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Explaining *de facto* Judicial Independence

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Abstract: *A high degree of de facto judicial Independence (JI) functions as a crucial precondition of governments to credibly commit to legislative decisions, such as respecting private property rights. Thus, de facto JI should improve the allocative efficiency and may therefore contribute positively to economic growth. But JI as formally written down in legal texts is an imperfect predictor for de facto JI. This paper tries to identify the forces which determine de facto JI. A distinction between factors that can be influenced in the short run and those that are the result of historical development and that are exempt from short-term modification is made. Ascertaining the relative relevance of these two groups of variables promises to be policy-relevant. A rigorous empirical model reduction process is used in order to cope with the potential excess of explanatory variables. The explanatory variables for de facto JI that survive the reduction process are de jure JI, legal confidence of the public, extent of democratization, degree of press freedom, and the religious beliefs of the population.*

Key Terms: *Judicial independence, informal institutions, formal institutions*

JEL classification: *D 72, D 78, H 11, K 42*

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Explaining *de facto* judicial independence

1. Introduction

Why is the judiciary factually independent in some legal systems and highly dependent in others? How have some countries managed to turn the promise of an independent judiciary into a time-honored commitment whereas governments in other countries renege on the promise time and again? The answers to these questions promise to be tremendously important. Judicial Independence (JI) as factually implemented can be considered as a necessary condition to the realization of the rule of law, i.e. government under the law. If the judiciary is not independent from the other two government branches, it is their representatives that will rule – and not the law. Further, governments may find it difficult to make credible commitments if the judiciary is not independent. Under these circumstances, government promises to respect and enforce private property rights might remain cheap talk. An independent judiciary, on the other hand, may prevent a government to renege against its own promises and thus make it possible for a government to credibly commit to its policy decisions.

First empirical analyses explicitly relying on the concept of *de facto* JI do not reject these hypotheses. Feld and Voigt (2003, 2006) show that *de facto* JI is both statistically and economically highly significant for explaining economic growth: a switch from a totally dependent to a totally independent judiciary would – *ceteris paribus* – lead to an increase in growth rates of between 1.5 to 2.1 percentage points. Increasing *de facto* JI thus promises substantial returns. But the authors also show that simply promising higher degrees of (*de jure*) JI will not do the trick: the partial correlation between their *de jure* and *de facto* indicators is a low .22. In other words: JI as found in the legal texts is a very incomplete predictor for JI as factually implemented. Thus, *de facto* JI is determined by additional factors.

It is the purpose of this paper to identify the causes behind the observed levels of *de facto* JI. It thus complements the Feld and Voigt (2003, 2006) papers, where *de jure* and *de facto* levels of JI were assumed to be exogenously given. Here, the focus is on explaining *de facto* JI, as no correlation between higher levels of *de jure* JI and higher growth rates were found and *de facto* JI thus seems to be the more relevant variable for growth and income. Over the last couple of years, quite a few papers have dealt with the economic consequences of alternative institutional arrangements (recent surveys of this fast growing field are provided by Acemoglu, Johnson and Robinson

(2004) as well as Durlauf, Johnson and Temple (2005)). However, precious few papers have dealt with judicial behavior as an endogenous variable.

Hanssen (2004) has recently tested two predictions first generated by Ramseyer (1994), namely that judicial independence will be higher if politicians fear to lose power and that it will also be higher the farther the ideal points of the rival parties are apart. Using judicial retention procedures as the proxy for judicial independence, he finds empirical support for these hypotheses by drawing on panel data covering the U.S.-states between 1950 and 1990. Also with regard to the U.S., Besley and Payne (2003) find that judges tend to decide in favor of important parts of the electorate as this might increase their chances of being re-elected.

This paper adds to the literature in three ways: First, in the theoretical part it explicitly discusses both formal factors, such as *de jure* JI, and informal factors, such as values and traditions, as potential determinants of *de facto* JI. Second, the empirical part is based on a cross-country analysis and thus goes beyond the analysis of JI within single countries. Third, in order to cope with potential problems regarding too few degrees of freedom, a rather novel rigorous model reduction process is applied.

Reflecting the positive relationship between *de facto* JI and growth, aid and development programs have also focused on judicial independence in recent years. In order to evaluate the chances of success of these programs, it is important to analyze as many potentially relevant determinants of *de facto* JI as possible. This is the reason why the relevance of informal factors is explicitly inquired into here. More specifically, an explicit distinction will be made between explanatory factors that are not subject to deliberate change, at least in the short- and medium-term, and explanatory factors that could be modified. The ethnic diversity of a society, its religious traditions, and its legal history are examples for the first group of factors, the number of political constraints of a political system or whether it is a unitary or a federal system are examples for the second group. This approach promises to shed light on the question to which degree a society has the capacity to establish a judiciary that is not only formally independent but that is indeed factually so.

The empirical analysis shows that five variables are of particular relevance for explaining the level of *de facto* JI. These are (i) *de jure* JI, (ii) the confidence of the population in the legal system, (iii) the degree of democratization, (iv) press freedom and (v) religious beliefs of the population. The form of government (democratic vs. non-democratic), the degree of press freedom granted, and especially the level of *de jure* JI are subject to deliberate choice. It is not quite clear whether one can easily

raise the confidence of the population in the legal system and religious believes should be seen outside the choice of today's policy makers. Our results thus indicate that societies can influence the preconditions for high levels of *de facto* JI – and that they can thereby lay the foundations for a higher average growth rate.

The plan of the paper is as follows: the next section serves to develop some theoretical considerations, section three contains information on how we measure judicial independence, section four entails a description of the data, our estimation approach, and the results, section five is devoted to an interpretation of the results, and section six concludes.

2. Theoretical Considerations and empirical data

In this section, we develop a number of hypotheses concerning the driving forces of *de facto* JI drawing on economic logic, i.e. we ask what forces can make it costly for government not to respect formal JI. Since we later test these hypotheses empirically, we already describe the data along with the theory.

Credibility can be an important asset of a government. If a government that promises to enforce private property rights is credible, then actors will invest more than if the government was not credible. Higher investment levels translate into additional income. This, in turn, leads to higher utility levels for both the governed and the governing because higher (aggregate) income also means increased tax revenue. The credibility of a government can thus make everybody better off.

