Judicial Independence and Development: Evidence from Pakistan

BY SULTAN MEHMOOD*

April 19th, 2020

This paper provides causal evidence that Presidential appointment of judges considerably impacts judicial independence, decision quality, and economic development in Pakistan. We find that when the judge selection procedure changed from Presidential appointment to appointment by judge peers, rulings in favor of the government decreased significantly. We show that this reduction reflects an improvement in the quality of judicial decisions and development outcomes. The age structure of judges at the time of the reform and the mandatory retirement age law provide us with an exogenous source of variation in the implementation of the reform. We test for and find evidence against potential threats to identification and alternative explanations for our findings. The analysis of mechanisms reveals that our results are explained by rulings in politically salient cases and by "patronage" judges who hold political office prior to their appointments. *(*JEL *D02, O17, K40).*

Keywords: Presidential appointment, judicial distortions, courts, law, economic development.

* Aix-Marseille School of Economics (E-mail: sultan.mehmood@univ-amu.fr). I would like to thank Ekaterina Zhuravskaya, Eric Brousseau, Esther Duflo, Abhijit Banerjee, Ruixue Jia, Jean-Philippe Platteau, Thierry Verdier, Sergei Guriev, William Howell, Georg Vanberg, Anandi Mani, Daniel Chen, Nico Voigtlaender, Christian Dippel, Paola Giuliano, Thomas Piketty, Eric Maskin, Ruben Enikolopov, Prashant Bharadwaj, Dany Bahar, Claire Lim, James Robinson, William Hubbard, Dina Pomeranz, Marta Troya-Martinez, Federica Carugati and participants at the ALEA 2019, MPSA 2019, SIOE 2019, WIP 2019, APSA 2019, RES 2019, New Economic School, PSE, University of Oxford and University of Chicago for their comments and feedback. Financial support from the Chair Governance and Regulation Lab, DIAL, University of Paris Dauphine is acknowledged.

"There is no liberty if the power of judging is not separated from the legislative and executive power."

[Montesquieu (1748) in *l'Esprit des Lois*]

"A judiciary's job is to interpret the law not to challenge the administration."

[President Ziaul Haq (1982) in *Amnesty International Report*]

I. Introduction

In many countries, including the United States, Brazil, Singapore and South Africa, it is the President who appoints judges to the superior courts. This seems counterintuitive to the principle of the "separation of powers" (Montesquieu, 1748). Yet it is argued that the separation of powers or the independence of the judiciary is ensured by removing the power of dismissal from the President, for instance via the institution of "life-time appointment" or retirement only at a set mandatory age (Madison, Hamilton, and Jay 1788; Hayek 1960; Buchanan 1974; La Porta et al., 2004).

In this paper, we provide causal evidence that Presidential appointment of judges exerts considerable influence on judicial decision-making. We consider a 2010 change in the selection procedure for judges in Pakistan, from a system of Presidential appointment similar to that in the United States or Brazil to a judicial commission-based selection procedure (appointment by peer judges) as in many European countries such as Sweden or the UK. We ask whether this judicial-selection reform affected judicial outcomes and, if so, which mechanisms link the Presidential

appointment of judges to judicial decision-making and the economy. We thus speak to a fundamental question in economics, i.e. what are the conditions for the establishment of rule of law in society and its consequent impact on the economy (North and Weingast, 1989; La Porta et al., 2008; Platteau, 2017).

A number of anecdotal accounts suggest that the selection reform affected judicial decision-making in Pakistan. For instance, a bench with four out of its five judges selected by the judicial commission ruled that the incumbent executive head, Prime Minister Nawaz Sharif, be removed from office on account of his "undeclared assets" and "living beyond means" (Reuters, 2017).[1] The "disqualification" of the Prime Minister, a business tycoon and the leader of a party with a two-thirds majority in Parliament, makes the judgement all the more salient politically. Similarly, in another judgement where all three judges were selected by the judicial commission, the Islamabad High Court, in a unanimous verdict, removed the Foreign Minister from office for having "*deliberately and willfully not disclosed his status as an employee of the foreign company, nor receiving of the salary per month*" while running for office.[2] This is in stark contrast to Presidential appointees' rulings involving individuals holding executive office. For example, a bench of judges appointed by the President ruled that the "*President may, in the*

[1]The Court proceedings started in 2015 following the "Panama Papers" scandal involving 11.5 million leaked documents describing ownership and financial information for more than 200,000 offshore companies. These document leaks revealed firms linked to Prime Minister Nawaz Sharif and his family.

[2]The judgement concludes that it was "*obvious from the facts and circumstances in the instant case that the Respondent (Foreign Minister Khawaja Asif) had deliberately and wilfully not disclosed his status as an employee of the foreign company, nor receiving of the salary per month pursuant thereto … working as an employee of the Company and receiving a substantial salary without being physically present, which is AED 50,000/- per month (USD 13, 600/- per month), were some benefits gained from non-disclosure. Disclosure would have led to giving the hefty salary paid by the Company for some advice sought telephonically by a foreign-based employer from the Foreign Minister of Pakistan. We have deeply pondered but could not persuade ourselves that this deliberate and wilful non-disclosure was an honest omission*". (*The State vs. Usman Dar*, reported in The News, 2018).

larger public interest perform all legislative measures which are in accordance with, or could have been made under the Constitution, including the power to amend it".[3]

Nevertheless, the more common cases with the government as a litigant in Pakistan concern land disputes with State agencies expropriating land (Gulf News, 2009).[4] For instance, when the "*Grievance of plaintiff was that despite being the owner of the house, the authorities had taken custody of the property*", a judge selected by the judicial commission, upon inspecting the notarized ownership documents ruled that the government had "*committed deliberate and willful breach of the right to private property*" and ordered the government to "*return the property to the rightful owner and pay damages*" (*Altaf Hussain vs. The State*, CLC, 2013, p. 284). This contrasts with decisions in many such cases prior to the reform. For example, in a case where the bench consisted of Presidential appointees, a similar "petition was dismissed" on a technicality (*Khalid Mohsin vs. The State*, CLC, 2005, p. 745).

We argue that these examples are suggestive of a broader change in judicial decision-making in Pakistan following the selection reform. To systematically examine the influence of this reform on judicial decision-making, we randomly sample the universe of cases in Pakistan's District High Courts and obtain information on 7500 cases from 1986 to 2016.[5] Our measure of executive influence over the judiciary in cases where the State is a party is a judicial-dependence dummy variable "State Wins", taking value 1 for "State victories" and 0 for "State losses".

[3] *Tikka Khan vs. The State*, 2008, PLD, p. 178.

[4] The government has repeatedly been accused and convicted of usurping private land through many notorious State agencies, chief among them the Lahore Development Authority (LDA), the Capital Development Authority (CDA) and the Karachi Development Authority (KDA).

[5] More information on sampling is provided in the data section, with further details in the data-construction section in Appendix B.3.

Following the literature, we asked a Law firm to code this variable (as in Djankov et al., 2003; La Porta et al., 2008).[6]

Judicial cases in Pakistan involving the government as a party cover a wide range of disputes, from simple commercial disputes to blasphemy, the political victimization of opposition politicians, the suppression of fundamental rights, and the constitutionality of Military Rule.[7] Nevertheless, a substantial portion of the petitions (about 40% of all petitions filed in High Courts) involving the State as a litigant concern land expropriation and ownership disputes with the government.[8] When the government expropriates land, courts are generally the only recourse for citizens seeking to recover their property (La Porta et al., 2008). On November 29th, 2017, a Court presided over by judicial commission appointees ordered the Karachi Development Authority to return 35,000 "public encroachments" to their owners (The News, 2017). Similar instances of land expropriation by government agencies have been reported elsewhere in India, Ghana, and China (BBC, 2013; Gadugah, 2017).[9]

Figure 1 generalizes these anecdotal accounts of less-favorable rulings for the State following the 2010 reform to about 7500 cases. Prior to the selection reform, around 50% of

[6]Law firms coded 1 if the State 'won' and 0 otherwise. Typically, when the State wins, the judgment text contains phrases such as "*Case against the State is dismissed*" and when the State loses, "*Petition against the State is accepted*". We later report the correlation coefficient between two independent codings of the State Wins variable (more details can be found in the data section and Appendix).

[7]Worldwide, many important petitions have been brought against the State. See, for example, the cases challenging the apartheid government in South Africa, *The State vs Nelson Mandela* (1963) and the bus segregation of African-Americans in the United States (*The State vs Martin Luther King*, 1956), or the case invalidating laws prohibiting interracial marriages (*Mildred Loving vs. The State*, 1963). The analysis of executive constraints and judicial dependence in this context has "*obvious value for securing … political rights when the government is itself a litigant*" La Porta et al. (2004, p. 447).

[8]By government we mean all levels of the administration with executive authority (i.e. local, provincial and federal government, and public agencies, e.g. the various land-development authorities in Pakistan).

[9]Such cases abound, the most recent (high-profile) example in India being on February 8th 2018, when a land-grab case was brought against Giriraj Singh, who was heading a government agency (Times of India, 2018). Now pending trial, Mr. Singh is accused of facilitating the illegal "land grab" of a scheduled class villager in the Indian State of Bihar.

cases were decided in favor of the State, as opposed to about 40% thereafter (Panel A). These differences are both qualitatively and statistically significant. A similar pattern emerges when cases decided by Presidential appointees are compared to those decided by judges appointed by the judicial commission (Figure 1, Panel B).

Figure 1 cannot, however, be interpreted as conclusive evidence for a causal link between the change in the judicial-selection procedure and judicial outcomes, as a number of other changes occurred around the selection-reform year of 2010. For instance, the transition from military to democratic rule took place in 2008. Likewise, there was a social movement in 2007 by lawyers in Pakistan demanding a more independent judiciary. In 2010, the President's power to unilaterally terminate the legislature was also removed from the constitution. The overall fall in the proportion of rulings in favor of the government following the selection reform could be explained by any of these changes. We address this concern by focusing on the staggered implementation of the reform: new judicial appointments are staggered in district courts due to limited vacancies within districts in a given year. That is, judges appointed by the President had to retire before they could be replaced by judicial commission appointees. For example, in 2016, 90% of judges in the District High Court of Peshawar, but only 40% in the Sukkur High Court, were selected by the judicial commission.

However, a simple difference-in-differences estimate of the fraction of judges appointed by the judicial commission on State Wins may not yield the causal effect of the reform, due to potential reassignment of judges across districts. Indeed, Iyer and Mani (2012) show that the reassignment power of Indian politicians allows them to exert substantial control over

bureaucrats.[10] This is a plausible concern here, where an independent judge in Pakistan might be reassigned to a different District High Court. This reintroduces endogeneity concerns.

We hence use an instrumental-variable strategy and instrument the fraction of judges appointed by the judicial commission by the fraction of predicted retirements from 2010 onwards. The predicted retirements are determined ex-ante solely from the age structure of judges in 2010 (when the reform went into effect) and the mandatory retirement age of 62 (unchanged since 1969). Figure 2 shows that actual judicial commission appointments are highly correlated with ex-ante predicted retirements based on the mandatory retirement age, as 91% of all judges in Pakistan serve out their full term and only retire on their 62nd birthday.[11] Under the assumption that judges reach their 62nd birthday randomly across district-years, we can address the concern that a more independent judge might be transferred to a different District High Court, or that district characteristics might be correlated with the staggered implementation of the selection reform. This, together with the random allocation of cases across judges, and the fact that Pakistani jurisdiction laws prevent litigants from choosing the districts where they file cases, allows us to estimate the causal effect of selection reform on judicial outcomes and development (Ponticelli and Alencar, 2016). We present evidence consistent with this identification assumption via a balance test, showing that the reform is not correlated with our observable case and district characteristics.

Presidential appointment of judges substantially affects judicial decisions: a 10% rise in judges selected by the judicial commission reduces State Wins by about 4 percentage points. We present evidence that this reduction in State Wins reflects an improvement in the quality of

[10] They show that even though Indian politicians cannot dismiss bureaucrats, the threat of reassignment to an alternative district allowed them to exert substantial control over bureaucrats.
[11] The remaining 9% of judges are either promoted to the Supreme Court (3%) or die in office (6%).

judicial decisions, consistent with the qualitative evidence (Haq, 2018; Arshad, 2017). First, judges appointed by the judicial commission are more efficient: a 10% rise in judicial commission-appointed judges reduces case delay by about two months. Second, judicial commission appointees are more likely to rule based on case merits or evidence than on legal technicalities or lacunas in the law: a 10% increase in judicial commission appointees increases 'merit' rulings by 5.5 percentage points.[12] Finally, judges appointed by the judicial commission issue decisions rated higher on observing jurisdictional, procedural, and evidential processes in making the decision: a 10% rise in judicial commission appointees improves ratings by 0.12 points (on a 1-5 point scale).

There remain three key threats to identification that can prevent causal interpretation of the selection reform's impact on judicial decision-making. First, it might be that we are picking up a pure appointment effect. If, for instance, being newly appointed has an independent effect on judge behavior, then we may be picking up the effect of new appointments instead of the change in the judicial selection procedure. Second, the correlation may reflect a pure retirement effect. If it takes time for the judge-State relationship to develop, then we may be picking up the impact of judge experience and other possibly unobservable judge characteristics related to retirement. The use of judges' age as a control may not completely solve this problem. Third, long before the reform there could have been an unobserved shock that is correlated with the implementation of the selection reform. We provide evidence against each of these possibilities. To determine whether we are picking up a pure appointment or retirement effect, we conduct falsification tests. We show that new judge appointments and retirements have an effect on State

[12]Rulings on merit imply that the judicial decision is "*based on evidence rather than technical or procedural grounds*" (Pound, 1963). Likewise, anecdotal accounts from Pakistan suggest that ruling on technicalities in Pakistan is a "*weapon of choice to rule unfairly*" (Haq, 2018) and that judges use decisions on technicalities to "*favour the state authorities*" (Arshad, 2017).

Wins only after the reform, and that there is no effect from pre-treatment appointments and pre-treatment retirements on judicial decision-making. Regarding a past unobserved shock, we present two pieces of evidence. First, we show that there are no differential trends prior to the selection reform. Second, we demonstrate the robustness of the results via the logic of a regression discontinuity design: the results are similar when we limit the sample to cases just before and after the reform.[13]

We test for and reject alternative explanations for our finding that the judge-selection reform changed judicial decision-making in Pakistan. We show that the effect of selection reform is not President- or Chief Justice-specific.[14] Nor are our results driven by the 2008 transition from Military to Democratic Rule. We further provide evidence that the reform's effect is not confounded by district-specific trends. First, we find similar results when we control for district-specific linear trends in the baseline specification. Second, we conduct permutation inference falsification tests and find no effect from the reform when districts are randomly scrambled. This suggests that district-specific linear or non-linear trends are unlikely to be behind the results. We also conduct a number of additional sensitivity tests showing that the results are robust to alternative specifications, different levels of clustering including small-cluster bootstrap procedures, district-year aggregation, the strategic filing of cases, and non-linear estimation.

We next consider the mechanisms, and first the type of cases behind these results. These turn out to be politically salient cases involving land and human-rights disputes with the State. We carry out a placebo test to examine this political-influence mechanism using criminal cases

[13]Cases just around the reform year are plausibly more similar to each other than those more distant. The finding of similar coefficient estimates to those in the full sample suggests that unobserved differences in case characteristics are unlikely to be behind the results.

[14]We can test this empirically since we have judges appointed by six different Presidents serving under five different Chief Justices in the sample.

(these also involve the State, which acts as the Prosecutor). We find no effect from the judge-selection reform on State Wins in quotidian criminal cases.[15]

We also examine the type of judges driving the results. We find that President-appointed and judicial commission-appointed judges are similar in many characteristics such as age, tenure, gender, and experience. Nevertheless, judicial commission appointees are 35% less likely to have run for political office prior to their appointment. This is consistent with Presidential selection favoring more 'political' or 'patronage' judges (who rule in favor of the State more often, take longer to adjudicate, and are less likely to rule on the merits of the case).[16]

We next link the selection reform to the recent housing boom in Pakistan and present evidence how this may be due to better enforcement of property rights. In the period since the reform, house prices in Pakistan have more than doubled (Zameen, 2018). If, consistent with anecdotal accounts, the judges appointed by the judicial commission reduced land expropriations and risk premiums in the housing sector, we should observe increased house prices where more judges were appointed by the judicial commission. This turns out to be the case: a 10% increase in judicial commission appointees increases house prices by about 1.5%.

