

Personnel Politics: Elections, Clientelistic Competition, and Teacher Hiring in Indonesia*

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Abstract

What is the effect of increased electoral competition on patronage politics in the civil service? We argue that if programmatic appeals are not credible, institutional reforms that move politics from an elite- to a mass-focused and more competitive environment increase patronage efforts. This leads to an overall surge and notable spike in civil service hiring in election years. We test this prediction using detailed teacher censuses from Indonesia. We exploit the exogenous phasing in and timing of elections in Indonesian districts for causal identification. We find evidence for election-related increases in the number of contract teachers on local payrolls and increases in civil service teacher certifications, which dramatically increases salaries. These effects are particularly pronounced for districts in which the former authoritarian ruling party is in competition with new entrants that have yet to build an effective political machine in the bureaucracy.

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1 Introduction

In the wake of democratization and decentralization reforms, following the fall of the Suharto regime in 1998, the Indonesian government invested enormous fiscal and bureaucratic resources to improve its education sector. By law, the government is committed to spending at least 20% of its fiscal resources on education. A 2005 reform law modernized the teaching profession by increasing professional standards, salaries, and school oversight. The large influx of fiscal resources over the last 10 to 15 years led to a dramatic increase in the number of teachers, creating one of the lowest student-teacher ratios in the developing world (Cerdan-Infantes *et al.* 2013). Despite these efforts, the Indonesian education sector is largely failing its students. Out of the 65 countries that participated in the 2012 Program for International Student Assessment’s internationally standardized tests of math, science and reading skills among 15-year-old students, Indonesia ranked 60th in reading skills and 64th in math and science (Chang *et al.* 2013). Cheating in national exams is rampant, and teacher absenteeism is common (LaForge 2013, Usman *et al.* 2004). Why are the government’s massive expenditures on education not translating into improvements in the quality of education?

We argue that this failure is, in part, due to the introduction of local electoral competition, which has intensified political interference in the hiring process for the Indonesian bureaucracy. Some believe that electoral competition can provide the necessary incentives for politicians to improve the provision of public goods, reduce corruption, and create an effective, meritocratic civil service (Besley 2006, Stasavage 2005, Kudamatsu 2012, Grzymala-Busse 2007, O’Dwyer 2004, Golden & Chang 2001). Instead, we argue the effect of electoral competition is more complicated. In contexts of low information and low credibility of partisan platforms, institutional reforms that move politics from a non-competitive, elite-focused process to a mass-focused and more competitive process provide local elites an incentive to use their control over the bureaucracy to *increase* patronage efforts, in particular in the education sector.

We draw on the literature on clientelism (Keefer 2007, Corstange 2018) and political budget cycles (Alesina *et al.* 1997, Khemani 2004) to develop our argument about the specific effects of electoral competition and electoral cycles on hiring and the distribution of monetary benefits in bureaucracies. Local bureaucrats are important intermediaries in electoral machines: they control

targetable resources through procurement and service delivery and can be effectively deployed during election campaigns to deliver turnout and votes. This is particularly relevant for teachers, who are deeply embedded in local social networks and often act as organizational brokers in clientelistic machines (Holland & Palmer-Rubin 2015, Larreguy *et al.* 2015). Moreover, the distribution of civil service jobs, like teaching posts, serves as important currency in clientelistic exchanges (Golden 2003). In sum, competition for office and the need to win broad-based support in the electorate forces local elites to staff the bureaucracy with their own affiliates, buy the loyalty of existing bureaucrats with financial rewards, and use temporary government contracts for short-term patronage hiring. This behavior is particularly pronounced in election years and can be especially important for emerging elites who lacked access to state patronage under autocratic rule.

We test the observable implications of our argument in the context of Indonesia, which has three important advantages. First, election-related clientelism is pervasive in Indonesia (Aspinall 2014) and variation in the quality of service delivery, including education at the sub-national level, makes this a relevant case. Second, the availability of detailed, time-series, sub-national data on teacher hiring and certification allows us to track patronage politics at the personnel level in a sector that is likely to be affected by patronage politics. Third, due to idiosyncratic circumstances, an institutional reform that changed the selection of district heads from a parliamentary vote to a general, direct election—increasing competitiveness and forcing candidates to win mass instead of elite support—was phased in with an exogenous schedule and offers a plausible avenue for causal identification.

Our empirical analysis proceeds in several steps. Using information from comprehensive teacher censuses, we establish the effect of direct elections and the election schedule on patronage politics in the education sector. Three findings suggest that politicians leverage their control over personnel in the education sector to build a political machine in the Indonesian civil service and distribute targeted benefits. First, we document a marked increase in the number of contract teachers on payroll as a consequence of the switch to direct elections. Second, we show that the hiring of contract teachers is particularly pronounced in election years. Third, we provide evidence that in the run-up to an election, the certification rates of civil servant teachers, which are tied to substantial salary increases, rise. We also provide some additional evidence on re-assignments and

promotions of teachers in election years. We proceed by tracing the heterogeneous effect of election years, distinguishing between districts controlled by the former autocratic ruling party from those that are not. For two reasons, we expect election-related patronage to be highest in areas with stronger former opposition party presence. In an environment in which the former ruling party feels threatened by emerging competitors, it will increase its efforts to strengthen its supporters within the civil service. Alternatively, because former opposition parties are less efficient at clientelistic exchange, they will turn to investing resources in building a machine in the civil service. We find some evidence that the election cycle effects are stronger in former non-ruling party areas. To conclude, we test whether these election-related distortions affect student learning, using individual-level student test score data. We find that districts with a higher number of contract teachers record lower student test scores, indicating that election-induced hiring represents distortionary policy.

This paper makes important contributions to several debates. For one, our argument and findings speak to the literature on the effects of democracy on public goods provision. Our theory and tests explicitly measure the short-term impacts of the introduction of direct elections.¹ Existing research on this topic often argues that democratic elections lead politicians to increase the level and the quality of public goods provision. Our analysis shows instead that electoral competition can generate incentives for politicians to build a clientelistic machine in the civil service, crippling the effectiveness of the bureaucracy in the process. This finding is consistent with other studies which show that the introduction of direct elections in Indonesia has lowered capital investments ([Pier-skalla & Sacks 2017](#)). It is also consistent with studies which demonstrate that democracy, under some conditions, does not always produce desirable outcomes, at least in the short term (e.g., [Ross 2006](#), [Keefer & Khemani 2005](#), [Franzese 2002](#), [Harding & Stasavage 2014](#)).²

We also make a contribution to the literature on bureaucracies in the developing world. A large literature on bureaucratic quality and state capacity identifies an effective Weberian bureaucracy as necessary for the delivery of services, growth, and improvements in human welfare ([Besley & Persson 2010](#), [Evans 1995](#), [Evans & Rauch 1999](#), [Rothstein & Teorell 2008](#)). While scholars and

¹This paper does not speak to the longer term effects of the introduction of direct elections on public goods provision

²There is a related literature on how democratic competition can engender increased discrimination against minority groups (e.g., [Grossman 2015](#)).

policy-makers agree in principle on the core features of an effective civil service—in particular the importance of meritocratic recruitment and promotion—bureaucracies in many developing countries fall short of that ideal (Rauch & Evans 2000). Our study helps to understand processes of politicization and identifies conditions under which an effective civil service is less likely to emerge. Our argument and evidence suggest that local elections can play, at least in the short to medium term, a pernicious role by giving local elites an incentive to create political machines within the civil service.