The separation of powers has often been discussed as a way to increase government credibility (Landes and Posner 1975, Barzel 1997, Tsebelis 2002). Beyond the conventional separation into the three functions of legislating, executing and adjudicating, the delegation to independent or non-majoritarian institutions has received a lot of attention lately (see, e.g. Majone 2001 or Voigt and Salzberger 2002). Independent central banks are the most frequently cited example: on the long run, everybody profits from stable money. On the short run, however, politicians may be tempted to increase their popularity by pushing for an output-stimulating monetary policy. If citizens expect this, the short-term positive effects will not materialize but the policy will nevertheless be costly because it will lead to a higher inflation rate. Delegating monetary authority to an independent central bank can be interpreted as a solution to the problem of time-inconsistent preferences as introduced by Kydland and Prescott (1977).

The creation of an independent judiciary can also be interpreted as an attempt to mitigate the problem of time-inconsistent preferences. For example, a government might announce at some point in time that it will enforce private property rights, hoping that private actors will invest later on. Once invested, government is subject to the (short-term) temptation to attenuate the investors' property rights. If a neutral third party (the judiciary) has the competence to ascertain whether any of the conflicting players has reneged on its promises, and to force them to make good on their promises, incentives to honor one's promises are substantially increased.

It would thus seem that rational nation state governments should aim at increasing their credibility by creating independent judiciaries. Yet, creating an independent judiciary and respecting its independence are not identical. Decision-makers who are subject to time-inconsistent preferences and who have delegated decision-making power might be tempted to interfere with the decisions of the judges once implementing a specific judicial decision appears very costly. Worse yet, unsatisfied governments might simply fire some judges or even abolish the independent judiciary altogether. This problem has been coined "second order commitment problem" (Moser 1999). On a worldwide scale, the effective average term-length of supreme court judges is substantially below the term-length to be expected according to the statutes of those agencies.¹ Formal delegation is thus not sufficient to solve the problem of time inconsistency. Hence the question what conditions need to be fulfilled in order to make governments honor their own promises – here with regard to respecting the independence of the judiciary.

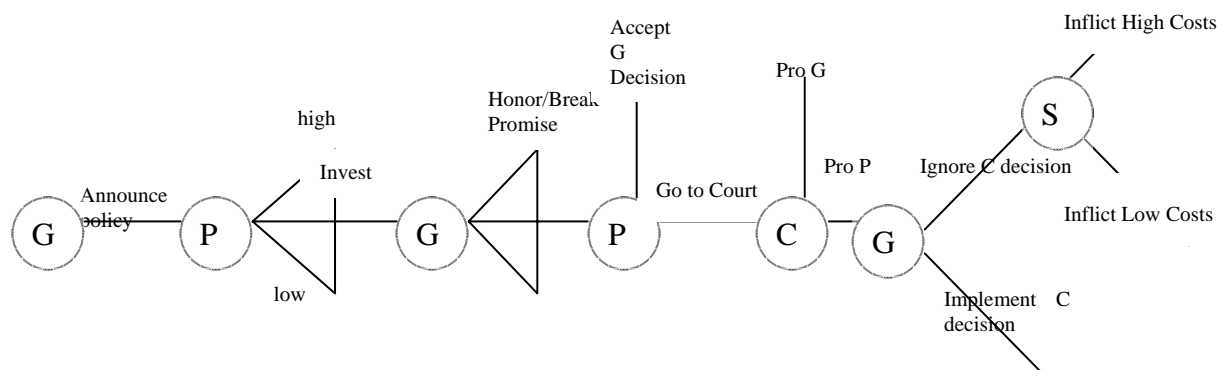
Actors with time-inconsistent preferences will make decisions that are not in their own long-term interest. They thus have an interest in restructuring the relevant decision-making situations. Rational actors with time-inconsistent preferences will try to transform simple promises (e.g. to enforce private property rights) into credible commitments by modifying the relevant payoffs. If, once the time has come to honor or break one's promises, honoring one's promises leads to higher utility than breaking them and this is common knowledge among the participating actors, a simple promise has been transformed into a credible commitment.

One can think of the relevant interactions as a simple non-iterated game (see figure 1 below): in the first stage, government announces its policies (it could, e.g., announce

¹ The effective average term-length of the members of the Supreme Court of Paraguay between 1960 and 1990 has, e.g., been a mere 1.1 years (Henisz 2000).

to create private property rights and have their enforcement checked upon by an independent court), in the second stage, private actors make their investment decisions based on the credibility of government promises and in the third stage, government decides whether to honor its promises (enforce private property rights) or whether to break them (attenuate private property rights). After government has made its choice, the private actors can decide whether to take the case to court (stage four). If the court decides that government action was in congruence with its promises, the game is over. If the court, however, decides that government had broken its promises and that it was its duty to make up for it, the next stage follows in which government either accepts the court decision (i.e. makes up for the damage it has caused) or ignores the court decision. The last stage of the game can be thought of as (part of) society reacting to the government's decision to ignore the judgment of the court. If society is able to inflict high costs on the government, the government might prefer to implement the judgment of the court. If, however, society is not able to inflict high costs on the government, the government might indeed prefer to ignore the court decision over implementing it. Possibilities of society to inflict costs on the government are not to re-elect it, to criticize it via the press etc. Some possibilities – based both on formal and informal institutions – will be discussed in some detail below.

Figure 1: A Stylized Game



G = Government; P = Private actors; C = Court; S = Society

The government will ignore the court decision if that is connected with a higher utility level than implementing it. If that is the case, private actors will not make use of courts and – more importantly - will choose low levels of voluntary investment. Repetition of the game greatly increases the number of possible equilibria. Governments might – but need not – honor their own promises because they know that what they do in this round of the game affects private actor decisions in the next

round of the game. Whether repetition makes governments comply depends *inter alia* on their time preferences.

