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

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(Received 8 January 2018; revised 18 September 2018; accepted 8 November 2018; First published online 1 February 2019)

Abstract

What is the effect of increased electoral competition on patronage politics? 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 discretionary state hiring in election years. The study tests this prediction in the context of Indonesia's decentralized education sector. The authors exploit the exogenous phasing in and timing of elections in Indonesian districts for causal identification. They find evidence of 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.

Keywords clientelism; patronage; civil service; elections

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. The government is required by law to spend at least 20 per cent 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 10–15 years, paired with the discretionary power to hire contract teachers at the local level, 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. Of the sixty-five 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 sixtieth in reading skills and sixty-fourth in math and science (Chang et al. 2013). 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 education bureaucracy. Some believe that electoral competition can provide the necessary incentives for politicians to improve public goods provision and create an effective, meritocratic civil service (Besley 2006; Golden and Chang 2001; Stasavage 2005). Others argue that electoral competition, under some conditions, can lead to intensified patronage and excessive bloat in the public sector (Driscoll 2018; Grzymala-Busse 2007; O'Dwyer 2004; Schuster forthcoming). We add to the latter set of arguments by studying a context in which electoral politics shifted from an elite-focused

non-competitive environment to a mass-focused and competitive electoral process. In the context of a low- and middle-income country that lacks a sufficiently large middle class, where voters know little about prospective candidates and partisan platforms generally have low credibility, institutional reforms that increase the competitiveness of the electoral process give local elites an incentive to use their discretionary control over state hiring to *increase* patronage efforts.

We draw on the literature on clientelism (Corstange 2018; Keefer 2007) and political budget cycles (Franzese 2002) to specify observable implications about the specific effects of electoral competition and electoral cycles on hiring and the distribution of monetary benefits in the education sector. We focus on the education sector because teachers can be effectively deployed during election campaigns to deliver turnout and votes due to their embeddedness in local social networks. Further, teaching jobs themselves are valuable patronage rewards (Golden 2003) or provide access to valuable rents (for example, some Indonesian teachers collect illegal school fees that finance political machines). In effect, teachers there act as organizational brokers in clientelistic machines (Holland and Palmer-Rubin 2015; Larreguy, Montiel Olea and Querubin 2017). In sum, competition for office and the need to win broad-based support in the electorate forces local elites to staff the educational bureaucracy with their own affiliates, buy teachers' loyalty with financial rewards, and use temporary government contracts for short-term patronage hiring. This behavior is particularly pronounced in election years and is driven by competition between old and new elites, not prior existing clientelistic networks.

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. Secondly, 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. Thirdly, 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 on an exogenous schedule. The initial timing of direct elections and subsequent electoral cycles was determined by the length of tenure of sitting district heads who were appointed under the autocratic Suharto regime, which offers a plausible avenue for causal identification.

Our empirical analysis proceeds in several steps. Using information from comprehensive teacher censuses, we document 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 political influence and distribute targeted benefits. First, we find mixed evidence of an average increase in the number of contract teachers on payroll as a consequence of the overall switch to direct elections. Secondly and more pronounced, we find that the hiring of contract teachers is significantly elevated in election years. Thirdly, we provide evidence that in the run-up to an election, there is an increase in the certification rates of civil servant teachers, which are tied to substantial salary increases. We also offer additional evidence on job changes and promotions of civil servants more generally in election years. We proceed by tracing the heterogeneous effect of election years, distinguishing between districts dominated by the former autocratic ruling party from those that are not. We find evidence that the election cycle effects are stronger in areas in which competitiveness is higher. 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, illustrating the likely distortionary nature of contract teacher hiring.

This article 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 and

election schedules.¹ Existing research on this topic often argues that democratic elections lead politicians to increase the level and quality of public goods provision. Instead, our analysis shows that electoral competition can generate incentives for politicians to interfere with patronage politics in the education sector, 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 (Pierskalla and Sacks 2018). 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 (for example, Harding and Stasavage 2014; Ross 2006).

We also make a contribution to the literature on the political economy of education in the developing world (Gift and Wibbels 2014). Prior work has linked democratization and elections to increased educational expenditures (Stasavage 2005), but has also discussed democratization's more problematic push towards visible reform efforts, like the abolishment of school fees, instead of long-term investments in the quality of education (Harding and Stasavage 2014). Our study adds to this work by shining a light on the politicization of hiring and management practices of teachers. 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 politicize the public education sector.

