

DEMOCRACY AND EDUCATIONAL EXPANSION:
EVIDENCE FROM 200 YEARS

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Because schools may not only increase individual wellbeing but also promote industrialization, create more loyal subjects, and contribute to nation-building, it is not *a priori* obvious that democracies will provide more basic schooling than autocracies. To explore this question empirically, I undertake a historical study of primary education provision spanning 200 years. Drawing on new longitudinal datasets at the country level, I show that: (i) state-controlled primary education systems emerged about a century before the first transition to democracy; (ii) a majority of school-aged children were already enrolled in school about two decades before democratization; and (iii) democratization had no or little impact on primary school enrollment rates. By uncovering the non-democratic origins of public schooling around the world, and showing that the enfranchisement of the poor played a marginal role in explaining the high levels of primary schooling we see today, these findings highlight the need to revise existing theories of what drives governments to provide mass education.

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Education shapes many of the things we care about most: individual wellbeing, economic development, social cohesion, political participation, and more. Around the world, the provision of education is a political matter. Governments fund, manage, and regulate schools, and choose policies that affect the quantity and quality of schooling. Judging by the quantity of primary schooling available, the historical record paints a remarkably positive picture of governmental intervention in education. While in the early-twentieth century only a handful of countries provided universal access to primary education, today most countries have reached universal primary school enrollment rates. What explains the expansion of primary education systems? When do governments increase access to basic education services?¹

Over the past two decades, the literature in political science and economics has emphasized the role that democratic institutions play in the expansion of basic education. Core to this argument is the idea that basic education is a service that increases individual human capital and more so among the poor, thus constituting a form of progressive redistribution. As a result, the argument goes, the poor will demand its provision, and politicians will address this demand in societies where the poor can vote.² Although recent empirical studies challenge the idea that democracies redistribute more toward the poor than autocracies through healthcare provision (Ross 2006), land reform (Albertus 2015), wealth taxation (Scheve & Stasavage 2016) and welfare spending (Ansell & Samuels 2014), the democracy argument remains salient in explanations of why some governments provide more education than others, backed by a consistent empirical finding that democratization and suffrage extensions are all associated with higher school enrollment rates and education spending levels (e.g., Brown 1999; Mariscal & Sokoloff 2000; Lake & Baum 2001; Kaufman & Segura-Ubiergo 2001; Mariscal & Sokoloff 2000; Lindert 2002, 2004; Baum & Lake 2003; Brown &

¹ “Primary” and “basic” education are used interchangeably throughout.

² In most formulations, the argument builds on median voter models that predict increased pro-poor redistribution once the poor become enfranchised (Melzter and Richard 1981; Boix 2003; Acemoglu and Robinson 2006; Stasavage 2005a; Ansell 2010).

Hunter 1999, 2004; Stasavage 2005a; Avelino, Brown & Hunter 2005; Ansell 2008, 2010; Harding & Stasavage 2014). Indeed, recent surveys of the literature characterize the argument that democracies provide higher quantities of education than autocracies as an established truth (Gift and Wibbels 2014: 294; Hoffman 2015).

Despite its salience, there are theoretical reasons that warrant a reexamination of the idea that democracy promotes the expansion of primary education. First, the argument relies on the assumption that the provision of education, particularly primary schooling, is a form of progressive redistribution that disproportionately raises the human capital of the poor (e.g., Lindert 2004; Stasavage 2005a; Ansell 2010). This assumption is at odds with mounting evidence that education systems often fail to promote learning and reduce poverty and inequality (Pritchett 2013; Hanushek & Woessmann 2015; World Bank 2017). If schools do not have the equalizing benefits that political economy theories typically ascribe to them, the demand for increased access to schooling among low-income citizens may also be weaker than these theories assume. Second, by focusing exclusively on schools' potential to promote human capital, and overlooking their potential role as an indoctrination and nation-building tool that can shape students' political values and behaviors (Darden & Grzymala-Busse 2006; Alesina & Reich 2013; Cantoni, Chen, Yang, Yuchtman & Zhang 2017; Paglayan 2017), the democracy argument may understate autocratic rulers' incentives to provide schooling even in the absence of popular demand for it. Third, even if increased provision of basic schooling was a salient political demand among the poor, democratic politicians may fail to be responsive to it—e.g., due to capture of the policymaking process by the middle and upper classes (Ross 2006; Ansell and Samuels 2014; Albertus & Menaldo 2016); rampant clientelism that makes poor voters accountable to politicians instead of the other way around (Stokes 2003); voting along racial or ethnic lines as opposed to social class

(Stasavage 2005b); and/or difficulty introducing redistributive policies given the greater number of veto players in democracies compared to autocracies (Albertus 2015).

Adding to these theoretical considerations, we lack empirical research that convincingly assesses the presence of a causal relationship between democracy and education for a large number of countries and regions over a period that encompasses most of the history of public schooling. Past studies concluding that democratization leads to educational expansion raise questions about their internal and external validity due to: (i) the absence of controls for long-standing differences between countries that could simultaneously explain why some countries are democratic *and* provide higher quantities of education than others; (ii) the absence of controls for the global upward trend in the quantity of education provision observed during the postwar period, both in countries that democratized *and* in those that did not;³ (iii) limited geographic coverage focusing on a single region or country; and/or, crucially, (iv) reliance on school enrollment and spending data from the 1960s on, which raises questions about the relationship between regime type and education provision in earlier periods—a key question in the case of state-controlled primary education systems, which have been around for well over a century (Ansell & Lindvall 2013).⁴

This paper shows that once we examine the long history of primary education systems worldwide, and address the methodological issues limiting the internal validity of previous studies, democracy loses strength as a meaningful explanation for why some governments provide more education than others. Analyses based on new country-level datasets spanning the period from around 1830 to 2010 reveal three main findings. First, state-controlled primary education systems emerged under non-democratic regimes well before governments had electoral incentives to redistribute toward the poor. On average,

³ Ross (2006) finds that, after including country and year fixed effects, there is no longer evidence democracy reduces infant or child mortality, pointing to the need for a similar study of education provision.

⁴ See Table A1 of the Online Supplementary Materials for a summary of the methodological characteristics of past studies.

central governments began to intervene in primary education over a century before democratization. Second, non-democratic regimes provided large quantities of primary education: in most countries that transitioned to democracy, over two thirds of school-aged children were already enrolled in primary school at least a decade before democratization. Third, difference-in-differences and interrupted time series estimates that exploit variation in the timing of democratization across countries and control for country and year fixed effects provide little support for the claim that democratization led to the expansion of primary education systems. Analyses that unpack this result show that the null effect of democratization can be explained precisely by the fact that, in most countries, autocracies already provided a lot of primary education. Democratization only leads to increased primary education provision in those few instances where the median voter did not already have access to primary schooling before the emergence of democracy.

Together, these findings do not question that democratization can sometimes play a role in promoting educational expansion, but they do challenge the centrality that has been given to democracy and the voice of the poor in explanations of why some governments provide more education than others. The rise and spread of primary education systems took place mostly under autocratic regimes.

Rethinking the Public Provision of Education

Most studies in comparative politics and political economy focus on understanding what determines governments' decision to increase the quantity of schooling or the size of education systems, as reflected in the choice of school enrollment rates and education spending as the dependent variables of interest. That is also my focus here. I depart, however, from past studies' assumption that increases in the provision of, and level of

spending on, basic schooling lead to increases in human capital.⁵ And I argue that the decision to expand the provision of basic schooling need not stem from an incentive to improve the material conditions of the poor. It can also stem from an interest in molding individuals' ideology and attitudes toward the government to enhance the legitimacy of the status quo, and/or equipping individuals with the skills to contribute to the state's industrial and military goals. When schooling is conceptualized this way, it is no longer obvious that democracies will provide higher quantities of it than autocracies.

Quantity vs. Quality of Education

The assumption that schooling, especially primary schooling, is a “good” or “service” that increases the human capital of the poor is the starting point of the argument that democracy promotes educational expansion. Primary schooling, the argument goes, benefits the poor by increasing their human capital, so the poor will demand increased access to and great spending on it, and politicians will be more responsive to this demand in societies where the poor can vote (e.g., Brown & Hunter 2004; Stasavage 2005a; Lindert 2004; Ansell 2010).⁶

While crucial to democratic theories of education provision, the assumption that schooling promotes human capital is not empirically founded. Too many schools around the world, especially those available to the poor, fail to promote basic literacy and numeracy skills and fail to reduce poverty and income inequality (Pritchett 2013; Hanushek & Woessmann 2015; World Bank 2018). As Figure 1 shows, schooling and

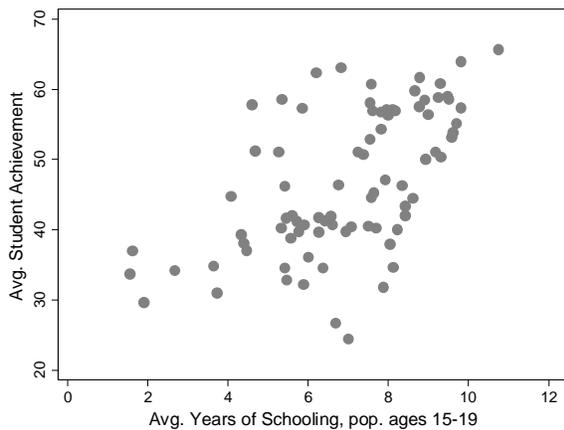
⁵ E.g., Brown and Hunter (2004: 843) (education spending “greatly enhances the prospects of human capital formation”); Stasavage (2005a: 343) (“basic services like ... education lead to accumulation of human capital;” Ansell (2008: 290) (the supply of schooling “increases the relative abundance of skilled labor”).

⁶ Lindert (2004: 107) (“what fuller democracies delivered, relative to nondemocracies or elite democracies, was *primary* education, the kind of tax-based education that redistributed the most from rich to poor”). Ansell's (2010: 2-3) prediction that we should expect to see increased primary education spending under democracies rests on the assumption that universal education is “the sharpest edge of progressive redistribution” because it “undermines the position of the rich – and their children – in the distribution of income” by making income dependent on “meritocracy over heredity.”

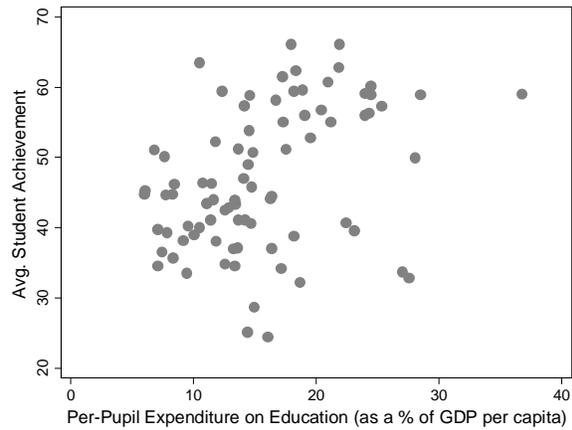
skills often fail to go hand in hand. Across countries, for any given quantity of schooling (measured here by average years of schooling among young individuals), there is huge variation in students' skills (measured by average scores on international tests of student achievement). Indeed, the observation that too many students who are in school do not acquire even basic literacy and numeracy skills has been the main concern guiding foreign aid for education over the last decade (World Bank 2011).

Figure 1. Education quantity and quality at the country level, 1970-2010

Panel A:
Student achievement and
Years of Schooling



Panel B:
Student achievement and
Education Spending



The dissociation that exists between schooling and skills points to an important aspect of education policymaking that has escaped most political economy theories: the political incentives to increase the quantity of schooling need not be aligned with the incentive to promote human capital accumulation. A democratically-elected politician, for instance, may have an interest in building more schools—a highly visible action that can yield votes (Harding & Stasavage 2014)—and, by the same logic of pursuing votes, he may want to (a) staff those schools with low-skilled teachers whose electoral support can be bought at a relatively low cost and (b) prevent the social mobility of low-income children to have a large pool of future citizens who can be bought off at a low cost.

Demand for Primary Education

The second major assumption of the argument that democracy promotes educational expansion is that “education is universally desired by parents” (Gift & Wibbels 2014: 294), and particularly, by low-income parents. I leave it for future research to measure the degree and the conditions under which parents demand increased provision of primary education. My goal here is much more modest. Building on existing work in other disciplines, I simply aim to show that the demand for education is a much more complex issue than existing theories assume, which provides a reason to reexamine those theories.

Surveys conducted worldwide find that student absenteeism on any given day ranges from 14-50% of enrolled student, and that most absenteeism stems from children’s unwillingness to attend school, and parents’ inability and/or unwillingness to compel them (Duflo & Banerjee 2011: 72; World Bank 2017; Platas 2018). Indeed, many interventions in developing countries, including conditional and unconditional cash transfers, seek precisely to identify cost-effective ways to foster demand for schooling among low-income families (Murnane & Ganimian 2016).

Economic and psychological factors may explain why the demand for education among the poor often remains low. Sending children to school implies foregoing current consumption (because children become unavailable to work) and diverting some current consumption to buy school supplies, all in exchange for the promise of future higher income and consumption. First, the future returns to schooling may not outweigh the current economic losses for low-income families. This is especially likely to happen when the schools to which these families have access are of poor quality and do not have the equalizing benefits that political economy theories typically attribute to them (Hanushek, Lavy & Hitomi 2008; Duflo & Banerjee 2011); and when patronage and social connections, rather than meritocracy, are the main criteria used in hiring

decisions. Second, the returns to schooling may be positive—whether because schools promote human capital, signal innate talent, or provide valuable social connections—, but low-income parents may underestimate those returns (Jensen 2010) due to inaccurate information (Nguyen 2008) and the deep feelings of hopelessness that are often engendered by sustained hardship (Appadurai 2004; Ray 2006; Dalton, Ghosal & Mani 2016; Moya & Carter 2014; Battaglia & Lebedinski 2014). Third, low-income parents may know that the returns to schooling are positive, but financial constraints and short-term consumption needs may still mean that the rational decision for them is to not invest in their children’s schooling (Burzтын 2016; Banerjee & Duflo: 2011: 79-80; Murnane & Ganimian 2016). Fourth, low-income parents who value education and can afford to send their children to school may still not advocate for more education, conditioned by their understanding of what constitutes a “good” education system.⁷ For instance, parents whose children have greater access to schooling than they did when they were young may be quite content with the status quo.