The question then is: how can the “ignore the court decision” action be made so costly that government will be better off by choosing to “implement the court decision”. Two groups of possibly relevant factors will be distinguished, namely institutions that can be deliberately created on the one hand, and informal institutions which are not subject to deliberate change on the other. It is, of course, possible that factors of both groups need to complement each other in order to make the government honor its own promises.

Formal Institutions

The distinction between “Government” vs. “Court” as used in the simple game is an extreme simplification. Government is usually not a monolithic actor but made up of many actors, representing different constituencies and thus having heterogeneous preferences. If, following a possible non-implementation of an unfavorable court ruling, parts of “government” heavily oppose such action, this can reduce the likelihood of its occurrence. We have basically described the notion of checks and balances where actors who control other actors have an incentive to monitor the actions of these other actors and make them remain within the constitutionally agreed upon boundaries since any transgression can reduce their own competence. Thus, our first hypothesis is that the higher the degree of (factual) checks and balances, the higher the costs of meddling with the independence of courts, and the less likely interference into the judiciary’s competences are to occur. Recently, it has been proposed to make the degree of checks and balances measurable by counting the number of veto players found in a political system (Beck *et al.* 2000); this measure is used here.

Closely related to the number of veto players is the question of whether one is dealing with a parliamentary or a presidential system. Parliamentary governments need the constant support of parliamentary majorities whereas directly elected presidents do not. Only in parliamentary systems has parliament the possibility to inflict costs on the chief executive by forcing him out of office during his term. The costs of ignoring court decisions – or of tinkering with judicial independence more generally – are lower in presidential than in parliamentary systems. Our second hypothesis is that, *c.p.*, presidential systems will enjoy lower degrees of *de facto* JI than parliamentary ones. Notice that this hypothesis is partially conflicting with our first hypothesis as the separation of powers is higher in presidential than in parliamentary systems. We

include a variable here that distinguishes between presidential and parliamentary systems based on the Database on Political Institutions (DPI), which was provided by Beck et al. (2000).²

A third possible determinant, also closely related to the first one, is the question of whether one is dealing with a unitary or a federal system. Federal systems have a larger number of veto players than unitary ones and we would *c.p.* expect a higher degree of *de facto* JI in federal than in unitary states. An additional layer of government means that there are additional actors who might have an interest in the federal government playing by the formally valid rules. They have different constituencies and thus interests different from the federal government. If the federal government tries to meddle with the judiciary, state governments might oppose this move and thus make it more costly for the federal government. Our third hypothesis is that, *c.p.*, federal systems will enjoy higher degrees of *de facto* JI than unitary systems. Unfortunately, it is notoriously difficult to “measure” the degree of federalism of a given political system. Treisman (2000) contains a dummy variable on federalism which is based on Elazar (1995) and Riker (1964). This variable is used here.

In the game described above, the voters or “society” can sanction government by, e.g., refusing to re-elect it, criticizing it in the press etc. If voters appreciate living under a regime that honors its own promises, a non-implementation of a constitutional decision can reduce re-election chances of that government. This argument obviously

² Presidents often claim that they are the only ones who represent the people as a whole. This might make them more audacious than, e.g., prime ministers in renegeing upon constitutional constraints. Political parties are regularly weaker in presidential than in parliamentary systems. This might further increase the incentives of presidents not to take formal judicial independence too seriously: if parties are weak, the possibility to produce opposition against a president who reneges upon the constitution might be less than in systems with strong political parties. A reduced likelihood of opposition does, of course, make renegeing upon constitutional rules more beneficial. There might be yet another transmission mechanism concerned with political parties. Brennan and Kliemt (1994) show that organizations like political parties often develop longer time horizons than individual politicians: whereas presidents will be out after one or two terms (as in Mexico or the U.S.), political parties might opt for staying in power indefinitely (like in Japan). If the discount rate of presidents is indeed higher than that of, say, prime ministers or party leaders, this might also let offenses against judicial independence appear more beneficial to presidents than to prime ministers.

presupposes the existence of a democratic regime; the corresponding – and fourth - hypothesis reads that democratic regimes are more likely to enjoy a high degree of *de facto* JI than non-democratic regimes. The degree of realized democracy is proxied for by the variable “political rights” which is primarily concerned with the right of all adults to vote and to compete for public office and which is published annually by Freedom House.

But tinkering with the independence of the judiciary can also be costly if such action is widely reported (and criticized) in the press. A free press is hypothesized to be conducive to a high degree of *de facto* JI. Strictly speaking, a free press is not part of the relevant institutional structure, but rather a consequence of a certain institutional structure. If politicians consider tinkering with the independence of the judiciary, a press that is largely free from government interference can make such attempts costly – and hence less attractive – for politicians by widely reporting them. At times, a free press can be instrumental for helping those opposed to the interference into the independence of the judiciary to overcome their collective action problems. The indicator used here is also provided by Freedom House and takes into account whether or not dissent is allowed, whether there is political pressure on the content of the media no matter whether state run or privately owned, whether there is economic influence on media content that would distort the quality of reporting, and whether there have been any incidents in which press freedom was violated such as murders, arrests, suspension and the like.

Informal Factors

After having developed five hypotheses focusing on the potential role of institutions that can be deliberately created and modified, we now turn to possible determinants of *de facto* JI that are not subject to deliberate choice, at least not in the short and medium term. Should the empirical analysis show that these factors are crucial for achieving high degrees of factual JI, this would be bad news for policies trying to bring improvement about.

Going back to the stylized game introduced above, the question now is if a society has the capacity to inflict substantial costs onto its government should it ignore a court decision – or tinker with JI more generally. Suppose a court has issued a decision not in line with (short-term) government interests and the government now considers ignoring the court decision. If government knows that this would lead to substantial opposition, it might be better off implementing the court decision nevertheless. The capacity of (parts of) society to produce opposition thus appears crucial. The

production of opposition is, however, equivalent to the production of a public good. A population's potential to produce opposition is therefore subject to its capacity to overcome the problem of collective action. Voluntary participation in the production of public goods is always precarious but there are some factors that make it more likely: (1) Relevant parts of the population need to be convinced that it is not fate that is responsible for their lot, but - at least to some degree - their individual actions. If that is not the case, no relevant opposition can be expected when governments ignore court decisions or reduce JI in some other way. (2) It is easier for organized groups than for unorganized individuals to oppose government in case it tries to put undue pressure on the judiciary because organized groups have already solved the problem of collective action. However, the production of opposition remains a public good and the conditions under which it can be beneficial for an organized group to participate in its provision must be specified.