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 (Nichter 2008; Stokes 2005), who can be (and is) effectively targeted by clientelistic appeals (Calvo and Murillo 2004; Cammett and Issar 2010), the role of brokers (Gingerich 2014; Stokes et al. 2013), whether clientelistic exchanges serve a signaling purpose (Kramon 2016; Muñoz 2014), what explains the portfolio of different linkage strategies (Gans-Morse, Mazzuca and Nichter 2014; Kitschelt and Kselman 2013; Weitz-Shapiro 2012), and the negative effects of clientelism on public goods provision (Keefer 2007; Khemani 2015). Much of the prior work on Indonesia has focused on the importance and mechanics of vote buying (Aspinall and Sukmajati 2016). We advance the literature along two dimensions. First, instead of studying vote buying, we take an in-depth look at hiring in the public education sector. This adds useful, micro-level empirical findings on the politicization of education and the public sector as a consequence of elections, and complements prior studies on the internal dynamics of patronage in the public sector (Gingerich 2013; Oliveros 2016; Oliveros and Schuster 2018). Secondly, to our knowledge, our article is the first to test the effects of increased electoral competition on patronage, using detailed data on teacher hiring and providing credible causal identification via a natural experiment.

Elections and Patronage Hiring in the Education Sector

Some argue 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 (for example, Besley 2006). A large body of empirical work suggests that elections increase the provision of public goods and services (for example, Stasavage 2005).

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 and Wilkinson 2007). In order for elections to discipline politicians and influence broad-based public policies, politicians have to be able to make credible programmatic appeals to voters (Keefer 2007).

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

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 met 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 (Nichter 2008; Stokes 2005), 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 to or communicate programmatic party platforms, often resort to clientelistic practices to stay in office (Hanusch and Keefer 2013). This equilibrium is unlikely to shift without the presence of a sizable and growing middle class that could demand better programmatic politics (Weitz-Shapiro 2012).

While the literature on clientelism is broad, we focus on politicians' ability to exploit their control over the public sector to offer patronage jobs and promotions to political supporters in order to win elections (Golden 2003; Robinson and Verdier 2013). What are the effects of electoral competitiveness on public sector patronage? Some believe that increasing electoral competition can reduce incentives for corruption, clientelism and the provision of patronage jobs (Horn 1995; Ruhil and Camões 2003; Ting et al. 2013). 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). Electoral competition may also lead to the passage of freedom of information (Berliner and Erlich 2015) and anti-corruption laws (Grzymala-Busse 2006) that limit opportunities for patronage.²

Others are less sanguine about the effects of increased electoral competition on patronage politics. Increasingly, scholars have identified conditions under which electoral competition not only fails to alleviate patronage but can actually increase clientelism and the politicization of state resources (Driscoll 2018; Grzymala-Busse 2007; O'Dwyer 2004; Schuster forthcoming).

We follow this latter strand of the literature and argue that institutional reforms that reorient clientelistic politics from an elite-focused, fairly non-competitive affair towards a linkage strategy that has to gain support from larger groups of voters in the face of competing elites' efforts will *intensify* patronage politics. Kitschelt and Wilkinson (2007) 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

²Conversely, Cruz and 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.

from 1967–2000 in India as one in which the fading dominance of the Congress Party was accompanied by a dramatic increase in the provision of targeted goods to voters. Three noteworthy studies examine Ghana: Asunka et al. (2017) find evidence that electoral competition increases attempts at electoral fraud, Driscoll (2018) documents increased patronage hiring, and Kopecký (2011) finds no evidence that electoral competition reduces patronage efforts.

We argue that when electoral competition increases in the wake of democratization, it can increase demands for clientelism. Once competitive elections are introduced and the political marketplace opens to embrace multiple elite groupings, more actors engage in clientelistic exchange, since newly emerging elites cannot yet rely on credible partisan platforms (Keefer and 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). Secondly 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). Thirdly, civil servants can manipulate the electoral process and results to benefit the incumbent. Fourthly, in many contexts, bureaucrats can act as effective vote canvassers and representatives on the ground (Folke et al. 2011). This is particularly likely when the civil service is not already autonomous at the time of democratization (Shefter 1977).

The effect of electoral competition on patronage hiring is particularly relevant to the education sector. While often distinct from the rest of the traditional civil service, teachers often play an important role in patronage politics around the world. Studies from other countries suggest that teachers are frequently absent from the classroom partly due 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 and 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 (Larreguy, Montiel Olea and Querubin 2017) have identified teachers as common intermediaries in clientelistic vote-canvassing operations. This is likely the case due to the large number of teachers, who often constitute a large share of state employees. 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.

