M. and R. Poniak (2018), The Power of the Family: New Data Reveal the Role of the Historical Family as the Instigator of Disparate and Lasting Developmental Trajectories, *World Values Research* 10(1): 1–39.

Todd, E. (1985), *Explanation of Ideology: Family Structures and Social Systems (Family, sexuality, and social relations in past times)*, Oxford: Blackwell.

Todd, E. (1990), *L'invention de l'Europe*, Paris: Seuil.

Todd, E. (2019), *Lineages of Modernity: A History of Humanity from the Stone Age to Homo Americanus*, Hoboken, NJ: John Wiley & Sons.

Weber, M. (1919), Politics as Vocation, In: T. Waters and D. Waters (eds., 2015), *Weber's Rationalism and Modern Society: New Translations on Politics, Bureaucracy, and Social Stratification*, New York: Palgrave Macmillan.

Williamson, O. E. (2000), The new institutional economics: taking stock, looking ahead, *Journal of Economic Literature*, 38(3): 595–613.

Table 2: Descriptive statistics

	Mean	SD	Min	Max	Nuclear	Authorit.	Endo.Com.	Exo.Com.	Afr./Anom.
Nuclear	0.24	0.43	0	1	1	0	0	0	0
Authoritarian	0.10	0.30	0	1	0	1	0	0	0
Endogamous Community	0.21	0.41	0	1	0	0	1	0	0
Exogamous Community	0.21	0.41	0	1	0	0	0	1	0
WVS: Racism	0.21	0.13	0.02	0.58	0.14*	0.15	0.32*	0.24	0.21
WVS: Control	0.65	0.08	0.45	0.79	0.67	0.67	0.63	0.61*	0.68
State Antiquity Index	0.54	0.21	0.08	0.96	0.64*	0.70*	0.55	0.56	0.38*
State Fragility Index (SFI)	9.42	6.45	0.00	23.3	6.25*	2.20*	12.37*	8.84	12.7*
SFI-Effectiveness	4.73	3.58	0.00	12.13	3.08*	0.98*	5.96*	4.51	6.64*
SFI-Legitimacy	4.69	3.18	0.00	11.48	3.17*	1.21*	6.40*	4.34	6.07*
WGI: Government Effectiveness	-0.04	1.00	-2.15	2.15	0.41*	1.28*	-0.46*	-0.13	-0.51*
WGI: Rule of Law	-0.07	1.03	-2.31	1.98	0.39*	1.26*	-0.47*	-0.21	-0.54*
Majoritarian Electoral System	0.34	0.48	0	1	0.35	0.06*	0.52*	0.26	0.38
DPI: Checks	2.48	1.23	1.00	6.86	3.20*	3.87*	1.75*	2.07*	2.31
Henisz: PolConIII	0.16	0.14	0.00	0.53	0.20	0.30*	0.10*	0.13	0.15
Henisz: PolConV	0.32	0.27	0.00	0.88	0.45*	0.69*	0.13*	0.25	0.29
Federalism	0.28	0.45	0	1	0.42	0.44	0.13*	0.23	0.27
Avg. Time in Office for Leader	9.31	6.46	1.01	49	6.43*	5.38*	12.45*	10.76	9.28
V-DEM: Civil Society	0.44	0.21	0.07	0.9	0.52*	0.59*	0.29*	0.46	0.41
Year of Industrialization	1986	33.29	1801	2005	1972*	1946*	2000*	1990	2002*
Technology 1000BC	0.45	0.28	0.00	1.00	0.40	0.52	0.65*	0.55	0.28*
Technology 1AD	0.74	0.28	0.00	1.00	0.59*	0.97*	0.94*	0.78	0.59*
Technology 1500AD	0.49	0.32	0.00	1.00	0.46	0.87*	0.57	0.66*	0.24*
Technology 2000AD	0.46	0.2	0.17	1.01	0.56*	0.81*	0.35*	0.44	0.35*
Gini, Before Transfers	0.45	0.07	0.24	0.69	0.46	0.43	0.42*	0.43*	0.49*
Gini, After Transfers	0.39	0.08	0.23	0.66	0.37	0.30*	0.39	0.35*	0.47*
Cousin Marriage, Share	15.1	17.31	0.20	65.8	2.66*	2.37*	32.01*	16.27	9.44
WVS: Family Ties	0.27	0.11	0.04	0.57	0.25	0.16*	0.37*	0.26	0.28
<i>Observations</i>	<i>164</i>				<i>36</i>	<i>16</i>	<i>33</i>	<i>35</i>	<i>39</i>

Note: Right panel shows mean values under each family type. *: difference to other family types significant at the 5%-level.