Some variables from the World Values Survey can be used as proxies for individual attitudes that are a precondition for becoming actively involved in public issues. Since they are not directly measuring what we are interested in, we construct a variable containing the common variance of the respective variables, which we interpret as potential for collective action in a country. Distilling the information of several variables into one is also advantageous in the present situation of a scarcity of degrees of freedom. We use three such variables to generate a factor "Collective Action" by using principle components analysis:

- (1) Survey respondents were given a list of 15 different types of voluntary organizations (from social welfare services for elderly, handicapped or deprived people via sports organizations and women's groups to animal rights) and they could indicate (i) whether they belonged to any of these and (ii) whether they actively participated in them. Answers to both questions are of interest here: the existence of voluntary organizations and a high membership rate indicate that people in a specific society have managed to overcome the problem of collective action before.
- (2) Respondents were asked whether they have complete control over their lives. Those who think that they do not have much control are less likely to believe in the potential of collective action.
- (3) Finally, one question inquired whether respondents thought that their country was run by a few big interests. Again, a higher percentage of people believing that this is the case will make it less likely that collective actions are undertaken, as people feel powerless.

A principle component analysis based on these three variables is run and generates a factor that explains 39% of the variance in the underlying variables. The signs of the factor loadings are as suggested above and all pass the rule-of-thumb value of 0.5. This factor is computed for every country, which makes its absolute value comparable in the cross-section analysis conducted below. A high positive value indicates that the country has a relatively good potential for solving the collective action problem.³

The individual attitudes that are conducive (or not) to collective action are caused by a number of different influences. It can be argued that religious affiliation is of paramount importance (Weber 1920/1988). Religions can propagate the importance of individual attitudes, decisions, and actions with regard to the good life. But they can also preach that most things are predetermined. Such views are conducive to fatalism in which opposition against government would not come to the believers' mind. We test for this by drawing on the share of a population that adheres to a specific religion.

The likelihood of collective action can further be influenced by the costliness of coordinating behavior. If the population is split into many different ethnic groups using different languages, coordination will be more difficult. Our hypothesis thus reads that *de facto* JI will, *c.p.*, be higher the more homogenous the population. The index of ethnolinguistic fractionalization (ELF) measures the probability that two persons from a given country selected at random do not belong to the same ethnolinguistic group. The higher the index, the more heterogeneous the country. Easterly and Levine (1997) have constructed a variable "Average ethnolinguistic fractionalization" based on the ELF as well as on four additional indicators. The partial correlation coefficient between the original indicator and the average indicator is high (0.92). The average indicator is used here as it is available for a larger number of countries.

Yet another aspect determining the probability of collective action is the level of trust that members of society display against each other. Collective action depends on the capacity to cooperate on a voluntary basis. Both Banfield (1958) and Putnam (1993) have stressed the importance of trust for the possibility to cooperate voluntarily. It is thus hypothesized that high degrees of trust are, *c.p.*, one cause for high levels of *de*

³ From an economic point of view, voluntary participation in general elections is equivalent to participate in the voluntary provision of a public good. Voter turnout is therefore an alternative indicator that has also been used here.

facto JI. Trust data are answers to the question “Generally speaking, most people in society can be trusted” taken from the World Values Survey.

Lastly, we conjecture that the confidence the citizens have in the legal system might be conducive to *de facto* JI. This gives an indication of the informal support the judiciary has in the population. Strong public support may not only help to guarantee that the codified extent of *de jure* JI is actually implemented, it may actually increase the degree of JI.⁴ However, the direction of causation is not entirely clear. It might also be the case that a high degree of *de facto* JI increases the confidence of the population in the legal system. If this is the case, OLS coefficient estimates of this variable might be upward biased and in the empirical implementation we have to take that possibility into account.

The informal variables that have been conjectured to have a causal influence on *de facto* JI have focused on individual attitudes (and their determinants) based on the assumption that certain individual attitudes are a necessary condition for collective action. They have further focused on the importance of voluntary associations based on the assumption that their extent can be important in producing opposition in case a government tries to reduce judicial independence.

Control Variables

We now turn to a number of variables that could also influence the observed degree of *de facto* JI and for which we thus control. *A priori*, it is not clear whether good institutions lead to higher incomes or whether higher incomes enable societies to “afford” good institutions (see, e.g., Chong and Caldéron 2000). We therefore control for the log of GNP per capita. This variable can also be justified by asking for the incentives of citizens to participate in the production of opposition should government try to influence the judiciary: the wealthier citizens are, the more they have to lose. It is thus hypothesized that high levels of per capita income increase the citizens’ interests in an impartial and independent judiciary.

Another factor that might influence the results is geography. Here, the latitude of a country is controlled for based on the observation that economies in more temperate zones have a number of advantages such as less health problems, better conditions for agriculture and – possibly – less natural disasters that could also facilitate the implementation of a factually independent judiciary.

⁴ A similar argument related to central bank independence has been made by Hayo (1998).

Additional Instruments

Arguably, there are two variables in our list of explanatory variables that may be endogenous, legal confidence and per capita income. In the regressions below, we include dummy variables for the legal origin of a country's commercial law. La Porta et al. (1999) distinguish between British (Common Law), Scandinavian, German, French and Socialist legal origins as additional instruments. The legal tradition may affect the potentially endogenous variables while it is unlikely that they are related to *de facto* JI.

As another instrument, we use the time that has passed since the Constitution of a country has come into force. Again, we conjecture that this variable can affect the potentially endogenous variables while it is unlikely that they are an important determinant of the dependent variable.

This concludes our discussion of variables determining a country's level of *de facto* JI. Before we can turn to the empirical part, we still need to define our dependent variable, i.e. *de facto* judicial independence and the indicator that is to proxy for it.