As a final point, it is important to note that the mental model associating primary education with social mobility and economic development was not nearly as salient a hundred years ago as it is today. In the early stages of public school systems, primary schools served societal and political goals much more than individual or economic ones, and the promotion of industrialization was left to secondary and tertiary education institutions, which were only available to the children of elites (Green 1990: 44-55; Brockliss & Sheldon 2012: 2-3; Pritchett 2013; Ansell & Lindvall 2013: 505-506; Paglayan 2017). Excepting the United States, where elementary schools were thought to be useful for promoting social mobility already in the eighteenth century, in most countries the current conception of education as a tool for empowering individuals to realize their potential took root mostly after World War II (Green 1990; Brockliss &

⁷ Similarly, voters’ specific understanding of what is an “equitable” tax policy may prevent them from advocating for progressive taxation (Scheve and Stasavage 2016)

Sheldon 2012; Bonal 2016). The evolution of economics reflects this: human capital theory, which establishes that our individual earnings depend on our years of schooling, only emerged in the mid-twentieth century; and macroeconomic models linking average years of schooling and economic growth at the country level are even more recent (Hanushek 2016). To the extent that, in earlier periods, people did not even think of primary schools as a tool that could help improve their material wellbeing, then the demand for education may have been even lower than it is today.

Accountability for Education Provision

Even if low-income voters demand increased provision of basic schooling, the presence of open and competitive elections may fail to incentivize politicians to respond to that demand. First, the policymaking process in democratic regimes may be more responsive to the upper classes than to the poor (Ansell & Samuels 2014). What gives leverage to the poor is that they are numerous (Brown 1999), but this characteristic may also make it quite difficult for them to organize collectively (Olson 1965; Kosack 2013). Wealthy individuals are more likely to vote and participate in politics than the poor; can devote considerable resources to lobbying for their preferred policies; and can capture the democratic policymaking process by purposefully designing institutions prior to a democratic transition in order to prevent future redistribution (Ross 2006; Acemoglu, Ticchi & Vindigni 2011; Albertus & Menaldo 2016). And, where dense clientelistic networks exist, politicians may find it cheaper to win over the poor by distributing boxes of food or medicine close to election day, rather than providing a steady stream of social services (Stokes 2003). Second, it is entirely possible that, once elected, politicians respond not so much to voters as they do to organized interest groups with well-defined policy goals (Hacker & Pierson 2014). In the case of education policy, the political power of teacher unions rather than the empowerment of the poor may be the main determinant of the size of education systems. Third, arguments about the incentives to advance pro-poor redistributive policies under democracy may not apply to societies

where socioeconomic class is not a salient political cleavage. In particular, in democracies that are fractured along ethnic lines, politicians may lack incentives to provide education for everyone (Stasavage 2005b; Miguel 2004; Kramon and Posner 2016). Fourth, democratically-elected politicians may face more obstacles when trying to expand education compared to an autocratic ruler, given the greater number of veto players in a democracy—a mechanism that has been shown to be at play in the case of land redistribution (Albertus 2015).

Autocracy and Education

Even if (a) politicians, owing to the presence of open and competitive elections, have an incentive to be responsive to the policy demands of a majority of citizens, and (b) the poor want increased provision of basic schooling, democratization may not lead to it. Under a median voter framework, if a majority of citizens already had access to primary schools *prior to* democratization, then we should not expect democracy to lead to increased provision of primary schooling—even if voters at the low end of the income distribution lack access. That is, even if median voter theory provides a good characterization of policymaking under democracies, it is not obvious that democratization will lead to increased access to basic schooling. Whether or not it does will depend on the quantity of education provision under autocracy.

Autocrats may incentives to provide high quantities of basic schooling to influence both human capital and ideology. First, autocrats may introduce growth-promoting policies if they expect to be around long enough to benefit from increased aggregate income (Olson 1993; Acemoglu and Robinson 2006b).⁸ Stalin and Mao's decision to expand primary schooling are good examples of this. Russia achieved universal primary education during the 1930s (Lee & Lee 2016). Stalin linked primary schools to the economic goals of the USSR: schools had to inculcate in peasants the importance of

⁸ Time horizons may be especially relevant when deciding whether to promote human capital because it usually takes many years before these investments translate into economic growth.

collectivization and provide the lower classes with strong technical and scientific skills to contribute to the industrialization goals of the Five-Year Plan (Fitzpatrick 1979). In China, primary schooling expanded at an unprecedented rate during the 1950s (Lee & Lee 2016). The Communist Party promoted this expansion and reshaped the curriculum partly to increase labor productivity and promote the acquisition of practical technical skills that could help transform China from a backward economy to a major economic power (Elliott 1982).

Additionally, autocratic regimes may turn to mass primary schooling as a vehicle to inculcate specific values, ideas, attitudes and behaviors that strengthen the regime's stability and legitimacy. In Prussia and France, comprehensive national laws organizing primary schooling and mandating a common curriculum designed by the state emerged in 1763 and 1833, respectively, under the absolutist regime of Frederick II in Prussia, and during the July Monarchy in France. In both cases, the expansion of primary schooling in rural areas was an elite-driven initiative that advanced despite peasants' reluctance to send their children to school (Weber 1976; Budde 2012; Squicciarini & Voigtlander 2016). Prussian and French rulers believed primary schools were needed to shape the moral character of children, foster respect for the king's authority and the rule of law, forge a national identity and patriotic attitudes, and encourage the poor to be satisfied with their material condition (Guizot 1816; Weber 1976; Ramirez & Boli 1987; Melton 2002; Brockliss & Sheldon 2012). In Prussia, the curriculum sought to teach "loyalty, obedience, and devotion to the king" and discourage aspirations for social mobility (Johann Felbiger, quoted in Melton 2002: 186). Frederick II believed "we do not confer upon the individual or upon society any benefit when we educate him beyond the bounds of his social class and vocation ... and awaken in him pretensions and needs which his lot in life does not allow him to satisfy" (quoted in Ramirez & Boli 1987: 5). In France, François Guizot—the Minister of Education who wrote the 1833 school law—

believed the state had to provide primary education to improve the moral life of the poor more than their material condition (Guizot 1860: 63-64). By teaching a curriculum focused on moral and religious education, a common language, and “French” festivities and cultural symbols, primary schools sought to turn “peasants into Frenchmen” (Weber 1976), ensure everyone “learned from childhood to understand the fundamental laws of the country and to respect its sovereign,” foster “a true patriotism” (Guizot 1816: 9-10), and encourage children to “always remain faithful to these two great things they have learned so young to love: duty and fatherland” (Bruno 1877: 150).

Schools’ role in socializing or indoctrinating citizens, contributing to nation- and state-building, and shaping political values and behaviors to sustain the status quo has received increasing attention in political economy (Darden & Grzymala-Busse 2006; Ansell & Lindvall 2013; Cantoni, Chen, Yang, Yuchtman & Zhang 2017; Paglayan 2017; Koesel 2017). This conceptualization of what schools do departs both from theories that emphasize the expansionary effect of democratization and from modernization theories. The former do not recognize that schools can impact individual political behavior. The latter do, but assume that schools *empower* individuals and support democratically-oriented political behaviors (Almond & Verba 1963; Lipset 1960), thereby predicting that autocrats will block the expansion of education systems to protect their own stability (Bourguignon and Verdier 2000).

Neither logic alone nor knowledge of specific cases is sufficient to infer whether democracies or autocracies will have greater incentives to expand primary education systems. In addition to the famous historical cases of Prussia, the USSR, and China, there are equally famous cases of expansion under democratic regimes—e.g., the United States and Canada in the nineteenth century. What we need in order to determine whether education systems have expanded more under democracies or autocracies is a systematic analysis of a large number of cases.

Existing Empirical Research

While there is no dearth of theories about the factors that lead governments to provide education, a theory is only useful if it explains the patterns we see in the world. To what extent does the spread of democracy help explain the expansion in the size of education systems observed from the nineteenth century to the present?

That democracies provide higher quantities of education than non-democracies, and especially, that they provide more primary education, is one of the most consistent empirical findings in cross-national studies of the relationship between regime type and education provision according to recent surveys of the literature (Gift and Wibbels 2014; Hoffman 2015). While the extant literature is usually interpreted as providing evidence that democracy leads to increases in enrollment rates and education expenditures, there are several methodological reasons that warrant caution against causal claims. Specifically, past studies raise questions about their internal and external validity due to: (i) the absence of controls for long-standing features of a country that may have influenced both its political trajectory and the level of education provision; (ii) the absence of controls for common time trends, including the global upward trend in enrollment rates observed in all countries during the postwar period regardless of the type of regime in place; (iii) limited geographic coverage focusing on a single region or country; and/or, crucially, (iv) reliance on school enrollment and spending data from the 1960s on 1970s on, , which captures only a short period in the history of state-controlled education systems.

For instance, in one of the earliest statistical analyses on this topic, Brown (1999) compares primary school enrollment in democracies and non-democracies using data from 136 countries over the period 1960-1987. Observing that democracies have higher enrollment rates than non-democracies with similar observable characteristics such as GDP per capita, the study concludes that “the institutions associated with individual

rights and electoral competition have *an important effect* on primary school enrollment” (p. 681; emphasis mine). The importance of controlling for country fixed effects becomes clear in Lake and Baum’s (2001) study of the relationship between democracy and secondary school enrollment rates for a panel of 90 countries in 1970-1990. While the study’s cross-sectional analysis controlling for observable confounders suggests that enrollment rates in democracies are on average 18 percentage points higher than in autocracies, when looking at the relationship between a *change* in regime type and the *change* in secondary school enrollment rates within countries, the results show that moving from a highly autocratic to a highly democratic regime is associated with only a 5 p.p. increase in enrollment. Several subsequent studies using data from the 1960s to the 1990s find evidence that within-country transitions from autocracy to democracy are associated with increases in enrollment rates, school attendance, and primary education expenditures (e.g., Stasavage 2005a; Ansell 2008; Harding & Stasavage 2014). Although controlling for country fixed effects improves causal identification, it is not enough. We also need year fixed effects to assess whether countries that did not transition from autocracy to democracy experienced similar educational expansion over the same period.

The few peer-reviewed studies that control for both country and year fixed effects arrive at conflicting conclusions, perhaps because they cover different periods and sets of countries. In a study of developed countries in 1880-1930, Lindert (2004) finds that the presence of democratic institutions alone does not predict primary or secondary school enrollment rates, but voter turnout does. This suggests that politicians are responsive to low-income voters not when they have the right to vote but when they actually do vote. By contrast, John Lott’s (1999) analysis covering 99 countries over 1985–92, finds that transitioning from a totalitarian to a democratic regime is associated with a *reduction* in education spending, a finding he attributes to totalitarian regimes’ interest in indoctrinating the population.

Importantly, few studies examine the relationship between democracy and education provision with data preceding the 1960s, which is what is available from the World Bank and UNESCO. Those that do, have limited geographic coverage: Lindert (2004) focuses on OECD countries, and Mariscal and Sokoloff (2000) on the Americas, raising questions about the generalizability of the findings.

In sum, while there is no dearth of theories about the relationship between regime type and the quantity of education provision, we lack empirical research that convincingly assesses the presence of a causal relationship between these variables for a large number of countries over a period that encompasses most of the history of state-controlled education systems. This paper seeks to fill this important gap.

Research Design

To assess the role of democratic institutions in explaining the expansion of primary education around the world, the paper follows a three-step empirical strategy. First, I examine a basic question: What came first, states' interest in the provision of primary education, or democracy? To determine when states became interested in primary education, the analysis employs two historical datasets. The first is an original dataset documenting the year when central governments in 33 European and Latin American countries began to regulate the provision of primary education. In comparative perspective, European countries have been leading providers of education since the mid-nineteenth century, and Latin America was the first developing region to reach near-universal primary school enrollment rates (Figure A1), so a look at these regions can provide particularly useful insights about what motivated the emergence of state-controlled primary education systems—whether electoral incentives or something else. The second dataset, compiled by Lee & Lee (2016), covers 109 countries and provides information about the year when central governments in each country began to monitor

primary education systems by collecting statistics about the number of students, schools, and teachers.

Second, I assess the degree to which interventions in primary education under non-democratic regimes included efforts at expanding access to schools, or whether they were restricted to regulating and monitoring schools. To measure the quantity of provision, I rely on country-level data about primary school enrollment rates—the most common measure of education provision in the extant literature. The main analysis uses quinquennial school enrollment data compiled by Lee & Lee (2016) for 109 countries from 1820 to 2010. To assess the robustness of the results to other historical datasets, I also employ an original longitudinal dataset containing annual primary school enrollment rates for 38 European and Latin American countries beginning in 1830. Both datasets enable me to examine the relationship between regime type and primary education provision over a much longer period than has been possible in the past.

Third, I use difference-in-differences and interrupted time series methods—discussed later on—to assess whether and how transitions to democracy impacted the level of access to primary education, again as measured by primary school enrollment rates. I examine democracy’s average impact on enrollment rates over the whole period of analysis from 1820 to 2010, as well as separately for democratic transitions that took place between 1820 and 1945, and for transitions that occurred during the post-1945 period. The 1945 cutoff is informed by two factors. First, primary school enrollment rates across developing countries increased at an accelerated pace after that year (Figure A2). Examining the degree to which democratization contributed to this acceleration is an important question. Second, scholars have argued that the idea that education can contribute to individual earnings and economic development only became widespread after World War II (Green 1990; Brockliss & Sheldon 2012; Bonal 2016; Hanushek 2016). As a result, demands for education in the postwar period may have been more

salient than in earlier periods, and—if democracies are responsive to popular demands—the effect of democratization may have differed across periods, too.

Throughout all analyses, I rely on several definitions and country-level measures of democracy obtained from the Polity Project, the Boix, Miller & Rosato (2012) dataset (hereafter, BMR), and the PIPE dataset by Przeworski et.al. (2013). The main conclusions are robust to all these measures. To facilitate comparison with past studies, the main text figures and tables present results based on the Polity measure, but results using the other measures are available in the Online Supplementary Materials.

Historical Datasets

Timing of initial state intervention in primary education. State intervention to shape primary education systems can take many forms. For 16 countries in Europe and 17 countries in Latin America and the Caribbean, I code the year when central governments began to: (i) fund primary schools; (ii) manage them; (iii) establish curriculum requirements for all primary schools; (iv) establish primary school teacher certification requirements; (v) train prospective teachers (e.g., through state-run Normal Schools); (vi) mandate all local authorities to provide universal access to schooling; (vii) stipulate that primary education must be free of charge at least for the poor; and (viii) establish compulsory attendance to primary schools. The focus on central governments, which sometimes began intervening in primary education *after* subnational governments, implies that we cannot be certain that the dataset captures the earliest expression of politicians' interest in education, but it does allow us to make statements of the form “politicians were interested in primary schooling at least as far back as X.” Data on the first time that central governments intervened in the ways listed above were obtained through an extensive review of over 80 country-specific history of education books, articles, and Ph.D. dissertations published in English, Spanish, or Portuguese; supplemented by consultations with history of education experts in a few countries

where some of the relevant dates could not be found in these sources (91% of the data come from text sources; and 9% from consultations with experts). The specific source used for each cell entry, and a brief narrative of the timing of central government interventions in primary education by country, are available in a detailed Data Appendix included in the Online Supplementary Materials.