Finally, we add to the growing body of work on clientelism. The existing literature on clientelism has tried to understand the mechanics of clientelistic exchange (Stokes 2005, Nichter 2008, Larreguy *et al.* 2016, Rueda 2016, Finan & Schechter 2012, Baland & Robinson 2008), who can be and is effectively targeted by clientelistic appeals (Cammett & Issar 2010, Schaffer & Baker 2015, Wantchekon 2003, Calvo & Murillo 2004), the role of brokers (Stokes *et al.* 2013, Aspinall 2014, Gingerich 2014), whether clientelistic exchange serves as signaling purposes (Muoz 2014, Szwarcberg 2012, Kramon 2016), what explains the portfolio of different linkage strategies (Kitschelt & Kselman 2013, Weitz-Shapiro 2012, Gans-Morse *et al.* 2014), and the negative effects of clientelism on public goods provision (Keefer 2007, Khemani 2015). Instead, we ask how institutional reforms that increase electoral competition and force political elites to win mass support in the electorate, all within a clientelistic environment, affect patronage hiring in the civil service. While prior work has often treated the details of clientelistic exchange within the civil service as a black box, the focus of our analysis is on how electoral clientelism transforms bureaucracies. Finally, to our knowledge, our paper is the first to test the effects of increased electoral competition on the civil service, using detailed data on civil service hiring and providing credible causal identification via a natural experiment.

2 Elections and Patronage Hiring in the Bureaucracy

Received wisdom suggests that democratization and increased electoral competition has a positive effect on the delivery of public goods and services. Elections provide a mechanism with which to hold leaders accountable and make public policy responsive to voters' preferences: if voters demand better public services, politicians have an incentive to deliver in core areas like health care,

education, and basic infrastructure. A number of theoretical models formally articulate the link between elections and responsive public policies (e.g., [Besley 2006](#)). A large empirical body of work suggests that elections increase the provision of public goods and services (e.g., [Lake & Baum 2001](#), [Stasavage 2005](#), [Kudamatsu 2012](#), [Huber *et al.* 2008](#)).

Alas, the large literature on clientelism has argued that the link between electoral competition and increased public goods provision rests on several important assumptions ([Kitschelt & Wilkinson 2007](#)). In order for elections to discipline politicians and influence the broad-based public policies, politicians have to be able to make credible programmatic appeals to voters ([Keefer 2007](#)). In return, voters need to be minimally informed about partisan platforms and prefer programmatic appeals over other linkage strategies. Politicians also need to be able to delegate the provision of public goods to a capable bureaucracy in order to effectively implement programmatic reforms. These conditions are particularly unlikely to be plausible in developing democracies that are characterized by low levels of information among voters, young party systems with weak partisan differentiation, and weak bureaucratic structures ([Keefer 2007](#)). Given the prevalence of clientelism and its role in structuring political competition in developing democracies, it is important to understand its implications for distributive politics. Clientelism describes an asymmetric but reciprocal relationship between patrons and clients, in which the latter offer political support and the former provide benefits and protection ([Hicken 2011](#)). In the context of elections, clientelism often takes the form of a contingent and dyadic exchange of political support for targeted benefits—for example, via outright vote buying, turnout buying ([Stokes 2005](#), [Nichter 2008](#)), or the exchange of social benefits and public sector jobs for political allegiance ([Penfold-Becerra 2007](#)). Keefer (2007) argues that young democracies perform particularly badly in terms of public goods provision due to credibility problems in the political process. Without credible party or candidate labels, political competition evolves around highly personalistic politics rather than programmatic platforms that aim to improve public services. Politicians operating in such an electoral environment, in which they cannot credibly commit or communicate programmatic party platforms, often resort to clientelistic practices to stay in office ([Hanusch & Keefer 2013](#)). Using their access to state resources, politicians exploit their control over the civil service to offer patronage jobs and promotions to political supporters in order to win elections ([Golden 2003](#), [Robinson & Verdier 2013](#)).

Some believe that increasing electoral competition in such an environment can reduce incentives for corruption, clientelism, and the provision of patronage jobs (Grzymala-Busse 2007, O'Dwyer 2004, Golden & Chang 2001). Incumbents might limit patronage by enshrining norms of meritocracy in the civil service because they fear losing control over a bureaucratic spoils system in the future (Ting *et al.* 2013). Patronage might also decline as a function of electoral competition because elections can generate incentives to create programmatic parties, which in turn increases legislative oversight and limits patronage in the bureaucracy (Cruz & Keefer 2015).³ Reliance on patronage jobs can also decline as a function of intra-party competition (Kemahlioglu 2011).

Yet, we believe electoral competition may not create an environment that encourages meritocratic hiring in the bureaucracy and discourage the delivery of targeted benefits. In fact, we argue that institutional reforms that re-orient clientelistic politics from an elite-focused, fairly non-competitive affair towards a linkage strategy that has to gain support among larger groups of voters in the face of competing elites' efforts, will *intensify* patronage politics. Kitschelt & Wilkinson (2007, p.30) argue that increasing political competition in a low income environment does not necessarily make programmatic appeals more attractive because demands to supply targeted benefits outweigh marginal increases in the returns to programmatic linkages. Clientelistic competition forces candidates to mobilize resources to win marginal voters—who are very receptive to clientelistic appeals but also often more expensive to persuade (Corstange 2018). Case-specific evidence from Latin America, India, and Africa seems to support the idea that increased electoral competition can amplify demands for clientelism. For example, Levitsky (2007) shows that the growth in numbers of urban informal poor workers, paired with intensified party competition, transformed the linkage strategies of Latin American labor parties towards machine politics. Wilkinson (2007) characterizes the time period from 1967–2000 in India as one in which the fading dominance of the Congress party was accompanied by a dramatic increase of targeted goods provision to voters. Asunka *et al.* (2016) find evidence that electoral competition increases attempts at electoral fraud and Kopeck (2011) does not find any evidence that electoral competition reduces patronage efforts.

We argue that when electoral competition increases in the wake of democratization, it can

³Cruz & Keefer (2015) analyze comparative data on 109 countries and find that the absence of programmatic parties is one of the main roadblocks to effective civil service reforms.

increase demands for clientelism. While personalist dictatorships or single party regimes also rely on the delivery of patronage goods in exchange for support (Brownlee 2008, Arriola 2009), the need for patronage opportunities intensifies under clientelistic electoral competition. Once semi-competitive elections are introduced and the political marketplace opens toward multiple elite groupings, more actors engage in clientelistic exchange, since newly emerging elites cannot yet rely on credible partisan platforms (Keefer & Vlaicu 2007).

If institutional reforms increase competitive clientelism, for several reasons, politicians must build effective political machines that can deliver targeted goods and services during elections and beyond, for which they need to control the local civil service (Grzymala-Busse 2008). First, controlling state personnel enables politicians to offer public service jobs in exchange for votes or turnout (Remmer 2007). Second and more indirectly, when politicians are able to hire their supporters into the civil service, they can much more easily control discretionary expenditures and implement regulations that consolidate their support. Political cronies in the civil service can exchange public services for political support (Oliveros 2016). Third, civil servants can also manipulate the electoral process and results to benefit the incumbent. Fourth, in many contexts, bureaucrats can also act as effective vote canvassers and representatives on the ground (Folke *et al.* 2011).

The effect of electoral competition on civil service hiring is particularly relevant to the education sector. Studies from other countries suggest that teachers are frequently absent from the classroom due, in part, to the role they play in campaigning and ensuring voter turnout. In effect, they often act as *organizational brokers* who can form alliances with various parties and candidates (Holland & Palmer-Rubin 2015). Findings from a teacher survey conducted in India in 2007 and 2008 suggest that politicians frequently use teachers informally for campaigning, and that teachers exercise control over polling booths (Beteille 2009, 9). Similarly, studies of Thailand (Chattharakul 2011) and Mexico (Fernandez 2012, Larreguy *et al.* 2015) have identified teachers as common intermediaries in clientelistic vote-canvassing operations. This is likely the case because teachers are large in numbers, often constituting the largest portion of the civil servants. They can reach voters even in remote parts of electoral districts due to the wide spatial distribution of schools. Moreover, they are often centrally embedded in local social networks and have high-levels of information about voters'

political affiliations and socio-economic status. This makes teachers a prime target for recruitment into political machines.