3 Measuring Judicial Independence

JI means that judges can expect their decisions to be implemented regardless of whether they are in the (short-term) interest of other government branches upon which implementation depends. It further implies that judges – apart from their decisions not being implemented – do not have to anticipate negative consequences as the result of their decisions, such as (a) being expelled, (b) being paid less, or (c) being made less influential.

Recently, two new indicators measuring *de jure* as well as *de facto* JI that aim at measuring the most important aspects of judicial independence have been presented (Feld and Voigt 2003). These indicators focus on the independence of the highest court of a country, no matter whether it is a supreme court or a constitutional court. The focus on the highest court seems warranted because even though judges are personally independent, the ultimate control of court decisions lies with the highest courts, as they review – on the initiative of the parties involved – the lower court decisions. The independence of the highest court thus seems crucial.

Secondly, these indicators are constructed as objective as opposed to subjective indicators. A subjective indicator of JI would ask for the perception of independence amongst those being polled. For those who live under the respective rules, their

perception is surely an important element determining their behavior. However, the norms of what an ideally independent judiciary would look like will most likely be different in different parts of the world. Data obtained by polls are thus not easily comparable. Therefore, the two new indicators aim at objective information. In principle, anybody re-estimating JI in the countries covered should end up with exactly the same data.

The indicator measuring *de jure* JI contains twelve variables, the indicator measuring *de facto* JI eight. The *de jure* indicator includes variables such as the modus of nominating or appointing highest court level judges, their term lengths, the possibility of re-appointment, the procedure of removing them from office, their pay and possible measures against reduction of their income, the accessibility of the court, the question of whether there is a general rule allocating cases to specific judges, and publication requirements concerning the decisions of the court. Here, we are more interested in the *de facto* indicator, which is why the variables are described in a little more detail:

- (1–3) A crucial aspect of *de facto* JI will be the effective average term length of the members of the highest court. If the actual term length and the one to be expected on the basis of the legal foundations deviate, this is interpreted as a signal for a low level of factual independence. Removing a judge before the end of term is a serious breach of JI and countries where this has occurred get a low score.
- (4) The influence of a judge depends on the number of other judges who are members of the same court. By increasing the number of judges, the weight of the sitting judges can be reduced. The *de facto* indicator takes into consideration how many times the number of judges has been changed since 1960.
- (5–6) In order to be factually independent, judges need to be paid adequately. It was therefore inquired whether the incomes of judges have at least remained constant in real terms since 1960. But the efficacy of courts does not only depend on the income level of their judges but also on the number of clerks employed, the size of the library, the availability of modern computer equipment etc. This aspect has been taken into account by asking for the development of the court's budget as an organization (also since 1960).
- (7) Any change in the basis of the legal foundation of the highest court will increase uncertainty among its potential users, i.e. will be counter to one of the most fundamental functions of the law. Frequent changes of the respective legal rules are therefore interpreted as an indicator for low *de facto* independence.

- (8) The *de facto* degree of judicial independence is low if decisions of the highest court, in order to be implemented, depend on some action of one (or both) of the other branches of government and this cooperation is not granted. The more frequently this has been the case, the less independent is JI supposed to be factually.

All variables can take on values between 0 and 1. The unweighted sum of the variables is then divided by the number of variables for which information is available. The *de facto* indicator can thus also take on values between 0 and 1. *De facto* data are available for 86 countries (data for both the *de jure* and the *de facto* indicator can be found in appendix 1; appendix 2 contains a description of the data sources).

4. Explaining *de facto* Judicial Independence in a Multivariate Setting

In view of the theoretical discussion above, we cannot get many empirically relevant restrictions over and above the choice of variables that should be included in our model. However, when there is little guide from theory, we think that special emphasis needs to be placed on avoiding spurious relationships. Therefore, our modeling strategy is general-to-specific, as advocated by Hendry (1993). This strategy ensures that the inferences are statistically valid. Since we have quite a number of potentially influential variables, there is the danger that our final parsimonious model is not an encompassing model, as inference may be path-dependent. Based on the re-examination of the vices and virtues of data mining by Hoover and Perez (1999), Hendry and Krolzig (1999) develop a model reduction algorithm, that is, according to a wide range of Monte-Carlo studies, surprisingly powerful in recovering the underlying data generating process (DGP). We apply this approach to the problem at hand.

There are theoretical reasons to suspect that GDP per capita and legal confidence are endogenous with respect to *de facto* JI. To account for any biases in our estimators, we instrument these variables. As additional instruments we use dummies for the legal origin and the date when the constitution came into force. As an estimator, we utilize two-stage least squares. Note that the reduction process takes the instrumentation of these variables consistently into account by keeping the set of instruments fixed. Removing the exogenous variables that do not survive the testing-down process from the list of instruments does not alter our results in any noteworthy way. It is also interesting to note that the additional instruments are not significant when included in the regression as normal explanatory variables.