I extend the analysis to all regions by examining an additional form of state intervention in education which involves the oversight of primary schools through inspections and gathering of school-level statistics used by educational authorities to monitor the state of public schooling. Lee and Lee (2016) identify the first year when statistics about student enrollment in public primary schools became available in 111 countries—of which 109 can be matched to information about regime type. As we will see, other forms of state intervention—such as the provision of funding for primary schools or the enactment of mandatory curricula—usually occurred before statistics reports were produced, so again, the timing of these statistics enables us to say that “politicians were interested in primary schooling at least as far back as X.”

Primary school enrollment rates. I employ two separate datasets that measure primary school enrollment rates. The first is an original country-level dataset containing annual primary school enrollment rates as a proportion of the population ages 5-14 for 38 countries in Europe and Latin America going as far back as 1828 and up to 1945—though there is variation in the initial date of data availability across countries partly due to variation in the timing of emergence of state-controlled primary education systems. The construction of this dataset involved contrasting and merging historical data on student enrollment from several secondary sources (Benavot and Riddle 1988; Mitchell 2003; the U.S. Bureau of Education’s annual *Reports of the Commissioner of Education* for 1872-1915; Flora 1983) and supplementing this with country-specific primary and secondary sources. The Data Appendix in the Online Supplementary

Materials provides detailed information about how the dataset was assembled and what sources were used.

The second dataset, assembled by Lee and Lee (2016), contains country-level data on primary school enrollment rates as a proportion of the school-aged population on a quinquennial basis for 111 countries from 1820 to 2010. The authors merged data on primary school enrollment available from UNESCO since 1950 with historical data compiled from similar—but not the same—secondary sources as the ones I used, and supplemented this with official statistical reports for some countries.

Each dataset has its own advantages and limitations, and using both helps me assess the robustness of the conclusions. My dataset contains more historical data than Lee and Lee's for Europe and Latin America in the pre-1945 period. Although they provide extrapolated enrollment rates for all countries since 1820, in reality only 9 countries have actual pre-1870 data in their dataset, compared to 17 in mine. Indeed, my dataset contains one extra decade of historical data for Argentina, Brazil, and England, two decades for Costa Rica, Ecuador, France, and Spain, and four decades for Austria, Germany and Norway.

The Lee and Lee dataset enables us to examine the relationship between regime type and primary education over a long period with data that cover all regions. Although data preceding 1870 are scarce, 63 countries in their dataset have enrollment data beginning in 1900, 85 have data preceding 1920, and 105 countries have data preceding 1950. This enables us to improve on the external validity of past studies that employ data from UNESCO or the World Bank, which are only available since 1950 or later.

Democratization. What constitutes democracy and how it should be measured remains a contested issue in political science. The choice of measures for this study is informed by the theory that is being tested, which posits that the main reason why democracies provide more primary education than autocracies is because they confer

greater “political voice” to the poor through the extension of the franchise. Accordingly, a natural measure of the extension of the franchise to the poor is the introduction of universal male suffrage, which I retrieve from the PIPE dataset by Przeworski et.al. (2013). In addition, I use the BMR measure of democracy, which counts as democratic any country that has competitive elections and has enfranchised *a majority* (i.e., more than 50%) of the adult male population, though not necessarily all. Lastly, I use a measure of democracy from Polity which considers not just whether there are open and competitive elections but also whether there are constraints on the Executive—a relevant mechanism according to Lake and Baum (2001; 2003). The analyses rely on a binary measure constructed following the convention that a country is democratic if *polity2* ranges between 6 and 10. Because the Polity measure of democracy is the most used in prior studies, the tables and figures below are based on results using this measure, but the main conclusions hold when we consider all three measures.

State-Controlled Primary School Systems Emerged Under Autocracies

A comparison of the timing of democratization and initial state intervention in education reveals that, around the world, states began to intervene in the primary education sector well before the poor had the right to vote.

In Europe and Latin America, two early leaders in the global emergence and expansion of public primary education systems, central governments began to intervene in primary education on average 107 years before democratization took place (as measured by Polity or BMR) and 91 years before the introduction of universal male suffrage laws. In general, the earliest forms of governmental intervention took the form of providing funding for primary schools and directly managing these schools. About a decade later, central governments began to establish curriculum and teacher certification requirements, and took over responsibilities for the direct training of prospective

teachers through state-run Normal Schools. Statistics about school enrollment followed about another decade later. Compulsory primary schooling laws were usually the latest form of state intervention to emerge, but still, they were introduced about 52 years before democratization and 36 years before universal male suffrage. These findings are not driven by a few countries; they reflect a general pattern shown in Panel A of Figure 2. The orange dots on the graph indicate when a compulsory education law was first passed. The red dots indicate when any other form of central state intervention in the primary education sector first took place (i.e., funding schools, managing schools, setting curriculum requirements, or certification requirements, training prospective teachers, mandating “universal” provision, or guaranteeing free provision at least for the poor).⁹ The blue dots indicate the timing of democratization as measured by Polity. The pattern is clear: in general, the red dots precede the orange dots, which precede the blue dots. This is true regardless of the measure of “political voice” employed (see Figure A3).

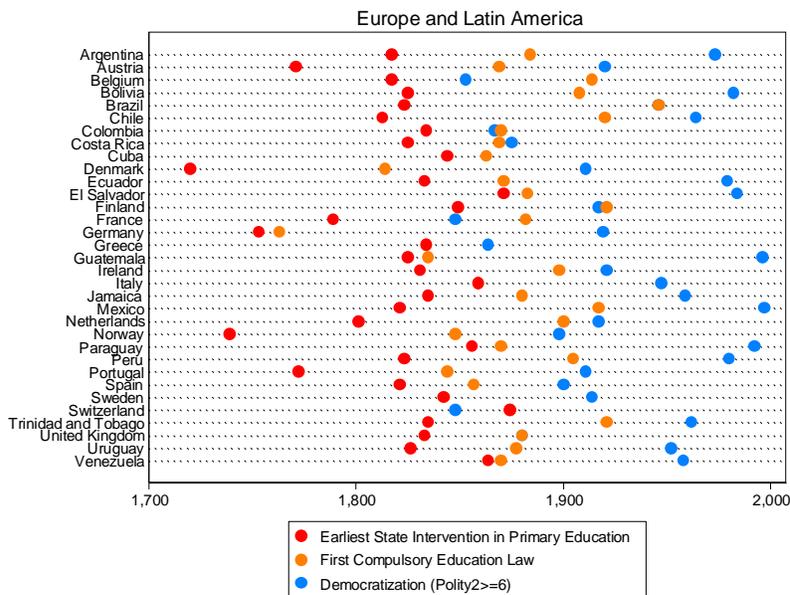
The conclusion holds when examining other regions: states began to monitor primary school systems, in part by publishing statistics about these systems, many decades before the enfranchisement of the poor. This is shown in Panel B of Figure 2. Statistics on primary school enrollment became available on average 61 years before democratization in Europe and Latin America; and 63 years before democratization in the rest of the world. The striking similarity of these figures provides reassurance that looking at the availability of primary school statistics is a valid way to assess the presence of politicians’ interest in primary education outside Europe and Latin America.

As a global phenomenon, then, state intervention in primary education preceded democracy and the enfranchisement of the poor by many decades.

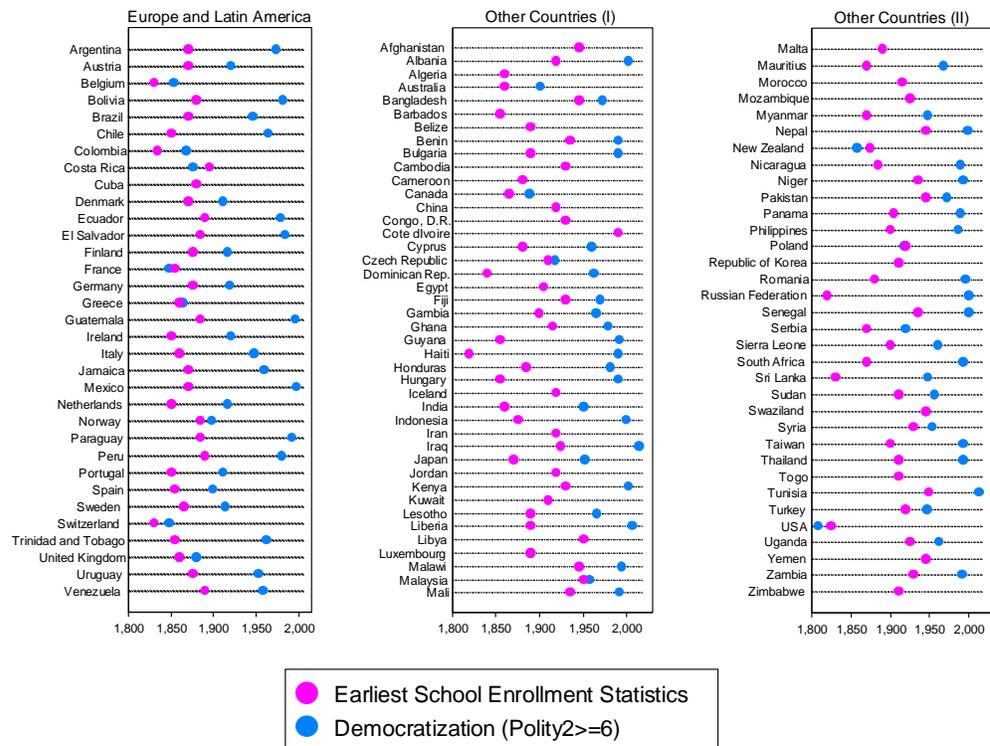
⁹ Figure A3 provides separate graphs for these various forms of intervention in education.

Figure 2. Timing of Democratization and State Intervention in Education, by Country

Panel A: Europe and Latin America



Panel B: All Regions



SOURCES: Author for timing of education interventions (see Online Data Appendix); Lee & Lee (2016) for timing of first school enrollment statistics; Polity IV Project for timing of democracy.

Autocracies Have Made Considerable Efforts to Expand Primary Schooling

State intervention in primary education prior to democratization was not trivial. The way in which elites structured the emerging public education systems in this early stage created patterns of authority and organization that remained in place for a long time (Ansell and Lindvall 2013). It was not uncommon for curriculum plans crafted prior to democratization to remain in place several decades after the transition to democracy;¹⁰ and virtually everywhere the basic setup for recruiting and training teachers through state-run Normal Schools remained unchanged well into the late-twentieth century. Indeed, when we think of what education systems look like today—what classrooms are arranged, how teachers are trained, how schools are inspected—we can trace many of the features we take for granted to decisions made in the early stages of provision.

But states didn't just regulate or monitor primary education; they also made considerable efforts to expand its provision despite the absence of mass electoral pressure to do so. This is shown in Figure 3, where the thick black line represents the world average primary school enrollment rate twenty years before and twenty years after each country's first transition to democracy. Two observations stem from the graph. First, primary education systems had reached a considerable size well before democratization, with 60 percent of children already enrolled in primary school two decades *before* democratization. Second, there was no dramatic change in the enrollment trend after democratization. At the regional level, in all regions except for Sub-Saharan Africa, a large majority of children were already enrolled in primary school at least two decades before democratization; and across the board, including in Sub-Saharan Africa, democratization was not followed by a sharp acceleration of primary school enrollment.

¹⁰ E.g., in Spain, the 1868 curriculum remained in place for over 30 years after the introduction of universal male suffrage in 1869; while in Argentina, the primary school curriculum instituted in 1910 remained in place for 25 years after the introduction of universal male suffrage in 1912.

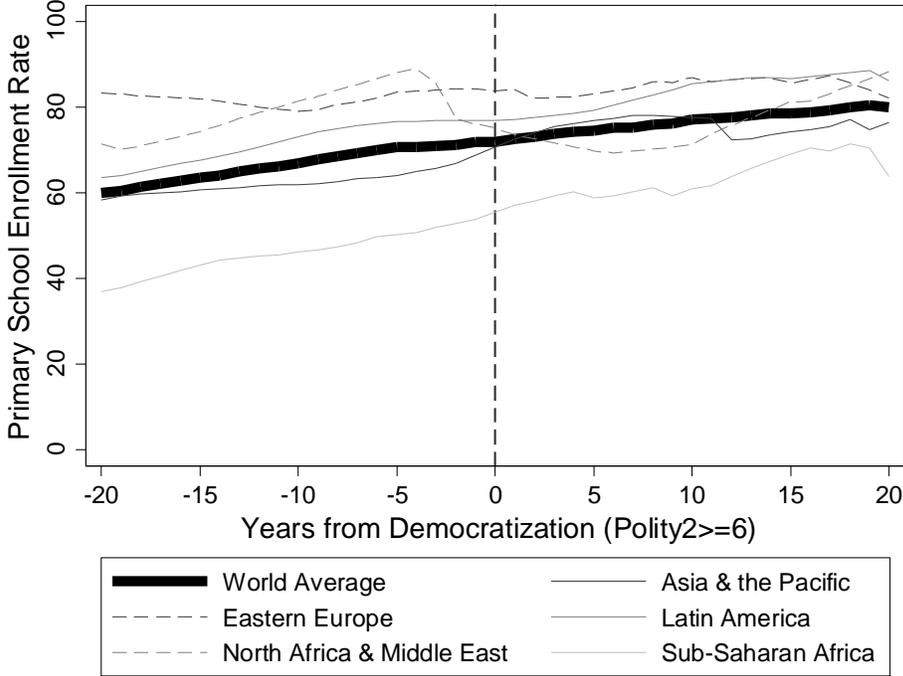
These observations are true regardless of what measure of democratization we use (see Figure A4).

A different way to look at the data to get a better understanding of what is behind these patterns is to compare the average primary school enrollment rate in each region over time, from 1820 to 2010, and the degree to which democracy was prevalent or not. This is what Figure 4 does. What it shows is that, in every developing region, primary school enrollment rates expanded greatly, and a majority of children got access to primary education, well before there was a move toward democracy in the region.

While there are specific non-democratic regimes within each region that have been known to make great efforts to expand education—e.g., Russia, China, Cuba, Prussia—the pattern of higher quantities of primary education provision under non-democratic regimes shown in Figures 2 and 3 is not driven by these exceptional cases. In 65% of countries that experienced a transition to democracy, a majority of school-aged children were already enrolled in primary school at least 20 years before democratization; and that proportion climbs to 74% of countries if we look at enrollment rates 10 years before democratization.