Teaching jobs are also highly desirable patronage benefits that can be handed out to supporters. In Indonesia, teachers are also revenue generators for political machines via the elicitation of illegal school fees from parents (Rosser and Fahmi 2016; Rosser, Joshi and Edwin 2011). 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 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. For instance, the increase in competition between clientelistic elite groups generated by elections increases the demand and pressure for patronage jobs. Hence, we ought to observe an overall increase in education sector hiring as a consequence of increased electoral competitiveness:

Hypothesis 1: An increase in electoral competitiveness will lead to a rise in teacher hiring.

In addition to this mean shift in hiring, we should also observe spikes in hiring that are concentrated during elections, similar to other forms of electoral budget cycles. 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 (Franzese 2002). Several studies provide empirical evidence of the existence of electoral budget cycles in developing countries (Labonne 2014; Vergne 2009), while Hanusch and Keefer (2013) extend the logic of budget cycles to a clientelistic context. Following Hanusch and Keefer (2013), we expect to observe an intensification of 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 nears. Scheduling patronage hires close to elections is important, because it limits the commitment problems associated with clientelistic exchange, given that the reward occurs shortly before the (electoral) support is provided. To summarize:

Hypothesis 2: There will be an increase in teacher hiring in election years.

Both of our hypotheses apply to a specific institutional and socio-economic context. Echoing Keefer and Vlaicu (2007), Weitz-Shapiro (2012) and Shefter (1977), our argument applies to low- and middle-income settings in which voters have limited information about candidates and parties, where programmatic messaging by candidates is not credible, the middle class is not large enough to make a platform of reform and clean government electorally viable, and the civil service is not autonomous from partisan politics at the time of democratization. In this kind of environment, institutional reforms that intensify competition between elite groups and make mass-level electoral support for victory a requirement will increase overall patronage efforts and tie patronage politics to the electoral calendar.

Empirical Strategy

Investigating the link between institutional reforms that change the electoral environment and patronage hiring in the education sector is challenging for several reasons. First, studies of public hiring patterns in the developing world have been constrained by a lack of data. Secondly, 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. First, the availability of several complete teacher censuses in Indonesia allows us to determine the extent of teacher hiring at the district level. Secondly, 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 setting of our case naturally constrains the applicability of our results to other countries, but the country's structural characteristics – a young middle-income democracy, with high inequality and pervasive clientelism – make it an interesting example to study in depth the effects of electoral competition on personnel politics.

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 apparatus 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 the repression of civil liberties played an equal or arguably more important role (Aspinall 2005; King 2003).

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. During election campaigns, the political regime mobilized votes through schools. If teachers did not display sufficient loyalty to the regime, they risked punishment including transfers to schools in remote areas (Rosser and 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. 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 unresponsive to the wishes of the general electorate (Antlöv and Cederroth 2004). In fact, powerful party operatives would often sell votes in the local legislature to rich candidates for the district head office (Buehler and 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; they could safely ignore the general electorate, and often faced little meaningful competition from rivaling elites.

An electoral reform, designed 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 (Erb and 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). Observers of the political reforms in the post-Suharto regime have argued that the move from a centralized to a more decentralized, competitive system with multiple competing interests has decentralized and increased corruption and patronage (Robison and 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, the central government exercised direct

control over schools and teachers, and the teaching profession was characterized by a lack of systematic standards, comparatively low salaries, and hiring driven by personal relationships and bribes (Kristiansen and Ramli 2006). The reforms of the 2000s transferred important authority over schools and teachers to the district level and introduced several elements of professionalization (for example, minimum educational standards for teachers and better salaries). The reforms also included a constitutional amendment that requires the government to spend at least 20 per cent of its fiscal resources in the education sector.

Today, while the Ministry of National Education oversees state-run public schools, which educate 87 per cent of all students, and the Ministry of Religious Affairs administers semi-private religious (typically Islamic) schools, district governments are in charge of hiring and placing teachers into schools. This gives district governments influence over nearly three million teachers, who teach fifty-nine million students in 330,000 schools (Cerdan-Infantes et al. 2013). Districts can either hire teachers as permanent civil servants (*Pegawai Negeri Sipil*, PNS), 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 for 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 at the school level and are paid 10–50 per cent 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 per cent 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 (*Bantuan Operasional Sekolah*, BOS) subsidizes the school-level hiring of contract teachers. This means that principals, typically under the direction of a district head, can hire contract teachers with fiscal resources that leave the district budget unaffected. School-level hiring is also exempt from a number of regulations, which makes the practice particularly susceptible to patronage politics.³

Importantly, the hiring of teachers as permanent civil servants is heavily constrained by central government quotas and minimum entry requirements. From a theoretical perspective, this makes civil service teacher hiring unattractive because it is not reversible (Robinson and Verdier 2013) and it is hard to synchronize hiring with the electoral calendar. Temporary contract teacher positions are more likely to be used as a classic patronage tool. Conceptually, we expect that contract teaching jobs are given as political rewards to brokers and their supporters in return for political support. 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 reassign 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, 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, Akhmadi and Suryadarma 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 and Fahmi 2016).

