Destined for Democracy? Labour Markets and Political Change in Colonial British America

ELENA NIKOLOVA*

In this article a new explanation for the emergence of democratic institutions is proposed: elites may extend the right to vote to the masses in order to attract migrant workers. It is argued that representative assemblies serve as a commitment device for any promises made to labourers by those in power, and the argument is tested on a new political and economic dataset from the thirteen British American colonies. The results suggest that colonies that relied on white migrant labour, rather than slaves, had better representative institutions. These findings are not driven by alternative factors identified in the literature, such as inequality or initial conditions, and survive a battery of validity checks.

What explains the emergence and persistence of democratic institutions? Recent research shows that there are many possible answers to this question. Scholars have linked the probability of democratic transition and consolidation to economic development;1 historical path dependence and revolution;2 social learning;3 and financial openness.4 Some have argued that societies with a highly unequal income distribution – which in turn may be driven by differences in initial factor endowments – are less likely to be democratic, as the rich may prefer an authoritarian regime due to redistribution pressures from a low-income median voter.5 Democratic institutions will thus emerge and be sustained in instances of relatively low inequality, as the redistribution from rich to poor is minimal.

This article studies one particular political institution – voting rights – to propose an altogether different reason behind political liberalization: elites may use the franchise as a tool to attract migrant labour. Focusing on the political evolution of the thirteen British American colonies from the early seventeenth century until the American Revolution, I show that those colonies which relied on white immigrant workers, rather than slaves, had a more liberal franchise. For example, the Northern colonies had both a more liberal suffrage and a higher proportion of white settlers, while, in the eighteenth century, the Southern colonies combined a restrictive franchise with a large slave population.6 These institutional differences are hardly

* European Bank for Reconstruction and Development, London (email: nikolove@ebrd.com). The author is deeply grateful to Carles Boix, Grigore Pop-Eleches and Jeff Hammer for many discussions, advice and encouragement. She also thanks the Editor (René Lindstädt), three referees and Alicia Adsera, Toke Aidt, Shekhar Aiyar, Ralph De Haas, Stanley Engerman, Ruben Enikolopov, Christina Gathmann, Simon Hess, Kosuke Imai, Marina Kaloumenou, Ilyana Kuziemko, Nolan McCarty, Maria Petrova, Jessica Trounstine, Andrea Vindigni, Joachim Voth, and participants at several seminars and conferences. The views expressed in this article are those of the author only and not necessarily of the EBRD. Data replication sets are available at http://dx.doi.org/doi: 10.1017/S0007123415000101. Online appendices are available at http://dx.doi.org/doi: 10.1017/S0007123415000101.

1 Boix 2011; Lipset 1959.
2 Acemoglu and Robinson 2006; Przeworski 2009.
3 Gleditsch and Ward 2006.
4 Freeman and Quinn 2012.
5 Boix 2003; Engerman and Sokoloff 2000; Engerman and Sokoloff 2002; Engerman and Sokoloff 2005.
6 The South includes Maryland, Virginia, South Carolina and North Carolina, while the North includes Massachusetts, Rhode Island, Connecticut, New Hampshire, New York, New Jersey, Pennsylvania and Delaware.
surprising and have been documented by others. In the North, the staple crop (wheat) could be grown efficiently on small family farms, which may have contributed to a more egalitarian income distribution and, therefore, better political institutions. Alternatively, it is possible that the temperate Northern climate appealed to entire white migrant families, which may have sought to replicate British political institutions, emphasizing private property and controls on government power.

Although such theories are important, they fall short of explaining a different puzzle which emerges from the data analysed in this article. This puzzle lies in the observation that, despite the hot climate which harboured disease and was suitable for growing labour-intensive cash crops (such as tobacco and rice), the Southern colonies actually had a more inclusive suffrage than the North throughout the seventeenth century. During this period, African slaves were not generally available, so Southern landowners recruited European labour through the system of indentured servitude, under which migrants ‘tied’ themselves to a colonial landowner for several years in exchange for a loan covering transport costs from Europe. I argue that Southern elites initially allowed nearly all adult males to vote in order to attract immigrant workers. A liberal suffrage was highly desirable for such migrants, since assemblies in which they were adequately represented guaranteed fair enforcement of indenture contracts. As in the North, representative institutions also prevented the expropriation of land titles and private property of landowners and newly freed servants.