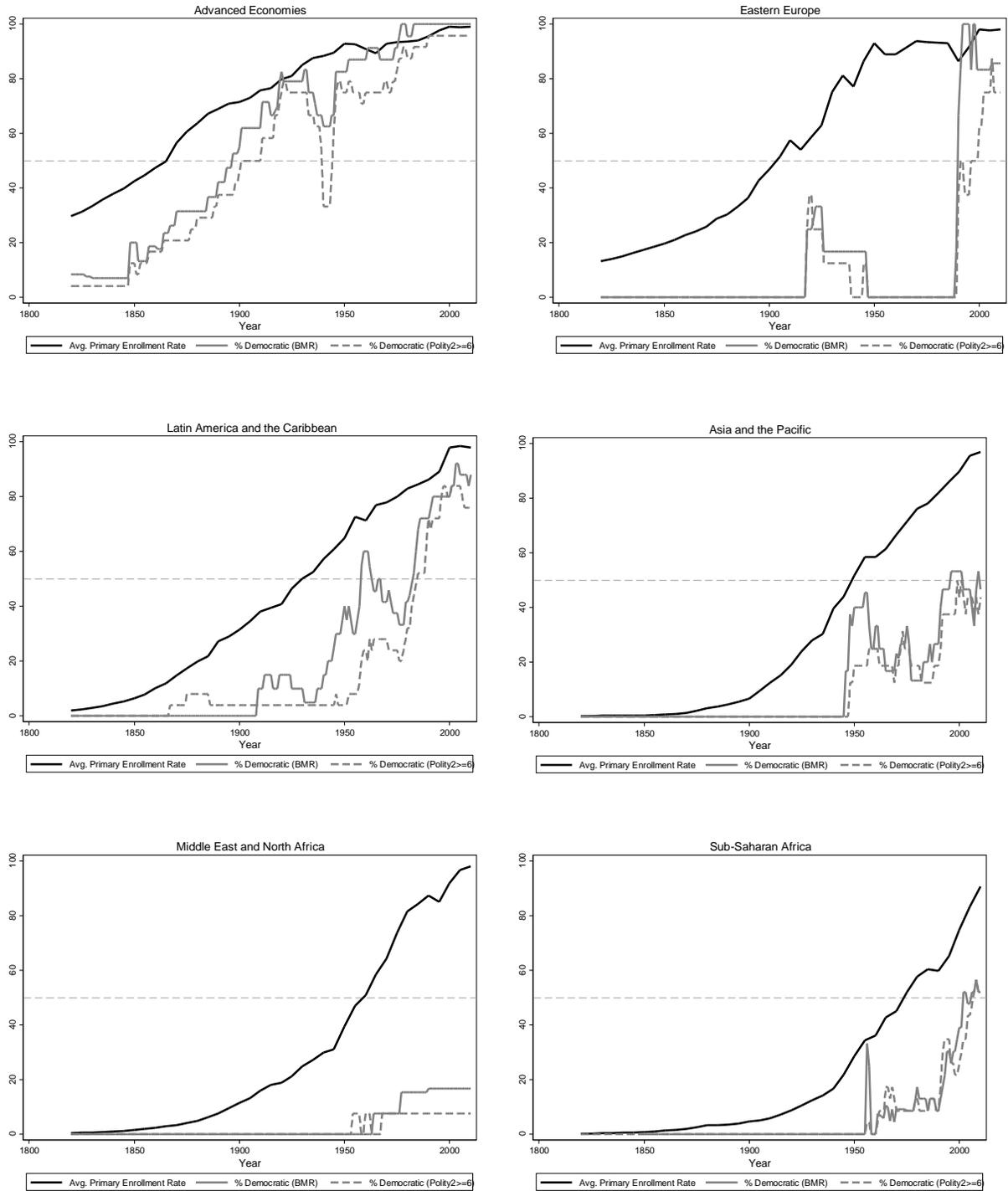
In sum, in addition to regulating and monitoring primary schools, non-democratic regimes provided high quantities of primary education. In most countries, a majority of children were already enrolled in primary school well before a transition to democracy took place.

Figure 3. Primary School Enrollment Rate Before and After Democratization, World and Regionals Means, 1820-2010



NOTE & SOURCE: Primary school enrollment rates at country level are from Lee & Lee (2016), which contains quinquennial data. These were linearly interpolated to obtain annual data. Figure A5 displays trends based on non-interpolated (i.e., quinquennial) data.

Figure 4. Primary School Enrollment Rates and Percentage of Countries that are Democratic, by Region, 1820-2010



Did Democracy Lead to Greater Access to Primary Education?

As a first step to understand how democratic institutions impact the level of access to primary education, I begin by exploring visually how primary school enrollment rates evolved over time in countries that transitioned to democracy (the black line in Figure 5) compared to countries that, at any given point, were non-democratic (the grey line).¹¹ Panel A displays these trends for the entire period from 1820 to 2010; Panel B examines only democratizations that occurred between 1820 and 1945; and Panel C, only those that occurred after 1945. For each period, I graph the same trends twice: the left hand side graph provides a zoomed-in look at the evolution of enrollment trends in the treated and control groups, while the right hand side graph puts these trends in historical perspective using a common scale for primary school enrollment rates that ranges from 0 to 100 percent.

Beginning with the patterns that emerge using data from 1820 to 2010, Panel A suggests that democratization did not lead to an expansion of primary school enrollment rates. Historically, countries that became democratic already had much higher levels of access to primary education *before* they transitioned to democracy, but democratization did not lead to an acceleration of primary education provision compared to non-democratic countries. To facilitate comparison with prior studies, democracy here is measured using Polity's definition and data, but the same pattern emerges if we look at trends before and after democracy as measured by BMR, or before and after universal male suffrage laws as measured by PIPE (Figure A6).

Are these conclusions different if, following past studies, we focus on the impact of more recent democratic transitions? No, they are not, but Panel C helps understand

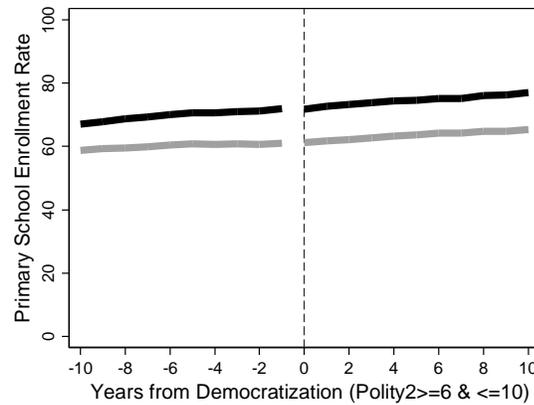
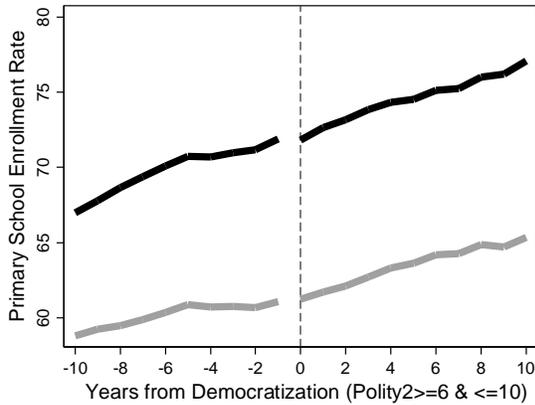
¹¹ For each country that democratized in year $t=T$, I compute the average primary school enrollment rate of a comparison group, which in any given year t is composed of those countries that were non-democratic in that specific year. I then compute the average primary school enrollment rate across all the comparison groups, displayed in grey in Figure 5.

why past studies concluded differently. Recall that past studies usually compare education provision in democratic and non-democratic regimes after accounting for observable country characteristics (e.g., Brown 1999), or, more recently, they compare education provision before and after democratization *within* countries that democratize, accounting for country fixed effects but not year fixed effects (e.g., Stasavage 2005; Ansell 2008). Essentially, this is like focusing on the black line of Panel C, while ignoring the grey line. If we look at the black line, we see that democratic transitions coincided with an acceleration of education provision, and based on this we might conclude that democratization led to that acceleration. But the grey line suggests that this temporal coincidence does not reflect a causal effect of democracy, because countries that did not democratize experienced the same acceleration. Indeed, several factors may have contributed to the global expansion of education during the postwar, regardless of a country's political regime: the creation of international organizations and multilateral development banks that have funneled much foreign aid for education to both democratic and non-democratic countries; the reduction of trade barriers beginning with the General Agreement on Tariffs and Trade of 1947; competition for economic, technological and military supremacy between democracies and communist autocracies during the Cold War; the U.N. General Assembly's designation of education as a basic human right in 1948, which was endorsed by both democratic and non-democratic countries; the emergence in the 1960s of economic theories linking individual earnings and years of schooling, and in the 1990s of human capital macroeconomic theories of growth; and the 1990 World Declaration on Education for All, in which 155 countries declared a commitment to universal primary education. Panel C suggests that, if we overlook the fact that primary school enrollment rates accelerated during the postwar in democratic and non-democratic countries alike, we will overestimate the impact of democratization—which, based on these preliminary graphs, appears to be null.

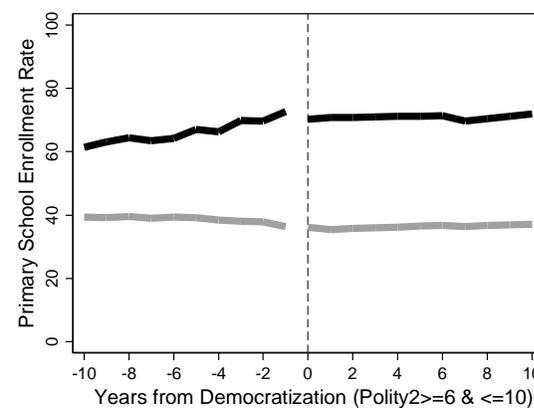
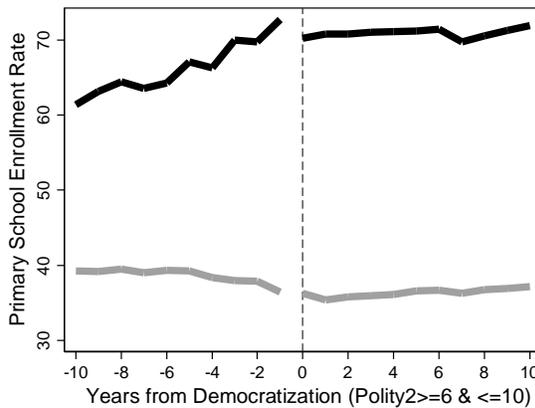
What about the impact on primary schooling of democratic transitions that occurred between 1820 and 1945? This period has received much less attention in the extant literature on the determinants of education provision, a notable gap in our knowledge considering that public school systems have been around for well over a century. Moreover, an emerging middle class, not mass revolution from workers or peasants, appears to have been the main driver of political opening in early cases of democratization (Moore 1966; Collier 1999); and there is some evidence that, in these cases, the middle and upper classes formed an alliance to prevent pro-poor redistribution (Ansell & Samuels 2014). Indeed, the trends in Panel B suggest that the adoption of democratic institutions did not lead to an expansion of primary schooling. In countries that became democratic between 1820 and 1945, primary school enrollment rates were higher *and* growing faster compared to control group countries *before* they adopted democratic institutions. We cannot know whether this was driven by elites who, anticipating political change and fearing how it might affect their power, turned to primary education to inculcate values and beliefs that would help elites maintain power after the extension of the franchise; or whether the expansion in this pre-democratic period responded to the educational demands of those who were already enfranchised. What we know is that, once democratic institutions were adopted, we no longer see a divergence in the enrollment rates of treated and control countries—suggesting that, if anything, democracy led to a reduction in the provision of primary schooling.

Figure 5. Average Primary School Enrollment Rates Before and After Democratization, Treated and Comparison Group

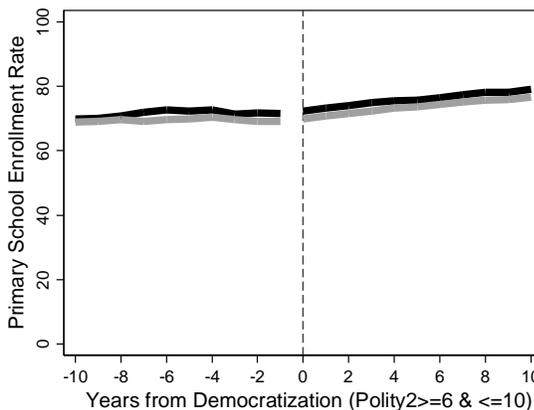
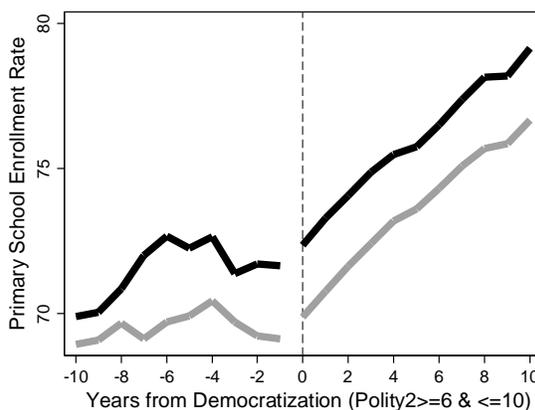
Panel A: 1820-2010



Panel B: 1820-1945



Panel C: 1945-2010



NOTE: Democratizing countries' trend in black; non-democracies' in grey. Quinquennial enrollment rates at the country level were interpolated to obtain annual estimates. SOURCE: Primary school enrollment rates from Lee & Lee; regime type from the Polity Project.

To quantify the impact of democratization on primary school enrollment rates, below I present estimates based on two estimation strategies, difference-in-differences (DD) and interrupted time series with a comparison group (ITS), whose assumptions require some consideration before we discuss the results. Specifically, I estimate the following DD and ITS models, respectively:

$$(1) Y_{i,t} = \gamma_i + \phi_t + \delta_1 \cdot T_{i,t} + \epsilon_{i,t}$$

$$(2) Y_{i,t} = \gamma_i + \phi_t + \beta_0(\text{year}_{i,t} - \text{year}_i^*) \cdot T_i + \beta_1 T_i \cdot P_{i,t} + \beta_2(\text{year}_{i,t} - \text{year}_i^*) \cdot T_i \cdot P_{i,t} + \epsilon_{i,t}$$

In both models, γ_i accounts for long-standing features of a country that might be correlated with both the chance of democratization and the level of primary education provision (e.g., the historical influence of Protestantism, a climate conducive to agriculture in small landholdings, a heavy endowment of oil or mineral resources); while ϕ_t accounts for year fixed effects or shocks that affect education provision in all countries regardless of the type of political regime (e.g., the end of World War II, the adoption in 1990 of the World Declaration on Education for All). In the DD model, $T_{i,t}$ equals 1 if country i in year t had experienced a transition to democracy, and equals 0 otherwise; and δ_1 is the average treatment effect of democratization on primary school enrollment rates under the assumption that enrollment rates in countries that democratized, had they not transitioned to democracy, would have changed just as much as they did in countries that did not become democratic. Visual evidence of parallel pre-treatment trends shown in Figure 5 suggests that DD is a valid approach when estimating the average impact of democratization for the whole period of analysis (1820-2010) and when restricting the analysis to the post-war period (1945-2010). However, the absence of parallel pre-treatment trends in the period 1820-1945 suggests we need an alternative estimation strategy for that period.