Consistent with this and anecdotal accounts suggesting that judges appointed by the judicial commission are more likely to prevent land expropriation by the State through requiring higher standards of evidence, we find an increase in notarized land ownership certificates issued in districts with more judges appointed by the judicial commission. We leverage a unique dataset on notarized land attestations issued by the Pakistan Land Revenue Administration (BOR) to

[15]State Wins in this case is the conviction rate. An inspection of a random sample of 100 criminal cases from our sample reveals that these are plausibly politically less salient, as most cases involve bail pleas for theft and burglary (the categorization of the alleged crimes in these 100 cases is available on request).

[16]We discuss the link between these judicial outcomes (in a simple signalling framework) in the Mechanisms section.

show that a 10% increase in judicial-commission judges leads to a 1.6% increase in notarized land ownership certificates issued by Pakistan's Land Revenue Administration. Numerous anecdotal accounts suggest that these certifications are key to a land case being decided on merits or evidence (Sheikh, 2016; Arshad, 2017). Taken together with the evidence on improvement of decision quality in land cases and increased house prices, these results suggest that the selection reform may have indeed resulted in stronger protection of private property.

Finally, in line with the literature linking stronger property rights protection to development (e.g. North and Thomas, 1973; Acemoglu, 2001; Besley and Ghatak, 2010), we also find that the selection reform is positively linked to local development. Specifically, we show that increase in judicial commission-appointed judges are associated with an increase in night-time light intensity: a 10% rise in judicial commission appointees is associated with a 2.6% rise in night-time light intensity (Henderson et al., 2012).[17]

This paper relates to several strands of literature. First, it contributes to the literature on selection of public officials (Hanssen, 1999; Guerriero, 2011; Shvets, 2016; Acemoglu et al., 2017), most of which has focused on selection of politicians (Jones and Olken, 2005; Besley, 2005; Dal Bo et al., 2017; Hessami, 2018). The little existing literature on judge selection has focused on selection via elections versus governor appointments (Lim, 2013; Besley and Payne, 2013), or via elections versus a judicial commission in the United States (Ash and MacLoed, 2019). Our key contribution here is to show the effect of selection via Presidential appointment versus judicial commission, and to document the causal effect of a change in judicial selection

[17]Henderson et al. (2012) introduce night-time light intensity data as a measure of local development and show that night-time light intensity is highly correlated with measures of local development across the world. A large literature has since used this data, for instance, to show the effect of regional favoritism on local development (Holder and Raschky, 2014).

procedure on judicial independence, decision quality and development. Very few studies have investigated the judiciary in developing countries; the evidence presented here provides insights into how judicial independence may arise in a country where democratic institutions are weak to begin with, and how it may impact the economy (Hayek 1960; North and Weingast, 1989).

Second, we contribute to the extensive cross-country literature on courts (Djankov et al., 2003; La Porta el a., 2004; Voigt, 2008; Palumba et al., 2013; Boehm, 2015; Bielen et al., 2018). By drawing on variation across districts subject to the same national institutions, we overcome many of the common identification issues arising in work looking at differences between countries. Last, our work is also related to the literature on judge behavior. Most recent work has focused on judge behavior in criminal cases (Chalfin and McCrary, 2017; Cohen and Yang, 2019), the role of racial bias in criminal sentencing (Alesina and La Ferrara, 2014; Rehavi and Starr, 2014; Arnold et al., 2018), and extraneous factors affecting judge sentencing such as lunch breaks (Danziger et al., 2011), terrorism (Shayo and Zussman, 2011) and temperature (Heyes et al., 2019). We here reveal a political-selection mechanism: judge behavior in politically salient cases is affected by the way in which judges are selected.

The remainder of the paper is organized as follows. Section II provides the background on the judicial system of Pakistan and describes the specifics of the reform. Section III presents the data, their sources and descriptive statistics. Section IV describes the empirical methodology. Section V presents and discusses the main results, and Section VI explores the mechanisms behind them. Section VII rules out alternative explanations and details a battery of robustness checks. Section VIII concludes. Further information on the data construction, variable descriptions and additional robustness checks is in the Appendices.

II. Background

A. The Judicial Structure in Pakistan

The judicial system in Pakistan is a three-tier hierarchical structure. At the lowest level are the civil and session courts hearing civil and criminal cases respectively, whose rulings can be challenged in the District High Courts of Pakistan. Of particular interest here, it is in the High Court that an individual can file a case against the government in the form of a constitutional petition against the State. Cases with the State as a responding party involve the federal government, provincial governments, local governments, government agencies or any organ of the State with executive authority (such as the office of the President or the Prime Minister).

From 1986 to 2016, about 70% of all cases filed in the High Courts were "constitutional petitions", and the majority of these involved government housing agencies responding to land-dispute claims from the public.[18] If the government expropriates land or violates a fundamental right, the High Court is the first, and in most cases the only, platform offering remediation to individuals and firms. There are 16 District High Court benches in Pakistan and Figure 3 shows the location of these High Court benches and their respective jurisdictions.[19] Last, there is the final appellate Court, the Supreme Court of Pakistan, located in the federal capital. This typically hears criminal and constitutional appeals from the High Courts. The Supreme Court can have at most 16 judges, which greatly limits the number and scope of the cases it can hear. As such, only a small fraction of cases ends up being heard by the Supreme Court (Haq, 2018).

[18]The remaining 30% of cases were criminal appeals from the session court.
[19]Although, in theory there are four Provincial High Courts in Pakistan, in practice each of Pakistan's four provinces contains about four District High Court benches.

B. The Judicial Selection Reform

In April 2010, the ruling Pakistan People's Party tabled a constitutional amendment before Parliament that would dramatically change the process of judicial appointment in Pakistan.[20] This Eighteenth Amendment to Pakistan's constitution was passed by Parliament on April 15th 2010 and signed into Law by the President on April 19th 2010, when it came into effect (Tavernise and Masood, 2010). This amendment removed the following clause from the constitution:

"*The Chief Justice and each of other Judges of a High Court shall be appointed by the President in accordance with Article 175A*".

This was replaced by:

"*There shall be a Judicial Commission of Pakistan, for appointment of Judges of the Supreme Court, High Courts and the Federal Shariat Court. The Commission by majority of its total-membership shall nominate for each vacancy of a Judge in the Supreme Court, a High Court or the Federal Shariat Court, as the case may be*" (Constitution of Pakistan, 2010; 2018). [21]

The judicial commission consists of the "*Chief Justice of Supreme Court and 4 senior most judges, a former judge (nominated by the Chief Justice of Pakistan), federal law minister, and the attorney general of Pakistan, along with a senior advocate of Supreme Court nominated by the Pakistan Bar Council for two years.*" (Constitution of Pakistan, 2010; 2017).[22]

From April 2010, when the amendment was enacted, Supreme and High Court judges were

[20]More information on the political landscape at the time of the selection reform and context, see a discussion in Appendix B.2.

[21]Furthermore, Article 209 of the Constitution stipulates that judges can only be removed by filing a reference to their peers; this was left unchanged by the reform (Constitution of Pakistan, 2017).

[22]For the appointment of High Court judges, the case explored here, all of the above members plus the provincial Chief Justice, provincial Law Minister, the most senior judge of the provincial High Court, and a lawyer nominated for two years by the provincial Bar Council sit on the judicial commission.

appointed by a judicial commission (consisting of peer judges and senior lawyers), with no Presidential involvement.[23] Many accounts suggest that the effective appointment power of the executive was severely curtailed by this reform, as judges constitute the overwhelming majority (6/9) of the commission (Ijaz, 2014; Iqbal, 2015).[24] We interpret this shift from the Presidential appointment of judges to their selection by a judicial commission as a *de jure* reduction in executive control over the judiciary, and evaluate its impact on judicial adjudication and development.[25]

According to many political observers, the Eighteenth Amendment introduced by the incoming democratic government following a decade of military rule was intended to reduce the political authority of the President.[26] It is argued that the judge-selection procedure was changed to prevent potential abuses of power under future Presidencies of military rulers (Almeida, 2018). Further discussion on the reform, the political context at the time of the reform, the structure and the history of courts in Pakistan can be found in Appendix B.

[23]The Attorney General and the Law Minister are Lawyers and represent the executive branch of the government.

[24]The 18th amendment also created a Parliamentary Committee consisting of four members from the treasury and four from the opposition. Nominations by the judicial commission have to be confirmed by this committee, although its effective power is limited since the Judicial Commission can overrule Parliamentary Committee objections. This was not in the original 18th amendment but was incorporated on December 20th 2010 as the 19th Amendment, which 1) increased the number of judges in the judicial commission (judges now had the overwhelming majority of 8/11 in the Judicial commission as opposed to 6/9 under the 18th amendment) and 2) stated that the Judicial Commission now also had the power to overrule Parliamentary Committees' objections to appointments (Pakistan Constitutional Law, 2010).

[25]We do not argue that this new arrangement fully eliminates executive influence, just that the move to appointment by judicial commission reduced executive control over the judiciary relative to Presidential appointment.

[26]The 18th Amendment also aimed to increase provincial autonomy and weaken the overall power of the President: for instance, it also took away the President's power to unilaterally dismiss Parliament (Almeida, 2018).

III. Data

Our empirical analysis uses data on judicial cases from the central repository of cases in Pakistan, used by Lawyers to prepare their cases. We randomly sampled 7500 cases from 1986-2016 for all 16 District High Courts in Pakistan (from the universe of all cases decided in this period) and matched the details from these cases with judge characteristics from judicial administrative data and district characteristics from the census records.[27] We successfully matched this information for 7439 cases out of the 7500.[28] Table 1 shows the descriptive statistics of the variables used in the analysis, and the key outcome and explanatory variables are detailed below. Further information on the variables, their sources, sampling, and data construction can be found in Appendices A and B.

Outcome Variables. — The key outcome variable is State Wins. This is a case-level measure of judicial independence constructed from the text of the judgment orders containing details of the case. Following the literature (e.g. Djankov et al., 2003 and La Porta et al., 2008), we asked a Law firm to code this variable. The Law firm was divided into two independent teams that coded the "State Wins" dummy variable as 1 if the State won a dispute where the government was a party.[29] The State here includes all organs of the state yielding executive power, such as local, provincial, and federal governments, the Office of the Prime Minister, the Office of the President, and governmental agencies (in line with the conceptualizations of the State as an executive organ in Montesquieu, 1748).

[27]Further information on the sampling procedure and data construction can be found in Appendix B.3.

[28]The remaining 61 cases could not be matched because the poor image quality of the judgment order text prevented us from ascertaining the name of the judge.

[29]We show that the results are robust to using data from either of the teams. Further details on the construction of the variables coded by the two teams can be found in Appendix B.3.

Typically, when the dummy for State Wins is 1, the judgment contains markers such as "case against the State is accepted" and when 0, markers such as "case against the State is dismissed". A textual analysis of cases containing these precise phrases confirms the main results.

For the analysis of the quality of judicial decisions, we use three additional outcome variables: Case Delay, Merit and Process Followed, where the unit of observation is also at the case level. These three variables too are constructed from the information in the text of the judgment orders. Case Delay is calculated as the difference between the case decision and filing years. Merit is a dummy, also coded by attorneys at the Law firm, for the decision being "*based on evidence rather than technical or procedural grounds*" (Pound, 1963). This is based on Common Law jurisprudence, where cases decided on merit, i.e. based on evidence and the spirit of the Law rather than legal technicalities or lacunas, is an ideal to which Common-Law regimes aspire (see e.g. Tidmarsh, 2009, for a discussion). Furthermore, legal scholars in Pakistan argue that ruling on technicalities in Pakistan is a "*weapon of choice to rule unfairly*" (Aziz, 2001) and that judges use decisions on technicalities to "*favor the state authorities*" (Arshad, 2017). Finally, Process Followed is a discrete variable representing a rating of each judicial case. Specifically, the law firm was asked to rate on a scale of 1 to 5 the extent to which "all relevant jurisdictional, procedural, and evidential requirements were followed in reaching the judicial decision". [30]

Main Explanatory Variables. — The key explanatory variable used in the analysis, "Judicial Commission/Total Judges", is the fraction of judges appointed by the judicial commission in a given district-year. Data on appointments and other judge characteristics come from judicial administrative records obtained from the Registrar Offices of the District High Courts. Data on the total judges in each District High Court come from the High Court Annual Reports submitted to the Ministry of Justice, Government of Pakistan. These two sources are also used to construct the instrumental variable, "Predicted Retirements at 62/Total Judges" presented in Panel C of

[30]Two independent teams coded each of these outcome variables and the correlation coefficient between them appears in Table C.1 in Appendix C.

Table 1. This variable, which also varies by district-year, is equal to the ex-ante predicted retirements from the reform year to the end of our sample. It is entirely determined by the age structure of judges in 2010 and represents the predicted fraction of judges reaching their mandatory retirement age of 62 from 2010 to 2016. Figure 2 plots each of these variables over time.[31] We observe that judicial commission appointments are highly correlated with mandatory retirements. We also observe that the fraction of predicted retirements is larger than that of judicial commission appointments. This is because the instrument varies only due to mandatory retirements, and not all mandatory retirements are necessarily associated with a new judicial appointment in the same year.[32] This means that the instrument will give us the local average treatment effect for those districts that had a judicial commission appointment followed by a mandatory retirement in the same year.[33]

Controls: Case, Judge, and District Characteristics. — We rely on a combination of judgment texts, judicial administrative data, bar association and census records to construct the case, judge and district characteristics that we use as control variables. The case-characteristics data, like the outcome variables, are obtained from the text of the judgment order. They include district where the case was heard, year when the case was filed, decision year, full name of the judge(s) adjudicating on the case, number of lawyers and judges, type of case, a dummy for whether the case involved a land dispute with the government (land cases or "Eminent Domain" cases) and so on. Table C.1 in Appendix C lists the means of the outcome variables, the case characteristics and the corresponding correlation coefficients between these variables across the two teams of

[31]The frequency of the yearly mandatory retirements is presented in Figure C.1, which plots the total number of judges reaching their 62nd birthday each year before and after the reform.

[32]91% of judges in Pakistan serve out their full term and only retire on their 62nd birthday, while the remaining 9% either die in office (6%) or are promoted to the Supreme Court (3%).

[33]The compliers here are those districts and years where there is no transfer of judges across districts.

attorneys who coded them.[34] The data on judge characteristics is obtained from the judicial administrative records available at the Registrar Offices of the High Courts of Pakistan and Provincial High Court websites (Table 1, panel B). This includes information on judges' date of birth, appointment date, and retirement, as well as information on their previous employment. Information on holding office in the Bar Association and running for political office prior to judicial appointment is obtained from a combination of biographical information in the judicial administrative data, annual reports submitted by District High Courts to the Ministry of Justice, and bar association records. Combining the data from these sources gives us information on 7439 cases and 482 judges across all 16 District High Courts in Pakistan.

IV. Empirical Method

We use cross-district and over-time variation in the implementation of the reform to estimate the effect of judicial-selection reform on judicial outcomes at the case level. The Linear Probability Model we estimate by OLS and 2SLS is as follows:

$$Y_{cjdt} = \theta + \alpha \left(\frac{Commission-Appointed\ Judges}{Total\ Judges}\right)_{dt} + \beta_d + \gamma_t + \boldsymbol{W}'_{cdt}\boldsymbol{\varphi} + \varepsilon_{cdjt} \quad (1)$$

The subscripts *c*, *j*, *d* and *t* index cases, judges, district courts, and years respectively. *Y* denotes the respective judicial outcome and $\frac{Commission-Appointed\ Judges}{Total\ Judges}$ is the fraction of judges appointed by the judicial commission. As the regression is run at the case level, this variable can

[34]The results are robust to using data from either team of coders: further information can be found in the discussion in Appendix B.3.

be interpreted as the probability that a case was adjudicated by a commission appointee.[35] β_d and γ_t are district and year fixed effects respectively, and $\boldsymbol{W}'_{cdt}$ is a vector of case and district controls as shown in Table 1.[36]

OLS estimation of α in Equation (1) may not yield the causal impact of the selection reform, due to the potential reassignment of judges across districts. As shown by Iyer and Mani (2012) in India, the "transfer" powers of Indian politicians allowed them to exert substantial control over bureaucrats. It is plausible that independent judges in Pakistan could be reassigned to a different District High Court, rendering the reform-State Wins relationship endogenous.[37]

We address this empirical challenge via an instrumental variable strategy: we instrument the fraction of judicial commission appointees by the fraction of judges expected to reach their mandatory retirement age of 62 in each district from 2010 to 2016. This variable represents the trajectory of mandatory retirements following the reform and is predicted based on the reform year (2010) age-composition of judges in each district.[38] The first-stage equation is as follows:

[35]As part of the robustness checks, we show that we obtain similar results when we aggregate the data to the district-year level (i.e. to the level of variation of the main explanatory variable).