However, the arrival of slavery in the Southern colonies in the late seventeenth and early eighteenth centuries prompted planters to substitute white labourers with cheaper and easily available slaves. Political concessions to white workers were no longer warranted, so Southern elites immediately tightened the suffrage. In contrast, the Northern franchise remained liberal and largely unchanged throughout the colonial period. Black labourers were only of marginal importance, as agricultural work was done on small family farms without the need for much additional labour.

To test the hypothesis about labour market structure as a determinant of the colonial suffrage, I assemble an original dataset covering the thirteen British American colonies from the early seventeenth century to the American Revolution. In order to capture the quality of political institutions, I create an index that aggregates, for each colony-year observation, the presence of various restrictions on the franchise, such as those related to income, land ownership or religion. I measure labour market composition by tracing the spread of slavery via data on each colony’s share of the black population. I use the percentage of a colony’s white landless population to estimate inequality, where a higher percentage of landless people implies higher inequality. In addition, I control for a rich set of additional variables, ranging from urbanization and population density to colonial settlement patterns.

I use four complementary approaches to show that in the thirteen British American colonies, differences in labour markets had a causal impact on the quality of political institutions. First, I construct a new instrument for the extent of slavery, based on each colony’s propensity to produce one of the two labour-intensive crops (tobacco or rice), interacted with the price of these crops. The idea behind this instrument is that when the prices for labour-intensive crops increased, landowners would seek to acquire additional labour, turning to slaves if white labourers were not sufficient or too expensive. Secondly, I use the prices of slaves in the

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7 Engerman and Sokoloff 2000; Engerman and Sokoloff 2002; Engerman and Sokoloff 2005.
9 For more on how political institutions can serve as a commitment device for self-interested elites, see Acemoglu and Robinson (2006), Congleton (2010), North and Weingast (1989) and Olson (2000).
Caribbean – the largest slave market throughout the colonial period, which set prices for the rest of the New World – as an alternative proxy for the prevalence of black workers in the Southern colonies. Thirdly, I control for time-invariant colony characteristics, such as geographical or climate differences, which may affect both labour markets and the suffrage, by including colony fixed effects. Finally, in the online appendix, I supplement the econometric results with a detailed historical discussion of the link between labour markets and the franchise in the colonies, which also includes (fragmentary) migration data.¹⁰

This article offers several contributions to the literature. By linking the composition of human capital and representative institutions, I not only enrich the inequality–democracy theories developed in previous work, but also suggest a mechanism through which slavery could affect economic and political outcomes over the long term.¹¹ Moreover, I break away from the cross-country regression approach on which other similar studies rely and which has been criticized on account of problems of data inconsistency, unit heterogeneity and endogeneity.¹² The main advantage of my research design stems from my ability to trace the political and economic development of the thirteen colonies from their very settlement until 150 years later. In addition, I observe substantial variation in colonial political institutions as, from the very beginning, each colony was given complete freedom to shape – as well as alter – its representative institutions without any interference from England.

The idea that political institutions, by serving as a commitment device, can credibly constrain the power of elites has been developed in several earlier studies, including for the cases of the North American colonies and states and ancient Greece.¹³ My findings also resonate with those of a small but growing literature which demonstrates that one reason why the American states with a smaller female population enfranchised women earlier was to attract them as settlers.¹⁴ A separate strand of research has also linked the quality of institutions to migration. Bertocchi and Strozzi as well as Engerman and Sokoloff argue that electoral institutions mattered for attracting European migrants to the New World in the nineteenth century.¹⁵ Fleck and Hanssen find a correlation between government quality and the opportunities for population exit in cross-country data.¹⁶

This article enhances such work in at least three important ways. First, my theory applies the institutional commitment mechanism to a new problem: how to prevent self-interested elites from reneging on migration inducements once costly migration has taken place. Secondly, unlike previous work, my argument considers the joint impact of labour market structure and income inequality on representative institutions. Thirdly, a major strength of the article lies in the use of a unique dataset and research setup which makes identification concerns in the empirical analysis less pressing, something which is generally difficult to achieve with similar historical data.