An ITS model's identifying assumption is not that the trend of treated countries would have been parallel to that of control countries in the absence of democratization,

but rather that the treated countries' trend in the post-treatment period would have changed by the same (linear) amount as control countries' trend had they not experienced democratization (Shadish, Cook & Campbell 2002). In equation 2, $(year_{i,t} - year_i^*)$ is the number of years relative to democratization in country i ; T_i equals 1 if country i ever democratized during the period of analysis, and equals 0 otherwise; and $P_{i,t}$ takes a value of 1 if country i had already democratized in year t , and equals 0 otherwise. The ϕ_t dummies trace out the trend of comparison countries in a non-parametric way. β_0 is the linear difference in the pre-treatment trend of treated and comparison countries; β_1 indicates the average one-time shift in treated countries' trend in the first year under democracy; and β_2 measures the linear change in the slope of treated countries' trend after the introduction of democracy. Under the assumption that the change in the level and trend in enrollment rates among comparison countries is a good counterfactual for what the change in level and trend in enrollment among treated countries would have been in the absence of a change in regime type, the effect of democracy k years after its introduction is given by $(\beta_1 + k \cdot \beta_2)$. This magnitude can be thought of as the *difference* between treated and comparison countries in the *difference* between their post-treatment slopes net of *differences* in their pre-treatment slopes. Intuitively, if treated countries' enrollment rate was already growing faster than control countries' in the pre-democracy period, and diverged even more during the post-democratization period, we would interpret the additional amount of divergence as the positive impact of democratization. Conversely, if we observed that, after democracy, treated countries' trend diverged from control countries' trend less than it did in the pre-democracy period, we would interpret the reduction in the amount of divergence as the negative impact of democratization on enrollment rates.

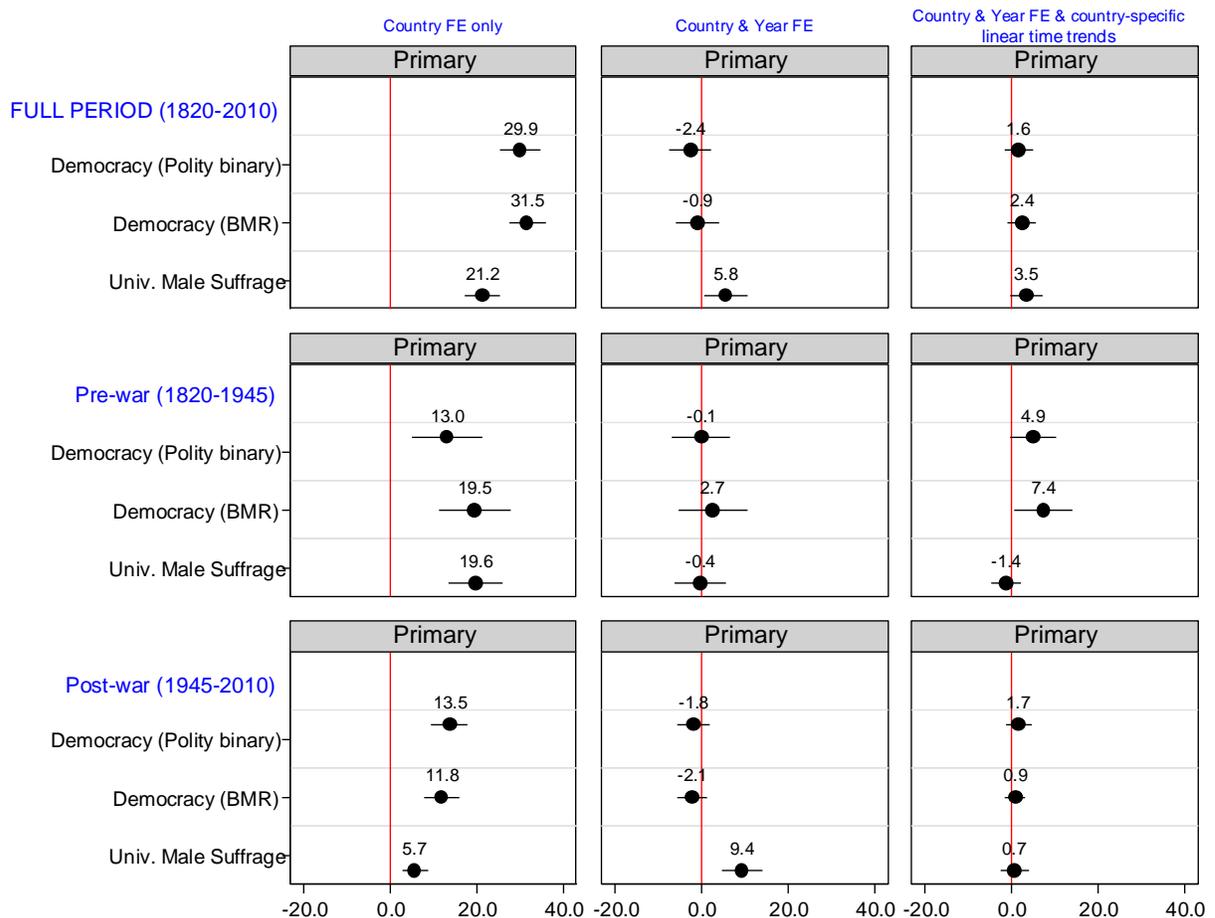
As anticipated by Figure 5, the results provide little support for the claim that democratization leads to an expansion of access to primary education as measured by school enrollment rates. In Figure 6, Panel A plots the coefficient on democracy obtained from (i) a regression with country fixed effects but not year fixed effects, the most common method used in prior studies; (ii) a DD model including both country *and* year fixed effects, as in equation 1; and (iii) a model that adds country-specific linear time trends to equation 1, to control also for any observable and unobservable features of a country that change linearly over time. In turn, Panel B provides the estimated impact of democracy within 10 years of democratization obtained from the ITS model given by equation 2 (i.e., $\beta_1+10\beta_2$), which is particularly informative of the impact of democracy in the period 1820-1945. In addition to point estimates, 95% confidence intervals computed from standard errors clustered at the country level are also reported. All equations are estimated using quinquennial data on primary school enrollment rates from Lee and Lee (2016) for the entire period of analysis, as well as separately for the periods 1820-1945 and 1945-2010. Additionally, all equations are estimated using the three different binary measures of democracy discussed earlier, based on data from the Polity Project, BMR, and the PIPE project. Results are robust to using the continuous measure of democracy given by the polity2 variable of the Polity Project.

When looking at the relationship between democracy and primary school enrollment rates over the period 1820-2010, Panel A shows that accounting for country fixed effects but not for year fixed effects would lead us to severely overestimate democracy's impact. For instance, when using Polity to measure democracy, the results suggest that democracy increases primary school enrollment rates by 30 percentage points. However, when year fixed effects are added to account for secular increases in the provision of education not driven by democratization, the coefficient on democracy as measured by Polity is no longer statistically different from zero, the point estimate is actually *negative*, and the upper bound of the confidence interval implies that *at most*

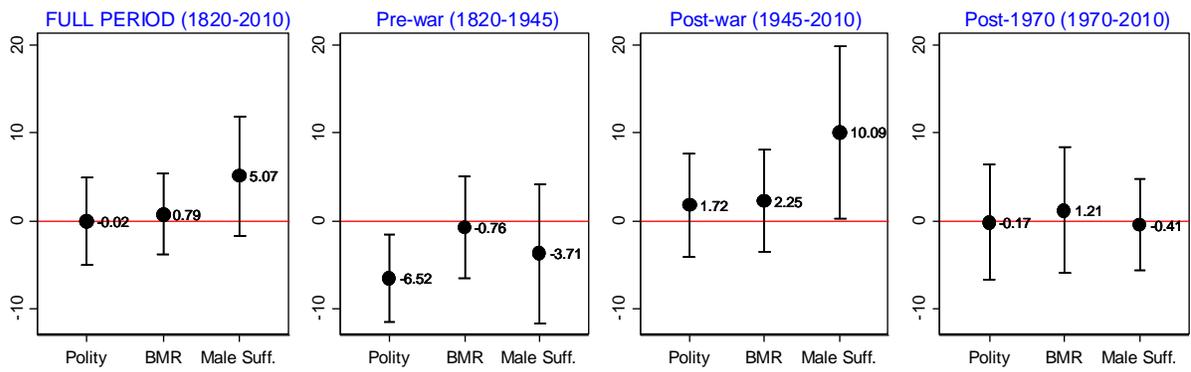
democracy increases primary school enrollment rates by 2.4 p.p. Recall from Figures 2 and 4 that the average primary school enrollment rate in democratizing countries already exceeded 70% prior to democratization, so even a 2.4 p.p. increase based on the upper bound of the confidence interval would represent a small effect on primary school enrollment rates. In sum, when looking at the long history of education provision, the spread of democracy plays an insignificant role in explaining the global expansion of access to primary schooling.

Figure 6. Democracy’s impact on primary school enrollment rates

Panel A: DD estimates



Panel B: ITS estimates



A more appropriate comparison with prior studies is one that focuses on the impact of democracy in the postwar period. Here again, Panel A of Figure 6 shows that estimating the impact of more recent democratic transitions using country fixed effects but not year fixed effects leads us to overestimate democracy's impact on education provision. Once year fixed effects are added, the estimated coefficient for democracy becomes negative and is no longer statistically significant if democracy is measured by Polity or using the less conservative definition of BMR. The only measure of democracy that appears to have a positive effect on primary school enrollment rates is the introduction universal male suffrage, but this effect also disappears once we account for country-specific linear time trends.

Finally, for democratic transitions taking place before 1945, DD models that account for country and year fixed effects (Panel A) are likely to overestimate the impact of democracy by overlooking the fact that primary school enrollment rates were growing faster in democratizing countries *prior* to democratization. If we account for the difference in the slope of the pre-treatment trends, and assume that this difference would have remained the same in the absence of democratization, our conclusions about the impact of democracy change dramatically. As shown in Panel B of Figure 6, and in line with the visual evidence shown in Panel B of Figure 5, ITS estimates of the impact of democratization on primary school enrollment rates provide no support for the claim that democracy leads to an expansion of primary education. The point estimates for all measures of democracy are negative, and statistically significant in the case of Polity.

Robustness

The findings presented above provide little evidence to support the claim that democracy leads to an expansion of primary schooling. The conclusion that democracy has not played a meaningful role in explaining the expansion of primary education systems holds if we: (i) look at the effect of continuous changes in regime type instead of using binary measures of democracy (Table A2); (ii) employ a different historical

dataset of primary school enrollment rates for the pre-1945 period (Figure A7); (iii) use public spending on primary education (available from previous studies) instead of enrollment rates to measure the quantity of primary education provision (Figure A8); and (iv) examine the impact of democratization separately for each region (Figure A9, and Table A3).

Mechanisms

Why did democratization and the emergence of voting rights for the poor not lead to significant increases in the provision of primary education? A common claim among studies that challenge median voter theories' prediction that democratization should lead to increased pro-poor redistribution is that economic elites can capture the democratic policymaking process both by devoting considerable resources to lobby against progressive policies (Ross 2006) and, if they have sufficient time to anticipate a democratic transition, by shaping the design of democratic institutions to minimize the influence of other groups (Albertus and Menaldo 2016).

To explore whether capture of the policymaking process by economic elites helps explain the absence of a positive impact of democracy on primary school enrollment rates, I begin by examining how democracy impacted the quantity of provision of the types of education that the middle and upper classes might prefer—secondary and tertiary education. In analyses analogous to those conducted for primary school enrollment rates, I find evidence that democratization can lead to positive and statistically significant impacts on secondary and/or tertiary school enrollment rates, especially when considering democratizations that occurred after 1945 (Panels B and C of Figure A10).

However, as noted by Scheve and Stasavage (2017), empirical patterns that are consistent with capture theories may also be consistent with other explanations. Indeed, the results above are insufficient to rule out median voter theories, which argue that the

median voter, not the rich, determines which policies are adopted in a democracy. Specifically, median voter theories would predict increased primary education provision after a democratic transition in countries where autocratic regimes did not provide access to primary schooling to a majority of citizens; but would predict increased secondary or tertiary education provision after democratization in countries where autocratic regimes provided access to primary schooling to a majority of citizens, but did not provide secondary or tertiary education to a majority.

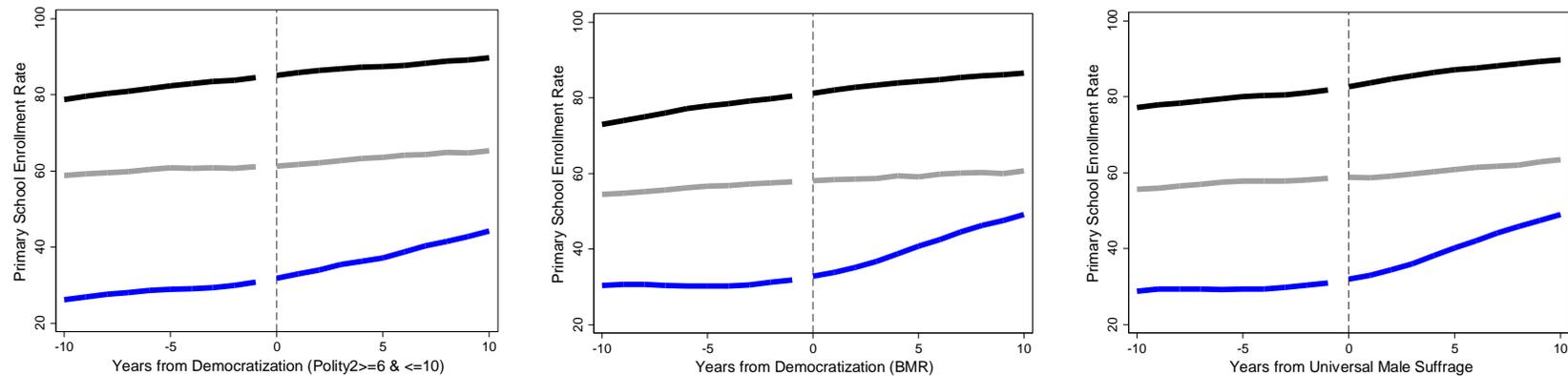
To assess the possibility that the null effects of democracy on primary education provision are explained by a median voter framework, I re-estimate equation 1 for the full period allowing for heterogeneous treatment effects of democratization depending on whether or not a majority of children were already enrolled in school prior to democracy. The results, shown in Table 1, provide some support for median voter theories. In countries where a minority of children had access to primary education prior to democratization (e.g. Portugal, Dominican Republic, Benin, Sierra Leone), a transition to democracy leads to increases in primary school enrollment rates based on BMR and PIPE measures of democracy; and leads to declines in the provision of secondary and tertiary education. However, in more than two thirds of countries that democratized, a majority of children already had access to primary schooling prior to democratization. In those cases, democratization does not lead to an increase in primary school enrollment rates, but does lead to increased enrollment in secondary education. Figure 7 provides visual evidence of these effects.