[36]The case controls include the number of Lawyers and Judges in the case, the presence of the Court Chief Justice on the bench, and the district characteristics (e.g. population), for a full list see Table 1, panels A and C. Note that we do not control for judge characteristics, as these may be correlated with the reform (we will discuss this possibility in more detail in the Mechanisms section). However, case-type fixed effects are included in the list of controls, i.e. we consider case-type fixed effects (dummies for case types) as part of the case characteristics controls in $\boldsymbol{W}'_{cdt}$.

[37]Although note that judges in Pakistan cannot be directly reassigned by politicians, as reassignment power lies with the Chief Justice of the Provincial High Court, not the Chief Minister as for Indian Civil Servants (Iyer and Mani, 2012). Nevertheless, anecdotal accounts suggest that politicians may influence the Chief Justice to transfer a judge.

[38]See Figure 2 for a graph showing the evolution of these variables over time.

$$\left(\frac{Commission - Appointed\ Judges}{Total\ Judges}\right)_{dt}$$

$$= \theta + \pi \left(\frac{Predicted\ Retirements\ at\ 62\ Post - Reform}{Total\ Judges}\right)_{dt}$$

$$+\beta_d + \gamma_t + \boldsymbol{W}'_{cdt}\boldsymbol{\varphi} + \varepsilon_{cdjt} \qquad (2)$$

The IV estimate of α yields the causal effect of the reform under the orthogonal distribution of judges' retirement ages across districts and provided that the identification assumption of the difference-in-differences estimator is satisfied: i.e., there are no systematic differences in the trends of the outcomes prior to the reform. We provide evidence in support of both of these identification assumptions in the next section.

We cluster standard errors at the most conservative district level. We demonstrate the robustness of the results by clustering within each district separately before and after the reform (Bertrand et al., 2004), clustering within each district-year combination, i.e. the level of variation of the instrument (Abadie et al., 2017), as well as clustering by bootstrapping as suggested by Cameron et al. (2008) for a small number of clusters.[39]

[39]We also demonstrate the robustness of the results by running an alternative specification where we regress the respective judicial outcome on the fraction of judges retiring at 62 interacted with the post-reform dummy, and the fraction of judges retiring at 62, with and without controls. This and other robustness checks can be found in Appendix C.

V. Main Results

5.1. The effect of the judicial-selection reform on State Wins

Table 2 presents the estimated effect of the judicial-selection reform on State victories: there is strong and robust evidence of a substantial negative effect. Panel A shows the OLS and IV (second-stage) results, while Panel B presents the corresponding first stages. The first column of panel A corresponds to the most basic OLS specification, with only district and year fixed effects. Column 2 adds all the available case and district characteristics (presented in Table 1, panels A and C). In column 3, we instrument the fraction of commission-appointed judges by the fraction of predicted retirements based on mandatory retirement age following the reform. Column 4 adds the available case and district controls to this IV specification. In the first stages of the two-stage least squares (2SLS) estimations in panel B, the instrument is a strong predictor of the fraction of judges appointed by the judicial commission, with the F-statistic above 100 in both specifications.

We find a negative and statistically significant effect of judicial-commission appointments on State Wins in both OLS and 2SLS estimations. The size of the coefficients is similar across the OLS and the IV estimations. In the latter, a 10% rise in judges appointed by the judicial commission reduces the probability of State Wins by about 3 percentage points (average State Wins before the reform was about 55%). Thus, the selection reform had a substantial impact on State Wins.

We also demonstrate the robustness of these results by estimating an alternative specification where we regress State Wins on the interaction of the fraction of judges reaching their mandatory retirement age and the post reform dummy, and the fraction of mandatory retirements each year. Table C.2 presents these results. Across all specifications, mandatory

retirements influence State Wins but only after the reform goes into effect. Interestingly, the coefficient point estimates suggest that the independent effect of mandatory retirements is positive across all specifications (although we cannot reject the possibility of a null effect).[40]

5.2. Alternative Explanations and Identification Concerns

We now examine the key threats to identification that could invalidate the causal interpretation of these estimates. First, our selection-reform estimate might reflect a pure appointment effect, with new appointments affecting judge behavior regardless of the selection reform. Table 3 (columns 1 and 2) presents evidence against this hypothesis by showing that pre-treatment appointments had no effect on rulings in favor of the government. In particular, the fraction of new appointments from 1986 (the first year for which we have data) up to the reform had no effect on State victories.

Second, the estimated coefficient might instead correspond to a pure retirement effect. If it takes time for the judge-State relationship to develop, instead of the selection reform we could actually be picking up the impact of judge experience and other potentially unobservable judge characteristics related to retirement. The use of mandatory retirements as an instrument here in fact exacerbates this problem, since we are comparing retirees to new appointees. Nevertheless, we find no evidence of a retirement effect as such in Table 3 (columns 3 and 4), which provides estimates of how the fraction of judges reaching their mandatory retirement age affects State Wins in the pre-reform period. That is, we find no effect from mandatory retirements before the reform came into effect. If anything, the coefficient estimate on pre-treatment retirements is

[40]We discuss this further in the following subsection.

positive.[41] As such, even if there is a retirement effect it appears to be relatively small and masked by the large impact of the selection reform. Similar results are obtained when we estimate an over-time reduced form (where we only see an effect of 'retirement' on State Wins after the reform goes into effect).[42] This is unsurprising, since judges' experience and age appear to be uncorrelated with government victories. In Figure C.2 of Appendix C, we plot the average State Wins of judges by years in service and age: experienced or older judges are no more likely to rule in favor of the State than young judges.

The third threat to identification of a causal effect from the reform could come from diverging trends prior to the reform. We thus estimate the baseline specification (Equation 1) for new appointments instrumented by predicted mandatory retirements before and after the reform at three-year intervals. Figure 4 depicts the results, plotting the coefficients along with their 95% confidence intervals.[43] There is no evidence of pre-trends.

A fourth identification threat is that the selection reform could be correlated with case and district characteristics, for instance, if Pakistan did not follow the *de jure* random allocation of cases. However, when we re-estimate the baseline equation (1) replacing State Wins with our case and district characteristics as dependent variables, the results support our identification assumption that the selection reform is orthogonal to case and district characteristics. Table 4 presents this check for balance test. None of the case or district characteristics is correlated with the selection reform; the same test performed at the case or the judge level yields similar results (see Table C.5 in Appendix C for these results). This is consistent both with random allocation of

[41]We obtain similar results with controls for judges' age and tenure: commission and Presidential appointees do not differ in these respects.

[42]Table C.3 in Appendix C presents this result. Appointments and retirements at age 62 pre-reform are constructed using the same method and data sources as those in the post-reform period. The figure for these pre-treatment variables is very similar to that shown post-treatment in Figure 2 (the pre-treatment plots of appointments and retirements are available on request).

[43]The corresponding Table C.4 appears in Appendix C.

cases across judges and with district characteristics being uncorrelated with the selection reform.[44]

Our confidence in the causal interpretation of the results is increased when we find similar results when the sample is limited to cases just before and after the reform. In particular, we re-estimate the baseline specification by 2SLS in a one-year window around the reform. Table 5 presents these results. We find broadly similar results, despite the reduced statistical power (most likely due to the much smaller sample): the selection reform reduces State Wins. This is reassuring as the cases around the reform year are plausibly quite similar as there is only little time for the government or litigants to respond to the reform.[45] It is also consistent with random allocation of cases and results from the balance test.[46]

VI. Mechanisms

This section is organized as follows. We first describe the type of cases driving the results. Second, we present evidence that the post-reform fall in State Wins reflects better-quality judicial decisions. Third, we show that the type of judges driving the results is consistent with the selection effects or judge heterogeneity mechanism. Last, we discuss the welfare implications of the reform, linking it to a recent housing boom in Pakistan, response of litigant land attestations and development.

[44]We show the effect of the selection reform at the judge level in the next section.
[45]This is also consistent with anecdotal accounts and an informal survey that litigants are typically unaware of the age of the judge, and so cannot calculate their age to retirement and thus exposure to reform in the district (Arshad, 2017).
[46]In the robustness section, we present evidence that district-specific trends or strategic filing of cases are unlikely to explain the results.

6.1. Mechanisms: The type of cases driving the results

We begin our investigation of the mechanisms by discussing the type of cases driving the results. We find evidence that the judicial-selection reform particularly affected politically salient cases. One key mechanism that we test is how the reform affected cases involving land disputes with the State. There is qualitative evidence suggesting that the expropriation of private property by government housing agencies (such as by the Peshawar Development Authority, the Lahore Development Authority, the Karachi Development Authority and the Capital Development Authority) was a major problem in Pakistan, and that rulings in these ownership or expropriation disputes with the government were heavily influenced by political considerations (Ijaz, 2014; Abbasi, 2017; Sattar, 2017). Some legal scholars in Pakistan go as far as to argue that land disputes involving the State are instances where the government is almost always wrong. For instance, "*when you see (government) housing agency involved in a land case, you know that justice is dead*" (Sheikh, 2016) or "*these housing development authorities is a mafia that operates with the full support of the highest level of the government … some judges are part of it too*" (Arshad, 2017). In columns 1 and 2 of Table 6, we present evidence that is consistent with this view: a 10% rise in judicial-commission appointees reduces State Wins by about 5 percentage points in land disputes with the State.

We next examine how the selection reform affected human-rights cases that are also considered highly political in nature. These are constitutional cases that do not involve land disputes with the government. These cases are separately marked as "writ petitions" within the constitutional cases and involve the violation of fundamental rights such as freedom of movement or discrimination based on religion, gender, and caste. A typical example from the dataset is the case of an individual claiming that his fundamental right to freedom of movement

within and outside Pakistan has been restricted by the government since he joined the opposition political party.[47] We find that the selection reform reduced State Wins in human-rights cases, as presented in columns 3 and 4 of Table 6. A 10% increase in judicial-commission appointees reduces State Wins in human-rights cases by 5.2 percentage points. These results suggest a political-influence channel, with fewer rulings in the government's favor in politically salient cases by commission-appointed judges.

Further evidence for this political-influence channel comes from a falsification test. As criminal cases also involve the State (as the prosecutor), but are politically less salient, we examine the impact of the selection reform on State Wins (or conviction rates) in criminal cases. These results appear in Table 7. The selection reform has no effect on State Wins in criminal cases, and the OLS point estimates are in fact positive. This suggests that judicial-commission appointees do not rule against the government more than Presidential appointees in politically less-salient criminal cases.[48]

6.2. Reduced State Wins reflect better-quality judicial decisions after the selection reform

We now provide evidence that the reduction in State Wins following the selection reform reflects an improvement in the quality of judicial decisions. We first show in Panel A of Table 8 that the selection reform reduced case delay: a 10% increase in judicial-commission appointees reduces case delay by about 0.15 years or 2 months. This reduction is only found for land and human-rights cases involving the State, with no effect on criminal cases. State Wins and Case Delay can be interpreted as separate outcome variables, where the former is a proxy for judicial

[47] *Khalid Langrov vs. The State*, PLD 2007.

[48]To verify that criminal cases in the High Courts are indeed politically low-stake cases, we randomly examined 100 criminal cases from our sample and found them politically less salient: most cases involved petty crime such as bail pleas for theft and burglary (the categorization of the alleged crimes in these 100 cases is available on request).

independence while the latter is a measure of judicial efficiency. Nevertheless, there is good reason to believe that, in the current context, State Wins and Case Delay may be linked. Legal scholars argue that judges delay cases in the interests of the government (Sheikh, 2016; Ahmed, 2016). This becomes apparent when government officials use the expropriated land for private benefit while the case is pending in court, or judges do not rule over cases when the government position is particularly weak (Malik, 2018). The null effect of the selection reform on Case Delay in criminal cases is consistent with this interpretation.

It may be reasoned, however, that shorter case delay following the reform could be seen as reflecting less deliberation in these cases, implying poorer-quality judicial decisions. Nevertheless, two additional pieces of evidence make us confident that the fall in State Wins and Case Delay actually reflects better-quality judicial decisions. First are the results for cases decided "on merit". In Common Law jurisprudence, rulings on merit imply that the judicial decision is "*based on evidence rather than technical or procedural grounds*" (Pound, 1963). This is consistent with anecdotal accounts from Pakistan that ruling on technicalities or legal lacunas is a "*weapon of choice to rule unfairly*" (Aziz, 2001) and that judges use decisions on technicalities to "*favor the state authorities*" in Pakistan (Arshad, 2017). Second, we ask the law firm to rate the judicial process followed in each case according to the extent to which "all relevant jurisdictional, procedural, and evidential requirements were followed in reaching the judicial decision". A higher rating on Process Followed implies that higher jurisdictional, procedural, and evidential standards were met in adjudication.

We consider how the selection reform affected merit decisions in panel B of Table 8. From the full sample estimates in column 1, we find that a 10% rise in commission-appointed judges increases Merit Decisions by about 5.5 percentage points. Likewise, in panel C of Table

8, we provide results for Process Followed: a 10% rise in judicial-commission judges improves the rating on Process Followed by 0.12 points (average rating is about 3). This rise in Merit Decisions and Process Followed only occurs for land disputes and human-rights cases involving the government; reassuringly we find no effect on criminal cases. Taken together, the results from Table 8 imply that selection reform improved the quality of judicial decisions.

6.3. Mechanisms: The type of judges driving the results

This subsection provides evidence that our results are consistent with a judge-selection effects or heterogeneity mechanism. First, consistent with our main findings, Table 9 shows that judicial commission appointees are about 15% less likely to rule in favor of the State (at the judge level): see columns 1 to 3. Nevertheless, controlling for all the available judge characteristics, we cannot reject the null hypothesis of no effect of the reform on State Wins. This is consistent with the judge heterogeneity mechanism, where the selection reform is correlated with judge characteristics.

We examine which judge characteristics distinguish judges appointed under the two selection procedures in Table 10. Presidential and judicial-commission appointees are similar in gender, age, and previous employment.[49] The key distinguishing feature here is that commission-appointed judges are about 35% less likely to have held office at the Lawyers' Bar Associations (see column 5 of Table 10). As candidates for office at a Bar Association in Pakistan must run on a political party platform (i.e. on a party "ticket"), we consider this as a plausible proxy for political activity prior to appointment. We also provide direct evidence that judicial-commission

[49] We find similar results across three measures of "age": age at time of judgment, tenure at judgment (shown in Table 10) and age at appointment. See also Figure C.2 to see how experience and age are uncorrelated with State Wins.

appointees are significantly less likely to have run for political office in provincial or national elections before their formal appointment date: see column 6 of Table 10.[50] Specifically, we find that commission-appointed judges are also about 16% less likely to have run for election to the provincial or national assembly prior to their appointment.[51] Nevertheless, the evidence presented here is suggestive, as political activity prior to the judicial appointment is potentially correlated with unobservable judge characteristics. We should therefore interpret these results with caution.

We can interpret these results through the lens of a simple signaling model. *A priori*, the President does not know the "type" of the judge. Once the judges run for elections, they reveal their type. Therefore, the President selects the judges that are of a similar type or who share similar preferences as the President. Under the assumption that the President places greater value on political loyalty than the judges who select the (judicial-commission) judges, and that these judges appointing judges place a greater value on judicial competence relative to the President, the Presidential judges will be more pro-State, take longer and be less likely to rule on the merits of the case or follow due process, consistent with what we find in this paper.

Alternatively, these results could be interpreted as the President appointing "patronage" judges to consolidate his grip on power and to extract resources such as land. This interpretation is consistent with historical evidence presented by Coulson (1964) and Platteau (2017): using a series of case studies from across the Muslim world, they argue that Presidents in Muslim-

[50] Once appointed, judges are barred from running for political office until two years after their retirement.

[51] We present judge-level regressions here for two reasons. First, these show in a transparent manner the average differences between the judges appointed under the two selection procedures. Second, we can consider the results in columns 1 to 3 i.e. at the judge-level a comparison to the baseline results of case-level regressions. Similar results are yielded by case-level regressions or mean comparisons (see, for instance, Table C.5 in Appendix C for an alternative illustration of the same results).

majority countries consider land as a rival source of power and use the Judiciary to extract land from the population and thereby consolidate their grasp on power.