The remainder of the article is organized as follows. The next section outlines the theoretical argument, while the following section discusses the data. The next two sections present the empirical set up and the results, respectively. A section focusing on validity threats follows, and the last section concludes.

¹⁰ See first footnote for address of online appendices.
¹¹ See Acemoglu, García-Jimeno and Robinson 2012. For recent work challenging the link between inequality and democracy, see Ansell and Samuels (2010), Haggard and Kaufman (2012) and Houle (2009).
¹² Atkinson and Brandolini 2001; Pande and Udry 2005.
¹³ Congleton 2011; Fleck and Hanssen 2006; Fleck and Hanssen 2009.
¹⁵ Bertocchi and Strozzi 2008; Engerman and Sokoloff 2005.
¹⁶ Fleck and Hanssen 2013.
THEORETICAL ARGUMENT

Colonial Labour Market Patterns

The primary goal of American settlement was to remedy the twin problems of scarcity of land and abundance of labour facing England in the seventeenth century. While some colonies were governed directly by the Crown, it was more common for either one or several wealthy Englishmen to gain ownership of a colony, which gave them substantial control over political and economic affairs. Migrant labour was essential for the production of high-profit crops such as tobacco, rice and wheat, which were then exported to Europe. As a result, the successful development of each colony – and the wealth of its proprietors – depended on attracting English migrants.

Despite the importance of immigration, attracting settlers to the colonies was not easy. Even the poorest labourers had alternatives to moving overseas, such as going to a different part of the countryside, to London or to Ireland. Moreover, the journey across the Atlantic was long, dangerous and expensive, with its price exceeding half a year’s income for a typical English emigrant. What is more, information about the difficulties of colonial life travelled relatively easily from the colonies to the mainland, as highly literate colonists wrote often, and even the illiterate could hire someone to write for them.

Colonial elites adopted different strategies for populating the colonies. In the North, the temperate climate encouraged a steady inflow of migrant families. Settlers were given small plots of land, which they used to cultivate wheat without the need for additional labour. In contrast, the hot climate and prevalence of disease in the South, along with an agriculture centred around the production of labour-intensive crops (such as tobacco and rice), made it a less attractive area for migrants.

While some slaves found their way to the colonies in the seventeenth century, transported by Dutch privateers or large planters who had migrated from the West Indies, the supply of black labour was generally limited by the high demand for slaves in the Caribbean, as well as by the tight regulation of the slave trade by the English government. Southern elites, therefore, recruited European labour mainly through the system of indentured servitude, under which migrants ‘tied’ themselves to a landowner for several years in exchange for a loan covering transport costs. Master–servant relations were regulated through contracts, which stipulated the length and conditions of the indenture, wages and any dues, such as land, payable once the servant was free. Given that the end-of-contract payments were substantial – sometimes comprising up to 66 per cent of a contract’s price, servants were often able to set up their own farms once their indentures were over. As a result, the supply of free white labour in the South was largely inelastic, except at very high wage levels. Recruiting workers from other colonies was also costly not only because planter settlements were separated by thick forests, but also because Southern roads, which were built to accommodate the transport of export crops from plantations to the coast, were of very low quality.

17 Purvis 1999.
18 The majority of English settlers went to the colonies because of the availability of economic opportunities. However, some migrants (such as the Quakers who established Pennsylvania) left England because of religious persecution.
20 Rosenbloom 2010.
22 Grubb 2000; Wertenbaker 1922.
Although the indenture system worked well for most of the seventeenth century, the supply of English servants plummeted towards the end of that period as economic conditions in the mother country improved. At the same time, the availability of African slaves rapidly increased at the beginning of the eighteenth century, driven by the rising English share in the slave trade and the low profitability of West Indies sugar production. While slavery had a limited impact on Northern labour markets as family farms continued to dominate production, in the South it prompted the relatively quick substitution of indentured servants with slaves. As Table A2 shows, in the early eighteenth century, blacks comprised nearly two-thirds of the population of South Carolina, and nearly one-third of that in Virginia. Even though Southern planters initially preferred white workers, by 1710 they had learned that slaves were just as productive, and ‘sought them avidly every time a slave ship arrived’. In fact, landowners used slaves not only for agricultural tasks, but also trained blacks for more highly skilled occupations, such as builders and craftsmen.