In sum, elections can generate strong incentives for competing political elites to build support within the state’s bureaucratic apparatus, especially within the public education sector. This is related to what [Geddes \(1994\)](#) calls the “politician’s dilemma,” in which democratic elites face a collective action problem in agreeing on civil service reforms. According to this dilemma, most citizens and politicians likely agree that a patronage-free civil service is desirable and would improve a range of important outcomes, yet no politician wants to be the first to propose or implement reform, for fear that others will use their control over the state apparatus to ensure their own political survival in future elections. Elites are reluctant to relinquish control over patronage opportunities since they cannot be sure about future electoral outcomes and the effects of reform.

This view of electoral competition and patronage politics generates specific observable implications for our empirical analysis. First, the greater competition between clientelistic elite groups as a consequence of elections increases the demand and pressure for patronage jobs. Hence, we ought to observe an overall increase in the number of civil servants on payroll as a consequence of increased electoral competitiveness:

H1: An increase in electoral competitiveness will increase hiring in the civil service.

Apart from this mean shift in hiring, we should also observe spikes in hiring that are concentrated during election times, similar to other forms of electoral budget cycles ([Labonne 2014](#), [Hanusch & Keefer 2013](#)). A large body of work on electoral business and budget cycles provides theoretical reasons and empirical evidence that elections can motivate policies that are targeted to election years and weaken the welfare-enhancing characteristics of elections ([Alesina et al. 1997](#), [Franzese 2002](#), [Nordhaus 1975](#)).⁴ Several studies provide empirical evidence of the existence of electoral budget cycles in developing countries ([Shi & Svensson 2006](#), [Schuknecht 1996](#), [Vergne 2009](#), [Labonne 2014](#))⁵, while [Hanusch & Keefer \(2013\)](#) extend the logic of budget cycles to a clientelistic

⁴[Rogoff \(1990\)](#) provides the standard theoretical account of electoral budget manipulation: politicians signal competency to uninformed voters by prioritizing current expenditures over investment in election years.

⁵The existence of political budget cycles has largely been studied in cross-country settings, but increasingly scholars have documented similar processes at the sub-national level (e.g., [Veiga & Veiga 2006](#), [Khemani 2004](#), [Saez & Sinha 2010](#))

context. Following [Hanusch & Keefer \(2013\)](#), we expect to observe an intensification in patronage hiring, as politicians are likely to time the exchange of patronage jobs for political support and/or to financially reward existing civil servants in exchange for their loyalty, as the election date comes close. Scheduling patronage hires close to elections is important, because it limits commitment problems inherent to clientelistic exchange, given that the reward occurs shortly before the (electoral) support is provided. To summarize:

H2: There will be an increase in civil service hiring in election years.

The strength of this election year effect is likely to vary across political contexts and across political parties, which differ in the extent of their control of patronage resources. For example, some parties—especially former autocratic ruling parties—already have strong clientelistic networks within the state apparatus and thus do not need to create a political machine from scratch following the introduction of electoral competition. [Folke et al. \(2011\)](#) show that entrenched parties are able to generate greater electoral rewards from their control over patronage hiring, given their deep knowledge about how the bureaucratic machine operates. Such parties are likely to still engage in some patronage hiring during election years, but they are more efficient in how they target and benefit from their long-standing control of state resources. Moreover, as long as former ruling parties are locally dominant and feel electorally secure, they can survive with minimal clientelistic effort. Yet, former opposition parties have to aggressively build their political machine in the civil service and are, initially, less efficient at targeting benefits to brokers and voters. Since they have historically been excluded from political power and access to state resources, areas that are strongholds of former opposition parties are likely to see stronger waves of patronage hiring in the civil service during election years, to compensate for their lower effectiveness.⁶ Areas with growing competition from opposition parties also feature increased pressure on former ruling parties to offer more targeted benefits. Areas in which former ruling and opposition parties are actually competing are likely to feature the highest levels of clientelistic effort:

⁶Note that this is related to, but somewhat distinct from, [Geddes' \(1994\)](#) argument. She posits that when parties have equal access to patronage, there is a chance that politicians can gain from proposing reforms that limit patronage hiring. Moreover, smaller parties that lack access to state resources will be in favor of such reforms more generally. [Ting et al. \(2013\)](#) argue that incumbents who are expecting a loss of electoral support will have an incentive to reform civil service hiring. Our argument is that former opposition parties that are *locally* dominant, but have had unequal access to state resources, have strong incentives to use their control over state resources to gain power via patronage, but are less efficient at it.

H3: The election-year effect on patronage hiring will be stronger for areas with higher support for former opposition parties and / or increased competition for the former ruling party.

3 Empirical Strategy

Investigating the link between institutional reforms that change the electoral environment and patronage hiring in the civil service is challenging for several reasons. First, studies of civil service reforms and hiring patterns in the developing world have been constrained by a lack of data. Second, it is often difficult to identify the causal effect of elections and election years, because institutional reforms that change elections and election timing are often endogenous and subject to political pressures, particularly in young and developing democracies.

We address both challenges in our analysis. In order to analyze politically influenced hiring in the civil service, we conduct an analysis of personnel decisions in Indonesia’s education sector. This is a useful starting point for two reasons. First, as we have argued, the education sector is particularly vulnerable to patronage politics. Second, the availability of several complete teacher censuses in Indonesia allows us to determine the extent of teacher hiring at the district level. We address concerns of causal identification by exploiting the exogenous phasing in and timing of direct local elections in Indonesia. Necessarily, this empirical setting forces us to sacrifice some generalizability with respect to our results—although traditional cross-national studies do not necessarily have stronger claims to external validity (see [Samii 2016](#)). The specific setting of our case naturally constrains the applicability of our results to other countries, but the structural characteristics of the Indonesian case—a young democracy, middle income setting with high inequality, pervasive clientelism—make this an interesting example to study in-depth the effects of electoral competition on personnel politics.

3.1 Indonesian Context

Between 1965 and 1998 Indonesia was governed by General Suharto’s New Order regime, in which public policies were largely formulated and implemented by a highly centralized political appara-

tus and with very limited political accountability. While provinces and districts had their own governments and elections formally took place, all candidates were vetted and approved by the central Ministry of Home Affairs, leaving no room for local discretion or democratic accountability. During autocratic rule, clientelism and patronage were widespread methods to help the incumbent regime sustain control by rewarding supporters and dividing the opposition, although violence and repression of civil liberties played an equal or arguably more important role (King 2003, Antlv 2004, Aspinall 2005).

The Suharto regime used the ruling party Golkar (*Golongan Karya*) to control the bureaucracy and dominate local elections. Civil servants including teachers were required to support Golkar. At election times, the political regime mobilized votes through schools. If teachers were seen as not displaying sufficient loyalty to the regime, they risked punishment including transfers to schools in remote areas (Rosser & Fahmi 2016). Importantly, this system of autocratic control was heavily centralized and competition between rival elite groups was limited and checked by the Suharto family.

The situation changed dramatically after the transition to democracy in 1998/1999 (Crouch 2010). Important responsibilities for service delivery—including education—were delegated to the district level, but were still largely financed by central government transfers, given local governments' limited tax collection capabilities (Lewis 2005). This increase in local responsibility for service delivery was paired with new forms of electoral accountability. Starting in 1999, Indonesian voters elected representatives to national, provincial, and district legislatures. The decentralization reforms of 2001 gave local legislatures, together with the district head, control over local expenditures. From 1999 to 2004 district heads were selected by a majority within the local parliament. This process of indirect election of district heads was largely perceived as fairly non-competitive and unresponsiveness to the wishes of the general electorate (Antlv & Cederroth 2004). In fact, powerful party operatives would often sell votes in the local legislature to rich candidates for the district head office (Buehler & Tan 2007). Under this system of indirect district head elections politics evolved around clientelistic exchanges in which candidates focused their efforts on winning support from a very narrow set of influential elites—being able to safely ignore the general electorate and often facing little meaningful competition from rivaling elites.