6.4. Selection reform impact is reflected in house prices, notarized land attestations and night-lights

House prices recently surged in Pakistan: Figure C.3 shows that house prices rose from about Rs 2000 (USD 15) in 2009 to more than Rs 5000 (USD 35) per square foot in 2016 following the selection reform (Zameen, 2018). Is the selection reform related to this increase in house prices?

Such a finding would be consistent with anecdotal accounts suggesting that the selection reform reduced expropriation risk and strengthened enforcement of property rights (Sheikh, 2016; Abbasi, 2017). For instance, "*Many people, particularly overseas Pakistanis can now purchase real estate given the judicial system has improved.*" (OFP Commission, 2018). Before the reform, an outspoken minister in the government noted, "*Land grabbing by the State is one of the major issues facing Pakistan. We have received a huge number of complaints regarding this … courts take years to decide such cases*" (Gulf News, 2009). The fall in State victories, increase in merit decisions, and ratings on Process Followed in cases involving land disputes with the State also suggest that the selection reform reduced expropriation risk. Consistent with this expropriation mechanism, the selection reform should have implications for house prices. Theoretically the effect of the change in judicial selection procedure on house prices is positive. Fewer government victories in land expropriation cases presided over by judicial commission appointees would reduce expropriation risk, and hence the risk premium in the housing sector. This in turn could increase the demand for houses and hence house prices, thereby leading to

more house construction and downward pressure on house prices. However, the consequent reduction in house prices is expected to be less than the original increase in house prices that instigated the construction boom.[52] We find that the selection reform increases house prices. Table 11 (Panel A) presents these results, replacing State Wins as the dependent variable in the baseline specification with "House Prices per Square Foot" (albeit at the district-year level). The IV point estimates imply that a 10% rise in commission-appointed judges increases house prices by Rs 17.6 (this is equivalent to a rise of about USD 0.12 per square foot). Putting this in perspective, our sample's average house price per square foot is Rs 1072, and the 10% increase in judicial commission appointees is reflected in a 1.5% rise in house prices.

We provide evidence suggesting that the selection reform increased house prices due to reduced land expropriation and better enforcement of property rights. Our results indicate that the selection reform improved the quality of judicial decisions as measured by more rulings made on case merits (Merit Decisions) and higher ratings on case process (Process Followed). A key evidential requirement for a land case to be decided on merits or to obtain a higher rating on the process followed is the submission of an attested land deed by the litigant in Court (Arshad, 2017). If, consistent with anecdotal accounts, judges appointed by the judicial commission are better able to enforce property rights by giving greater credence to land ownership documents, we would expect larger numbers of attested land ownership certificates to be issued in districts with more judges appointed by the judicial commission.

To examine this question, we leverage a unique dataset on notarized land attestations issued by the Pakistan Land Revenue Administration (BOR). We find results consistent with the house price increase and anecdotal accounts of stronger property rights law enforcement: the selection reform induced an endogenous response by litigants demanding more notarized land

[52]For a graphical illustration of why selection reform increases house prices, see Figure C.4 in Appendix C.

ownership certificates. These results are presented in Panel B of Table 11. Specifically, we find that a 10% increase in judicial commission appointees leads to an increase of about 9000 notarized certificates issued by Pakistan's Land Revenue Administration, roughly equivalent to a 1.6% increase. Taken together, the anecdotal accounts, the evidence on improved decision quality for land cases, the increase in house prices and land ownership attestations lead us to conclude that the selection reform may have indeed strengthened enforcement of property rights and reduced land expropriations by the State. This suggests that judicial independence has implications for development, especially in the light of the vast literature that finds stronger property rights protection is key to development (see e.g. North and Thomas, 1973; Acemoglu, 2001; La Porta et al., 2008; Besley and Ghatak, 2010; De Janvry et al, 2015).

Consistent with this literature, our findings here also point to the selection reform being positively linked with development. In particular, we find that the selection reform is positively associated with night-time light intensity, as presented in Table 12. A 10% rise in judicial commission appointees increases night-time light intensity by 2.6%.[53]

VII. Robustness

This section tests alternative explanations for the finding that the reform generated a change in judicial decision-making in Pakistan. First, we might be capturing a "President-specific effect". For instance, the fall in State Wins post-reform may simply reflect a correction from extremely high State Wins during the tenure of an idiosyncratic President (say, President

[53]The night-time light intensity data come from United States' National Oceanic and Atmospheric Administration and were recorded from 1992 to 2013 for the whole world. In a seminal contribution, Henderson et al. (2012) demonstrate that night-lights serve as a useful proxy for economic development and accurately mirror short-term economic fluctuations. Following literature, we take the logarithm of average night-time light intensity (as in Henderson et al, 2012 and Holder and Raschky, 2014).

General Musharraf). Since judges appointed by six different Presidents are included in the sample period, we can examine this claim empirically. Table 13 presents the results: the reform reduced State victories irrespective of the President who had made the appointment.[54]

Second, it could be argued that the change associated with the reform is a "Chief Justice-specific" effect. Some Chief Justices in Pakistan were considered to be particularly anti-government (Zafar, 2012). As the Chief Justice of Pakistan is the head of the judicial commission, this concern may be justified. However, during our sample period, five different Chief Justices headed the judicial commission; we therefore test and reject the hypothesis that the results are driven by an idiosyncratic Chief Justice, as shown in Table 14.[55]

Third, the reform (and the consequent fall in State wins) may capture a move from dictatorship to democracy. There was military rule in Pakistan from 1999 to 2008, and the controls and identification strategy might not distinguish the effects of this democratic transition from that of judicial selection. We test for this by considering only the sample from the democratic period (2009 to 2016). Table 15 contains these results, which are qualitatively and statistically similar to those in the full sample.[56]

We carry out a number of additional robustness checks. We first show that the results are unlikely to be driven by district-specific trends. In particular, we find the results are robust to adding district-specific linear trends to the baseline specification. Likewise, a permutation inference falsification test reveals no effect from the reform when we randomly scramble the

[54]We here compare case rulings by judges appointed by different Presidents to rulings by judicial commission appointees (the latter is a single group of cases); identical results are found in alternative specifications with interaction terms for the respective Presidential tenure.
[55]Table C.7 in Appendix C gives an alternative illustration of these results.
[56]Similar results from the estimation of the baseline specifications in one-year windows around the reform are also consistent with this finding (see Table 5).

districts (Ernst, 2004).[57] Second, we show that the results are robust to different levels of clustering: within each district separately before and after the reform, within each district-year combination (level of variation of the instrument), and via the bootstrap method using a small cluster bias reduction as suggested by Cameron et al. (2008). Third, the results are robust to aggregating the data at the district-year level (level of variation of the main explanatory variable and its corresponding instrument). Fourth, we find evidence that the reform effect is unlikely to be confounded by selection of cases that go to trial (Klein and Priest, 1984; Hubbard, 2013). Although, as noted in the literature, this possibility cannot entirely be ruled out, but we show that both total case filings and filings in politically salient cases are uncorrelated with judicial selection reform implementation. Last, our results remain unchanged when we estimate non-linear models such as Probit and Logit. These results can be found in Appendix C.[58]

[57]The null effect on State Wins when we randomly scramble the districts is reassuring since it suggests that neither linear nor non-linear trends in our treatment variable are likely to be behind the results.

[58]See Appendix C, Tables C.8 to C.13 for these results. For instance, Table C.10 in Appendix C reports the bias-reduced bootstrapped standard errors with 2000 iterations for small numbers of clusters as suggested in Cameron et al. (2008). The bootstrap clustering is robust to different iterations: similar results are found for 500 and 1000 iterations.

VIII. Conclusion

This paper has shown that Presidential appointment of judges exerts considerable influence over judicial decision-making in Pakistan. We demonstrate that the change in the judicial selection procedure from Presidential appointment to appointment by a judicial commission significantly reduces State Wins, and this reduction is suggestive of an improvement in the quality of judicial decisions. The identification strategy we propose allows us to obtain the causal effects of the reform. We present evidence against a number of threats to identification and alternative explanations for our finding that the selection reform reduced rulings in favor of the government.

These results are driven by politically salient cases involving land and human-rights disputes with the government, and by Presidential appointees, who are more likely to be politically active prior to their appointments than judges appointed by the judicial commission. Last, we link the reform to reduced expropriation in the housing sector, providing evidence that the reform may have reduced distortions in the economy due to political favoritism. We show that it raised house prices and induced an endogenous response from litigants in the form of increased demand for notarized land ownership certificates, which may have become more valuable under the new judicial selection regime.

Research examining the selection of public officials has, up to now, largely focused on politicians. Our work shifts the focus to the role of judges and the conditions for the establishment of the rule of law in developing countries. The judicial commission selected judges were relatively apolitical prior to their appointments. More research in other contexts on the conditions under which the judicial commission works well will further enhance our understanding of the mechanisms at play.

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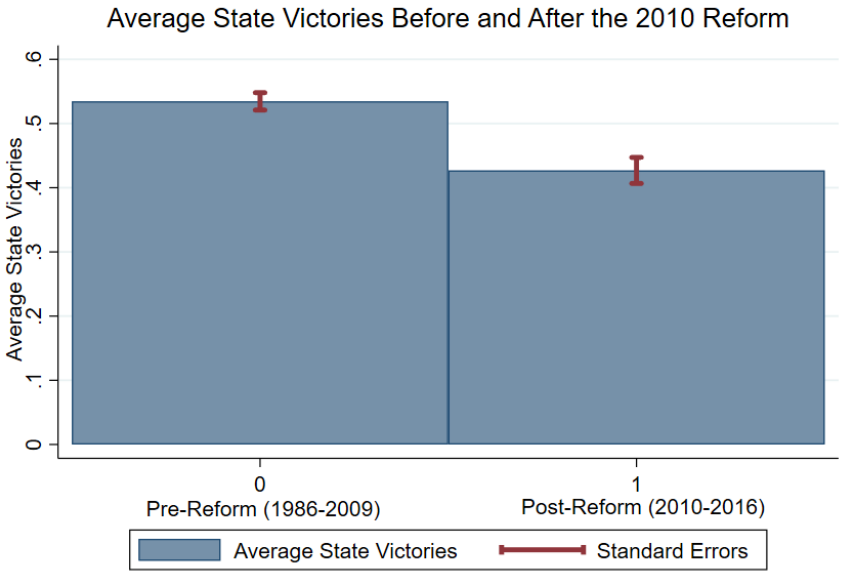
Figures and Tables

Figure 1: State Wins Before and After the Reform

Panel A: Average State Victories Before and After the Reform



Panel B: Average State Victories for Cases Decided by Presidential and Judicial-Commission Appointees

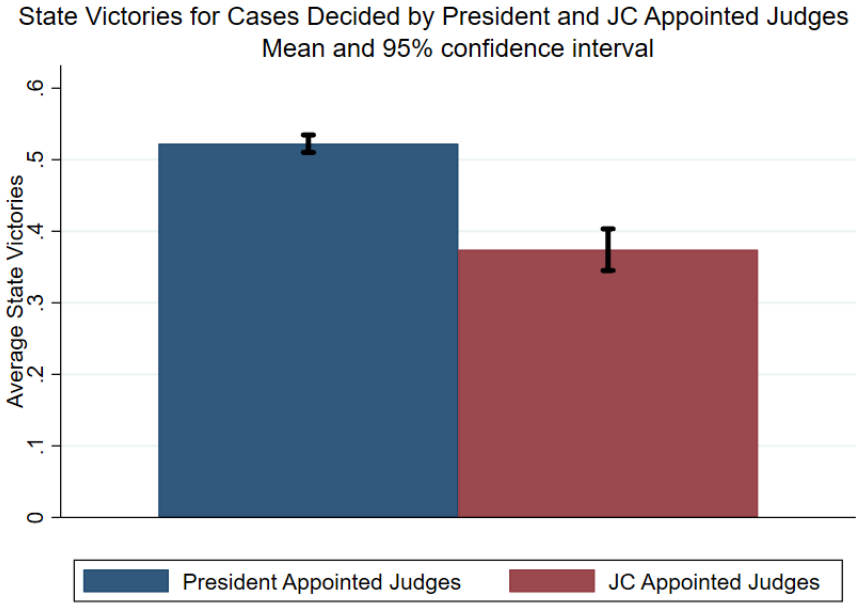
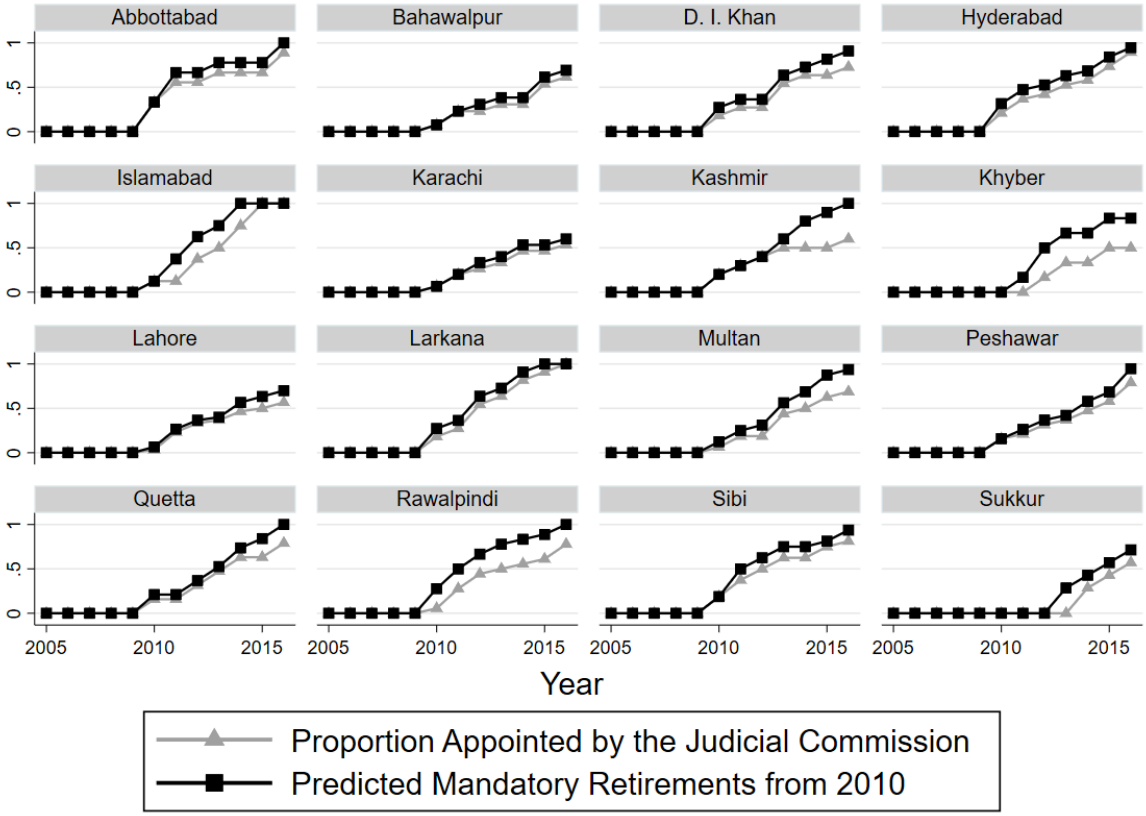
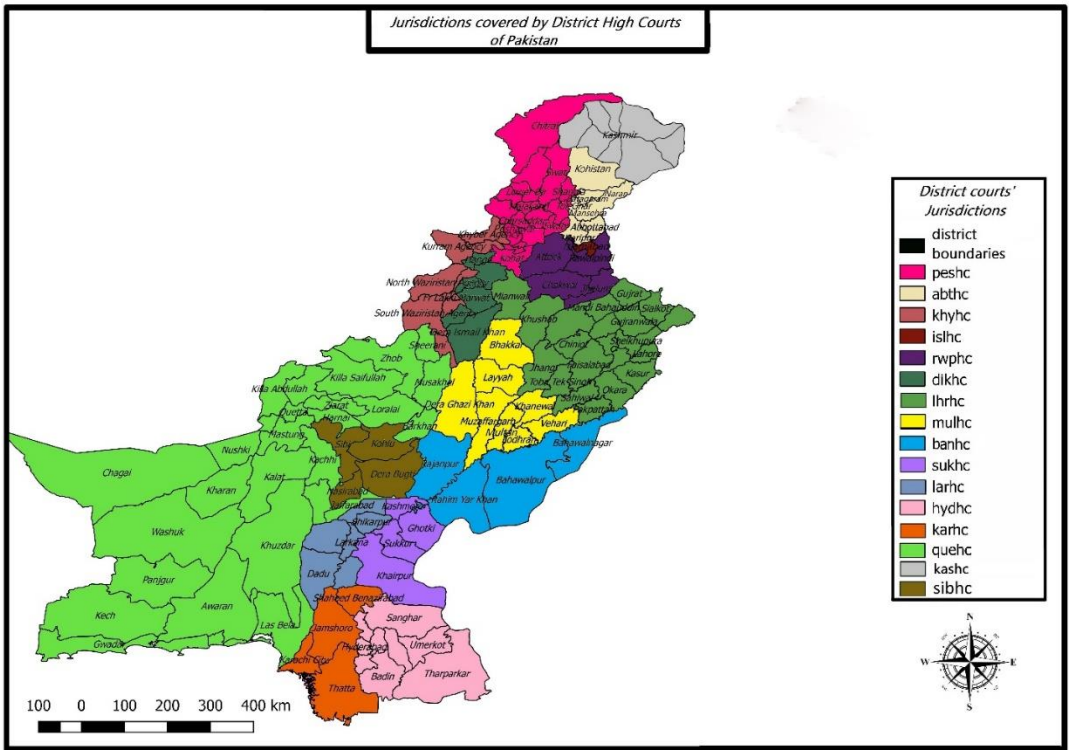