The Link between Labour Markets and the Suffrage

This subsection argues that one factor which explains why some colonies opted for a liberal franchise was the degree to which their labour markets depended on white migrant workers. When white workers were difficult to obtain – as in the South prior to the arrival of slavery – colonial governments granted the franchise to virtually all males, in order to attract settlers. In those colonies where white labour was easier to attract – such as in the Northern colonies – additional suffrage regulations, such as the requirement of owning land or property, were introduced. The most restrictive regimes, which required voters to satisfy a combination of requirements, including landholding, property, taxpaying and residency, were adopted in the South once slaves replaced white indentured servants in the late seventeenth and early eighteenth centuries.

Why was a liberal suffrage important for English migrants? Although all colonies were under English rule, representative assemblies, established soon after settlement, enjoyed significant prerogatives including complete control over law making and colonial finances. Therefore, political institutions in which labourers were adequately represented ensured that rules, regulations and policies that were relevant for them could not easily be changed by those in power. In particular, building on seminal work, I argue that representative assemblies served as a commitment device for any promises made to migrants by ruling elites.

In the North, wheat growing took place on small family farms, so an inclusive suffrage guaranteed not only that new settlers obtained the amount of land promised to them by

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25 See online appendix.
26 Kulikoff 1986, 41.
27 In all colonies, some sort of Native American slavery or servitude existed throughout the colonial period. However, Native American labourers never became as popular as blacks (or as indentured servants) for several reasons. First, four colonies (Virginia, South Carolina, Rhode Island and New York), declared Indian enslavement illegal. Secondly, Native Americans were highly susceptible to disease, making them less suited for rice and tobacco production than blacks. Other reasons included the decline of Indian tribes, driven by disease and fighting with the whites; the migration of Indian populations westward; as well as the better knowledge of the surrounding areas which made escape easier for Indians than for blacks. Moreover, Indians were perceived to have ‘irregular work habits’, as well as to be more likely to engage in savage acts if provoked (see Ward (1991), pp. 122–3).
28 Most American states did not allow women to vote until the Nineteenth Amendment which came into force in 1920.
29 Acemoglu and Robinson 2006; Congleton 2010; North and Weingast 1989.
proprietors before arrival, but also that their land, property or profits could not be taken away once they had settled. In the South, the protection of property rights was relevant for those few settlers who had set up their own farms. More importantly, representative institutions had an additional purpose, namely to aid the enforcement of labour contracts on which the indenture system was based. In order to undertake the long and arduous trip across the Atlantic, potential servants needed a guarantee that land owners would not alter contract terms or expropriate their wages once they arrived in the colonies, or once their contracts were over. Since masters often refused to comply with the terms agreed in the contract, colonial assemblies played an active role in devising laws regulating servant–master relations.

Of course, political institutions are only one of the ways credibly to constrain the power of elites. The rule of law – such as an impartial and independent court system – can be used effectively both to resolve contracting disputes, and to force governments to respect private property.\(^{30}\) The development of colonial courts, however, tended to lag behind that of political institutions.\(^{31}\) While courts existed in some colonies, judges were seldom impartial as they were appointed by large proprietors. Court independence was also a problem, as judges and assemblymen often ruled on disputes in which they themselves were involved.\(^{32}\)

*The Role of Inequality*

Building on the idea that representative assemblies force elites to commit credibly to promises made to migrant workers, the previous subsection has developed an argument linking the composition of labour markets and the extent of the colonial franchise. At the same time, the theory presented here also enriches existing inequality–democracy models. According to Boix, elites are more likely to implement an autocratic system when inequality increases, due to redistribution threats from a low-income median voter.\(^{33}\) In contrast, Acemoglu and Robinson argue that the inequality–democracy relationship follows an inverted U-shape.\(^{34}\) In their story, the negative effect of inequality on democracy working through redistribution is mitigated by the higher likelihood of democratic revolution when inequality is high. Since democratization occurs as a commitment to future redistribution, the stronger the threat of revolution, the more likely elites will be to cede democracy.