³Simultaneously, the central government has issued temporary hiring freezes for contract teachers at the district level.

While contract teacher jobs are a more malleable resource than permanent civil service positions for classic patronage politics, local politicians do not ignore civil service teachers. Given the longer tenure of permanent teachers and their higher degree of social embeddedness, they are likely more suitable for other useful aspects of patronage politics. For example, 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 and Baker 2015), making local teachers in Indonesia useful targets, especially given the wide network of local schools that reaches into many politically relevant neighborhoods. For example, 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 district head's re-election (Rosser and 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).

Local district heads can gain the loyalty of permanent teachers less through the initial apportionment of jobs but rather through their control over subsequent rotations across jobs and schools, promotions and the civil service certification process, which affects salaries (see below for more detail). It is not uncommon for teachers who support losing candidates for district head to be punished with transfers to isolated areas. In an interview with a local academic and member of a local Education Board, Rosser and Fahmi (2016) were told that after publicly declaring his support for a district head's rival in a forthcoming election, the school principal was demoted and stripped of his responsibilities and resources. After the rival candidate's election victory, the former school principal was promoted to head the education agency. Sugiaryo, chairman of the Indonesian Teachers Association in Surakarta city in Central Java, reported that following the district head elections in neighboring Boyolali Regency in 2010, 2,000 teachers were transferred in a year (Tempo 2014). He explained, 'A transfer is like a punishment. There are teachers who lived and worked in eastern region, but then were suddenly transferred to western region' (Tempo 2014, 18). 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 candidate, and are demoted or fired if they fail to do so (ACDP Indonesia 2015).

More generally, teachers are an important cog in local machine politics because political interest groups perceive teachers as influential community leaders who can help garner constituents' votes (ACDP Indonesia 2015). The Indonesian Teachers Union also plays an important role in local politics in general and in elections in particular (Rosser and Fahmi 2016). 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. The 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 by helping contract teacher candidates transition to civil service positions.⁴ 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. Organizations representing contract teachers regularly organize demonstrations demanding conversions to PNS status and better benefits (Rosser and Fahmi 2016).⁵ Teachers also form an important voting bloc that can be co-opted via patronage politics.

Finally, teachers 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

⁴For anonymity purposes, the district's name and candidates' names were omitted (Rosser and Fahmi 2016).

⁵For an example of such a protest, see Karensa (2016).

that ultimately reaches the top of the education bureaucracy. Civil servants more generally are also expected to pay patronage fees for their appointments in exchange for gaining access to a lifetime income stream (Kristiansen and Ramli 2006).

Causal Identification

We exploit a natural experiment in Indonesia, the staggered phase-in of local elections, as a plausible identification strategy. 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 out the rest of their terms.⁶ 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 originally appointed the 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 articles have exploited the exogenous variation in the timing of Indonesian elections for credible causal identification (Burgess et al. 2012; Skoufias et al. 2014). Using a range of statistical tests, Skoufias et al. (2014) provide additional evidence that whether a district held a direct election in a particular year is exogenous and unrelated to pre-existing district characteristics.

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 3-year panel data set for Indonesian districts and estimate standard fixed effects models:

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

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.⁷ Specifically, we calculate the log-

⁶Exceptions to this rule were made due to recusals from office for health reasons and a small number of no-confidence votes.

⁷This 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). For example, 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-election year and two non-election years. Since elections are asynchronous, we are nonetheless able to estimate coefficients for the full electoral cycle across districts.

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 because 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. To account for the local political environment, we control for the vote shares of Indonesia's two largest parties (Golkar and Indonesian Democratic Party of Struggle, PDI-P) in the local legislature.⁸ 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.⁹ 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.¹⁰ To account for the socio-economic structure of the district, we include a Gini coefficient of consumption inequality,¹¹ the share of the local population that is below the poverty line, GDP per capita levels and total population counts.¹² All fiscal and economic variables are in constant terms, and we lag all our measures temporally by 1 year. Summary statistics for all variables are shown in Appendix Section 2.

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.¹³ This leaves us with 348 districts in each of the three waves of the teacher census.