Figure 2: Appointments and Predicted Retirements Post-Reform



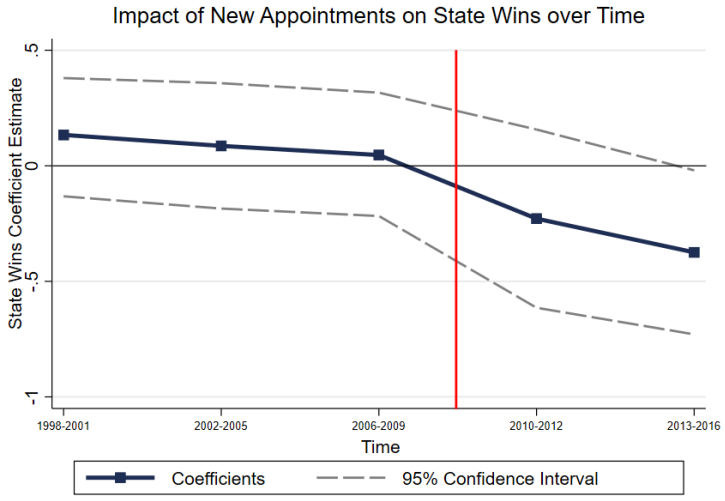
Note: The figure plots the fraction of judges appointed by the judicial commission (peer judges) in each district over time with the fraction of judges predicted to reach their mandatory retirement age of 62 in each district in the post-reform period. Predicted retirements are highly correlated with new appointments. The regression-form representation of this figure (first-stage results) appears in Table 2 (Panel B) and the results of the permutation inference falsification test where these districts are randomly scrambled appears in Table C.9 in Appendix C.

Figure 3: Jurisdictions covered by District High Courts of Pakistan



Note: peshc stands for Peshawar High Court Bench, abthc for Abbottabad High Court Bench, khyhc for Khyber High Court Bench, islhc for Islamabad High Court Bench and so forth.

Figure 4: Impact of New Appointments on State Wins over Time



Note: This figure presents the coefficients (along with their 95% confidence intervals) in the regression of State Wins on the fraction of new appointments instrumented by the proportion of predicted mandatory retirements for all cases in the respective three-year intervals. Pre-treatment appointments and retirements are not accompanied by judicial commission appointments. The vertical line marks the timing of the judicial-selection reform. The table-form representation of the results of these estimations appears in Table C.4 in Appendix C.

Table 1: Descriptive Statistics

Variables	Observations	Mean	Std. Dev.	Min	Max
Panel A: Case Characteristics (by cases)					
State Wins	7,439	0.50	0.50	0	1
Case Delay	7,439	3.33	2.47	0	23
Merit	7,439	0.62	0.48	0	1
Process Followed	7,439	3.31	1.49	1	5
Year Filed	7,439	1999.69	9.53	1970	2016
Year Decision	7,439	2003.03	8.88	1986	2016
Constitutional Cases	7,439	0.72	0.44	0	1
Land Cases	7,439	0.41	0.49	0	1
Human Rights Cases	7,439	0.31	0.46	0	1
Criminal Cases	7,439	0.28	0.44	0	1
Pages of Judgment Order	7,439	8.88	7.71	1	81
Number of Lawyers	7,439	4.04	3.62	1	32
Number of Judges on a case	7,439	1.81	0.84	1	5
Chief Justice on Bench	7,439	0.06	0.24	0	1
Panel B: Judge Characteristics (by judges)					
Tenure at Decision	482	4.10	3.64	8.46	22
Gender	482	0.95	0.19	0	1
Promoted to SC	482	0.05	0.23	0	1
Former Judge	482	0.11	0.31	0	1
Fr. Office-Holder Bar. Ass.	482	0.63	0.48	0	1
Ran for Political Office	482	0.19	0.39	0	1
Former Lawyer	482	0.89	0.31	0	1
Post-Reform Judge	482	0.14	0.34	0	1
Panel C: Treatment Variables and District Characteristics (by district-year)					
Commission Judges/Total	496	0.10	0.21	0	1
Pred. Retirements at 62/Total	496	0.12	0.26	0	1
Total Judges in district	496	14.16	5.84	6	30
Area (sq. km)	496	4321.81	3287.76	906	13297
Population	496	2150270	2428460	22454.11	1.14E+07
Density (per sq. km)	496	1094.32	1764.62	8.46	9023.83

Note: This table reports the summary statistics for the baseline sample of 7439 cases, 482 judges covering the 16 District High Courts in Pakistan over the 1986-2016 period.

Table 2: Impact of Selection Reform on State Wins

Panel A: Ordinary Least Squares and 2nd-Stage Least Squares Results				
	OLS		2SLS, 2nd Stage	
	(1)	(2)	(3)	(4)
	State Wins			
Commission Judges/Total Judges	-0.277**	-0.318***	-0.311*	-0.373***
	[0.112]	[0.105]	[0.166]	[0.143]
District and Year Fixed Effects	Yes	Yes	Yes	Yes
District Controls	No	Yes	No	Yes
Case Controls	No	Yes	No	Yes
Observations	7,439	7,439	7,439	7,439
R-squared	0.044	0.052	0.044	0.052
Mean of dependent variable	0.50	0.50	0.50	0.50

Panel B: First-Stage Results		
	(3)	(4)
	Commission Judges/Total Judges	
Predicted Retirements at 62/Total	0.793***	0.819***
	[0.0779]	[0.0719]
District Fixed Effects	Yes	Yes
Year Fixed Effects	Yes	Yes
District Controls	No	Yes
Case Controls	No	Yes
Observations	7,439	7,439
R-squared	0.971	0.979
F-Statistic	103.62	129.66

Robust standard errors appear in brackets (clustered at the district level). The dependent variable is State Wins, a dummy variable for the case being ruled in favor of the State. Commission/Total Judges is the fraction of judges appointed by the judicial commission (peer judges). In the IV regressions, this is instrumented by the predicted fraction of judges reaching the mandatory retirement age of 62 in the post-reform period. The first-stage results corresponding to columns (3) and (4) appear in Panel B. The controls include all case and district characteristics shown in Table 1. The case controls also include case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table 3: Impact of Pre-Reform Appointments and Pre-Reform Retirements on State Wins

	OLS			
	(1)	(2)	(3)	(4)
	State Wins			
New Judges/Total Judges	-0.0390	-0.0249		
	[0.0755]	[0.0714]		
Predicted Retirements at 62/Total			0.0705	0.0635
			[0.0560]	[0.0537]
District and Year Fixed Effects	Yes	Yes	Yes	Yes
District Controls	No	Yes	No	Yes
Case Controls	No	Yes	No	Yes
Observations	7,439	7,439	7,439	7,439
R-squared	0.043	0.050	0.044	0.050
Mean of dependent variable	0.50	0.50	0.50	0.50

Robust standard errors appear in brackets (clustered at the district level). The dependent variable is State Wins, a dummy variable for the case being ruled in favor of the State. New Judges/Total Judges is the fraction of new judges appointed before the reform from 1986 (the first year of our data). Predicted Retirements at 62/Total is the predicted fraction of judges reaching the mandatory retirement age of 62 from 1986 onwards. Once all judges active in 1986 have been replaced, this variable takes the value of 1 for all ensuing years, analogous to the Commission Judges/Total Judges variable which is 1 once all Presidential appointees have been replaced by judicial-commission judges in a given district. The controls include all case and district characteristics shown in Table 1. The case controls also include case-type fixed effects. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 4: Impact of Selection Reform on Case and District Characteristics

	2SLS, 2nd Stage							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Constitutional Case	Criminal Case	No. Pages	CJ on Case	No. Lawyers on Case	No. Judges on Case	Population	Population Density
Commission/Total Judges	0.0139	0.0107	0.482	-0.0328	-2.777	0.159	374,495	-588.7
	[0.0196]	[0.017]	[2.306]	[0.0546]	[1.694]	[0.185]	[440,433]	[403.5]
District Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,439	7,439	7,439	7,439	7,439	7,439	7,439	7,439
R-squared	0.092	0.091	0.246	0.017	0.055	0.072	0.995	0.995
Mean of dep. variable	0.722	0.278	8.887	0.064	4.042	1.815	3562527	2065.558

Robust standard errors appear in brackets (clustered at the district level). Commission/Total Judges is instrumented by the predicted fraction of judges reaching the mandatory retirement age of 62 in the post-reform period. The controls include case and district characteristics in Table 1, excluding the dependent variable. The case controls include case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table 5: Impact of Selection Reform on State Wins in one-year window around reform

	2SLS, 2nd Stage			
	(1)	(2)	(3)	(4)
	State Wins (2009-2011)			
Commission Judges/Total Judges	-0.676***	-0.735*	-0.684	-0.679*
	[0.101]	[0.378]	[0.404]	[0.354]
			p-value = 0.11	
District and Year Fixed Effects	No	Yes	Yes	Yes
District Controls	No	No	Yes	Yes
Case Controls	No	No	No	Yes
Observations	887	887	887	887
R-squared	0.065	0.085	0.064	0.084
Mean of dependent variable	0.60	0.60	0.60	0.60

Robust standard errors appear in brackets (clustered at the district level). The dependent variable is State Wins, a dummy variable for the case being ruled in favor of the State. Commission/Total Judges is the fraction of judicial-commission judges. This is instrumented by the predicted fraction of judges reaching the mandatory retirement age of 62 in the post-reform period. The controls include all case and district characteristics shown in Table 1. The case controls include case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Impact of Selection Reform on State Wins (by type of Constitutional Case)

	2SLS, 2nd Stage			
	Land Cases		Human-Rights Cases	
	State Wins			
Commission Judges/Total Judges	-0.453**	-0.476**	-0.363**	-0.517***
	[0.216]	[0.205]	[0.154]	[0.103]
District and Year Fixed Effects	Yes	Yes	Yes	Yes
District Controls	No	Yes	No	Yes
Case Controls	No	Yes	No	Yes
Observations	3,041	3,041	2,323	2,323
R-squared	0.083	0.084	0.047	0.050
Mean of dependent variable	0.47	0.47	0.46	0.46

Robust standard errors appear in brackets (clustered at the district level). The dependent variable is State Wins, a dummy variable for the case being ruled in favor of the State. Commission/Total Judges is the fraction of judges appointed by the judicial commission, which is instrumented by the predicted fraction of judges reaching the mandatory retirement age of 62 in the post-reform period. The controls include all case and district characteristics shown in Table 1. The case controls also include case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table 7: Placebo Test of Political Influence Mechanism – Impact of Selection Reform on Criminal Cases

	OLS		2SLS, 2nd Stage	
	(1)	(2)	(3)	(4)
	State Wins			
Commission Judges/Total Judges	0.0195	0.0410	-0.227	-0.0720
	[0.382]	[0.370]	[0.412]	[0.393]
District and Year Fixed Effects	Yes	Yes	Yes	Yes
District Controls	No	Yes	No	Yes
Case Controls	No	Yes	No	Yes
Observations	2,075	2,075	2,075	2,075
R-squared	0.071	0.079	0.071	0.079
Mean of dependent variable	0.58	0.58	0.58	0.58

Robust standard errors appear in brackets (clustered at the district level). The dependent variable is State Wins, a dummy for the case being ruled in favor of the State. Commission/Total Judges is the fraction of judicial-commission judges, instrumented by the predicted fraction of judges reaching the mandatory retirement age of 62 in the post-reform period. The controls include all case and district characteristics shown in Table 1. The case controls also include case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Impact of Selection Reform on Decision Quality – Case Delay, Merit Decisions and Process Followed

Panel A: Case Delay	2SLS			
	Case Delay			
	(1)	(2)	(3)	(4)
	Overall	Land	Human Rights	Criminal
Commission Judges/Total Judges	-1.571***	-2.697***	-1.306*	0.237
	[0.470]	[0.711]	[0.775]	[1.146]
R-squared	0.085	0.145	0.135	0.081
Mean of dependent variable	3.33	3.33	3.28	3.40
Panel B: Decisions on Merit	2SLS			
	Decisions on Merit			
	Overall	Land	Human Rights	Criminal
Commission Judges/Total Judges	0.558***	0.511**	0.599***	0.0670
	[0.182]	[0.234]	[0.221]	[0.347]
R-squared	0.085	0.128	0.074	0.162
Mean of dependent variable	0.62	0.60	0.61	0.67
Panel C: Process Followed	2SLS			
	Process Followed			
	Overall	Land	Human Rights	Criminal
Commission Judges/Total Judges	1.245***	1.193***	1.083*	-0.260
	[0.386]	[0.460]	[0.581]	[1.501]
R-squared	0.020	0.036	0.040	0.049
Mean of dependent variable	3.31	3.24	3.35	3.36
District and Year Fixed Effects	Yes	Yes	Yes	Yes
District and Case Controls	Yes	Yes	Yes	Yes
Observations	7,439	3,041	2,323	2,075

Robust standard errors appear in brackets (clustered at the district level). The dependent variable is Case Delay in Panel A, a dummy for the case being ruled on merits in Panel B and the rating on Process Followed in Panel C. Commission/Total Judges is the fraction of judicial commission appointees, instrumented by the predicted fraction of judges reaching the mandatory retirement age of 62 in the post-reform period. All coefficient estimates are calculated from Two-Stage Least Squares. The controls include all case and district characteristics shown in Table 1. The case controls also include case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1

Table 9: Selection Effects – Impact of Selection Reform on State Wins at Judge Level

	OLS			
	(1)	(2)	(3)	(4)
	State Wins			
JC Judge Dummy	-0.160***	-0.161***	-0.161***	-0.00113
	[0.0253]	[0.0284]	[0.0287]	[0.0429]
District Controls	No	Yes	Yes	Yes
Case Controls	No	No	Yes	Yes
Judge Controls	No	No	No	Yes
Observations	482	482	482	482
R-squared	0.093	0.101	0.108	0.153
Mean of dependent variable	0.48	0.48	0.48	0.48

Robust standard errors appear in brackets (clustered at the judge level). The dependent variable is State Wins, a dummy for the case being ruled in favor of the State. JC Judge Dummy is a dummy variable that takes the value of one if the judge is appointed by the judicial commission and zero if the judge is appointed by the President. The controls include all case and district characteristics shown in Table 1. The case controls also include case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table 10: Judicial Commission Appointees and Judge Characteristics

	OLS					
	(1)	(2)	(3)	(4)	(5)	(6)
	Gender	Former Judge	Former Lawyer	Age at Decision	Former Office Holder Bar Assoc.	Ran for Political Office
JC Judge Dummy	-0.0280	-0.0368	0.0368	-0.557	-0.343***	-0.156***
	[0.0212]	[0.0364]	[0.0364]	[0.529]	[0.055]	[0.044]
Age Control	Yes	Yes	Yes	-	Yes	Yes
Case Controls	Yes	Yes	Yes	Yes	Yes	Yes
District Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	482	482	482	482	482	482
R-squared	0.024	0.010	0.010	0.091	0.195	0.050
Mean of dependent variable	0.96	0.11	0.89	56.53	0.58	0.19

Robust standard errors appear in brackets (clustered at the judge level). JC Judge is a dummy for the judge being appointed by the Judicial Commission. The case and district controls variable are identical to those in the baseline regression. The age control is tenure at decision (Similar results are obtained if we use age at decision or age at appointment or run case-level regressions) *** p<0.01, ** p<0.05, * p<0.1.