While I examine the independent role of revolutionary threats in the penultimate section of this article, it is possible that inequality, through its effect on redistribution, exerts an effect on the franchise that is independent from that of labour markets. A first question to ask is to what extent redistributive transfers mattered in the thirteen colonies. Although an advanced system of taxation and redistribution did not emerge until after the American Revolution, several percentage points of the average colonist’s income went to pay taxes.\(^{35}\) Colonial governments used these proceeds to finance in-kind redistribution (rather than pure monetary transfers), such as poor relief, as well as the building of roads, bridges and schools.\(^{36}\) The extent to which the labour market structure affects the relationship between inequality and the suffrage depends on the trade-off between the redistributive costs of a particular franchise regime and its benefits in

\(^{30}\) Congleton 2010.
\(^{31}\) Surrency 1967.
\(^{32}\) Morgan 1975.
\(^{33}\) Boix 2003.
\(^{34}\) Acemoglu and Robinson 2006.
\(^{35}\) See Rabushka (2002). In fact, several colonies, including Massachusetts and South Carolina, had well-developed tax systems.
\(^{36}\) Einhorn 2008; Rabushka 2002.
securing migrant labour. On one hand, liberal representative institutions under high inequality are particularly costly for elites, due to the losses associated with relinquishing assembly control to the poor, such as higher levels of redistribution. On the other hand, an inclusive suffrage may also attract white workers, and thus increase elite incomes when labour is difficult to obtain. Although redistribution in the thirteen colonies was non-negligible, labour market issues were of even greater importance, as the survival and progress of each colony depended on attracting a sufficient number of workers. Therefore, I expect that even though inequality may still have a negative effect on the extent of the franchise, labour markets will be the primary determinant of political institutions.

One concern about this theoretical model is the potential relationship between labour markets and inequality. For instance, the spread of slavery in the South in the early eighteenth century not only decreased the importance of white workers, but also may have led to the establishment of large plantations. This could have exacerbated the income differences between large land owners and the rest of the population, leading to a deterioration in the suffrage in the Southern colonies. However, the historical evidence shows that such a scenario is not entirely convincing, as slavery did not lead to a dramatic shift in the Southern income distribution. I investigate this concern in more detail in the penultimate section of the article.

Testable Predictions

The preceding discussion suggests that differences in labour market organization across colonies, driven by the varying importance of white workers, may have had a direct effect on the extent of the suffrage. Colonies that needed to attract white labourers opted for more democratic institutions, which served as a commitment device for promises made to migrants. However, the previous subsection has also shown the labour–franchise link is moderated by income inequality, as attracting poor labourers by extending the suffrage also imposes redistribution costs which are particularly high when incomes are unequally distributed.

This framework suggests two empirically testable hypotheses:

**HYPOTHESIS 1:** Liberal representative institutions will be observed in those colonies in which white labourers are important. The substitution of white workers with slaves will lead to a contraction of the franchise.

**HYPOTHESIS 2:** Higher inequality will have a negative effect on the colonial franchise. The impact of inequality will be lower than that of labour market structure.

DATA

*A New Dataset on Representative Institutions*

This subsection discusses the data used in the regressions to follow.

*Suffrage.* To examine trends in colonial political institutions, I have compiled a new dataset which codes, for each colony and annually from the first year of its establishment, all the different restrictions that governments placed on the suffrage. I have drawn on the extensive study of the suffrage in the thirteen colonies by McKinley, which I cross-checked against other

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37 Main 1965.
38 More detailed information on the data is available in the online appendix (Part 3).
more recent work, such as Rusk and Dinkin. Even though the general reliability of the McKinley study was also confirmed by Stanley Engerman, it is very likely that the dataset measures representative institutions with error. This should be partly mitigated by the fact that historians agree that the suffrage restrictions on the books were binding, suggesting that the franchise rules that I coded should be highly correlated with those that were actually enforced.

I have created a suffrage index to use as the dependent variable in the regression analysis below. First, I extracted a list of all the franchise regulations in force in any particular colony from 1619 to 1775, such as those relating to income, property or religion. For each colony-year observation and suffrage restriction, I created a variable that takes a value of 1 if voters needed to satisfy this particular regulation, and 0 otherwise. I have not focused on requirements for voting in local elections, as these differed very little from those for colony elections.