Results

Table 1 shows our results for teacher hiring.¹⁴ 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 civil service teachers, because central government quotas constrain district-level decision making. However, for contract teachers we find a positive and statistically significant (at the 5 per cent 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 per cent level) for the logged

⁸Based on electoral returns from the 2004 and 2009 local legislative elections.

⁹The results are unchanged if we exclude this control. See Appendix Section 12.

¹⁰Total 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.

¹¹Based on consumption data from the National Socio-Economic Survey (SUSENAS).

¹²We log transform skewed measures.

¹³For robustness checks we include newly created 'mother' and 'daughter' regions post-split, but assign them separate fixed effects. See Section 5 in the Appendix.

¹⁴Appendix Section 4 shows estimated coefficients for all variables in the model.

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	0.007 (0.289)	0.648* (0.320)	-0.146 + (0.0769)	0.387 (0.325)	0.802 (0.629)
Pre-Election Year	0.048 (0.116)	0.252* (0.122)	-0.0452 + (0.0274)	0.192 (0.128)	0.190 (0.232)
Election Year	0.042 (0.157)	0.397* (0.168)	-0.0777* (0.0388)	0.363* (0.169)	0.161 (0.334)
Post-Election	0.030 (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

Note: clustered standard errors in parentheses. + p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001

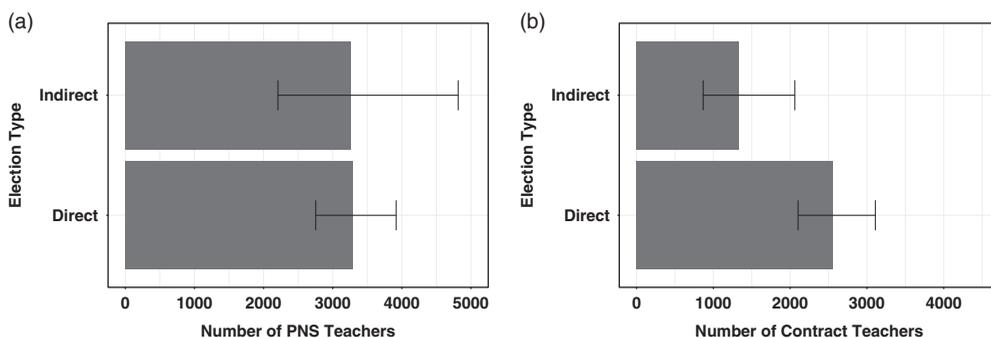


Figure 1. Direct election effect. (a) Civil Service and (b) contract.

number of contract teachers (the civil service share). Columns 4 and 5 distinguish between contract teachers hired by the school and those 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, which makes sense given the financial incentives provided by the centrally financed BOS funding stream for school-level hiring (see Context). In sum, this provides positive but mixed evidence in line with Hypothesis 1 and strong support for Hypothesis 2.

Figure 1 visualizes the effect of direct elections on the number of civil service and contract teachers in a district. The right panel shows that the number of contract teachers increased by, on average, 1,200 teachers after the introduction of direct elections (which is equivalent to about one half of a standard deviation of the number of contract teachers). The left panel shows the results of our placebo test on PNS teachers: there is no observable difference in the number of permanent civil service teachers between districts that have switched to direct elections and those with indirect elections.

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

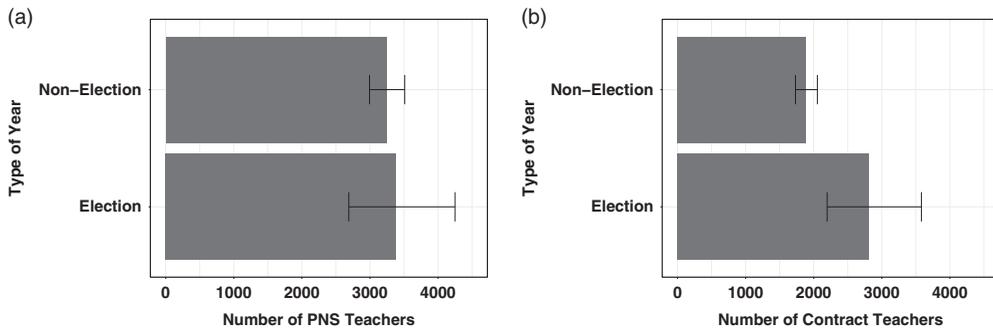


Figure 2. Election year effect. (a) Civil Service and (b) contract

contract teachers ends after the election, which also explains why the overall increase is not even higher than Figure 1 suggests.¹⁵ We are unable to detect this upward trend in civil service teachers with our direct election dummy, likely because the effect materializes slowly and all of our control observations with indirect elections eventually convert to direct elections.