Table 11: Impact of Selection Reform on House Prices and Attested Land Deeds

Panel A: District Year Regression with House Prices

	OLS		2SLS, 2nd Stage	
	(1)	(2)	(3)	(4)
	House Price (per square foot)			
Commission Judges/Total Judges	56.58	75.94	152.2*	176.2**
	[586.6]	[533.9]	[863.7]	[709.2]
District and Year Fixed Effects	Yes	Yes	Yes	Yes
District and Case Controls	No	Yes	No	Yes
Observations	496	496	496	496
R-squared	0.092	0.093	0.092	0.093
Mean of dependent variable	1072.11	1072.11	1072.11	1072.11

Panel B: District Year Regression with Number of Attested Land Deeds

	OLS		2SLS, 2nd Stage	
	(1)	(2)	(3)	(4)
	Notarized Certificates			
Commission Judges/Total Judges	26,793	37,335	76,856*	89,768**
	[30,176]	[27,273]	[44,476]	[36,328]
District and Year Fixed Effects	Yes	Yes	Yes	Yes
District and Case Controls	No	Yes	No	Yes
Observations	496	496	496	496
R-squared	0.092	0.093	0.092	0.093
Mean of dependent variable	548936.5	548936.5	548936.5	548936.5

Robust standard errors appear in brackets (clustered at the district level). The dependent variable is house price per square foot denominated in Pakistani Rupees in Panel A and number of notarized land ownership certificates issued by the Pakistan Land Revenue Administration in Panel B. Commission/Total Judges is the fraction of judges appointed by the Judicial Commission. In the IV regressions this is instrumented by the predicted proportion of judges reaching the mandatory retirement age of 62 in the post-reform period. The controls include all case and region characteristics shown in Table 1 and case-type fixed effects. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 12: Impact of Selection Reform on Development (Night-time Lights)

District-Year Regression with Night-time Light Intensity				
	OLS		2SLS, 2nd Stage	
	(1)	(2)	(3)	(4)
	Logarithm of Night-time Light Intensity			
Commission Judges/Total Judges	0.277*	0.320*	0.220	0.264*
	[0.165]	[0.179]	[0.156]	[0.150]
District and Year Fixed Effects	Yes	Yes	Yes	Yes
District and Case Controls	No	Yes	No	Yes
Observations	324	324	324	324
R-squared	0.098	0.099	0.098	0.099
Mean of dependent variable	2.02	2.02	2.02	2.02

Robust standard errors appear in brackets (clustered at district level). The dependent variable is the logarithm of night-time light intensity. Commission/Total Judges is the fraction of judges appointed by the Judicial Commission. In the IV regressions this is instrumented by the predicted proportion of judges reaching the mandatory retirement age of 62 in the post-reform period. The controls include all case and district characteristics shown in Table 1 and case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1

Table 13: Impact of Selection Reform on State Wins (by President appointing)

	State Wins					
	2SLS, 2nd Stage					
	Pres. Zardari	Pres. Musharraf	Pres. Tarar	Pres. Leghari	Pres. Khan	Pres. Haq
	(1)	(2)	(3)	(4)	(5)	(6)
Commission/Total Judges	-0.498*	-0.395**	-0.349	-0.422**	-0.605***	-0.494**
	(0.269)	(0.154)	(0.412)	(0.189)	(0.189)	(0.200)
District and Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,861	2,608	1,049	2,224	1,834	2,249
R-squared	0.097	0.072	0.102	0.089	0.107	0.088
Mean Dep. Variable	0.43	0.47	0.38	0.45	0.44	0.46

Robust standard errors appear in brackets (clustered at the district level). The dependent variable, key explanatory variable, instrument and controls are identical to those in the baseline specification. The judicial outcomes of cases adjudicated by Judicial Commission judges are compared to those of the judges appointed by the last six Presidents prior to the selection reform. The sample size varies as Presidents had different lengths of time in office, so their opportunities to appoint new judges when vacancies arose differed. For instance, President Rafiq Tarar was in office for only three years, and consequently appointed fewer judges and had fewer cases decided by his appointees. The case controls include case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table 14: Impact of Selection Reform on State Wins (by Chief Justice)

	State Wins				
	2SLS, 2nd Stage				
	CJ Jamali	CJ Khawaja	CJ Mulk	CJ Jillani	CJ Chaudhary
	(1)	(2)	(3)	(4)	(5)
Commission/Total Judges	-0.145	-0.326**	-0.355**	-0.283**	-0.263*
X Chief Justice	(0.106)	(0.149)	(0.124)	(0.123)	(0.155)
District and Year FE	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Observations	7,439	7,439	7,439	7,439	7,439
R-squared	0.051	0.051	0.051	0.051	0.050
Mean of Dep. Variable	0.50	0.50	0.50	0.50	0.50

Robust standard errors appear in brackets (clustered at the district level). The instrument and controls are identical to those in the baseline specification. The fraction appointed by Judicial Commission is interacted with the time period when the respective Chief Justice was in office following the selection reform. The case controls include case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table 15: Impact of Selection Reform on State Wins in the Democratic Period (2009-2016)

	OLS		2SLS, 2nd Stage	
	(1)	(2)	(3)	(4)
	State Wins (2009-2016)			
Commission Judges/Total Judges	-0.338*	-0.276	-0.481**	-0.412*
	[0.183]	[0.201]	[0.207]	[0.231]
District Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
District Controls	No	Yes	No	Yes
Case Controls	No	Yes	No	Yes
Observations	2,563	2,563	2,563	2,563
R-squared	0.096	0.100	0.095	0.100
Mean of Dep. Variable	0.46	0.46	0.46	0.46

Robust standard errors appear in brackets (clustered at the district level). Commission/Total Judges is the fraction of Judicial Commission judges. In the IV regressions this is instrumented by the predicted proportion of judges reaching the mandatory retirement age of 62 in the post-reform period. The controls include all case and district characteristics in Table 1 and case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

For Online Appendix to:

Judicial Independence and Development: Evidence from Pakistan

BY SULTAN MEHMOOD

Contents

A. Variable Definitions and sources

State Wins = This is a case level dummy variable for State victories. Law firm coded this variable as 1 for a State victory and 0 for a State loss based on the judgement orders retrieved from an online portal that records universe of High Court cases in Pakistan (https://www.pakistanlawsite.com/). More information on this source and data construction can be found in Appendix B.3.

Case Lag = This variable is the difference between the case-decision and case-filing years. It is also retrieved from the texts of the judgements compiled from the same data source as the State Wins variable.

Merit Case = A dummy variable for the case being decided based on "*evidence rather than technical or procedural grounds*" (Pound, 1963). This comes from the assessments by the Law firm based on their reading of the text of the judgement order.

Process Followed = This is a discrete variable that rates from 1 to 5 the extent that "all relevant jurisdictional, procedural and evidential requirements were followed in reaching the judicial decision". A higher rating implies higher jurisdictional, procedural and evidential standards are followed in adjudication. This also comes from the assessments by the Law firm based on their reading of the text of the judgement order.

Judicial Commission / Total Judges = This variable is the fraction of judges selected under the new selection procedure. Information on new appointments is obtained from judicial administrative records obtained from the Registrar Offices of the High Courts. The data on total judges in each district High Court comes from High-Court Annual Reports submitted to the Ministry of Law, Justice and Human Rights, Government of Pakistan.

Predicted Retirements at 62 / Total Judges (instrument) = This variable is the fraction of judges reaching the mandatory retirement age of 62, from 2010 to 2016, as predicted based on the age structure of judge in 2010 when the reform went into effect. Information on judge retirements comes from judicial administrative records obtained from Registrar Offices of the High Courts. The data on total judges in each district high court comes from High-Court Annual Reports submitted to the Ministry of Law, Justice and Human Rights, Government of Pakistan.

Criminal Case = A dummy for criminal cases. This is indicated in the text of the judgement order.

Constitutional Case = A dummy for constitutional cases. This is indicated in the text of the judgement order.

Land Case = A subset of the constitutional cases. This is a dummy for the case involving a landownership or expropriation dispute with "*The State*". These are "Eminent Domain" cases. The State here is the a housing development agency, which is authorized to resolve disputes with the public regarding land ownership on behalf of the government (e.g. Defense Housing Authority, the Lahore Development Authority (LDA), the Karachi Development Authority (KDA), the Peshawar Development Authority (PDA) and the Capital Development Authority (CDA)).

Human-Rights Case = A subset of the constitutional cases. This is a dummy variable for the case involving a human-rights dispute with "*The State*". These cases are marked as "writ petitions" in the text of the judgment order and are non-land cases against the government involving violation of a fundamental right.

Number of Lawyers = A count variable for the number of lawyers arguing the particular case. This is also indicated in the text of the judgement order.

Number of Judges = A count variable for the number of judges adjudicating upon the particular case. This is also indicated in the text of the judgement order.

Bench Chief Justice = A dummy variable for the Chief Justice adjudicating in the case. This is also indicated in the text of the judgement order.

Number of Pages of Judgment Orders = A count variable of the number of pages of the judgement order in the particular case. This is also indicated in the text of the judgement order.

Age at appointment = The difference between date of birth and age at appointment. This data is obtained from Judicial Administrative Data Records at the High Court Registrar Offices.

Gender = A dummy for male judges. This is coded in two ways: 1) Manually, where the author checks every judge name, and 2) Automatically, where the author asked Stata to read the string starting with "Justice Miss" and "Justice Mrs." as zero and the string starting with "Justice Mr." as one. The two methods yielded an identical number of male and female justices.

Promoted to SC = A dummy for the judge being elevated to the Supreme Court. This comes from the judicial administrative records of the Supreme Court Registrar Office.

Former Lawyer = A dummy for the judge having been a Lawyer before being appointed as a High-Court justice. The data comes from a combination of biographical information contained in annual reports, Bar Council records and judicial administrative data.

Former Office Holder Bar Association = A dummy for the judge having been an office holder in the Lawyers' Bar Association (before being appointed a High-Court justice). The data comes from a combination of biographical information contained in annual reports, Bar Council records and judicial administrative data.

Ran for Political Office = A dummy for the judge having run for provincial or national elections prior to judicial appointment. The data comes from the Election Commission of Pakistan matched with judicial administrative data.

Former Judge = A dummy for the judge having formerly been a lower (civil or session) Court judge. The data comes from a combination of biographical information contained in annual reports and judicial administrative data.

Total Judges = A district-year count variable of the number of judges at a district High Court in a given year. The data comes from a combination of information contained in annual reports and judicial administrative data.

House Price = This variable is the price of house per square feet denominated in Pakistani Rupees. The data comes from www.zameen.com.

Night-time Lights = This variable is logarithm of visible light band that range from 0-63 with higher values representing higher night-time intensity. This data is obtained from United States' National Oceanic and Atmospheric Administration database.

Area = The area (in square kilometres) of the district where the High Court is located. This is obtained from Pakistan census data.

Population = The population of the district where the High Court is located. This is obtained from a linear interpolation of 1981, 1998 and 2017 Pakistan census data.

Density = The per square kilometre population density of the district where the High Court is located (area/population). This comes from a linear interpolation of 1981, 1998 and 2017 Pakistan census data.

B. Data Appendix: Additional information and data collection

B.1. The History and Structure of Courts in Pakistan

In this subsection we discuss the background and structure of the Courts in Pakistan. The Indian High Courts Act of 1861 authorized the Crown to create High Courts in the Indian colony. These Courts served as precursors to the modern-day High Courts in both India and Pakistan. With the independence of India and Pakistan from British colonial rule in 1947, gradual changes were made in the legal institutions in both countries, but both retained the overarching institutional structure such as Common Law jurisprudence. One change that is relevant here is the raising of the mandatory retirement age from 60 to 62. India raised the retirement age of High Court judges to 62 years in 1963 and Pakistan made the same change in 1969 (both as part of amendments to their respective constitutions). The mandatory retirement age of High Court judges has been 62 ever since (in both India and Pakistan).

Pakistan's judiciary is a three-tier hierarchical structure (see Figure C.5). The lowest Courts are the civil and session Courts, which hear civil and criminal cases respectively. These Courts are located in the provincial capitals and have jurisdictions dictated by the domicile of the litigating parties. The decisions in civil and session Courts can be challenged in Pakistan's High Courts. If the government expropriates land or violates a fundamental right, the High Court is the first (and in most cases) the only platform for individuals and firms for remediation. Although, in theory there are only four provincial High Courts in Pakistan, the benches of each are spread out over the four provinces (see Figure 3) in the form of 16 district High Court benches. Key for our paper is that cases can be filed against the government in the High Court in the form of a constitutional or criminal petition against the State. Constitutional cases involving *The State* are filed against the federal government, provincial governments and local governments or any

organ of the state that yields executive authority (such as the office of the Prime Minister). Finally, there is the final appellate Court, the Supreme Court of Pakistan, located in the federal capital of Islamabad. This typically hears appeals on "technical" grounds for the criminal and constitutional cases in the High Courts. The Supreme Court can have at most 16 judges, which greatly limits the number and scope of cases it can hear. Only a small fraction of cases therefore end up being heard by the Supreme Court (Arshad, 2017).

B.2. The Political landscape at the time of the selection reform

Since the 1990s, Pakistan has largely been dominated by two political parties: the Centre-Right Pakistan Muslim League Nawaz (PML-N, henceforth) led by Nawaz Sharif, and the Centre-Left Pakistan Peoples' Party (PPP, henceforth) led by Benazir Bhutto. The 1990s was also a particularly volatile period in Pakistan's history. For one, no government was able to complete its five-year electoral term. Second, there were eight changes of Prime Minister and five changes of President over this period, rotating between the PML-N and the PPP. It was in this time of political uncertainty that the then army chief, General Pervez Musharraf stepped in and seized power to bring "stability", in what is now known as a "bloodless coup d'état of 1999." General Musharraf consolidated his power and won a controversial referendum in 2002 that awarded him five years of Presidency and managed to cobble together a coalition government consisting of disgruntled ex-PPP and ex-PML-N lawmakers (Bose and Jalal, 2004).

With elections due in the January of 2008 and Musharraf leading the polls, the sudden assassination of Benazir Bhutto on December 27th, 2007, drastically changed Pakistan's political landscape. The PPP managed to gain the largest share of the votes (Perlez and Gall, 2008), with many analysts attributing this result to a "sympathy wave" sweeping across the country as a direct consequence of the assassination (Basu, 2008). General Musharraf's political allies

obtained less than 10% of the vote, and Musharraf resigned as President on 8th September 2008, once the impeachment proceedings were due to start against him. On 9th September 2008, the Pakistan Peoples Party's Chairman, the widower of Benazir Bhutto, Asif Ali Zardari, was sworn in as the 11th President of Pakistan. It was under this backdrop that the President Zardari and his party pushed for an amendment to the constitution that would dramatically change judicial selection in Pakistan.

B.3. Case Data Sources and Construction

The case characteristics as well as the outcome variables are based on the judgement orders available at the central repository of cases used by Lawyers in Pakistan to prepare their cases. This is available online at a law portal: (https://www.pakistanlawsite.com/). This website is the "Central Library" used by lawyers to prepare their cases (since Pakistan has a Common Law system, where case precedent is crucial), the central repository is also used by paralegals and students studying for their Law exams and contains the universe of (undigitized) cases in the High Courts from 1950 to 2016. Access is password-protected, where permission to use the website and cases is obtained through the Law firm. Typical examples of cases accessed are presented in Figures C.4 and C.5 in Appendix C (with the permission of the Law firm). As this library contains the universe of (undigitized) cases from 1950 to 2016, we had to choose a sample period given our budget and research question. We randomly sample 0.2% of all the available cases in every year from the universe of cases decided in that year from 1986 to 2016 inclusive. As the number of cases decided in a given year gradually rises over time, so does the sampled cases in our sample. Figure C.8 presents this information as plot of sampled cases and total available cases. There is a gradual rise in the total cases decided in Pakistan's High Courts from 1986 to 2016, which is reassuringly reflected in the randomly sampled cases.