An electoral reform, meant to increase the competitiveness of district head elections, introduced direct elections in 2005. This reform dramatically altered incentive structures for local politicians. While candidates for the local district office are still typically drawn from a pool of established elites, the move to direct elections has created a more competitive environment and forced candidates to win mass support in the electorate (Clark & Palmer 2008, Erb & Sulistiyanto 2009). In these direct district head elections (and democratized Indonesia more generally) vote buying and “money politics” are common; candidates have to rely on powerful brokers and rich financial backers to finance their campaigns (Mietzner 2011). To be considered a serious candidate politicians have to mobilize campaign teams and broker networks in order to effectively distribute targeted goods to large sets of voters, who in turn show little loyalty and maximize returns on their vote (Aspinall 2014). Control over the local bureaucracy seems to be particularly useful in this context, which explains why so many candidates for the district head office are former bureaucrats (Buehler 2009).⁷ Observers of the political reforms in the post-Suharto regime have argued that the move from the centralized to a more decentralized, competitive system with multiple competing interests has decentralized and increased corruption and patronage (Robison & Hadiz 2004).

We analyze local education politics to trace the logic of patronage hiring and clientelism. Indonesia’s education system went through dramatic changes as a result of the 2001 decentralization reforms and the 2005 Teacher Law. Before, Indonesian schools and teachers were under the direct control of the central government and the teaching profession was characterized by a lack of systematic standards, comparatively low salaries, and hiring driven by personal relationships and bribes (Kristiansen & Ramli 2006). The reforms of the 2000s transferred important authority over schools and teachers to the district level and introduced several elements of professionalization (e.g., minimum educational standards for teachers and better salaries). The reforms also included a constitutional amendment that requires the government to spend at least 20% of its fiscal resources in the education sector.

Today, while the Ministry of National Education oversees state-run public schools, which educate 87% of all students, and the Ministry of Religious Affairs administers semi-private religious

⁷For example, in the district of Ternate, Golkar controls patronage opportunities, in particular government contracts and jobs, which helped it win the local direct election (Smith 2009). This suggests that control over patronage jobs is a valuable currency for winning local district elections in Indonesia.

(typically Islamic) schools, district governments are in charge of hiring and placing teachers into schools. This gives district governments influence over nearly 3 million teachers, who teach 59 million students in 330,000 schools (Cerdan-Infantes *et al.* 2013). Districts can either hire teachers as permanent civil servants (*PNS—Pegawai Negeri Sipil*), which requires them to fulfill certain minimum standards and pass a civil service exam. The central government can steer civil service hiring by setting overall quotas of the number of civil service jobs. Teachers can also be hired on a more short-term basis as contract teachers (non-PNS). Contract teachers are hired directly by the district (or increasingly, at the school level) and are paid 10% to 50% of the typical civil service salary.

The reforms of the 2000s led to a substantial increase in teacher hiring. From 2006 to 2010, 377,000 new teachers were hired, 60% of them as contract teachers (Cerdan-Infantes *et al.* 2013). This has contributed to inefficiently low student–teacher ratios and a very inequitable geographic distribution of teachers (Chang *et al.* 2013). The overall increase in hiring was driven by several factors. For example, fiscal incentives inherent to the intergovernmental transfer system reward district governments with higher allocations for greater numbers of civil servants. Similarly, the central government’s Operational School Assistance program (*BOS—Bantuan Operasional Sekolah*) subsidizes the school-level hiring of contract teachers.

Since civil service hiring is more constrained, e.g., by central government quotas and minimum entry requirements, we expect patronage hiring to focus on contract teachers. Indeed, research on school governance in Indonesia finds that schools reporting a stronger influence of district governments hire more contract teachers (Chen 2011). Hiring contract teachers is more flexible, and local district heads can re-assign them to different schools (or dismiss headmasters) as a reward or punishment, independently of educational needs (Chang *et al.* 2013). Handing out teaching jobs as political rewards has become more common now that district heads are directly elected, since they have control over the local education department (Chang *et al.* 2013, p.173).

In Indonesia, teaching positions are desirable patronage jobs because they offer attractive salaries for individuals with low educational attainment, have limited working hours, and, in practice, feature high absenteeism rates, allowing teachers to pursue other sources of income (Chang *et al.* 2013, Usman *et al.* 2004). Political and bureaucratic elites mobilize resources, distribute

patronage, and elicit votes, in part, through networks that link them to principals at state schools—who in turn are linked to teachers and the district education offices (Rosser & Fahmi 2016). The Indonesian Teachers Union also plays an important role in local politics in general and in particular elections (Rosser & Fahmi 2016). Teachers are often employed as vote canvassers for local district head candidates and act as important intermediaries. They are regularly put in charge of polling booth stations, which allows candidates who control teachers to monitor or manipulate the votes. Clientelism relies on links with opinion leaders and individuals who are central to social networks (Schaffer & Baker 2015), making local teachers in Indonesia useful targets, especially given the wide network of local schools that reaches into many politically relevant neighborhoods. Political interest groups perceive teachers as influential community leaders who can help garner constituents' votes ({ACDP Indonesia} 2015). Teachers also form an important voting bloc that can be co-opted via patronage politics. They are also important rent generators: despite a ban on school fees, many teachers collect private school fees from students, which are then channeled into a rent system that ultimately reaches the top of the education bureaucracy. Politicians thus have an incentive to cultivate clientelistic linkages with the education sector.

For example, in the run-up to the 2014 local elections in a particular district, the Indonesian Honorary Employees Community (KTSI) made an agreement with two candidates for district head. KTSI promised to support the candidates' election campaigns in exchange for a promise that once in office, the politicians would show favoritism to KTSI, especially with respect to helping contract teacher candidates transition to civil service positions.⁸ A qualitative study on universal free basic education in Indonesia found that in Bantul district, preschool teachers were active in getting out the vote for the Bupati's candidacy for re-election (Rosser & Sulistiyanto 2013).

A coalition of five non-governmental organizations – Indonesia Corruption Watch, Satu Karya Foundation, Pattiro, Article 33 and Paramadina Public Policy Institute – reported that in the 2015 local elections, political parties relied heavily on teachers for campaigns ({ACDP Indonesia} 2015). An adviser to the Indonesian Private Teacher Association remarked that teachers are frequently promoted or assigned a position at the Education Agency if they successfully support a winning

⁸For anonymity purposes, the district's name and candidates' names were omitted (Rosser & Fahmi 2016). Among contract teachers, civil service positions are highly coveted because they come with access to state-provided health insurance and social security, local allowances, and the possibility of a certification allowance.

candidate, and are demoted or fired if they fail to do so ([{ACDP Indonesia} 2015](#)).

3.2 Causal Identification

We exploit a natural experiment in Indonesia, the staggered phase-in of local elections, to provide plausible identification for the purposes of our study. In 1999 the Indonesian government instituted the indirect selection of local district heads, but did not harmonize the dates of their selection; the incumbents, who were appointed at different times during the Suharto regime, were allowed to serve the rest of their terms.⁹ Once a sitting district head’s term ended, the newly elected legislature was tasked to pick a replacement from a slate of candidates. This generated an uneven, exogenous schedule of indirect district head elections that was maintained until 2005 when the indirect elections were replaced by direct elections (Section 1 in the Appendix provides an overview). We argue that the specific timing of elections is unrelated to observable or unobservable district characteristics. This is plausible, because the autocratic regime that determined the original appointment of district heads collapsed suddenly and unexpectedly in the wake of the Asian financial crisis. Observable district-level data supports this claim. Using information on a number of important covariates, we document that most variables are balanced in their means and distributions across districts with and without elections in 2005 (see Section 3 in the Appendix for details). In addition, a number of related papers have exploited the exogenous variation in the timing of Indonesian elections for credible causal identification ([Burgess *et al.* 2012](#), [Skoufias *et al.* 2014](#)). Through a range of statistical tests, [Skoufias *et al.* \(2014\)](#) provide additional evidence that whether a district had direct election in particular year is exogenous and unrelated to pre-existing district characteristics.