Table 1: Information on variables

Variables	Sources	Codings
<i>Dependent variable</i>		
DE FACTO JI	Feld and Voigt (2003)	Continuous between 0 and 1.
<i>Formal factors:</i>		
DE JURE JI	Feld and Voigt (2003)	Continuous between 0 and 1.
CHECKS	Beck et al. (2000)	Number of institutions that provide legislative "checks". Average over the years 1975-79.
SYSPRES	Beck et al. (2000)	Presidential system. Direct presidential 0, strong president elected by assembly 1, parliamentary system 2. Average over the years 1975-79.
FEDERAL SYSTEM	Treisman (2000)	Federal system, Dummy (1, 0).
DEMOCRACY	Polity IV data base	From -10 (dictatorship) to 10 (Western democracy). Average over the years 1975-79.
PRESS FREEDOM	Freedom House	0: no press freedom to 100: Maximum press freedom.
<i>Informal factors</i>		
LEGAL CONFIDENCE	World Value Survey	Average of individual level coding ranging from 2: very much confidence, 1, -1, to -2: non at all (see the Appendix for original wording in survey).
TRUST	World Value Survey	National average of answer to question "Can people be trusted?" Yes: 1, No: 0. See Appendix for original wording in survey.
COLLECTIVE ACTION	World Value Survey	Factor estimated using principle component analysis using answers on "Active voluntary organization membership?", "Complete control over one's own life?", and "Country run by a few big interests?" See Appendix for original wording in survey.
ETHNIC FRACTIONALIZATION	Alesina et al. 2003	Likelihood that two randomly selected individuals belong to different ethnic groups
RELIGIOUS FRACTIONALIZATION	Alesina et al. 2003	Likelihood that two randomly selected individuals belong to different religious groups
LINGUISTIC FRACTIONALIZATION	Alesina et al. 2003	Likelihood that two randomly selected individuals belong to different linguistic groups
PROTESTANT	La Porta et al. (1999)	Share in % in population.
CATHOLIC	La Porta et al. (1999)	Share in % in population.
MUSLIM	La Porta et al. (1999)	Share in % in population.
ORTHODOX	CIA World Fact Book	Share in % in population.
<i>Control variables</i>		
LATITUDE	La Porta et al. (1998)	Actual latitude.
GNP PER CAPITA	La Porta et al. (1998)	Log of per capita GNP.
<i>Additional instruments</i>		
LOENGL	La Porta et al. (1999)	Dummy (1, 0).
LOFREN	La Porta et al. (1999)	Dummy (1, 0).
LOGERM	La Porta et al. (1999)	Dummy (1, 0).
LOSCAN	La Porta et al. (1999)	Dummy (1, 0).
LOSOCI	La Porta et al. (1999)	Dummy (1, 0).
DATE	Various sources	Year when constitution came into force.

A further complication in the present analysis is the uneven availability of data across countries. Most of the theoretically interesting variables contain observations for a

group of 46 countries (see Table A1 in the Appendix for the list of countries). Although the data cover all regions in the world (see Table A2), the sample is not necessarily representative of the world population or the geographic location of countries. In particular, African countries are very much under-represented, while European and South American countries are over-represented. We apply the reduction process to the variables of that sample. We then include the variables with fewer observations to see whether they have any additional explanatory power, at least within the resulting smaller sample. The general unrestricted model for the biggest data set includes all variables discussed in the theoretical section and listed in Table 1, except for the indicators of federalism and collective action.

Statistical tests indicate that the unrestricted model based on Table 1 is not an acceptable representation of the DGP, as it does not pass the test for normally-distributed residuals. This rejection is driven by one large outlier (Ghana). As the statistical validity of the reduction algorithm depends on the adequacy of the unrestricted model, we include a dummy variable for Ghana.⁵ We also check for collinearity, and find a considerable amount of common variation among the explanatory variables. The eigenvalues of the second-moment matrix range from 0.0002 to 9.9. Most of the collinearity is between explanatory variables and the constant term. In the testing-down process we try to ensure that the specific model is not the result of an excessive influence of collinearity.

The parsimonious model that emerges from the general-to-specific modeling process is listed in Table 2. Column one contains the variables that survive the reduction process and the elimination of which would violate a statistical test. The coefficient estimates and standard errors are given in columns two and three, respectively. Column four contains marginal significant levels and column five estimates of the elasticities of the variables measured at their means.

⁵ Chris Welzel, a member of the Executive Committee of the World Values Survey Association indicated to us that the quality of the sample for Ghana is particularly poor (it is only included in a pre-test format, utilizing about 100 observations). Thus, any results based on these data should be taken with great caution.

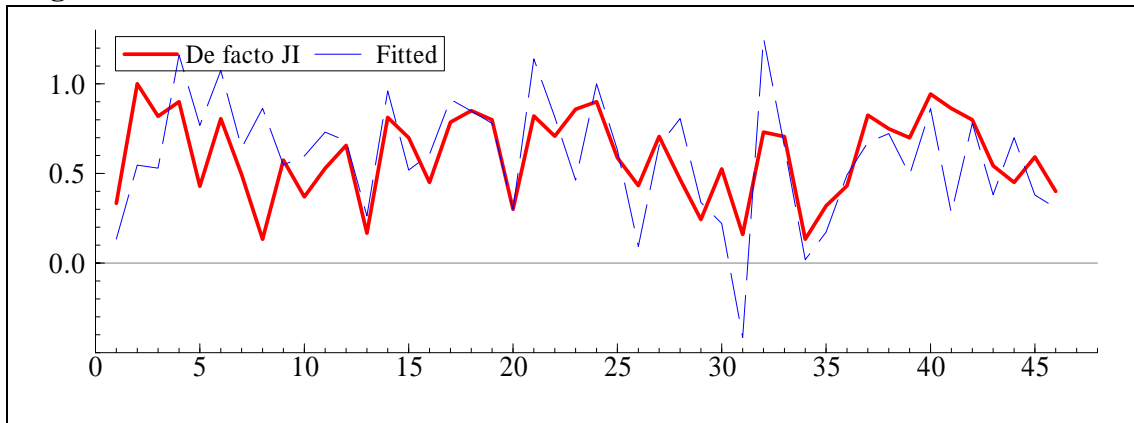
Table 2: Specific model for *de facto* judicial independence

Variables	Coeff.	SE	p-values	Elasticities
DE JURE JI	0.650	0.200	0.0025	0.72
LEGAL CONFIDENCE	0.904	0.265	0.0015	0.64
DEMOCRACY	0.013	0.006	0.0229	0.01
PRESS FREEDOM	0.005	0.003	0.0600	0.27
CATHOLIC	0.004	0.002	0.0155	0.31
ORTHODOX	0.012	0.003	0.001	0.16
PROTESTANT	-0.004	0.002	0.092	-0.10

Notes: The model contains a dummy variable for Ghana (coeff: -0.946, SE: 0.359, p-value: 0.012). The implied elasticity estimates are evaluated at the means of the respective variables.

Row five of Table 3 shows that the excluded variables are not significant at any reasonable level of significance, while the preceding row indicates that the remaining variables are jointly significant at a level of 1%. Comparing the p-values in Table 2 indicates that all of the variables remaining in the model are significant at a level of 10% or lower. The final model explains about 40% of the variation in *de facto* JI.⁶ Figure 1 shows the actual and predicted values.

⁶ The fit is measured by a Pseudo-R² based on the squared multivariate correlation coefficient.