Table 3: Hypotheses 1 and 2

	(1) Racist	(2) Control
Absolute latitude	-0.406** (0.142)	-0.028 (0.096)
Tropical land area (%)	-0.107 (0.089)	0.007 (0.051)
Landlocked	-0.046 (0.026)	-0.025 (0.022)
Island	0.068 (0.050)	-0.017 (0.031)
Nuclear	-0.039 (0.053)	-0.005 (0.030)
Authoritarian	0.042 (0.058)	-0.005 (0.036)
Endogamous communitarian	0.137** (0.048)	-0.043 (0.036)
Exogamous communitarian	0.118* (0.050)	-0.060 (0.033)
Constant	0.321*** (0.070)	0.689*** (0.049)
Nuclear=0, [p]	0.000	
EndoCom=ExoCom, [p]		0.611
EndoCom=0, [p]		0.320
N	86	87
R2	0.40	0.14

OLS, Robust standard errors in parentheses, *: 0.05 , **: 0.01 , ***: 0.001.

Table 4: Hypothesis 3

	(1) StateHist	(2) Fragility (SFI)	(3) SFI-effect	(4) SFI-legit	(5) WGI: GovEff
Absolute latitude	-0.190 (0.175)	-25.601*** (3.900)	-11.554*** (2.297)	-14.047*** (1.862)	2.622*** (0.604)
Tropical land area (%)	-0.141 (0.079)	-0.306 (1.630)	0.556 (1.014)	-0.862 (0.747)	-0.138 (0.241)
Landlocked	-0.081* (0.036)	3.815*** (0.812)	2.566*** (0.477)	1.249** (0.418)	-0.490*** (0.128)
Island	0.009 (0.066)	-0.104 (1.247)	0.402 (0.963)	-0.506 (0.454)	0.259 (0.247)
Nuclear	0.219*** (0.063)	-1.612 (1.110)	-1.030 (0.701)	-0.582 (0.528)	0.363* (0.180)
Authoritarian	0.315*** (0.077)	-1.803 (1.415)	-1.429 (0.829)	-0.374 (0.710)	0.979*** (0.197)
Endogamous communitarian	0.128* (0.063)	3.811** (1.179)	1.700* (0.716)	2.111*** (0.598)	-0.416* (0.167)
Exogamous communitarian	0.134* (0.065)	2.520 (1.374)	1.162 (0.878)	1.359* (0.654)	-0.465* (0.190)
Constant	0.516*** (0.070)	14.617*** (1.561)	6.757*** (0.948)	7.860*** (0.729)	-0.604* (0.237)
EndoCom=ExoCom, [p]	0.916	0.322	0.491	0.254	0.790
EndoCom=0, [p]	0.960	0.000	0.002	0.000	0.001
N	119	132	132	132	136
R2	0.32	0.63	0.56	0.62	0.61

OLS, Robust standard errors in parentheses, *: 0.05 , **: 0.01 , ***: 0.001.

Table 5: Hypotheses 4 to 6

	(1) ROL	(2) MAJ	(3) CHECKS	(4) H-iii	(5) H-v	(6) FED
Absolute latitude	2.769*** (0.612)	-0.740 (0.412)	4.301*** (0.672)	0.404*** (0.109)	1.024*** (0.156)	-0.504 (0.404)
Tropical land area (%)	-0.165 (0.255)	-0.129 (0.167)	0.695** (0.260)	0.021 (0.039)	0.058 (0.062)	-0.270 (0.148)
Landlocked	-0.394** (0.150)	0.234* (0.095)	-0.449* (0.175)	-0.041 (0.024)	-0.123** (0.039)	-0.254** (0.076)
Island	0.331 (0.221)	0.152 (0.145)	-0.215 (0.264)	0.048 (0.031)	0.006 (0.056)	-0.017 (0.144)
Nuclear	0.375* (0.186)	0.137 (0.124)	0.319 (0.244)	-0.032 (0.031)	-0.018 (0.053)	0.124 (0.132)
Authoritarian	0.939*** (0.197)	-0.058 (0.152)	0.576 (0.360)	0.035 (0.057)	0.073 (0.076)	0.238 (0.207)
Endogamous communitarian	-0.386* (0.187)	0.261 (0.132)	-0.969** (0.299)	-0.099** (0.031)	-0.282*** (0.051)	-0.179 (0.117)
Exogamous communitarian	-0.514** (0.192)	0.053 (0.142)	-0.998*** (0.225)	-0.097*** (0.029)	-0.248*** (0.049)	0.007 (0.125)
Constant	-0.725** (0.251)	0.387* (0.163)	1.581*** (0.274)	0.100* (0.039)	0.174** (0.064)	0.541*** (0.154)
Authoritarian=0, [p]	0.000	0.062	0.000	0.029	0.000	0.181
N	137	135	135	136	134	135
R2	0.58	0.14	0.50	0.34	0.59	0.12