4 Empirical Analysis

To study the effects of the introduction of direct elections and the subsequent election schedule on patronage politics in Indonesia’s education sector, we construct a panel data set for Indonesian districts and estimate standard fixed effects models:

⁹Exceptions to this rule were made due to recusals from office for health reasons and a small number of no-confidence votes.

$$y_{it} = \alpha_i + \gamma_t + \tau \cdot D_{it-1} + \delta^{t-1} \cdot E_{it-1} + \delta \cdot E_{it} + \delta^{t+1} \cdot E_{it+1} + \beta' \mathbf{x}_{it-1} + \epsilon_{it} \quad (1)$$

We model our outcome measures y_{it} in district i and year t as a function of time-varying control variables \mathbf{x}_{it-1} , district fixed effects α_i , and year effects γ_t . The variable D_{it-1} is a binary indicator for the introduction of direct elections in district i in year $t - 1$. E_{it} is a binary indicator for specific election years in each district. We include both a lag and a lead of this indicator to trace patronage hiring around the election date. The τ coefficient captures any potential mean shifts in the number of civil servants as a consequence of the direct elections, whereas the δ coefficients trace the effect of electoral cycles. We cluster standard errors at the district level to allow for arbitrary serial correlation and heteroskedasticity.

To measure our outcome variables of interest, we rely on detailed government teacher censuses from 2006, 2008, and 2010. These censuses provide individual-level information on all teachers in Indonesia and allow us to determine the total number of permanent civil service and contract teachers for each of the three years for all districts.¹⁰ Specifically, we calculate the log-transformed number of civil service and contract teachers, the share of civil service teachers, and the log-transformed number of school-level and other contract teachers. Since the hiring process for civil service teachers is vastly more constrained due to the central government’s quota system, we treat the models using the number of civil service teachers as placebo regressions.

Since the timing of the phase in of direct elections and subsequent election years is exogenously determined, and we include district and year fixed effects to account for time-invariant unobserved heterogeneity and contemporaneous shocks, our estimates are likely to reflect the causal effect of election years, relying on the parallel trends assumption. Nonetheless, we include a number of time-varying covariates \mathbf{x}_{it-1} to control for any remaining observable confounders. For example, we add a binary variable that identifies whether current incumbents are running for re-election.

¹⁰This means that we observe districts only in these three specific years and no single district has observations on the full electoral cycle (pre-election, election, post-election or other years). E.g., for a district with elections in 2006, we observe an election year, a non-election year and a pre-election year, whereas for a district with elections in 2007 we observe a pre-elections year and two non-election years. Since elections are asynchronous, we nonetheless are able to estimate coefficients for the full electoral cycle across districts.

To account for the local political environment we control for the vote shares of the Golkar and PDI-P party, Indonesia’s two largest parties, in the local legislature.¹¹ To measure the quality of local service delivery, we construct a simple additive index based on normalized data on sanitation infrastructure, clean water, enrollment rates, births attended by skilled staff, and the quality of roads. This also captures existing levels of service provision in the education sector. To distinguish districts with more or fewer fiscal resources, which might affect hiring in the education sector, we include total district revenue per capita and natural resource revenue per capita as additional controls.¹² To account for the socio-economic structure of the district, we include a Gini coefficient of consumption inequality,¹³ the share of the local population that is below the poverty line, GDP per capita levels, and total population counts.¹⁴ All fiscal and economic variables are in constant terms, and we lag all our measures temporally by one year. Summary statistics for all variables are shown in Section 2 of the Appendix.

As part of Indonesia’s decentralization process, the number and size of districts has dramatically changed during the study period. This process is highly political and has dramatic consequences for hiring new government personnel after the split ([Pierskalla 2016](#)). Hence, we only include non-splitting districts and districts up until the moment of a split in our main analysis.¹⁵

4.1 Results

Table 1 shows our results for teacher hiring.¹⁶ Column 1 shows the effect of the direct elections and the election cycle on the number of civil service teachers on the payroll. As expected, we do not observe any clear effects of either the direct elections or the election year on the number of

¹¹Based on electoral returns from the 2004 and 2009 local legislative elections.

¹²Total revenue excludes natural resource and own source revenue. The former is included in the model independently. The latter is likely to be endogenous to the local electoral process, but also numerically irrelevant ([Lewis 2005](#)). None of our results are sensitive to these decisions.

¹³Based on consumption data from SUSENAS.

¹⁴We log transform skewed measures.

¹⁵For robustness checks we include newly created “mother” and “daughter” regions post-split, but assign them separate fixed effects. See Section 5 in the Appendix.

¹⁶Section 4 in the Appendix shows estimated coefficients for all variables in the model.

civil service teachers, because central government quotas constrain district-level decision-making. However, for contract teachers we find a clear positive and statistically significant (at the 5% level) effect for the introduction of direct elections—consistent with Hypothesis 1. This overall increase in contract teacher hiring is also reflected in a reduced share of civil service teachers for districts that have switched to direct elections (see Column 3). Columns 2 and 3 also indicate support for Hypothesis 2. The hiring of contract teachers (and the implied reduction in the share of civil service teachers) is concentrated in election years. The coefficient for our election year dummy is positive (negative) and statistically significant (at the 5% level) for the logged number of contract teachers (the civil service share). Columns 4 and 5 distinguish between contract teachers hired by the school and contract teachers hired by the district or provincial government. Here we cannot distinguish any clear shifts as a consequence of direct elections, but we find that the election year effect is largely driven by school-level hiring. This is in line with qualitative evidence (Cerdan-Infantes *et al.* 2013) that ties the massive expansion in contract teachers to central government BOS transfers, and a central government-imposed freeze on direct contract teacher hiring by districts. Since BOS transfers to schools do not affect the local district budget, but powerful district heads can still control their use, they are a particularly attractive fiscal resource for politicians trying to engage in patronage politics.

Table 1: Teacher Hiring, FE-OLS

	(1)	(2)	(3)	(4)	(5)
	log(Civil Service Teachers)	log(Contract Teachers)	Civil Service Share	log(School-hired)	log(Other)
Direct Elections	0.00747 (0.289)	0.648* (0.320)	-0.146+ (0.0769)	0.387 (0.325)	0.802 (0.629)
Pre-Election Year	0.0480 (0.116)	0.252* (0.122)	-0.0452+ (0.0274)	0.192 (0.128)	0.190 (0.232)
Election Year	0.0419 (0.157)	0.397* (0.168)	-0.0777* (0.0388)	0.363* (0.169)	0.161 (0.334)
Post-Election	0.0296 (0.104)	-0.209+ (0.120)	0.0551* (0.0273)	-0.136 (0.122)	-0.352 (0.225)
Controls	✓	✓	✓	✓	✓
District FE	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓
Observations	813	813	813	813	811

Clustered standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 1 visualizes the effect of direct elections on the number of civil service and contract teachers in a district. We can see in the right panel that the number of contract teachers after the