Table 1. Heterogeneous effect of democracy depending on whether a majority of children already had access to primary schooling before democratization

Independent Variable:	Primary	Secondary		Tertiary	
		school enrollment rate			
Polity2 between 6 and 10					
<i>democracy</i>	5.3 (3.5623)		-5.1 (3.2870)		-2.6 (2.6150)
<i>democracy x majority enrolled in primary</i>	-8.6 ** (4.1463)		13.2 *** (3.9961)		3.6 (3.2115)
Democracy (BMR)					
<i>democracy</i>	8.0 ** (3.2197)		-12.2 *** (2.7032)		-7.2 *** (2.2573)
<i>democracy x majority enrolled in primary</i>	-9.7 *** (3.4496)		18.2 *** (3.0982)		6.1 ** (2.4868)
Universal male suffrage (PIPE)					
<i>democracy</i>	15.7 *** (3.1897)		-17.3 *** (2.6090)		-9.4 *** (1.4518)
<i>democracy x majority enrolled in primary</i>	-10.2 *** (2.9843)		18.7 *** (2.6514)		3.1 ** (1.2598)

NOTE: Results based on a linear DD model with country and year fixed effects similar to the one given by Equation 1 but allowing for heterogenous treatment effects depending on the level of primary school enrollment rates prior to democratization.

Figure 7. Heterogeneous effect of democracy depending on whether a majority of children already had access to primary schooling before democratization – Graph shows average primary school enrollment rate in democratizing countries where a majority of children were enrolled in primary education prior to democracy (**black** line); democratizing countries where a minority of children were enrolled in primary education prior to democracy (**blue**); and in control countries (**grey**)



Summary & Implications

This paper challenges the centrality that has been given to democracy in explanations of why some governments provide more education than others. Using new historical datasets and methods that improve on the internal validity of previous research, the paper uncovers three main patterns: (1) state-controlled primary school systems emerged about a century before countries transitioned to democracy; (2) across all regions, a majority of children were enrolled in primary schools well before democratization; and (3) democratization had, at best, a marginal impact on primary school enrollment rates, and did not play a meaningful role in the global expansion of access to primary education. In most countries, transitions to democracy did not lead to increased primary education provision because, by the time democratic institutions emerged, a majority of the population already had access to primary schooling.

A question for further research is whether these conclusions hold when other measures of the size of education systems are employed as dependent variables, particularly education spending data. Analyses using data from Stasavage (2005a) show that, once country and year fixed effects are accounted for, the conclusion that electoral competition leads to increases in primary education spending no longer holds. However, further data collection efforts are needed to cover more countries and years. Additionally, in line with past studies, the paper does not examine whether democratization leads to an improvement in the quality of education. Assessing the impact of democracy on educational quality will require extensive data collection efforts, and the identification and validation of appropriate historical measures of quality, since comparable test score data for a reasonable number of countries are only available from the mid-1990s on. That democracies promote higher levels of human capital is not at all obvious; current and former communist countries perform exceptionally well in international standardized tests of math, science and reading. Embarking on data

collection efforts to examine this question is important, because educational quality is a better predictor of economic development than the quantity of education provided by governments (Hanushek & Woessmann 2015).

The evidence presented here has implications for several literatures. It suggests the need to be cautious, and healthily skeptical, when school enrollment rates or other measures of the quantity of education provided by governments are used to gauge the level of human capital. This is common practice in the political economy of development literature, in a large literature on the determinants of public goods provision, and in empirical tests of modernization theory. However, as discussed in the theory section, the quantity and quality of education need not go hand in hand; and elites may structure the provision of schooling and invest in expanding basic education not to empower the poor but to maintain their own political and economic power. Exploring this possibility is an important path for future research.

The most direct contribution of this paper is to existing theories of the determinants of education provision. Past research emphasizes the role of democratization in driving the expansion of primary schooling, and recent calls to place education at the center of attention in comparative politics take for granted the notion that democracy has played a key role in triggering educational expansion (Busemeyer and Trampusch 2011; Gift and Wibbels 2014; Hoffman 2015; Moe and Wiborg 2016). The first step in developing a research agenda on the comparative politics of education should be to identify what are the main patterns that need to be explained. The evidence presented here suggests that our understanding of the political determinants of education provision would benefit from redirecting research efforts away from an emphasis on the relationship between democracy and education. The crucial puzzle we need to understand is why autocratic regimes made such impressive efforts to provide primary education to a majority of children. To what extent was the expansion of primary schooling an effort to promote economic growth and increase autocrats' future rents, vs. an effort to "school" the masses

so they would learn to respect authority? How did the goals that autocrats have in mind when designing primary education systems translate into specific curriculum policies, teacher training and recruitment policies, and other policies that affect what students learn in school? Finally, to what extent do the autocratic roots of primary school systems, and the education policies established by those systems, continue to influence education systems today, even after the spread of democracy? These are central questions that the growing literature on the comparative politics of education should address.

Finally, the paper speaks to the question of whether democracies are pro-poor or not. The analysis suggests that democracies are responsive to what a majority of the population wants or needs, often at the detriment of the poorest in society. When a majority of children have access to primary education, governments invest in expanding access to secondary schooling, and do not expand primary education even if a sizable portion of the poor lacks access to it. That is, democracy is not pro-poor but pro-majority.

References [need to revise/ complete based on citations in main text]

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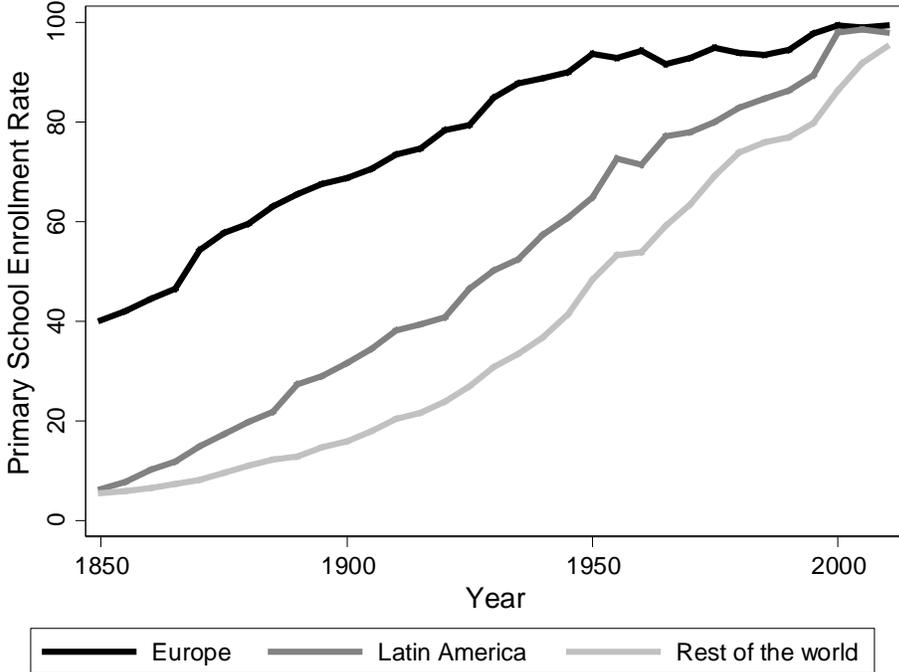
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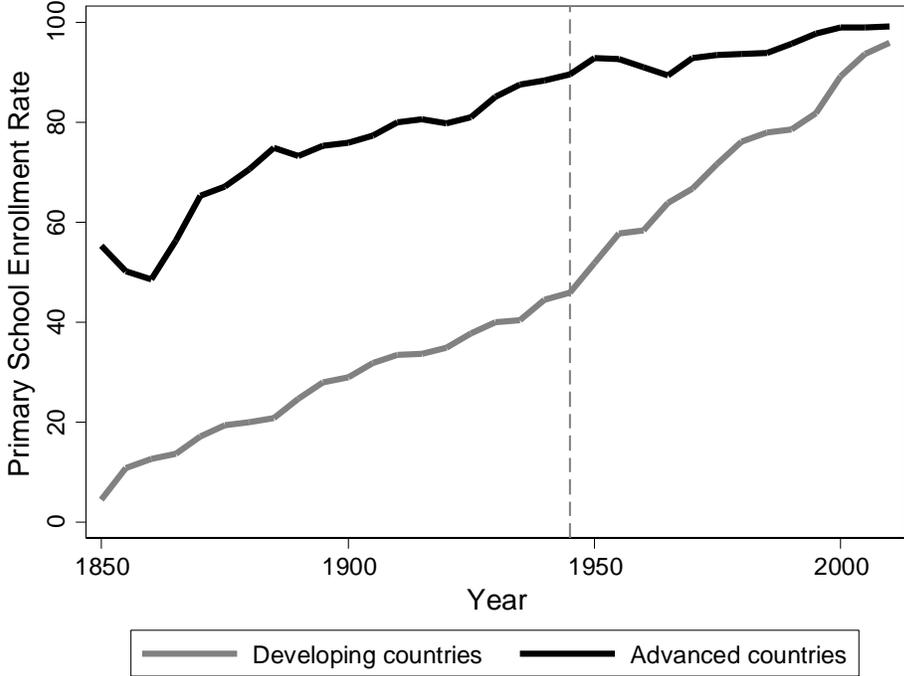
Online Supplementary Materials

Figure A1. Average primary school enrollment rate in Europe, Latin America, and the rest of the world, 1850-2010



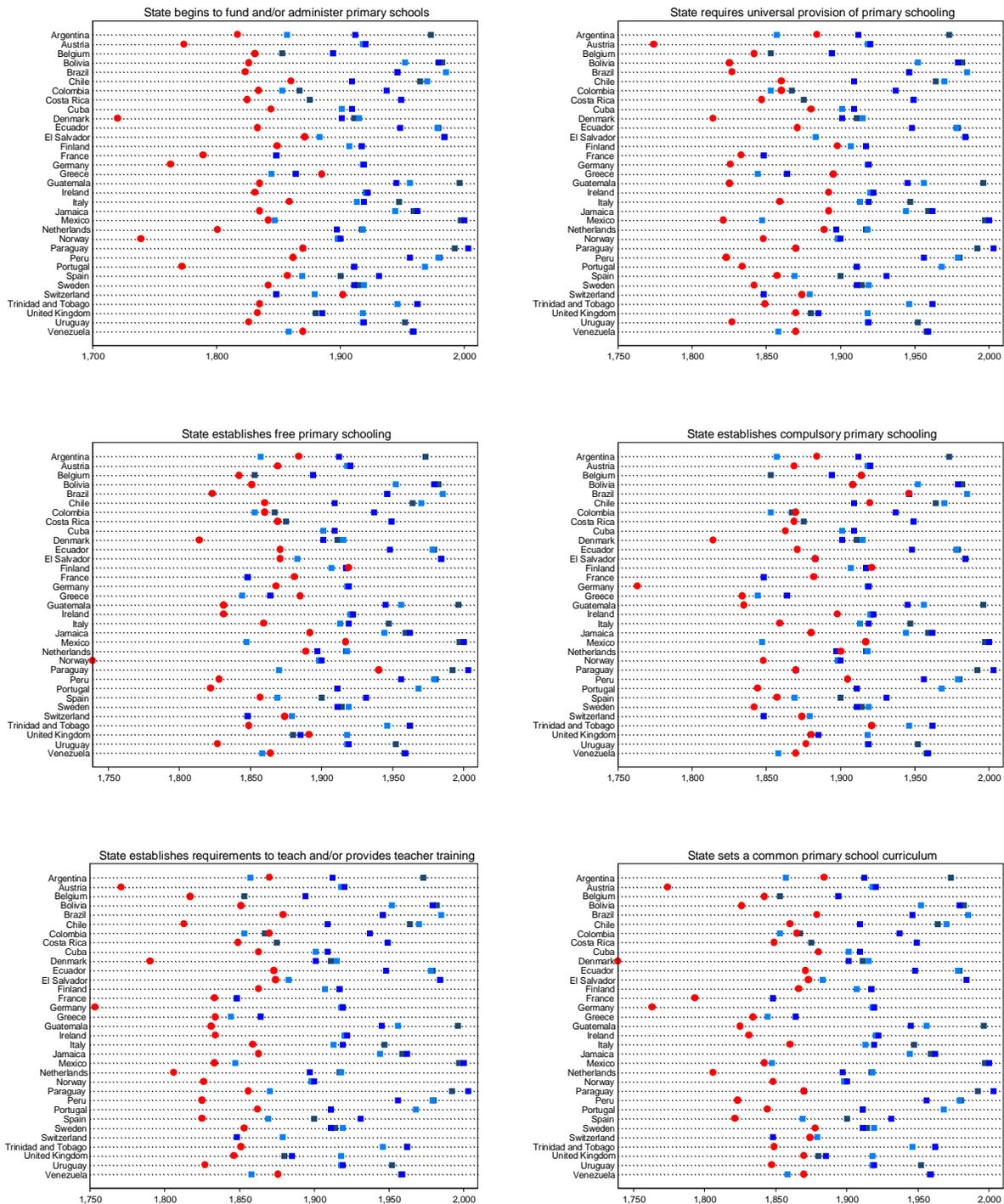
SOURCE: Author based on data from Lee & Lee (2016).

Figure A2. Average primary school enrollment rate in developing and OECD countries, before and after 1945



SOURCE: Author based on data from Lee & Lee (2016).