Importantly, this increase in contract teachers is not simply due to the opening of new schools. Appendix Section 7 shows the results for the direct election election-year dummies on the number of schools per district, which have no statistically significant findings. Results are somewhat weaker for the broader set of districts that includes districts' post-split units (see Appendix Section 5), which is to be expected, given the dramatic shifts in personnel as a consequence of district splitting. Our findings are completely robust to an alternative estimation approach – negative binomial count models with year and district dummies (see Appendix Section 6).

We now look at another relevant policy lever that local Indonesian politicians can exploit to facilitate clientelistic exchanges. A core component of the 2005 Teacher Law is the certification process, which effectively doubles teachers' salaries. Teachers who have earned a 4-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.¹⁶ 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 per cent), district heads can influence the process by helping teachers obtain 4-year degrees and changing an individual's position in the certification queue (Chang et al. 2013, 34). In practice, this means that district heads can influence when individual teachers receive their certification and thus double their salaries.¹⁷

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 districts with

¹⁵The difference in coefficients in Column 2 indicates that a portion of contract teachers hired in 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.

¹⁶While certification largely applies to civil service teachers, contract teachers also become eligible for the 'professional allowance' upon certification (World Bank 2010) if they were hired by the government. School-hired contract teachers are ineligible for certification.

¹⁷There 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).

no 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 with no certified teachers have been unable to start the certification process. Thus politicians in these 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 1.¹⁸ 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).¹⁹

Using the teacher census, we can also construct a teacher-level dataset that combines district-level variables with the three teacher censuses. We estimate the following model:

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

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 (for example, 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 per cent 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 per cent level. This coefficient implies a 3-percentage-point increase in the certification probability, which is a meaningful effect given that by 2010 only 30 per cent 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.

In addition to the certification of civil service teachers, district heads might also use their ability to reassign 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 the World Bank Office in Jakarta and BKN. It contains information on all of Indonesia's 4+ million current civil servants and their work history. We use this data source to calculate the total number of job changes among teachers (re-assignments and promotions) for each district year from 2001–15. We estimate the same model specification as before, but now take as an outcome variable the number of job changes among teaching staff relative to 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 the average number of job changes among civil servants (see Section 9 in the Appendix). When we focus more narrowly on promotions of civil servants, we find clear evidence that promotion rates increase in election years (see Section 13 in the Appendix). This provides an additional layer of evidence that district heads use their

¹⁸For 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.

¹⁹In Appendix Section 8 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

Note: clustered standard errors in parentheses. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3. Teacher certification, individual-level, FE-OLS

	(1)
	Certification
Direct Elections	0.0686 + (0.0385)
Pre-Election Year	0.0149 (0.0195)
Election Year	0.0481* (0.0141)
Post-Election	-0.0344* (0.0153)
District Controls	✓
Teacher Controls	✓
School FE	✓
Year FE	✓
Observations	6,465,038

Note: clustered standard errors in parentheses. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

authority over the civil service to engage in patronage politics, and that our results extend beyond the education sector.

Effect Size by Electoral Environment

One concern might be that patronage politics is driven not by electoral competitiveness but rather by the existence of pre-existing patronage networks and ties to the state that are now being deployed in a newly democratic environment. To address this concern, we investigate the extent to which the direct election and election year effects are stronger or weaker in areas with stronger former opposition elites. To that end, 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 of democratization. Appendix Section 10 provides a more detailed explanation and complete results. Figure 3 summarizes the main finding.

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 from non-election years. However, for districts at the 10th percentile of Golkar

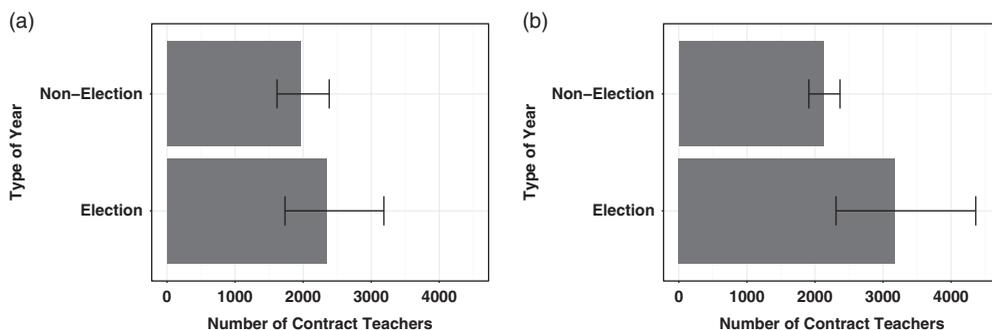


Figure 3. Election year effect by type of district. (a) Golkar Stronghold and (b) opposition

support, that is, areas in which the former ruling party faced immediate and strong competition after democratization, the difference between election and non-election years is roughly 1,000 contract teachers and is statistically significant below the 5 per cent level. 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. Our results are also robust to alternative specifications and measurement approaches (see Appendix Section 10).