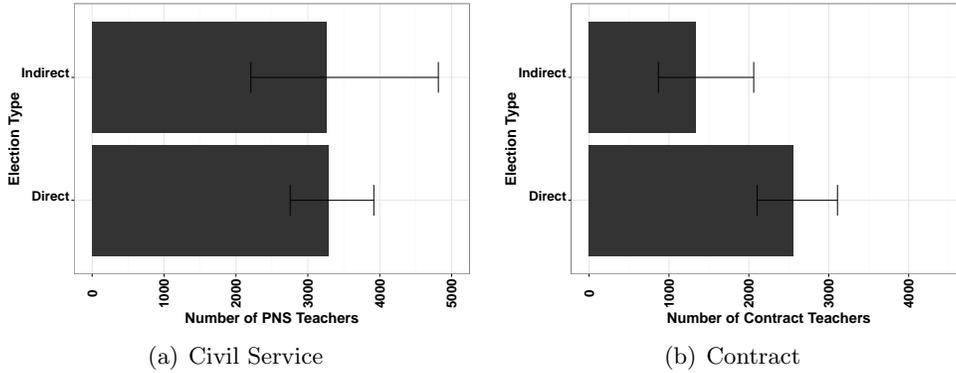


Figure 1: Direct Election Effect

introduction of direct elections has increased by, on average, 1,200 teachers (which is equivalent to about one half of a standard deviation of the number of contract teachers). The left panel shows the results for our placebo test on PNS teachers—there is no observable difference between the number of permanent civil service teachers between district that have switched to direct elections as compared to districts with indirect elections.

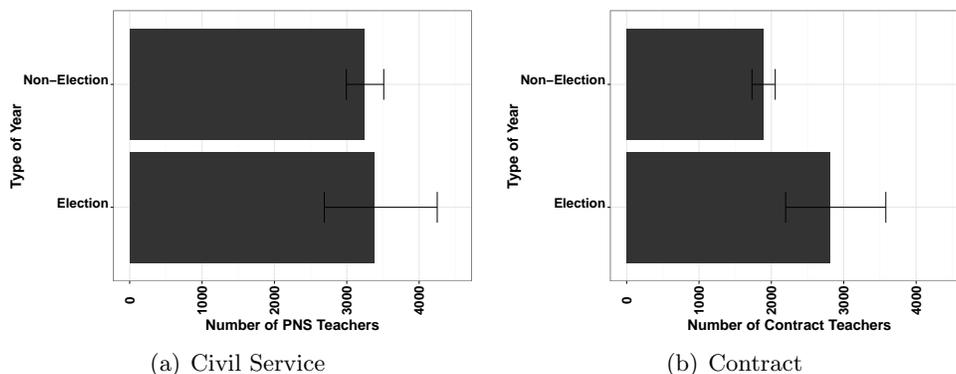


Figure 2: Election Year Effect

Figure 2 depicts the predicted election-year effect for the civil service and contract teacher categories. Again, while there is no significant difference between election and non-election years for civil service teachers, we see a substantively important difference for contract teachers. On average, there are roughly 800 more contract teachers on payroll during election years than in non-election years. The post-election dummy indicates that some of this short-term hiring of contract teachers ends after the election, which also explains why the overall increase is not even higher than Figure 1 suggests.¹⁷

Importantly, this increase in contract teachers is not simply due to the opening of new schools. Section 7 in the Appendix shows the results for the direct election election-year dummies on the number of schools per district, which have no statistically significant findings. We can also (largely) confirm these findings when looking at the broader set of districts, which includes post-split units (see Section 5 in the Appendix). Our findings are also completely robust to an alternative estimation approach—negative binomial count models with year and district dummies (see Section 6 in the Appendix).

We now look at another relevant policy lever local Indonesian politicians can exploit to facilitate clientelistic exchanges. A core component of the 2005 Teacher Law is the certification process, which

¹⁷The difference in coefficients in Column 2 indicates that a portion of contract teachers hired during election years remains on the payroll long term. Qualitative reports also suggest that some contract teachers are eventually converted to civil service status (Chang *et al.* 2013), which is in line with the positive and statistically significant coefficient for the post-election dummy in Column 5, indicating an increase in the share of civil service teachers in the district after the election. We are not able to pick up this upward trend in civil service teachers with our direct election dummy, likely because the effect materializes slowly and all our control observations with indirect elections eventually convert to direct elections.

effectively doubles teachers' salaries. Teachers who have earned a four-year degree and submitted a teaching portfolio, or take part in a special training course, are eligible for certification, which entitles them to a special professional allowance.¹⁸ To smooth the fiscal burden of certification, the central government sets quotas for the total number of certifiable teachers in each year, with the goal of certifying all teachers by 2015. Importantly, district governments are in charge of the certification process, including evaluating the teaching portfolios and administering the training course. While pass rates for the certification process are very high ($> 95\%$), district heads can influence the process by helping teachers in obtaining four-year degrees and changing an individual's position in the certification queue (Chang *et al.* 2013, p.34). In practice, this means that district heads can influence when individual teachers receive their certification and thus double their salaries.¹⁹

Drawing again on the teacher census, we include the number of certified teachers and the share of certified teachers for each district-year as outcome variables. We log the number of certified teachers due to its extreme skew. Doing so poses a problem with respect to the districts without any certified teachers. We add one to the count to be able to implement the log transformation, but also re-create the same measure for the set of district-years with zero certified teachers. Likely, districts without any certified teachers have been unable to start the certification process. Politicians in such districts are unlikely to be able to influence the certification program for political gain. Hence, estimates from the subset of districts with some certified teachers might be more informative. We estimate the same set of fixed-effects regressions as in Table 1.²⁰ Table 2 reports the results. We see evidence that direct elections have increased certification rates (Columns 2 and 3) and that rates receive an additional bump in election years (Columns 1, 2, and 3).²¹

Using the teacher census, we can also construct a teacher-level data set that combines district-

¹⁸While certification largely applies to civil service teachers, contract teachers also become eligible for the "professional allowance" upon certification (Bank 2010) if they were hired by the government. School-hired contract teachers are ineligible for certification.

¹⁹There is no evidence to suggest that the certification program has improved students' learning outcomes (de Ree *et al.* 2016). Indeed, scores in math and Bahasa Indonesia, the country's official language, show no significant differences between students of certified and non-certified teachers (Cerdan-Infantes *et al.* 2013).

²⁰For the models that use the logged number of certified teachers as a dependent variable, we also control for the total number of teachers in the district.

²¹In Section 8 in the Appendix we also show models of the certification effect when we include splitting districts and when controlling for the size of provincial certification quotas.

Table 2: Teacher Certification, FE-OLS

	(1)	(2)	(3)
	log(Certified+1)	log(Certified)	Share Certified
Direct Elections	1.040 (0.746)	3.563* (1.486)	0.0601+ (0.0357)
Pre-Election Year	0.470 (0.285)	1.300* (0.624)	0.0180 (0.0141)
Election Year	0.649+ (0.381)	1.816* (0.782)	0.0361+ (0.0187)
Post-Election	-0.382 (0.324)	-1.469* (0.602)	-0.0290* (0.0140)
Controls	✓	✓	✓
District FE	✓	✓	✓
Year FE	✓	✓	✓
Observations	813	547	813

Clustered standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

level variables with the three teacher censuses. We estimate the following model:

$$y_{ikst} = \alpha_s + \gamma_t + \tau \cdot D_{it-1} + \delta^{t-1} \cdot E_{it-1} + \delta \cdot E_{it} + \delta^{t+1} \cdot E_{it+1} + \beta' \mathbf{x}_{kt-1} + \rho' \mathbf{z}_{it} + \epsilon_{ikst}, \quad (2)$$

where y_{ikst} is a dummy indicator that denotes whether teacher i in district k , school s , and year t is certified. We control for school and year fixed effects and our standard set of district-level, time-varying control variables. In addition, we include a number of teacher-level characteristics: age and gender, and dummies for employment categories (e.g., the civil servant level) and teacher educational attainment. We cluster standard errors at the district level, since our treatment variable is shared for all teachers in the same district.