Figure 1: Predicted versus actual values

Note: Countries are ordered alphabetically according to the list given in Table A1 of the Appendix.

Table 3 contains the outcome of applying a battery of diagnostic statistics. None of these indicate any misspecification, as the model passes tests for heteroscedasticity (White (1980), using squares of regressors), normality (Jarque and Bera (1987), with a small-sample correction), misspecification (RESET test based on Ramsey (1969) using squares of the fitted values), and instrument exogeneity and functional form (Sargan test, see e.g. Davidson and McKinnon (1993)).

Table 3: Diagnostic information for final model in Table 2

No of observations	46
SE equation (σ)	0.24
Pseudo- R^2	0.41
Joint test remaining	$F(7,38) = 43.5^{**}$
Testing-down	$F(10,29) = 0.19$
Heteroscedasticity test	$F(15,22) = 1.99$
Normality test	$\text{Chi}^2(2) = 4.75$
RESET test	$F(1,37) = 0.01$
Sargan test	$\text{Chi}^2(13) = 5.00$

Notes: An $(^{**})$ indicates significance at a 5% (1%) level.

Adding the indicators for federalism and/or collective action to the model in Table 4 does not lead to any changes in the conclusion, as these variables are neither (individually as well as jointly) significant nor do they effect the other estimates.⁷

⁷ When including both federalism and collective action the sample size decreases to 30. The joint exclusion test does not reject at any reasonable level of significance: $F(2,21) = 0.07$.

Moreover, it is important to see whether the imbalance in the sample with regard to regions will affect our estimation results. It turns out that none of the regional dummies shows significant effects.⁸

5. Interpretation of Results

Concentrating our discussion on the robust influences, i.e. those variables that survive the testing down process, the first result of interest is the positive coefficient of the *de jure* judicial independence indicator. Hence anchoring JI by formal laws does increase actual JI. What is the meaning of the size of the coefficient? It implies that an increase in the index value of *de jure* JI raises *de facto* JI by 0.65 points. Although the size of the coefficients is not directly comparable, if actual JI were fully explainable by written laws then we would expect that the elasticity of *de jure* with respect to *de facto* JI is one. Computing this elasticity at the means of *de facto* and *de jure* JI, we get a value of 0.72 for all other variables being constant. Thus, our first important result is that there appears to be no one-to-one relationship between *de jure* JI and *de facto* JI.

The indicator for the confidence in the legal system by the public shows a positive influence. The higher legal confidence, the more independent will be the judges factually. Arguably, this supports the point made above, namely that judges can increase their independence by generating trust about their work in the general populace. Remember that we controlled for the potential endogeneity of legal confidence by instrumental variable techniques. Thus, legal trust can be a substitute for written laws. It should also be noted that the correlation coefficient between legal confidence and general trust in the society is significantly positive (0.37). However, the explanatory power of legal confidence for *de facto* JI is much higher, as it is more specific to the question at hand than general trust. Looking at the implied elasticity as an estimate of the absolute importance of legal trust, we find that a one percent increase will raise *de facto* JI by about 0.64 percent. This elasticity is slightly lower than the estimated value for *de jure* JI but not significantly so.

The extent of democratization shows a significantly positive influence on *de facto* JI. In other words, democratic states have, on average and controlling for other

⁸ After adding regional dummy variables for Africa, Asia, West- and East Europe, and South America to the model in Table 2, we cannot reject that their joint impact is zero. $F(5,34) = 1.22$. Neither is any regional dummy significant when included on its own.

influences, a more independent judiciary. Again we find this result in accordance with our theoretical arguments. Democratic control appears to be relevant in constraining an erosion of independence of the judges by legislative action. However, at the sample average the impact of democracy on *de facto* JI is quite small. Our elasticity estimate implies that a one percent increase in the democratization index will raise *de facto* JI by 0.01 percent only. Another effective control agency is a free press, as more press freedom leads to higher *de facto* JI. While the coefficient estimate is only significant at a 10% level, its elasticity is much higher than in the previous case. A one percent increase in the press freedom index leads to a rise of *de facto* JI by 0.27 percent.

With respect to cultural background, we find significant results for the share of Protestants, Catholics and Orthodox in a country. Opposite to our expectations, the share of Protestants has a negative impact on *de facto* JI. The bivariate correlation between these variables is 0.16. Thus, while the unconditional effect of Protestantism on *de facto* JI is positive, it becomes negative after accounting for other influences. However, again the coefficient is only significantly different from zero at a significance level of 10% and the implied elasticity is not particularly large in absolute values (-0.10). On the other hand, significantly positive results are recorded for the share of Catholics and Orthodox. The bivariate correlations are -0.02 and 0.02, respectively. Hence, the impact of these variables is much more pronounced in the multivariate setting. While the elasticity of the Orthodox share is not that big (0.16), a one percentage increase in the share of Catholics will increase *de facto* JI by 0.31 percent.

It seems worth pointing out what variables failed to survive the reduction algorithm used here: First, none of the institutions traditionally used to describe the architecture of political systems, i.e. the degree of checks and balances, the form of government (parliamentary vs. presidential) and the vertical separation of powers (unitary vs. federal) survived. It may be the case that the impact of these variables is overshadowed by our indicators of democracy and press freedom, which could be regarded as measuring political outcomes – and not institutions in the sense of rules and sanctions that are relatively stable over time (see Glaeser et al. (2004) who have criticized those who draw on such variables in an attempt to proxy for institutional arrangements). Repeating the general-to-specific modeling process without these two indicators leads to a significantly positive influence of parliamentary systems as opposed to presidential systems on *de facto* JI. In other words, the separation of powers is less successfully implemented in presidential than in parliamentary

systems.⁹ Secondly, neither the collective action variable nor the ethnic fractionalization of societies survived. As these two informal variables are hard to modify by lawmakers, this is potentially good news. Thirdly, GNP per capita did not survive the reduction process either which means that the potential endogeneity problem (high income causing good institutions – and not vice versa) is not relevant in this case.