Suffrage restrictions were almost always introduced or removed in combination with others, so I aggregated these data into a suffrage index, and have not focused on restriction-by-restriction analysis instead. In order to do so, I needed to account for the fact that colonies that allowed voters to satisfy a choice of two or more voting requirements likely had a more liberal franchise than those which imposed one of those restrictions. For example, while from 1698 onwards, North Carolina required all voters to be freeholders, during the same period Maryland allowed electors who did not possess land to vote if they owned property worth at least 40 pounds. Therefore, I gave the freeholding restriction in North Carolina a weight of 1, while in Maryland the restrictions for (1) freeholding, and (2) income or property, each carry a weight of one quarter. As I assume that having a choice of two voting criteria is only half as restrictive as needing to satisfy one of those criteria, the sum of the two Maryland restrictions is thus one half. A similar approach is adopted when one suffrage requirement can be substituted with two or three others, yielding sums of one-third and a quarter, respectively. I added up all the different restrictions coded in this way and subtracted from this sum the maximum number of suffrage restrictions observed in the sample (6.5) to obtain the final suffrage variable used in the regressions. I gave periods without elections – for instance, when the representative assembly is appointed by the governor – a suffrage value of 0. As a result, a higher value of the suffrage index implies better political institutions.

To illustrate how my coding works, consider the case of South Carolina. From 1669 until 1691, the South Carolina suffrage index takes a value of 5.5, as the colony allowed all freemen to vote (obtained by subtracting a coding for the existence of a single restriction from the maximum number of restrictions in the sample (6.5)). Instead, in 1692, electors had to possess income or property worth ten pounds and to take an oath, so I coded the existence of restrictions for income or property, minimum income or property and oath taking, yielding a suffrage index of 3.5 (obtained by subtracting 3 from 6.5). In 1697, an additional requirement for three-month residence in the colony prior to election was introduced, which decreases the suffrage index to 2.5 (obtained by subtracting 4 from 6.5). In 1704, all previous requirements were kept, but voters were given a choice to satisfy either the ten-pound income or property requirement, or the possession of land of fifty acres. I gave a weight of one quarter for both of the latter requirements, which means that the suffrage index now takes a value of 4 (obtained by subtracting 2.5 from 6.5).

Of course, it must be acknowledged that this weighting scheme is crude. An accurate assessment of the relative importance of each restriction entails comparing, for each colony, the

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39 Dinkin 1977; McKinley 1905; Rusk 2001.
40 Dinkin 1977; Rusk 2001.
41 The complete list is available in the online appendix, Part 3.
proportion of the population that was eligible to vote under each criterion.\textsuperscript{42} In the absence of such evidence, I adopt three approaches to test the reliability of my coding. First, I experiment with several alternative operationalizations of the suffrage index, including (1) assigning equal weights to all component restrictions (which means that I do not account for any possible substitutions among restrictions); (2) assigning weights of 1/2 and 1/3 (instead of 1/4 and 1/9) to restrictions that can be substituted with one other or two other restrictions, respectively; and (3) using principal component analysis, which creates data-dependent weights.\textsuperscript{43} The correlations with these new indices are quite high (above 0.8), and the empirical results are similar. Secondly, the effect of labour markets on the suffrage also survives when I replace my original suffrage index with a binary variable instead (which takes a value of 1 if any of the following restrictions are in place: income, freeholding, the existence of minimum freeholding or property, tax, residency or religion; and 0 otherwise).\textsuperscript{44}

Thirdly, I assemble some fragmentary data on the extent of suffrage in the colonies (covering mostly the eighteenth century) and investigate its correlation with the suffrage index. Figures A2 and A3, available online, show that the relationship is positive, as expected, and ranges from 0.237 if racial restrictions are accounted for to 0.356 if they are excluded. The correlation is also positive for the period 1775–1860 and takes a value of 0.4.\textsuperscript{45} Therefore, I conclude that, while not perfect, the constructed suffrage index should be an informative measure of the quality of representative institutions in colonial British America.

\textit{Labour markets.} I hypothesized that more liberal political institutions will be observed in those colonies that depend on white labourers, implying that colonies that find it harder to attract white labour should have more democratic regimes. To evaluate this argument empirically, one should ideally compile, for each colony and over time, data on the importance of indentured servants, free white labour, family labour, and slaves, as well as estimates of the demand for and supply of each labour group.