Table 3 shows a positive and statistically significant effect (below the 10% level) for the probability that teachers will receive their certification after the introduction of direct elections. Moreover, the effect of election years is also positive and statistically significant at the 5% level. This coefficient implies an increase in the certification probability of 3 percentage points, which is a meaningful effect given that by 2010 only 30% of all teachers had been certified. This result is particularly interesting, because district governments and teachers have strong incentives to fully exploit the central government's quotas for the number of certifiable teachers in each year. The fact that we find statistically significant deviations in election years suggests an imperfect implementation of the quota system, which is leveraged to provide patronage opportunities.

Table 3: Teacher Certification, Individual-Level, FE-OLS

	(1) Certification
Direct Elections	0.0686 ⁺ (0.0385)
Pre-Election Year	0.00175 (0.0107)
Election Year	0.0309* (0.0141)
Post-Election	-0.0255 ⁺ (0.0134)
District Controls	✓
Teacher Controls	✓
School FE	✓
Year FE	✓
Observations	6,465,038

Clustered standard errors in parentheses

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Apart from the certification of civil service teachers, district heads might also use their ability to re-assign or promote civil servants within their jurisdiction to engage in patronage politics. To explore this possibility, we draw on a different source of data, Indonesia’s civil service database that the State Civil Service Agency, (*Badan Kepegawaian Negara—BKN*), maintains. We created this dataset in collaboration with an organization based in Jakarta (name of organization omitted) and (*Badan Kepegawaian Negara—BKN*). It contains information on all of Indonesia’s 4+ million current civil servants and their work history. We use this source of data to calculate the total number of job changes among teachers (re-assignments and promotions) for each district year from 2001–2015. We estimate the same model specification as before but now take as an outcome variable the number of job changes among teaching staff per the overall number of teachers. We calculate the same outcome for civil servants more generally to see if our results carry over to the rest of the bureaucracy. We find that pre-election years are associated with a statistically significant increase in the number of job changes for teachers specifically and civil servants more generally. Evidence on the effect of election years is a bit weaker but we still observe increases in job changes for the average number of job changes among civil servants (see Section 9 in the Appendix). This provides an additional layer evidence that district heads use their authority over the civil service to engage in patronage politics and our results extend beyond the education sector.

4.2 Effect Size by Electoral Environment

We now test Hypothesis 3 about the varying effect of election years. We suspect that districts controlled by parties that already have firm control over the bureaucracy are more efficient at patronage politics and less threatened by competition, whereas areas with stronger former opposition elites will feature more clientelistic exchange. In the Indonesian context we can exploit differences across districts in the level of support for the Golkar party, which traditionally controlled the bureaucracy. Other parties lack a comparable personnel infrastructure and in general have much less influence over local bureaucrats. This leads to the expectation that the effects of election years should be more pronounced in areas in which non-Golkar parties are stronger. We use data on the local vote share for Golkar and the PDI-P, the most important former opposition party, in the 1999 legislative elections to proxy for the political influence of different types of parties at the beginning

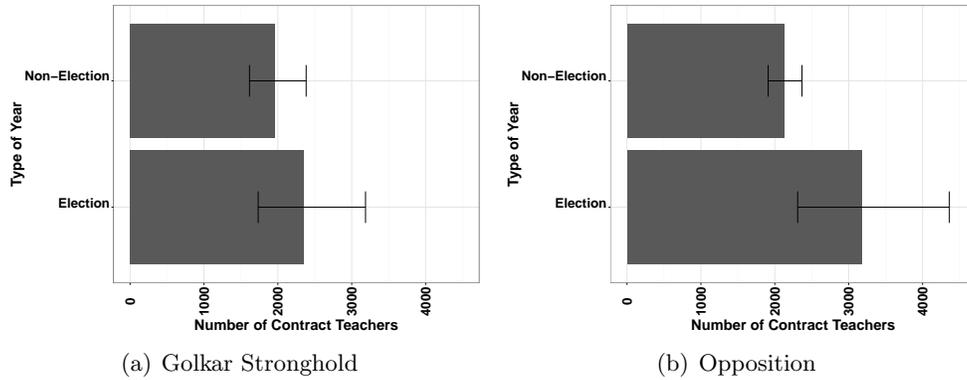


Figure 3: Election Year Effect by Type of District

of democratization. We use data from 1999 because party vote shares from later elections might be endogenous to electoral competition and patronage.²² We interact our vote share measures with the election year dummy to discern whether the effect varies by party type. Figure 3 presents the estimated effects.²³

²²We estimated models with time-varying vote share data, using information from the 2004 and 2009 legislative elections, with similar results.

²³Section 10 in the Appendix reports full tables.

Panel (a) of Figure 3 shows the effect of an election year on the number of contract teachers in a district at the 90th percentile of the Golkar vote share in 1999. While, on average, the number of contract teachers is higher in election years (by about 400), there is no statistically significant difference to non-election years. On the other hand, for districts at the 10th percentile of Golkar support, i.e., areas in which the former ruling party faced immediate and strong competition after democratization, the difference between election and non-election years is roughly 1000 contract teachers and is statistically significant below the 5%. Results are even more precise when looking at the share of civil servants as the dependent variable—we even find evidence that the overall transition to direct elections has increased the number of contract teachers on payroll, but largely in districts not dominated by the former autocratic ruling party (see Column 2 in Table 11 in the Appendix). We find the reverse pattern for an interaction model that uses the PDI-P vote share, proxying for the strength of the former opposition (see Columns 3 and 4 in Table 12 in the Appendix). We also estimate models with interactions between the election year variable and the absolute differences between the Golkar and PDI-P vote shares. This approach more closely captures the scenario of an effective threat against Golkar. For this specification we again find a statistically significant increase in contract teacher hiring when Golkar has little to no absolute vote share advantage over PDI-P but the effect approaches zero as Golkar is more electorally secure.

Overall, these results are in line with Hypothesis 3 and support the notion that the extent of patronage hiring is driven by the political environment and emerging elites’ incentives and ability to effectively deploy their political machine. We also explored interactions with incumbency status, a dummy variable measuring urban status, a dummy variable for districts on Java, the poverty headcount, and GDP growth rate without finding evidence for strong heterogeneity in effects (overall, effects might be a bit weaker in urban districts and districts on Java).²⁴

4.3 Discussion

Our analysis documents an overall increase in contract teacher hiring as a consequence of the change to direct elections, spikes of contract teacher hiring in election years, and increased certification of

²⁴See Section 10 of the Appendix for detailed regression tables. We do not explore the effects of partisan affiliation of district head candidates because partisan affiliation is fairly meaningless at the local level and candidates are typically nominated by the slate of parties.

civil servant teachers in election years. We argue these findings are due to the logic of competitive clientelism, which leads to an intensification of patronage hiring in the education sector. However, two alternative mechanisms might also partially explain these findings. First, standard political business and budget cycle theories also predict hiring in election years. Second, standard electoral accountability models suggest increased expenditures on public goods like education. We discuss each in turn.

The literature on political business and budget cycles suggests that election years are often associated with increased expenditures (for an overview of the literature see [Franzese 2002](#)). Politicians use their control over budgets to signal competence to voters by increasing expenditures on visible projects like infrastructure, social expenditures, but also staff. The important difference between standard political budget cycle arguments and ours is the absence of clientelistic linkage in the provision of government jobs. We contend that local politicians use their control over teacher hiring within the context of clientelistic exchange, targeting jobs to individuals. Outside the context of clientelism, politicians might still hire more contract teachers, but there is no need for targeting such jobs, as long as voters in general are aware of the increased personnel expenditures. We believe this subtly different mechanism does not fully explain our findings. For one, there is no reason why the strength of a standard election year effect should vary with the 1999 Golkar vote share, if this is merely a standard story of political budget cycles. In addition, there is some evidence that election year hiring is particularly pronounced in rural districts outside of Java, where patronage is typically more prevalent and employment is less of a salient electoral issue. Together with the qualitative evidence on the prevalence of clientelism in Indonesian district head elections, this is most consistent with our interpretation.