Overall, these results are in line with a mechanism that links electoral competition to patronage efforts. 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 and found no evidence of strong heterogeneity in effects. Overall, effects might be a bit weaker in urban districts and districts on Java, which is in line with work by Weitz-Shapiro (2012) and points to the presence of middle-class voters as an important boundary condition.²⁰

Alternative Arguments

Our analysis finds mixed evidence of an overall increase in contract teacher hiring as a consequence of the change to direct elections, and strong evidence of spikes in contract teacher hiring in election years, plus additional evidence of increased certification of civil servant teachers as a consequence of direct elections and 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. Secondly, 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 and social expenditures, as well as 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,

²⁰See Appendix Section 10 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.

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, when we add overall district expenditures as a control variable, to capture standard political business cycle effects, to the models in Table 1, none of our core findings are affected (see Appendix Section 14). There is also 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 election years to reap political benefits.²¹ If the hiring of contract teachers helps improve 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 for two reasons. First, voters rarely reward improvements of inputs to public goods, like the number of teachers, but instead focus on visible reforms like abolishing school fees (Harding and Stasavage 2014). This implies that politicians are unlikely to receive large electoral rewards for hiring contract teachers for the sake of improving education. Secondly, 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, Dupas and Kremer 2015; Muralidharan and Sundararaman 2013), it is unlikely in the Indonesian case that election-year hiring and certification is beneficial to students.

For example, given that contract teachers in general show higher rates of absenteeism (Chang et al. 2013; Usman, Akhmadi and Suryadarma 2004), this suggests that massive contract teacher hiring is wasteful. The teacher census also provides information on the level of educational attainment of 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 per cent level.²² This finding illustrates two points. First, contract teachers have, on average, lower educational attainment levels than are now required for civil service teachers (a 4 on the 7-point scale). Secondly, the composition of contract teachers hired in election years shows even lower levels of educational attainment than those hired in non-election years, which indicates that recruitment is not primarily focused on merit. We do not find a similar pattern for civil service teachers. In addition, a field experiment that randomized certification across schools did not show evidence of positive effects of certification on student learning (de Ree et al. 2016).

Lastly, 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 were no meaningful improvements in overall student learning outcomes during the study period, 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 twenty

²¹This would be consistent with the findings of Skoufias et al. (2014), who find increases in health expenditures as a consequence of direct elections. However, Pierskalla and Sacks (2018), using slightly more extensive data, also find positive effects on health expenditures per capita but negative effects on social expenditures as well as negative effects on capital expenditures in the health and education sector, complicating an interpretation of standard responsiveness.

²²We 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.

districts in 2011 and 2012. We match these individual-level learning data to the electoral calendar and 2010 teacher census 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 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.²³ 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.

It could be the case that politicians are becoming more responsive to voters' demands due to increased electoral competition, and that they genuinely believe that hiring scores of contract teachers is a good way to improve outcomes. This could explain the observed patterns in the data but would not be due to patronage politics but rather a form of incompetent responsiveness. It is difficult for us to disentangle such a mechanism from a patronage story and, likely, both mechanisms are operating in parallel. Politicians, due to increased electoral competition, make maximal use of contract teacher hiring because it is a useful patronage tool but at the same time also signals to voters a certain kind of responsiveness – both of which are electorally rewarding – even if this has little effect on educational quality in the long run.

These points confirm more journalistic accounts of the dismal state and undue role of politics in Indonesia's education system (for example, 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).

Conclusion

This article argues that institutional reforms that 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 reduce patronage politics in the presence of middle-class voters (Weitz-Shapiro 2012), credible partisan platforms (Keefer and Vlaicu 2007) or when the bureaucracy is already partially autonomous from political parties (Shefter 1977), under conditions of low information, low credibility 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 via discretionary state hiring. Similar findings in Brazil also suggest that the dominant role of men in politics may contribute to the persistence of patronage politics in competitive electoral environments (Brollo and Troiano 2016).