6. Conclusion

The starting point of this paper was the observation that *de jure* JI and *de facto* JI are imperfectly correlated. Hence our first question was how the factually observed levels of judicial independence can be explained. The second question dealt with a potentially frustrating issue: given that a society's politicians want to implement a factually independent judiciary, to what degree is it in their hands to establish it? Asked differently: to what degree does the observable level of judicial independence depend on variables beyond the reach of politicians?

Up to 13 potentially relevant variables were presented above: out of them, five can be influenced directly by deliberate institutional choice, whereas eight do not appear to be directly influenceable. This large number of potentially relevant variables was reduced by using the general-to-specific approach as developed by Hendry (1993). On the basis of 46 countries, we find that *de facto* JI is robustly explained by *de jure* JI, the realized degree of democracy and the freedom of the press all of which can, at least indirectly, be modified by institutional choice. The degree of *de facto* JI is further determined by the amount of confidence that the citizens of a country have in their legal system as well as by their religious affiliations. The confidence of the population in the legal system and perhaps even more so religious affiliations evolve over a longer time period and are not variables within easy reach of the typical political reformer.

On the basis of the analyzed sample, *de facto* JI is thus influenced by at least some variables that are subject to deliberate choice. Given that *de facto* JI appears to be

⁹ We prefer our original specification, as the result of the reduction process from the general model without the two indicators for democracy and press freedom *de jure* JI no longer contains *de jure* JI as an explanatory variable for *de facto* JI. In our view, this result appears to be too extreme, and suggests that, at least in our case, democracy and press freedom are valid indicators.

important for allocative efficiency and economic growth, this is good news. The highest elasticity estimate is for *de jure* JI, which means that the most effective way of increasing *de facto* JI is through the creation of formal laws. However, even this elasticity is below unity, i.e. the resulting increase in *de facto* JI will be relatively lower than the improvement in *de jure* JI that has caused it. The elasticity of *de facto* JI with regard to the freedom of the press is 0.27 and that of the degree of democracy is only 0.01. Hence, changes in the political system towards more democracy are unlikely to affect *de facto* JI very much. Improving press freedom appears to be a much more promising route: First, its relative effect on *de facto* JI is much higher. Second, it is much easier to implement by the government in practice, at least in general. Finally, it may be the case that policy makers can even actively influence legal confidence. For instance, it may be the case that public displays of respect towards judges (given a reasonable degree of *de jure* JI) may lead to a higher degree of trust with respect to the legal system in the population. Given that the elasticity estimate of legal confidence of 0.64 is the second largest in our model, there may be some scope for improving *de facto* JI by boosting legal trust.

Note, however, that these elasticity estimates are only suggestive and might vary a lot for any particular case, as they depend both on the actual degree of *de facto* JI and the value of the relevant explanatory policy variable. For instance, the elasticity of *de jure* JI with respect to *de facto* JI takes on a value of 1.30 in the case of Argentina, while it is only 0.63 in the case of Turkey. Thus, the usefulness of any particular factor that is amendable for policy makers seeking to increase *de facto* JI needs to be assessed for every particular case.

Appendix

Table A1: List of countries in sample

Country	De jure	De facto	Country	De jure	De facto
Argentina	0.665	0.333	Japan	0.622	0.900
Armenia	0.629	1.000	Korea, South	0.607	0.588
Australia	0.817	0.819	Lithuania	0.447	0.433
Austria	0.733	0.900	Mexico	0.804	0.707
Bangladesh	0.587	0.429	Netherlands	0.631	0.467
Belgium	0.825	0.806	Nigeria	0.553	0.243
Brazil	0.907	0.494	Pakistan	0.765	0.525
Bulgaria	0.397	0.133	Peru	0.485	0.160
Chile	0.778	0.575	Philippines	0.909	0.731
China	0.406	0.370	Portugal	0.530	0.706
Colombia	0.939	0.529	Russia	0.845	0.133
Croatia	0.570	0.657	Slovakia	0.569	0.319
Czech Republic	0.761	0.167	Slovenia	0.869	0.431
Denmark	0.779	0.813	South Africa	0.681	0.825
Estonia	0.641	0.700	Spain	0.551	0.750
Finland	0.544	0.450	Sweden	0.605	0.700
France	0.634	0.786	Switzerland	0.459	0.943
Georgia	0.893	0.850	Taiwan	0.575	0.863
Germany (West)	0.729	0.800	Turkey	0.774	0.800
Ghana	0.464	0.300	Ukraine	0.703	0.543
Hungary	0.628	0.821	Uruguay	0.577	0.450
India	0.629	0.708	USA	0.685	0.592
Italy	0.793	0.858	Venezuela	0.650	0.400

Table A2: Regional breakdown of available observations

Region	No of cases
Africa	3
Asia	9
Australia	1
Eastern Europe	12
North America	1
South America	8
Western Europe	12

Information on World Value Survey data

Primary data were obtained from the “Zentralarchiv für Empirische Sozialforschung” in Cologne. Waves are 1981-84, 1990-93, 1995-97, and 1999-2001. When several years of data on the same question are available for a country, arithmetic averages were used in the analyses.

Original wording of questions

LEGAL CONFIDENCE

Please look at this card and tell me, for each item listed [here the legal system], how much confidence you have in them, is it a great deal, quite a lot, not very much or none at all?

TRUST

Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?

- Most people can be trusted
- Can't be too careful [TRANSLATION: ="have to be very careful"]
- Don't know [DO NOT READ OUT]

Questions used for constructing factor “COLLECTIVE ACTION”

1. Generally speaking, would you say that this country is run by a few big interests looking out for themselves, or that it is run for the benefit of all the people?

- Run by a few big interests
- Run for all the people
- Don't know [DO NOT READ OUT]

2. Now I am going to read off a list of voluntary organizations; for each one, could you tell me whether you are an active member, an inactive member or not a member of that type of organization? Categories: Active member, Inactive member or Don' t belong.

- Church or religious organization
- Sport or recreation organization
- Art, music or educational organization
- Labor union
- Political party
- Environmental organization
- Professional association

- Charitable organization
- Any other voluntary organization

3. Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means "none at all" and 10 means "a great deal" to indicate how much freedom of choice and control you feel you have over the way your life turns out.

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