Two teams of four paralegals supervised by a senior Lawyer each recorded the key information in the texts of the judgement order available at the website for these 7439 cases. Table C.1 presents the means of the outcome variables and case characteristics coded by the two teams, as well as correlation coefficient between them. There is a strong correlation between the coding of the two teams. For instance, the average State Wins figure from Team 1 is 0.50 and the correlation coefficient for State Wins between the two teams is 0.89. Since, there is some subjectivity in coding State Wins or Merit variable, we consider the robustness of our results across the two teams: we obtain similar results from the State Wins or Merit measure from either team. It is notable that the averages as well as the correlation coefficients are much more similar for variables that are plausibly more objective (e.g. for case delay, the correlation coefficient across the two teams is 0.99). This is reassuring. The discrepancies here most likely arise from minor coding errors. Throughout, the paper, for space reasons, we report the results from Team 1. Unsurprisingly given the high correlation coefficients, similar results are obtained from the dataset of Team 2 (the results from using variables from Team 2 are available on request).

C. Additional Tables and Figures

Table C.1: Outcome Variables and Case Characteristics

Variables	Team 1	Team 2	Difference	Correlation (ρ)
State Wins	0.50	0.56	-0.06	0.89
Case Delay	3.33	3.30	-0.03	0.99
Merit	0.62	0.67	0.05	0.88
Process Followed	3.31	3.22	0.09	0.85
Constitutional	0.72	0.70	-0.01	0.95
Land Cases	0.41	0.38	0.03	0.94
HR Cases	0.31	0.33	0.02	0.96
Criminal Cases	0.28	0.29	-0.01	0.93
No. of Lawyers	4.04	4.09	-0.05	0.94
No. of Judges	1.81	1.83	-0.02	0.87
CJ in Bench	0.06	0.08	-0.02	0.83
Pg. of Judgement	8.88	8.71	0.03	0.97

Note: This table compares the outcome variables and case characteristics for the two teams of coders for the same 7439 cases used in the analysis. Team 1 are the data used in the regressions. The table shows the two means, the difference, and the correlation coefficient between them.

Table C.2: Alternate Specification – Reduced Form with Post Treatment Interaction Term

	State Wins		
	(1)	(2)	(3)
	OLS		
Predicted Retirements at 62/Total	-0.233*	-0.211*	-0.296***
X Post Reform	[0.115]	[0.120]	[0.0978]
Predicted Retirements at 62/Total	0.0338	0.0192	0.0255
	[0.0606]	[0.0600]	[0.0517]
District and Year Fixed Effects	Yes	Yes	Yes
District Controls	No	Yes	Yes
Case Controls	No	No	Yes
Observations	7,439	7,439	7,439
R-squared	0.044	0.050	0.052
Mean of dependent variable	0.50	0.50	0.50

Robust standard errors appear in brackets (clustered at the district level). The dependent variable is State Wins, a dummy for the case being ruled in favour of the State. Predicted Retirements at 62/Total Judges is the fraction of judges reaching the mandatory retirement age of 62 (pre and post reform). Post Reform is a dummy variable that switches on in 2010 i.e. when the selection reform goes into effect. The controls include all case and district characteristics in Table 1. The case controls also include case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table C.3: The impact of retirement in the pre- and post-reform periods (Reduced Form over time)

	OLS				
	1998-2001	2002-2005	2006-2009	2010-2013	2014-2016
	(1)	(2)	(3)	(4)	(5)
	State Wins				
Period1998_2001xRetired_1986	0.102				
	[0.0932]				
Period2002_2005xRetired_1986		0.0560			
		[0.0862]			
Period2006_2009xRetired_1986			0.0316		
			[0.0385]		
Period2010_2013xRetired_2010				-0.172	
				[0.159]	
Period2013_2016xRetired_2010					-0.334**
					[0.168]
District and Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
District Controls	Yes	Yes	Yes	Yes	Yes
Case Controls	Yes	Yes	Yes	Yes	Yes
Observations	7,439	7,439	7,439	7,439	7,439
R-squared	0.050	0.050	0.050	0.050	0.051

Robust standard errors appear in brackets (clustered at district level). Retired_1986 is the predicted fraction of judges reaching the mandatory retirement age since 1986, while Retired_2010 is the predicted fraction of judges reaching mandatory retirement age since 2010. These variables are interacted with a dummy for the corresponding 3-year time periods. The case controls include case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table C.4: The Impact of New Appointments on State Wins over Time

	2SLS				
	(1)	(2)	(3)	(4)	(5)
	State Wins				
Period 1998-2001 X Appoint since 1986	0.134				
	[0.278]				
Period 2002-2005 X Appoint since 1986		0.0862			
		[0.138]			
Period 2006-2009 X Appoint since 1986			0.0466		
			[0.0609]		
Period 2010-2013 X Appoint since 2010				-0.229	
				[0.197]	
Period 2013-2016 X Appoint since 2010					-0.375**
					[0.181]
District and Year FE	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Observations	7,439	7,439	7,439	7,439	7,439
R-squared	0.049	0.050	0.050	0.051	0.051

Robust standard errors appear in brackets (clustered at the district level). These are IV 2nd-stage results. The fraction of Judges appointed since 1986 is instrumented by the predicted fraction of mandatory retirements post-1986. Likewise, the fraction of judges appointed post-2010 is instrumented by the predicted fraction of retirements since 2010. The case controls include case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table C.5: Balance Checks at the Case and Judge Level

Panel A: Case Level								
	(1) Constitutional Case	(2) Criminal Case	(3) No. of Pages	(4) CJ on Case	(5) No. Lawyers on Case	(6) No. Judges on Case	(7) Population	(8) Population Density
After Reform Judge	0.004	0.003	0.211	-0.005	0.116	-0.035	-22,208*	13.780
	[0.005]	[0.004]	[0.281]	[0.016]	[0.252]	[0.041]	[12,497]	[8.765]
District and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,439	7,439	7,439	7,439	7,439	7,439	7,439	7,439
R-squared	0.099	0.092	0.246	0.017	0.057	0.072	0.995	0.995
Panel B: Judge Level								
	(1) Constitutional Case	(2) Criminal Case	(3) No. of Pages	(4) CJ on Case	(5) No. Lawyers on Case	(6) No. Judges on Case	(7) Population	(8) Population Density
After Reform Judge	0.00482	0.00291	-1.692	-0.00675	-0.296	-0.206	-150,535	68.982
	[0.00352]	[0.00353]	[0.912]	[0.0148]	[0.291]	[0.511]	[229,321]	[164.34]
Age Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Case & District Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	482	482	482	482	482	482	482	482
R-squared	0.090	0.091	0.301	0.026	0.080	0.145	0.219	0.037

Robust standard errors appear in brackets (clustered at the district level) in Panel A. Robust Standard errors are clustered at the judge level in Panel B (similar results are found if we use Newey-West standard errors). For Panel A, post-Reform Judge is a dummy for the case being adjudicated by a judicial-commission judge. For the judge-level regressions in Panel B, post-Reform Judge is a dummy for a judicial-commission judge. *** p<0.01, ** p<0.05, * p<0.1.

Table C.6: The Difference in Observed Characteristics of President and JC Appointed Judges

Variables	Pres. Judge	JC Judge	Difference	(p-value)
Gender	0.97	0.95	0.02	0.16
Former Lower Court Judge	0.11	0.10	0.01	0.70
Former Lawyer	0.89	0.90	-0.01	0.69
Age at Decision	53.43	54.18	-0.75	0.13
Former Office Holder Bar Asso.	0.70	0.27	0.43	0.00
Political Office Prior to Appoint.	0.23	0.08	0.15	0.00
Observations (judges)	347	135		

Note: The table lists average judge characteristics, their differences and the statistical significance for the differences between the judges appointed under the two selection procedures.

Table C.7: The Impact of Selection Reform on State Wins (by Chief Justice)

	2SLS				
	CJ Jamali	CJ Khawaja	CJ Mulk	CJ Jillani	CJ Chaudhary
	(1)	(2)	(3)	(4)	(5)
	State Wins				
CJ Jamali X Commission/Total Judges	-0.145				
	(0.106)				
CJ Khawaja X Commission/Total Judges		-0.326**			
		(0.149)			
CJ Mulk X Commission/Total Judges			-0.355**		
			(0.124)		
CJ Jilani X Commission/Total Judges				-0.283**	
				(0.123)	
CJ Chaudhry X Commission/Total Judges					-0.263*
					(0.155)
District and Year FE	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Observations	7,439	7,439	7,439	7,439	7,439
R-squared	0.050	0.051	0.051	0.051	0.051
Mean of dependent variable	0.50	0.50	0.50	0.50	0.50

Robust standard errors appear in brackets (clustered at the district level). The instrument and controls are identical to those in Table 2. The fraction appointed by Judicial Commission is interacted with the period when the respective Chief Justice was in office following the selection reform. The controls include case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table C.8: The Effect of Reform on State Wins with District-Specific Trends

	OLS		IV, 2nd Stage	
	(1)	(2)	(3)	(4)
	State Wins			
Commission Judges/Total Judges	-0.321**	-0.292**	-0.371**	-0.344**
	[0.130]	[0.135]	[0.167]	[0.161]
District and Year Fixed Effects	Yes	Yes	Yes	Yes
District and Case Controls	No	Yes	No	Yes
District-Specific Trends	Yes	Yes	Yes	Yes
Observations	7,439	7,439	7,439	7,439
R-squared	0.048	0.055	0.048	0.055
Mean of dependent variable	0.50	0.50	0.50	0.50

Robust standard errors appear in brackets (clustered at the district level). The dependent variable is State Wins, a dummy for the case being ruled in favour of the State. Commission/Total Judges is the fraction of Judicial Commission judges. In the IV regressions, this is instrumented by the predicted proportion of judges reaching the mandatory retirement age of 62 in the post-reform period. The controls include all the case and district characteristics in Table 1 and case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table C.9: The Effect of Reform on State Wins with Randomly Scrambled Districts

	OLS		IV, 2nd Stage	
	(1)	(2)	(3)	(4)
	State Wins			
Commission Judges/Total Judges	-0.116	-0.126	-0.0280	-0.0450
(Scrambled)	[0.158]	[0.157]	[0.209]	[0.198]
District and Year Fixed Effects	Yes	Yes	Yes	Yes
District and Case Controls	No	Yes	No	Yes
Observations	7,439	7,439	7,439	7,439
R-squared	0.043	0.050	0.043	0.050
Mean of dependent variable	0.50	0.50	0.50	0.50

Robust standard errors appear in brackets (clustered at the district level). The dependent variable is State Wins, a dummy for the case being ruled in favour of the State. Commission/Total Judges (Scrambled) is the fraction of Judicial Commission judges where the 16 districts high courts are randomly scrambled. In the IV regressions, this is instrumented by the predicted proportion of judges reaching the mandatory retirement age of 62 in the post-reform period where we use the randomly scrambled ordering of districts as used in the OLS estimation. The controls include all the case and district characteristics in Table 1 and case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table C.10: The Impact of Selection Reform on State Wins at Different Levels of Clustering

	IV, 2nd Stage		
	Before-After Clustering	District-Year Clustering	Bootstrap Clustering
	(1)	(2)	(3)
	State Wins		
Commission Judges/Total Judges	-0.373***	-0.373***	-0.373**
	[0.113]	[0.107]	[0.152]
District and Year Fixed Effects	Yes	Yes	Yes
District and Case Controls	Yes	Yes	Yes
Observations	7,439	7,439	7,439
R-squared	0.052	0.052	0.052
Mean of dependent variable	0.50	0.50	0.50

Robust standard errors appear in brackets. The first column clusters within each district separately before and after the 2010 reform. The second column clusters within each district-year combination. The third column computes standard errors using bootstrap method with small cluster correction. The dependent variable is State Wins, a dummy for the case being ruled in favour of the State. These are IV 2nd-stage results as in the baseline regression; the corresponding first-stage results can be found in Table 2 (Panel B). The controls include all the case and district characteristics in Table 1 and case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table C.11: The Effect of Reform on State Wins on aggregated district-time panel

	OLS		IV, 2nd Stage	
	(1)	(2)	(3)	(4)
	State Wins			
Commission Judges/Total Judges	-0.298***	-0.331***	-0.357*	-0.474***
	[0.0899]	[0.111]	[0.188]	[0.160]
District and Year Fixed Effects	Yes	Yes	Yes	Yes
District and Case Controls	Yes	Yes	Yes	Yes
Observations	496	496	496	496
R-squared	0.203	0.241	0.203	0.240
Mean of dependent variable	0.50	0.50	0.50	0.50

Robust standard errors appear in brackets (clustered at the district level). The dependent variable is State Wins aggregated at the district-time level. Commission/Total Judges is the fraction of judicial-commission judges. In the IV regressions, this is instrumented by the predicted proportion of judges reaching the mandatory retirement age of 62 in the post-reform period. The controls include all the case and district characteristics in Table 1 and case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table C.12: The Impact of Selection Reform on Case Filings

	2SLS, 2nd Stage		
	(1)	(2)	(3)
	Total Filed	Constitutional Filed	Criminal Filed
Commission Judges/Total Judges	-1,665	-1,141	-524.1
	[1,286]	[926.8]	[387.0]
District and Year Fixed Effects	Yes	Yes	Yes
District and Case Controls	Yes	Yes	Yes
Observations	448	448	448
R-squared	0.095	0.094	0.090
Mean of dependent variable	9557.09	6878.49	2678.59

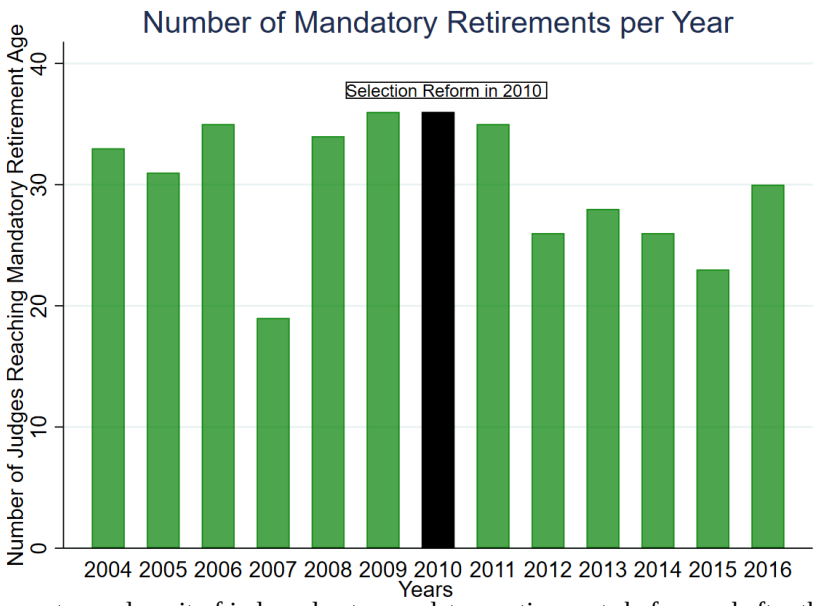
Robust standard errors appear in brackets (clustered at district-level). The dependent variable is total cases filed in the first column, total constitutional cases filed in the second column and total criminal cases filed in the third column. Commission/Total Judges is the fraction of Judicial Commission judges. This is instrumented by the predicted fraction of judges reaching the mandatory retirement age of 62 in the post-reform period. The controls include all the case and district characteristics in Table 1 and case-type fixed effects. The regression is run at the district-year level, i.e. the level of variation of the dependent and main explanatory variables. *** p<0.01, ** p<0.05, * p<0.1.