Leveraging a natural experiment from the Indonesian context, we document evidence to support our hypotheses. First, we present some evidence that the introduction of direct elections leads to an overall increase in contract teacher hiring, although this is not entirely robust to alternative model specifications. While there is only mixed evidence of an average upward shift in hiring levels as a consequence of the introduction of direct elections, there is strong evidence that local elections have led to significant temporal hiring spikes in election years. Secondly, we

²³When we disaggregate the effects by district, we find that out of thirty-two district-subject areas with elections, nine had a statistically significant and negative effect on student learning (below the 5 per cent level) and nine had positive effects; the remaining areas recorded non-significant effects.

document election-related increases in certification rates for civil service teachers. These findings suggest the presence of clientelistic practices and the politicization of the education sector.

Our argument and evidence have useful insights for several debates. First, these results add to the ongoing debate on the determinants and effects of clientelism. This article illustrates how the construction of political machines within the public education sector is tied to elections and election cycles. The heterogeneity of the effect illustrates the interplay between different parties and their ability 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 of the effect on an institutional reform that changes the competitive environment of clientelistic politics. Secondly, our argument and analysis add additional nuance to the debate on the effects of electoral competition on public goods provision. We show that electoral pressures can actually increase the politicization of the bureaucracy, which is likely to hamper the effectiveness of the civil service in the medium to long run. In the context of Indonesia, this work also helps to explain why the government's massive expenditures on education are not improving student learning outcomes.

While our findings are derived from the specific context 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 a lack of programmatic politics, little information about parties and candidates among voters, media controlled by government or a few private actors, widespread poverty and a lack of a vibrant middle class, and generally weak rule of law and little bureaucratic autonomy from politics. 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 a public service sector like education. Naturally, open questions remain. Our argument and analysis are restricted to a case that features some degree of competition between multiple clientelistic parties and candidates. Future research will have to determine more explicitly the exact boundary conditions for our findings and, for example, the extent to which teacher unions condition the degree that politicians politicize the education sector.

Our findings provide a number of useful insights for policy. In Indonesia, the central government is responsible for hiring civil service teachers and districts are responsible for hiring contract teachers. A policy solution to reducing discretion in hiring practices could be to put the same level of government in charge of hiring contract and civil service teachers. To improve the quality of education more broadly, the government could encourage the adoption of performance-based incentives for civil service and contract teachers. Indonesia's Civil Servant Law (UU 5/ 2014) aims to put in place a merit-based performance bureaucracy system by encouraging the adoption of performance-based evaluations and incentives for civil servants. In practice, the government could tie bonuses to teacher presence and performance as measured by objective student outcomes and/or community evaluations. Currently, Indonesia's Ministry of Education and Culture, with assistance from the World Bank, is supporting a pilot known as KIAT Guru (Improving Teacher Performance and Accountability),²⁴ which ties teacher presence and performance to the payment of special allowances. If effective, the government could consider tailoring and expanding the system nationwide and to health and other sectors. Our findings also enrich the debate around the effectiveness of contract teachers. While recent studies from India suggest they may constitute an affordable and effective alternative to civil service teachers (Muralidharan and Sundararaman 2013), our study identifies the possible dangers of

²⁴<https://localsolutionstopoverty.org/project/kiat-guru-improving-teacher-performance-and-accountability.html>.

politicized hiring. Additional evidence is needed on the effectiveness of these policy solutions for reducing clientelism in teacher hiring and improving the quality of education.

Supplementary Material. Data replication sets can be available in Harvard Dataverse at: <https://doi.org/10.7910/DVN/0BFF0K>. Due to privacy concerns and data release restrictions, the published replication data excludes sensitive variables on teachers but contains all remaining variables and code used to produce tables and figures. More information can be found in the replication archive. The online appendix is available at: <https://doi.org/10.1017/S0007123418000601>

Acknowledgements. This article has benefited tremendously from the valuable feedback of Guy Grossman, Pablo Bera-mendi, Ben Ansell, Stuti Khemani, Philip Keefer, Lily Hoo, Daan Pattinasarany, Emmanuel Skoufias, Blane Lewis, Andy Ragatz, Samer Al-Samarrai, Danny Hidalgo, Rich Nielsen, Evan Lieberman, Pablo Querubin, Cesi Cruz, Amy Liu, Andy Baker, Sara Wilson Sokhey, Sebastian Dettman, Tom Pepinsky, seminar participants at MIT's comparative politics workshop, seminar participants at Cornell's Southeast Asia workshop, and participants at the World Bank's brown bag lunches in Jakarta and Washington, DC.

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