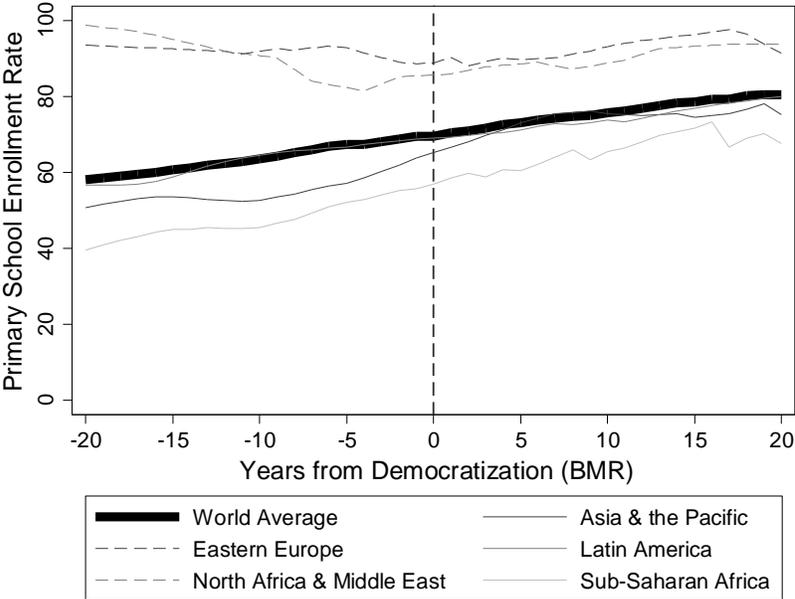
Figure A3. Timing of Different Types of State Intervention in Primary Education vs. Timing of Democratization



NOTE & SOURCES: Red dots indicate the first year in which the state intervened in primary education in the specific way indicated by the graph title (source: author; see Online Data Appendix); light blue squares indicate the timing of universal male suffrage (source: PIPE Dataset); dark blue and navy blue squares indicate the timing of the first transition to democracy (sources: Boix-Miller-Rosato and Polity Project, respectively)

Figure A4. Primary School Enrollment Rate Before and After Democratization, World and Regionals Means, 1820-2010 – Additional measures of democracy

Panel A: independent variable is democracy as measured by BMR



Panel B: independent variable is universal male suffrage as measured by PIPE

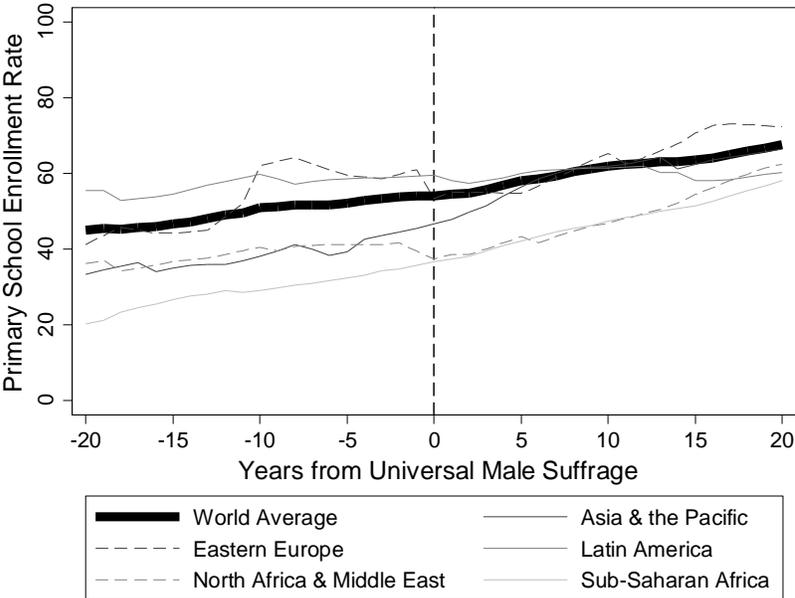
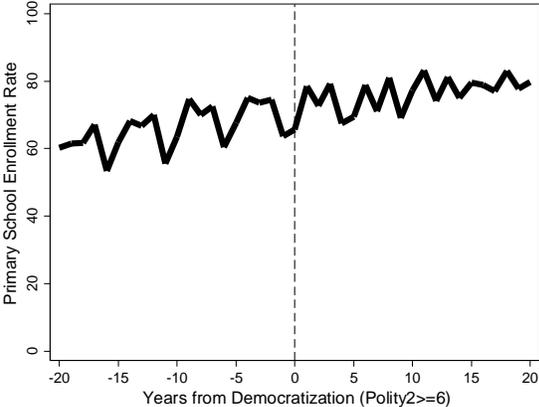
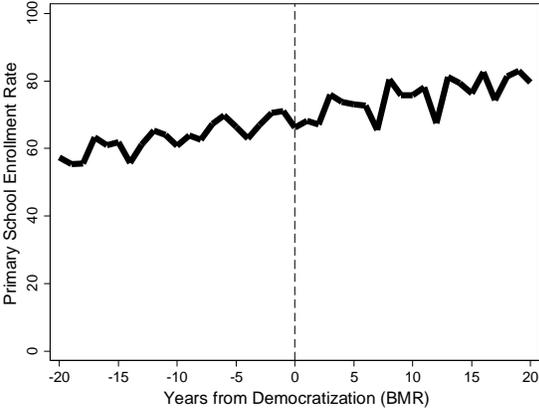


Figure A5. Primary School Enrollment Rate Before and After Democratization, World and Regionals Means, 1820-2010 – Non-interpolated (i.e. quinquennial) data

Panel A: independent variable is binary measure of democracy (polity2 between 6 & 10)



Panel B: independent variable is democracy as measured by BMR



Panel C: independent variable is universal male suffrage as measured by PIPE

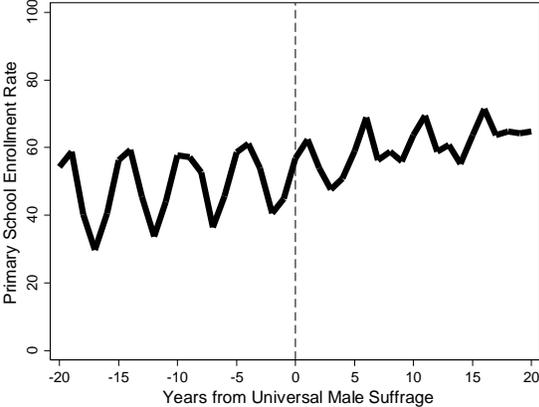
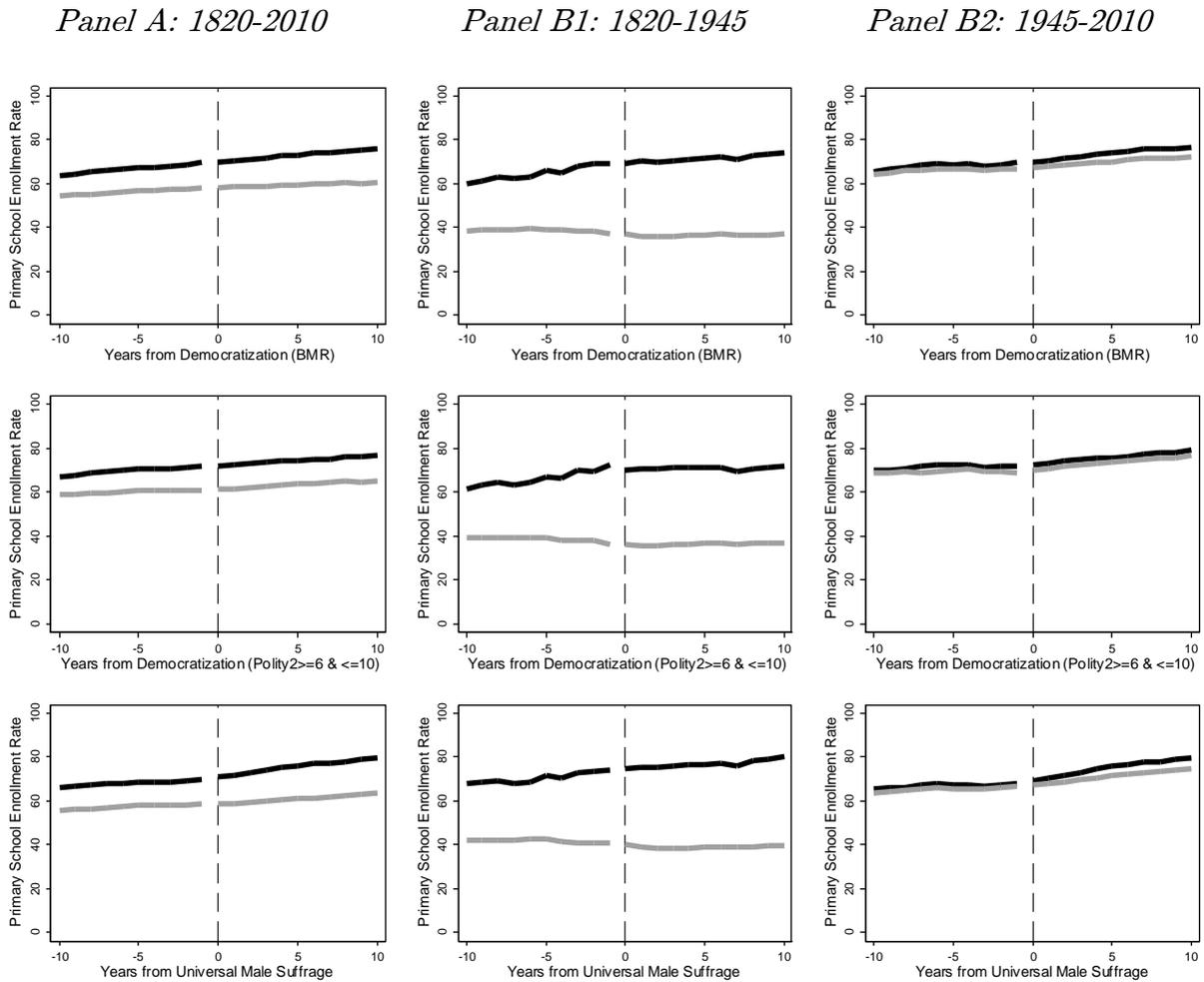


Figure A6. Average Primary School Enrollment Rates Before and After Democratization, Treated and Control Group



NOTE: Average country-level primary school enrollment rates before and after: democratization as defined by BMR (row 1); democratization as defined by Polity IV (row 2); and introduction of universal male suffrage laws (row 3).

SOURCE: Author for primary school enrollment rates; Przeworski et.al. (2013) and Boix, Miller and Rosato (2012) for political voice as measured in Panels A and B, respectively.

Table A1. Methodological characteristics of past peer-reviewed publications

Peer-reviewed publication*	Internal validity		External validity	
	Country fixed effects?	Year fixed effects?	Global geographic coverage?	Pre-1960 data?
Lott (1999, <i>JPE</i>)	Yes	Yes	Yes	No
Brown (1999, <i>PRQ</i>)	No	No	Yes	No
Brown & Hunter (1999, <i>APSR</i>)	Yes (fn. 24)	No	No (Latin America only)	No
Mariscal & Sokoloff (2000, <i>Hoover Institution Press</i>)	No	No	No (the Americas only)	Yes
Lake & Baum (2001, <i>CPS</i>)	Yes	No	Yes	No
Lindert (2002, <i>JEH</i>)	No	No	No	Yes
Baum & Lake (2003, <i>AJPS</i>)	Yes	No	Yes	No
Lindert (2004, Cambridge University Press)	Yes	Yes	No (OECD only)	Yes
Brown & Hunter (2004, <i>CPS</i>)	Yes	No	No (Latin America only)	No
Avelino, Brown & Hunter (2004, <i>AJPS</i>)	Yes	Yes	No (Latin America only)	No
Stasavage (2005a, <i>AJPS</i>)	Yes	No	No (Africa only)	No
Ansell (2008, <i>IO</i>)	Yes	No	Yes	No
Ansell (2010, Cambridge University Press)	Yes	No	Yes	No
Kosack (2013, <i>BJPS</i>)	Yes (implicitly)	No	No (Brazil, Ghana, and Taiwan only)	Yes
Harding & Stasavage (2014, <i>JoP</i>)	Yes	No	No (Africa only)	No

*Peer-reviewed publications that include school enrollment rates and/or education expenditures among the dependent variables. *AJPS*=*American Journal of Political Science*; *APSR*=*American Political Science Review*; *BJPS*=*British Journal of Political Science*; *CPS*=*Comparative Political Studies*; *IO*=*International Organization*; *JEH*=*Journal of Economic History*; *JoP*=*Journal of Politics*; *PRQ*=*Political Research Quarterly*; *JPE*=*Journal of Political Economy*

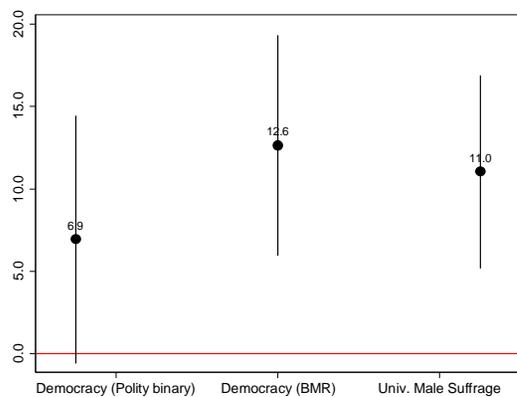
Table A2. Effect of changes in regime type using a continuous independent variable

		DV: Primary School Enrollment Rate				
		1820-2010	1820-1945		1945-2010	1970-2010
		Lee & Lee enrollment data	Lee & Lee enrollment data	Original enrollment data	Lee & Lee enrollment data	Lee & Lee enrollment data
Wit country fixed effects only						
<i>polity2</i>		1.61 ***	0.80 **	0.18	0.84 ***	0.84 ***
		(0.2059)	(0.3243)	(0.1902)	(0.1937)	(0.1765)
With country and year fixed effects						
<i>polity2</i>		0.00	0.15	-0.26	-0.03	0.11
		(0.1754)	(0.2656)	(0.1642)	(0.1500)	(0.1581)

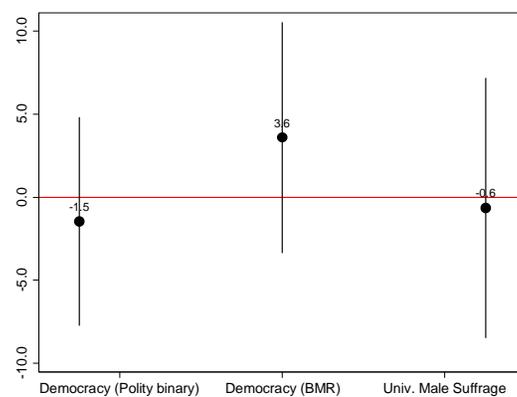
NOTE & SOURCES: Estimated effect of democracy as measured by *polity2* scores, which range from -10 to 10. Polity2 scores are from the Polity Project. Scores between 6 and 10 denote that a country is democratic; between -10 and -6, autocratic, and between -5 and 5, a hybrid or anocracy.