Table C.13: The Impact of Selection Reform on State Wins – Non-Linear Models

	Logit Marginal Effects		Probit Marginal Effects	
	(1)	(2)	(3)	(4)
	State Wins			
Commission Judges/Total Judges	-0.287**	-0.329***	-0.283**	-0.322***
	[0.116]	[0.109]	[0.115]	[0.108]
District and Year Fixed Effects	Yes	Yes	Yes	Yes
District and Case Controls	No	Yes	No	Yes
Observations	7,439	7,439	7,439	7,439
R-squared (Pseudo)	0.032	0.038	0.050	0.047
Mean of dependent variable	0.50	0.50	0.50	0.50

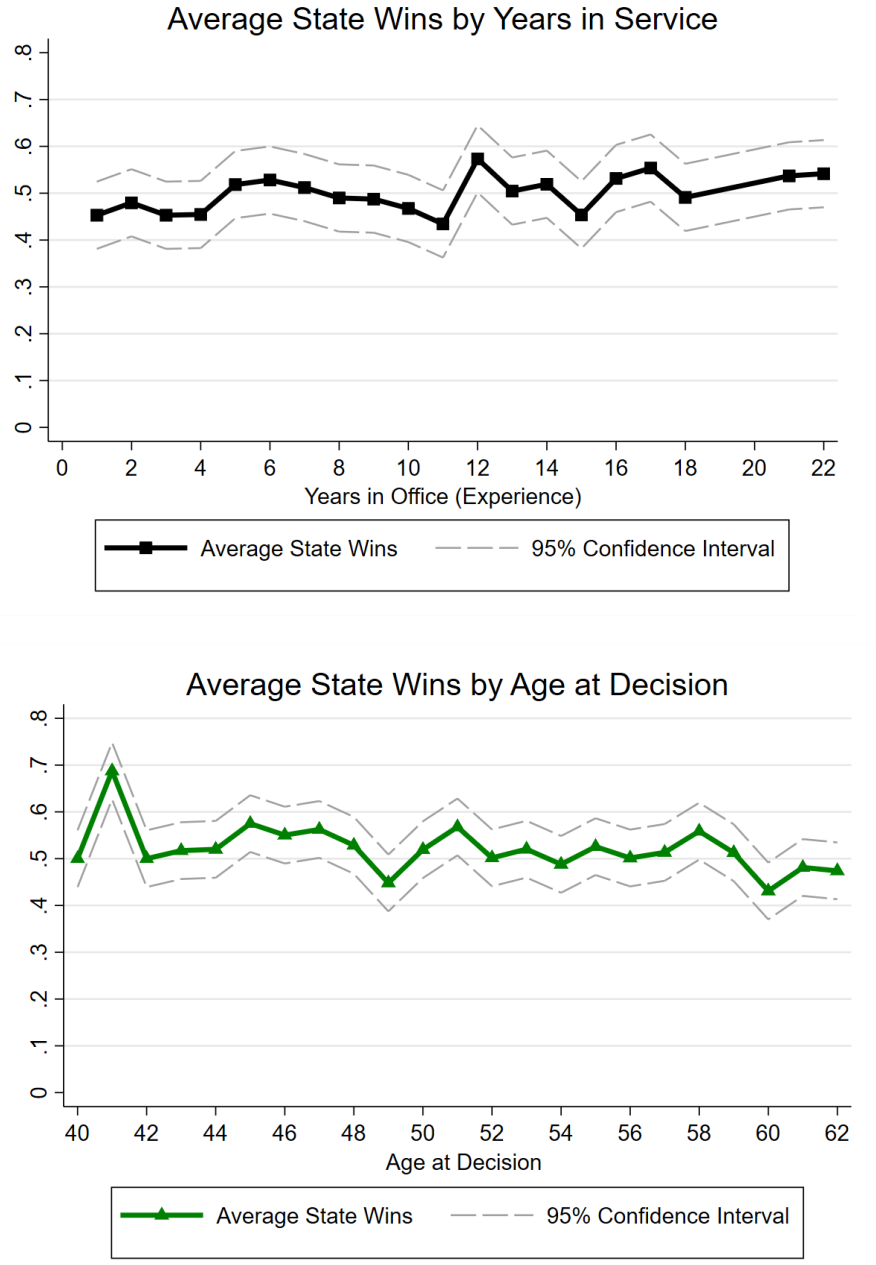
Robust standard errors appear in brackets (clustered at the district level). The dependent variable is State Wins, a dummy for the case being ruled in favour of the State. Commission Judges/Total Judges is the fraction of Judicial Commission judges. The marginal effects from the corresponding Logit and Probit regressions are reported here. The controls include all the case and district characteristics in Table 1 and case-type fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Figure C.1: Mandatory Retirements per Year



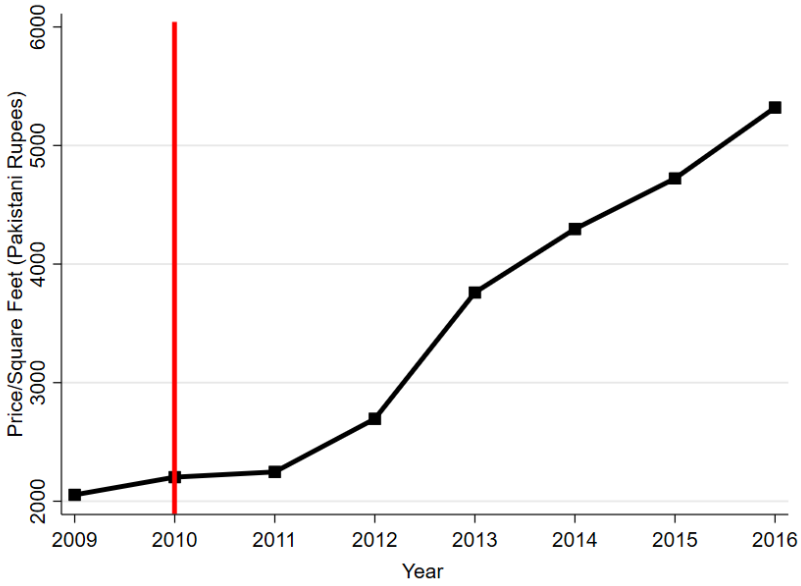
Note: The figure presents yearly exit of judges due to mandatory retirements before and after the reform. The dark bar of 2010 represents the reform year.

Figure C.2: Average State Wins by Years in Office and Age at Decision



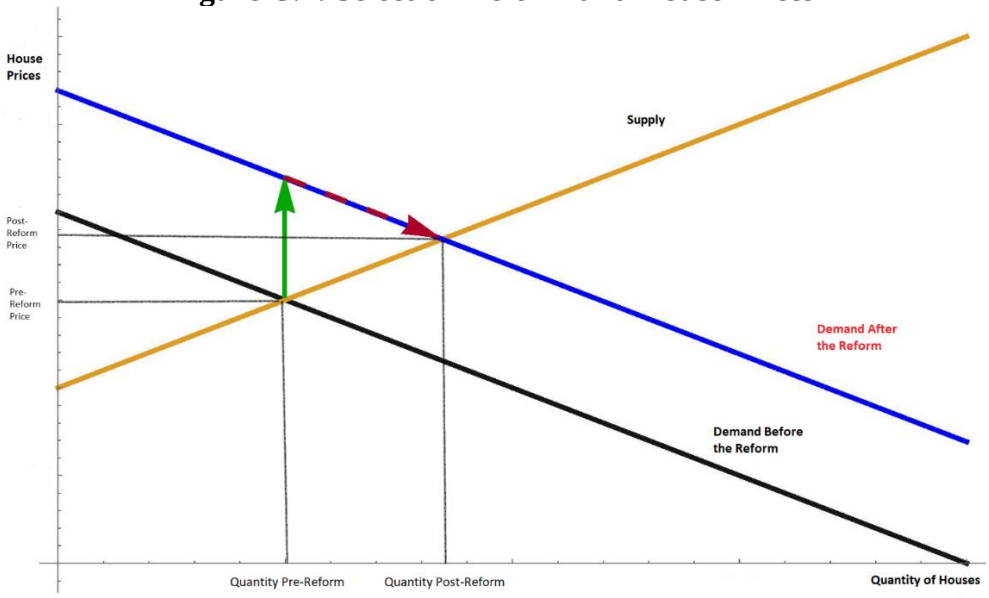
Note: The Figures above plots the average State Wins by judge experience (top panel) and age at decision (lower panel) along with their 95% confidence intervals. For instance, from upper panel we observe that judges with 15 years of experience had an average State Wins of 45%. Likewise, from the lower panel we observe that all 42-year-old judges had an average State Wins of about 50%. The jump at age 41 in the lower panel is most likely due to particularly small number of decisions observed for 41-year-old judges. Importantly for our identification, however, we observe no sharp jump in State Wins for judges nearing their retirements.

Figure C.3: House Prices over Time



Note: The figure presents yearly residential property prices per square feet denominated in Pakistani Rupees. The data is obtained from an online portal of house prices across Pakistan (www.zameen.com). The vertical line indicates the 2010 judicial-selection reform.

Figure C.4: Selection Reform and House Prices



Note: The figure presents a simplified illustration of why selection reform may increase house prices. The shift in demand curve to the right following the selection reform may be driven by a fall in risk premium due to a reduction in expropriation.

Figure C.5: The Structure of the Judiciary

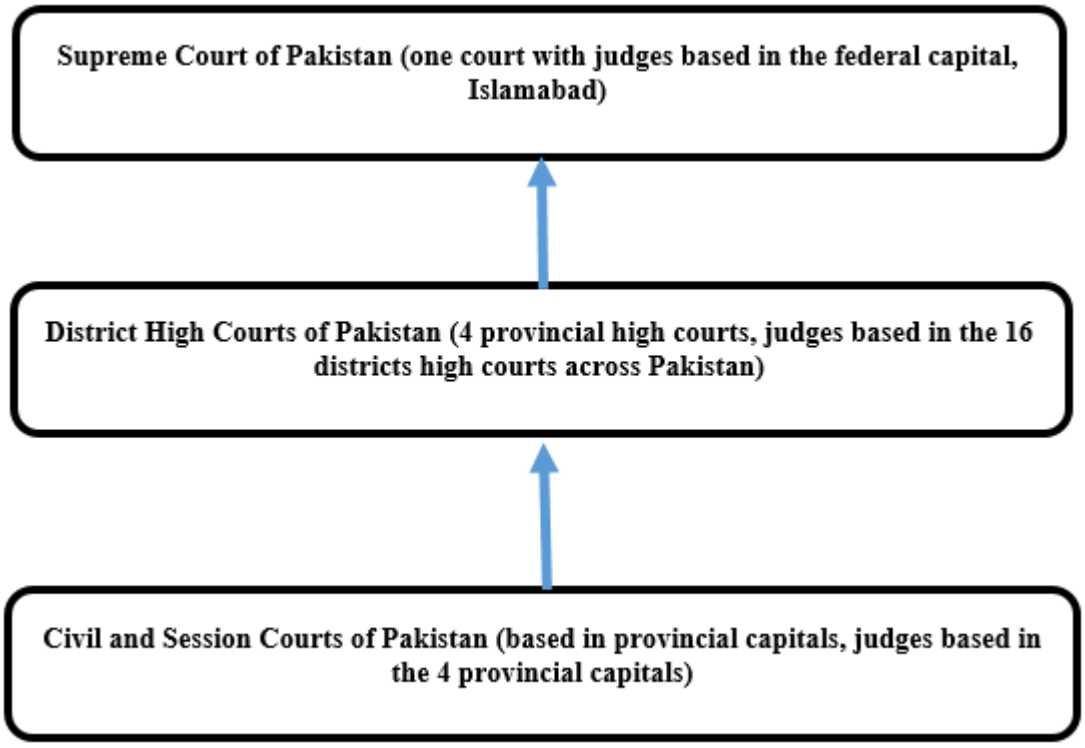


Figure C.6: An Example of a Land Case (case against the government dismissed)

2005 C L C 745

[Karachi]

Before Sabihuddin Ahmed and Khilji Arif Hussain, JJ

KHALID MOHSIN---Petitioner

versus

SECRETARY, MINISTRY OF DEFENCE, Government of Pakistan, Islamabad and 2 others---Respondents

Constitutional Petition No.59 of 1988, decided on 23rd November, 2004.

West Pakistan Land Revenue Act (XVII of 1967)---

----S. 45---Constitution of Pakistan (1973), Art.199---Constitutional petition---Maintainability---Disputed question of fact---Mutation, a document of title---Petitioner claimed to be owner of the land which had been mutated in favour of his predecessor-in-interest on the basis of allotment by Settlement authorities---Question for determination was whether the petitioner had acquired any title to the land so as to entitle him to the relief of possession or whether he had locus standi to seek declaration in respect of existence or otherwise of requisition---Validity---No allotment order by a competent officer in favour of the predecessor-in-interest of the petitioner was available on record---Petitioner had relied upon an order of Assistant Rehabilitation Mukhtiarkar directing that the land be mutated in the name of the predecessor-in-interest of the petitioner---Nothing was available to show that the predecessor-in-interest of the petitioner had applied for allotment of evacuee land against units available with him---Predecessor-in-interest of the petitioner was entitled to 159 units but was allotted land comprising of 453 units---Mutation entries did not confer title but could at the best be considered evidence of title which was rebutable---Such disputed questions requiring detailed scrutiny of facts and production of evidence could not be undertaken in the proceedings under Art.199 of the Constitution---Petition was dismissed in circumstances.

Hassan Akbar for Petitioner.

Nadeem Azhar Siddiqui, D.A.-G. and S. Tariq Ali, Federal Counsel for Respondents.

Ahmed Pirzada, Addl. A.-G.

Date of hearing: 29th August, 2004.

Figure C.7: An Example of a Land Case (case against government accepted)

Names of Judges	Date of Birth	Date of Appointment	Date of Retirement
Mr. Justice Nadeem Akhtar	16-02-1962	20-03-2012	15-02-2024

From Judicial Administrative Data we know this judge was appointed **AFTER** reform

2013 C L C 824

[Karachi]

Before Nadeem Akhtar, J

Syed ALTAF HUSSAIN ---- Plaintiff

Versus

Federal Government of Pakistan through Chief Secretary ---- Defendants

Suit No. 399 of 2012 decided on 15th December 2012.

Specific Relief Act (1 of 1877) ---

---S, 11 --- Suit for recovery of property --- Grievance of the plaintiff is despite being the owner of the house the authorities had taken custody of the property.

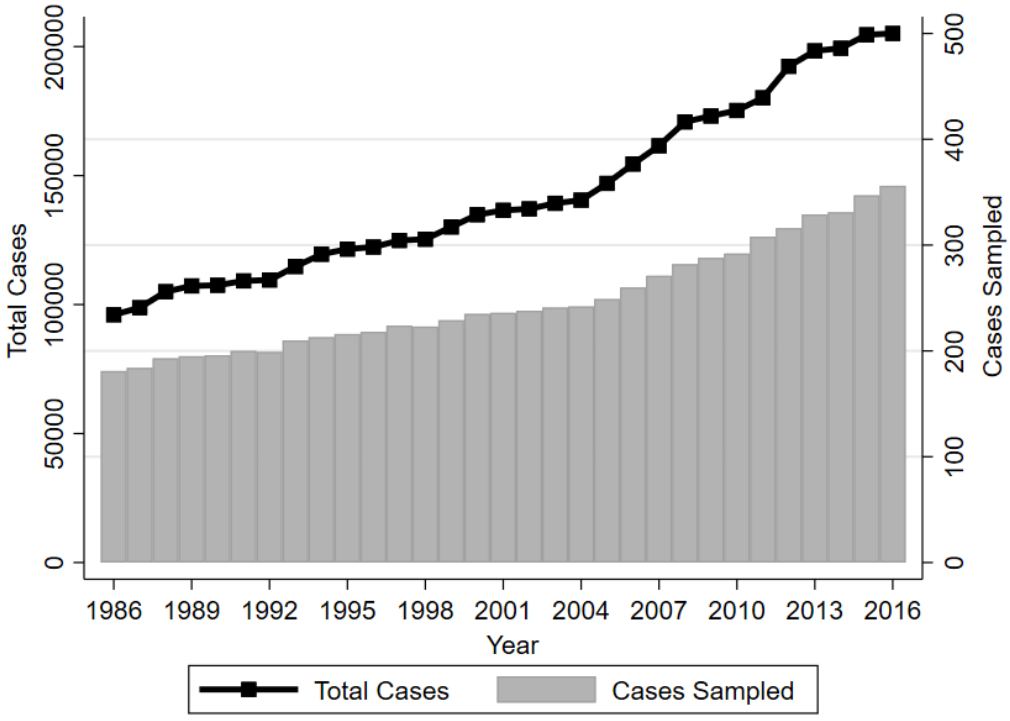
Validity --- Title and trust deed presented by the Plaintiff to the court to establish his ownership --- No corresponding evidence showing government ownership --- Authorities have admitted and acknowledged that property was cleared and paid off by the Plaintiff on 19th June, 1996 --- Plaintiff demanded damages --- Rent for time he was not in possession of the house.

Authorities committed willful and deliberate breach of right to private property. High Court directs the Federation to return the property to the rightful owner and pay damages. The petition is accepted.

H.A. Rahmani for Plaintiff

Ms. Afsheen Aman State Counsel for Defendants.

Figure C.8: Total vs. Sampled Cases



Note: These are 7500 randomly sampled cases for all years from 1986 to 2016 from the universe of district High Courts in Pakistan (0.2% of the total cases decided in the period are sampled).