OLS, Robust standard errors in parentheses, *: 0.05 , **: 0.01 , ***: 0.001.

Table 6: Hypotheses 7 to 9

	(1) Tenure	(2) CivSoc	(3) Industr
Absolute latitude	-11.917* (5.199)	0.702*** (0.154)	-113.590*** (28.110)
Tropical land area (%)	-1.846 (1.830)	0.087 (0.062)	-3.339 (7.271)
Landlocked	0.883 (1.191)	-0.062 (0.036)	9.966* (4.633)
Island	3.177 (2.724)	0.038 (0.057)	-4.940 (13.717)
Nuclear	-1.738 (1.186)	0.011 (0.053)	-9.198 (5.612)
Authoritarian	-1.526 (1.875)	0.007 (0.077)	-20.876 (13.568)
Endogamous communitarian	4.205* (1.823)	-0.182*** (0.045)	13.065** (4.218)
Exogamous communitarian	3.391 (2.552)	-0.082 (0.051)	16.570* (6.808)
Constant	11.302*** (1.878)	0.292*** (0.056)	2014.216*** (8.472)
Nuclear=Authoritarian, [p]	0.876		
Nuclear=0, [p]		0.064	0.040
N	135	133	117
R2	0.21	0.37	0.52

OLS, Robust standard errors in parentheses, *: 0.05 , **: 0.01 , ***: 0.001.

Table 7: Hypothesis 10

	(1) Inno1000BC	(2) Inno1AD	(3) Inno1500AD	(4) Inno2000AD
Absolute latitude	0.255 (0.241)	-0.010 (0.232)	0.903*** (0.260)	0.583*** (0.109)
Tropical land area (%)	-0.110 (0.121)	-0.148 (0.101)	0.043 (0.108)	-0.030 (0.038)
Landlocked	-0.109 (0.061)	0.055 (0.052)	0.005 (0.053)	-0.125*** (0.023)
Island	0.000 (0.120)	0.035 (0.116)	0.122 (0.116)	0.029 (0.055)
Nuclear	0.034 (0.068)	-0.029 (0.072)	0.074 (0.075)	0.080* (0.036)
Authoritarian	0.096 (0.089)	0.305*** (0.077)	0.293*** (0.083)	0.203*** (0.046)
Endogamous communitarian	0.302** (0.096)	0.292*** (0.056)	0.231*** (0.060)	-0.103*** (0.025)
Exogamous communitarian	0.155* (0.076)	0.136 (0.072)	0.199* (0.082)	-0.092** (0.035)
Constant	0.335** (0.117)	0.656*** (0.086)	0.099 (0.097)	0.336*** (0.038)
Nuclear=0, [p]	0.133	0.011	0.244	0.003
N	99	115	105	114
R2	0.31	0.36	0.50	0.71

OLS, Robust standard errors in parentheses, *: 0.05 , **: 0.01 , ***: 0.001.

Table 8: Hypothesis 11

	(1) GINI-PRE	(2) GINI-POST
Absolute latitude	-0.039 (0.050)	-0.281*** (0.046)
Tropical land area (%)	-0.012 (0.026)	-0.024 (0.025)
Landlocked	-0.011 (0.014)	-0.012 (0.013)
Island	-0.003 (0.017)	-0.003 (0.019)
Nuclear	-0.032 (0.021)	-0.043* (0.021)
Authoritarian	-0.061* (0.026)	-0.092*** (0.022)
Endogamous communitarian	-0.081*** (0.020)	-0.053** (0.019)
Exogamous communitarian	-0.064** (0.023)	-0.055** (0.020)
Constant	0.518*** (0.027)	0.511*** (0.025)
Nuclear=Authoritarian, [p]	0.079	0.002
Authoritarian=Communitarian, [p]	0.426	0.001
N	134	134
R2	0.22	0.58

OLS, Robust standard errors in parentheses, *: 0.05 , **: 0.01 , ***: 0.001.