Since such detailed information is not available, I have made use of data on the percentage of each colony’s black population.\textsuperscript{46} While this is a simple proxy based on fairly reliable data, it is an imperfect measure of the whites and blacks actually in the labour force.\textsuperscript{47} Moreover, this measure does not capture differences in white labour scarcity across colonies. To account for the latter, I controlled for the density of the white population in each colony. I also collected colony-level data on life expectancy and the sex ratio of men over women, but I do not have enough observations to include these variables in the regressions,\textsuperscript{48} so I have calculated simple correlations with the franchise index.\textsuperscript{49} While population density is generally insignificant in the regressions – possibly because it proxies for other variables, such as differences in economic

\textsuperscript{42} Przeworski 2009.
\textsuperscript{43} I perform orthogonal varimax rotation, and only keep the factor with the biggest eigenvalue, which explains 0.26 of the variance.
\textsuperscript{44} See Table A4.
\textsuperscript{45} This is based on data from Keyssar (2000) to extend the suffrage index, and Rusk (2001) for data on the extent of the suffrage. Unfortunately, the Rusk data on the extent of the suffrage cover only franchise laws related to citizenship, race, age and sex, and exclude important laws related to economic qualifications or residency.
\textsuperscript{46} Carter et al. 2006.
\textsuperscript{47} Data on slave arrivals are less precise than the share of the black population, as slave ships did not land in those Southern colonies with coastlines that were difficult to navigate, such as Maryland.
\textsuperscript{48} Scholars agree that colonies which found it difficult to attract white migrants had a high proportion of men, which made it difficult to produce a steady labour supply or to attract whole families (Purvis 1999).
\textsuperscript{49} See Figures A4 and A5 in the online appendix.
development—colonies with more men and a lower life expectancy had a more liberal suffrage, which is consistent with my theory. I supplement this measure with two additional labour market proxies. First, to capture the arrival of slavery in the South in the late seventeenth and early eighteenth century, I have created a binary variable that is 1 for the South after 1700, and 0 for all other colonies and years. The idea is that such an indicator, albeit crude, would appropriately account for all three events which increased the supply of slaves in the South around 1700: the rising English share in the slave trade; the low profitability of West Indies sugar production; and the decrease in the supply of English indentured servants. Secondly, I also collected data on the prices of slaves in the Caribbean to construct an alternative proxy for the prevalence of black workers in the Southern colonies.50 Since the Caribbean was the largest slave market throughout the colonial period, which set prices for the rest of the New World, high Caribbean slave prices should have decreased the demand for—and the number of—new slaves in the South.

Income inequality. According to the presented theory, income inequality, through its effect on redistribution, may be an important factor in determining the quality of colonial political institutions. Unfortunately, income distribution data for colonial America is not available, so I have utilized the percentage of a colony’s white landless population instead.51 The argument is that as the percentage of the population who are landless increases, so does income inequality. While this inequality proxy is clearly less precise than a more direct measure, such as a Gini coefficient, there are several reasons why it should capture at least some of the variation in the colonial income distribution. First, an extensive literature has documented a positive correlation between the unequal distribution of land and an unbalanced distribution of income.52 This was particularly true for colonial America, where land—through its use for the production of export crops—was the major source of income and wealth, both in the North and the South. Moreover, historians agree that the main class divide in the colonies was between the few large landowners (colonial proprietors and their friends) and landless labourers (indentured servants in the South, or poor whites in the North).53 The wealth of colonial elites, amassed from the very beginning through land grants and tax breaks granted by the Crown, changed little over time.

In addition, the share of the largest land-owning class (middle farmers owning between 100 and 500 acres) stayed relatively constant: for instance, in South Carolina, 60 per cent of landowners held between 100 and 500 acres.54 As a result, taking into account those marginal farmers that shifted from landlessness to owning land (and vice versa) should track closely changes in the overall income distribution.