Another concern is that electoral competition increases the pressure on politicians to improve public goods provision, but politicians simply time the hiring of teachers to take place in elections years to reap political benefits. If the hiring of contract teachers is beneficial to producing better education, then there is not necessarily any patronage associated with teacher hiring, but a genuine desire to improve educational outcomes. Again, we think this is unlikely. First, voters rarely reward improvements of inputs to public goods, like the number of teachers, but instead focus on visible reforms like the abolishment of school fees ([Harding & Stasavage 2014](#)). This implies that

politicians are unlikely to receive large electoral rewards to hiring contract teachers for the sake of improving education. Moreover, there is ample indirect evidence that contract teacher hiring in Indonesia is truly distortionary. While research suggests that the hiring of contract teachers might be a useful and effective way of improving student learning outcomes in some contexts (Duflo *et al.* 2015, Muralidharan & Sundararaman 2013), it is unlikely in the Indonesian case that election-year hiring and certification is beneficial for students.

First, given that contract teachers in general show higher rates of absenteeism (Chang *et al.* 2013, Usman *et al.* 2004), this suggests that massive contract teacher hiring is wasteful. Second, the teacher census provides information on the level of educational attainment for all teachers. The set of active contract teachers has a mean level of education of 3.35 on a 7-point scale in election years (4 = a completed Bachelors degree), whereas the average increases to 3.41 in non-election years. The difference of 0.057 is statistically significant below the 0.01% level.²⁵ This finding illustrates two points. First, contract teachers have, on average, lower educational attainment levels than is now required for civil service teachers (a 4 on the 7-point scale). Second, the composition of contract teachers hired in election years shows even lower levels of educational attainment than contract teachers hired outside of election years, which indicates that recruitment is not primarily focused on merit. We do not find a similar pattern for civil service teachers. Fourth and with respect to certification, a field experiment which randomized certification across schools did not show evidence of positive effects of certification on student learning (de Ree *et al.* 2016).

Last, if the election-related hiring of contract teachers is not distortionary, one might expect to find improvements in student learning outcomes. As discussed in the introduction, there have been no meaningful improvements in overall student learning outcomes over the time period of study—despite this expansion of the teaching force. We also test this proposition using individual-level student test score data from de Ree *et al.* (2016). This randomized-controlled trial, designed to estimate the effects of the teacher certification program, collected student-level test score data in math, sciences, Indonesian and English language skills for over 80,000 students in 20 districts in 2011 and 2012. We match these individual-level learning data to the electoral calendar and the

²⁵We define non-election years as those that do not precede or follow an election. If we include the immediate pre- and post-election years in our set of “election” years, we obtain an even larger difference.

teacher census of 2010 to estimate the effect of the number of contract teachers and election years on normalized student test scores, controlling for the same confounders as in our main specification. We find consistent evidence that higher numbers of contract teachers are associated with lower test scores for math, sciences, and English test scores (see Section 11 in the Appendix). Since our measure of contract teachers is time-invariant for the years of 2011 and 2012, we also estimate models with a time-varying election year dummy to capture the overall effects of elections. In these models we add student fixed effects to strengthen identification. We estimate negative coefficients for Bahasa, sciences, and English test scores, but the estimates fail to attain statistical significance.²⁶ At a minimum, this provides no evidence that the hiring of contract teachers or election years more generally have clear benefits for actual student learning but is instead more consistent with a distortionary patronage effect.

These points confirm more journalistic accounts about the dismal state and undue role of politics in Indonesia’s education system (e.g., [Pisani 2013](#)). Our findings are also consistent with Indonesia’s Ministry of Education and Culture’s own assessment of teacher recruitment. A 2012 symposium held at the ministry concluded that the appointment of teachers is “characterized by corruption, lack of transparency, primordial regionalism, and co-opted by the political interests of the ruling authorities” and that “many teachers are not appointed in accordance with the requirements of the minimum standards of teacher competencies” ([Chang *et al.* 2013](#), 173).

5 Conclusion

This paper argues that institutional reforms which increase electoral competition and force politicians to win support in the general voting population will lead to an intensification of patronage efforts during election years. While elections might induce good governance and meritocratic hiring in the long run, under conditions of low information and prevalent clientelism, elections will generate a competitive environment that produces incentives for local elites to leverage their control over hiring to build a political machine in the bureaucracy.

²⁶When we disaggregate the effects by district, we find that out of 36 district-subject areas with elections, ten had a statistically significant and negative effect on student learning (below the 5% level), while only five had positive effects and the remaining recorded non-significant effects.

Leveraging a natural experiment from the Indonesian context, we document evidence to support our hypotheses. Direct elections are associated with an overall increase in contract teachers. In addition, hiring is concentrated in election years. We also document increased certification rates for civil service teachers. These findings suggest the presence of clientelistic practices and the politicization of the bureaucracy. Local district heads use their influence to build their political machine within the civil service. These findings are robust to a number of additional tests. Moreover, we find that the strength of this effect varies by political context. Districts that are under the control of the former ruling party, which already has an established network within the bureaucracy and does not have to fear the opposition, experience much weaker election-year effects, while areas with stronger former opposition parties experience much more pronounced electoral cycles of patronage hiring. This suggests that former outsiders are starting to build and learn how to effectively deploy their political machine in a competitive, clientelistic environment.

Our argument and evidence carry useful insights for several debates. First, our paper makes an important contribution to our understanding of bureaucracies in developing countries and the conditions under which meritocratic recruitment can emerge. We document substantial distortions caused by electoral competition at the local level. Second, these results add to the ongoing debate on the determinants and effects of clientelism. This paper illustrates how the construction of political machines inside the civil service is tied to elections and election cycles. The heterogeneity of the effect illustrates the interplay between different parties and their abilities to engage in clientelistic appeals. Our findings also suggest that, while in some contexts political parties are the main locus of clientelistic power, elites' control over local bureaucracies is much more important for institutionalizing clientelistic structures. Our research design also allows us to offer a credible causal estimate for the effect on an institutional reform that changes the competitive environment of clientelistic politics. Last, our argument and analysis adds additional nuance to the debate on the effects of electoral competition on public goods provision. We show that electoral pressures can actually increase demands on targeted goods delivery, which requires political control of the civil service. This politicization of the bureaucracy is likely to hamper the effectiveness of the civil service in the medium to long-run. Within the context of Indonesia, this work also helps to explain, in part, why the government's massive expenditures on education are not translating into

improvements in student learning outcomes.

While our findings are derived within the specific of local elections in Indonesia, we believe they apply to a broader class of cases. Young democracies in low and middle income countries often feature electoral competition similar to Indonesia's: organizationally weak parties and programmatic politics, little information about parties and candidates among voters, media controlled by government or few private actors, widespread poverty, and generally weak rule of law and low institutional quality. In such contexts, reforms that increase competitive pressures will amplify the incentive to engage in patronage politics among parties and candidates. Given the inability to relate to voters via programmatic platforms, political actors will rely on tried and tested patronage politics, with substantial consequences for the degree to which political candidates, parties, and their machines will attempt to establish control over the civil service.

Naturally, open questions remain. Our argument and analysis are restricted to a case in which there exists competition between multiple clientelistic parties and candidates. In this environment, elections seem to generate stronger incentives for patronage hiring in the civil service. Our study says less about which larger contextual conditions have to change in order to modify the effects of electoral competition. When do local political elites and parties have an incentive to run on a platform of effective service delivery and creating a capable bureaucracy? Future research will have to disentangle these questions.

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