Figure A7. Democracy's impact on primary school enrollment rates in 1820-1945 – Using an original historical dataset of primary school enrollment rates in Europe and Latin America

Country FE only



Country & Year FE



ITS estimates

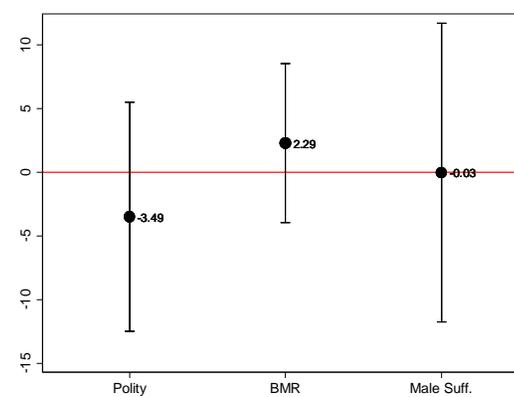


Figure A8. Effect of multiparty elections on public spending on primary education in Africa, 1980-1996 – Using spending data from Stasavage (2005a)

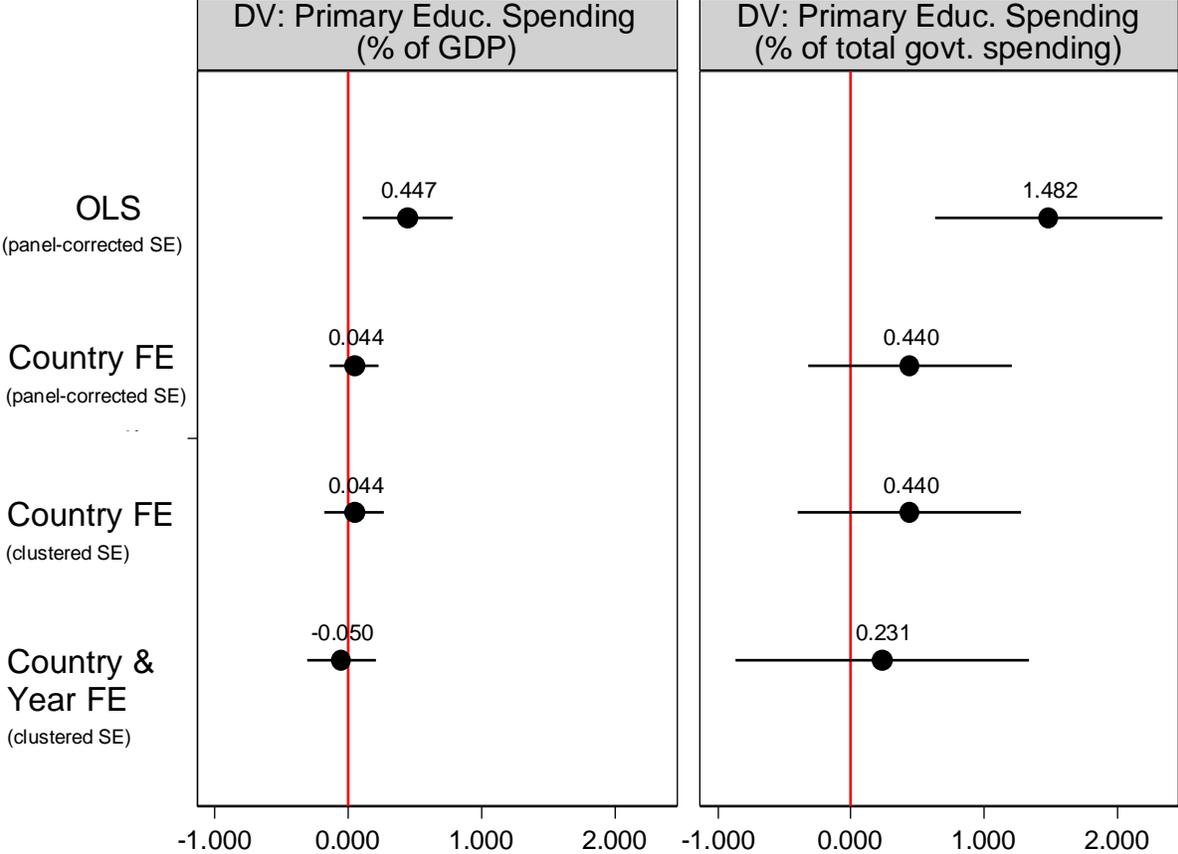


Figure A9. Effect of Democratization on Primary School Enrollment Rates, 1945-2010 – By Region – Visual evidence of primary school enrollment rates in treated (**black**) and control (**grey**) groups suggests democracy had a positive effect only in Asia. In all other regions—including Sub-Saharan Africa—the rapid expansion of primary schooling in recent decades cannot be attributed to the move towards democracy—and for Latin America, visual evidence suggests that democracy had a negative impact on enrollment.

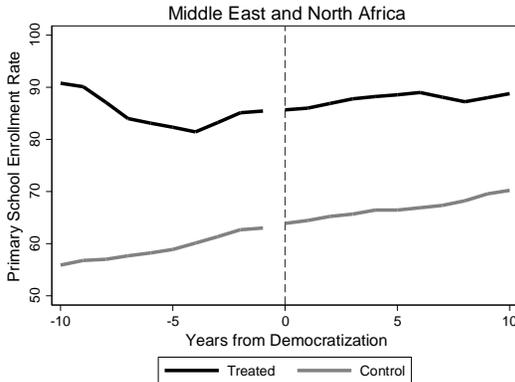
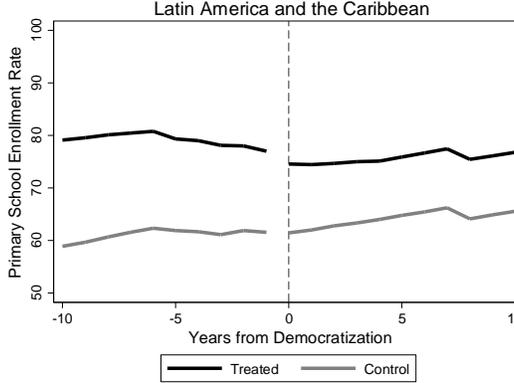
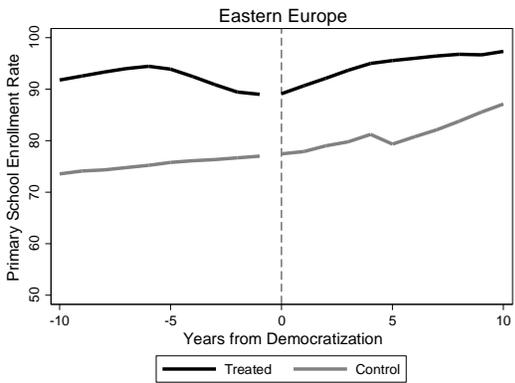
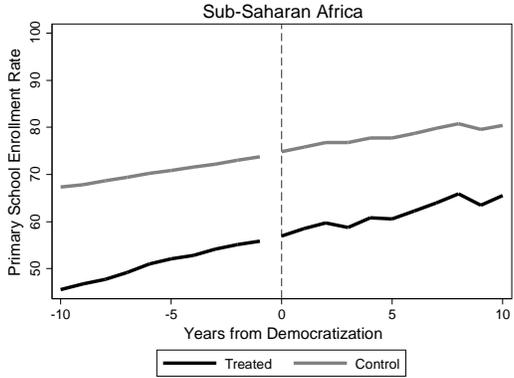
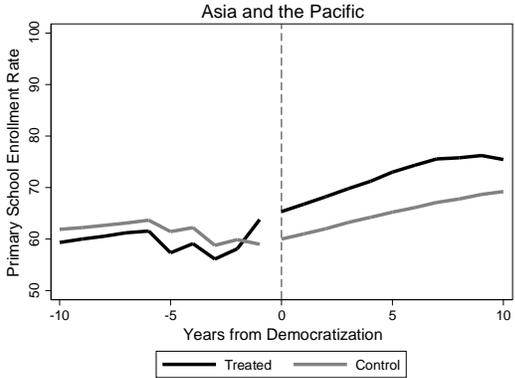


Table A3. Effect of Democratization on Primary School Enrollment Rates, 1945-2010 – By Region – A linear difference-in-differences model that allows for heterogeneous treatment effects of democracy by region suggests that the difference between Asia and other regions is not statistically significant (Panel B)

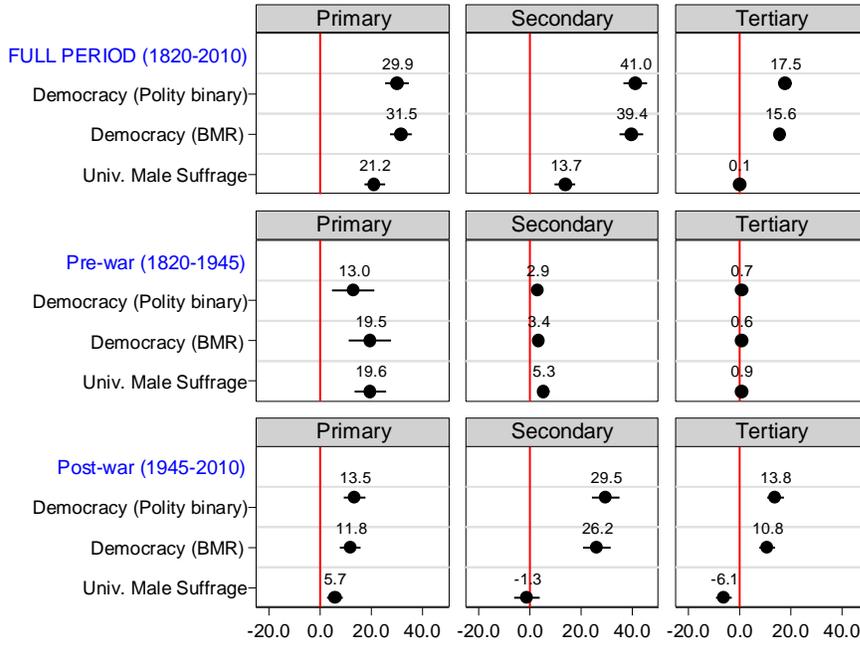
	<i>Panel A</i>		<i>Panel B</i>	
<i>Democracy</i>	3.67		2.56	
	(2.8061)		(3.0681)	
<i>Democracy x Asia</i>			6.10	
			(7.6800)	
Constant	71.63	**	72.82	**
	(2.6761)		(2.8966)	
No. of clusters	109		109	
Country fixed effects	Yes		Yes	
Year fixed effects	Yes		Yes	

NOTES: Panel A shows results of a linear difference-in-differences model with country and year fixed effects: $Y_{i,t} = \gamma_i + \phi_t + \beta_1 Democracy_{i,t} + \epsilon_{i,t}$. $Democracy_{i,t}$ takes a value of 1 for treated countries in the post-treatment period; and a value of 0 otherwise. Panel B shows results of a linear difference-in-differences model that allows for heterogeneous treatment effects of democracy for Asian and non-Asian countries: $Y_{i,t} = \gamma_i + \phi_t + \beta_1 Democracy_{i,t} + \beta_2 Democracy_{i,t} x Asia_i + \epsilon_{i,t}$. $Asia_i$ takes a value of 1 if country i is in Asia, and a value of 0 otherwise. Standards errors clustered at the country level in parenthesis. Enrollment rates are the number of students enrolled in primary education as a percentage of the school-age population. Stars denote statistical significance at the *0.05 and **0.001 level.

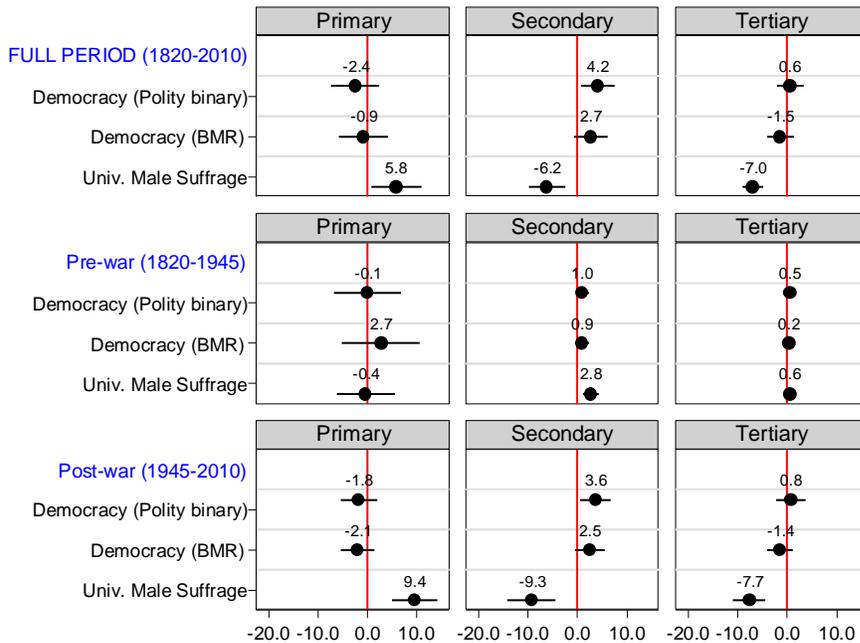
SOURCE: Lee and Lee (2016) for primary school enrollment rates; BMR for timing of democratization.

Figure A10. Estimated effect of democratization on primary, secondary and tertiary education enrollment rates

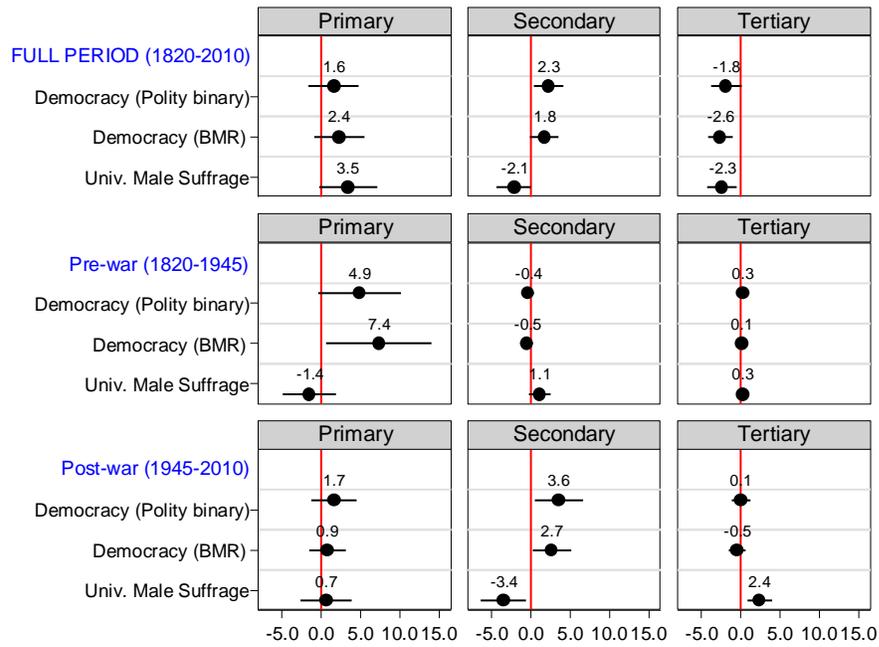
Panel A: Country fixed effects, no year fixed effects



Panel B: Country and year fixed effects



Panel C: Country and year fixed effects, and country-specific linear time trends



Online Data Appendix

[paste here]