Indeed, the share of the white landless population correlates well with other (less extensive) measures of colonial economic inequality, such as the share of taxable wealth of the top 10 per cent of the population paying the largest wealth tax (the correlation is 0.389).55 To dig deeper into the relationship between the white landless share and inequality, I looked beyond the colonial period and exploited land distribution data for the American states covering the period 1860–1920, the earliest period for which such data are available. While there is no information

50 Eltis, Lewis and Richardson 2005.
51 I have built on data from several secondary sources described in the online appendix.
52 See Boix (2003); Ramcharan (2010); Vanhanen (2002). A well-accepted inequality measure in this literature—the area of family farms as a percentage of the total area of landholdings—is quite similar to the share of the white landless population used here.
53 Jordan 2002; Risch 1937.
54 Cooper 2000, 6–7.
55 These data are from Main (1965).
on the percentage of the population with no landholdings, there is data on the number of farms under 10 acres, which should approximate, at least to some extent, owning no land (farm size in the nineteenth-century United States ranged from 41 to 468 acres, with a mean of 175 acres). The correlation between the percentage of farms under ten acres and the land Gini coefficient is 0.589, which again suggests that percentage landless should account for a significant proportion of the variation in the colonial income distribution.

Additional control variables. Differences in economic development across colonies may have an independent effect on the colonial suffrage through at least two mechanisms. Colonies that are richer may not only be better able to afford the redistributive costs of a democratic regime, but higher income per capita may also make it more likely that citizens support the rule of law and democratic elections.\(^{56}\)

To capture economic development, I have relied on data on colonial urbanization and white population density.\(^{57}\) The basic idea is that, in the absence of income per capita data, in the pre-industrial period large urban populations could thrive only in areas with high agricultural productivity and a developed transport network, and that only relatively prosperous areas could generally support dense populations.\(^{58}\) Controlling for urbanization is also important for ruling out concerns that a rising percentage of landless persons may be driven by the rise of cities and the decline of agriculture, rather than by an increase in income inequality. While this issue is less relevant for the South, which remained mostly agricultural and relatively rural throughout the colonial period, it matters for the North, where urban centres gained economic importance, particularly in the eighteenth century.\(^{59}\) As argued above, white population density may also proxy for the degree of labour scarcity of white workers. In the regressions to follow, I also control for the type of colonial settlement.\(^{60}\) While charter colonies originated when the Crown granted patents and a land grant to a corporation or trustees, in other colonies a single or several proprietors were in charge of colonial affairs. In contrast, royal colonies were governed directly by England through an appointed governor. It is possible that proprietary and charter colonies, lacking the burden of royal supervision, may have had a stronger incentive to liberalize the suffrage in order to attract migrants.

Descriptive and Graphical Evidence
Table A1 in the online appendix presents summary statistics for the evidence I collected. For each colonial region, it breaks down the data into two panels: before and after 1700, the approximate arrival of slavery in the South. The third column in each of the two time panels reports the difference in the means across the two groups of colonies. This information is supplemented by the graphical evidence in Figures 1a and 1b. Figure 1a plots, for each Southern colony and using annual data, the suffrage index (left-hand-side panel), and percentage black (right-hand-side panel). Figure 1b does the same for the colonies in the North. For ease of reading, for each year, each graph presents three data points only: the maximum value of the suffrage or percentage black variable observed across all colonies in the region (circle), the minimum value (triangle), and the value obtained using Lowess smoothing (line).

\(^{56}\) Boix 2011.
\(^{57}\) Carter et al. 2006; Purvis 1999.
\(^{58}\) Acemoglu, Johnson and Robinson 2001.
\(^{59}\) See Nash 1979.
\(^{60}\) This is from Purvis (1999).
A quick look at the data reveals several interesting patterns. First, while the black population of the South increased rapidly in the late seventeenth and early eighteenth centuries (reaching an average of 40 per cent by the 1750s), the average slave share in a typical Northern colony was less than 10 per cent during this period. Moreover, these differences in labour market structure tracked closely the evolution of political institutions in the two regions. In the seventeenth century, the franchise in the South was in fact very liberal (by around 1.3 restrictions as compared to the North). In contrast, an average Southern colony in the eighteenth century now

![Fig. 1. Evolution of suffrage and labour markets, by region](https://www.cambridge.org/core/terms). Notes: A higher value of suffrage indicates a more liberal political system. The black lines are obtained by locally weighted least squares smoothing (Lowess) over all colony-year observations. For each year, each graph presents three data points: the maximum value of the suffrage or percentage of population black variable observed across all colonies in the region (circle), the minimum value (triangle), and the value obtained using Lowess smoothing (dot).

A quick look at the data reveals several interesting patterns. First, while the black population of the South increased rapidly in the late seventeenth and early eighteenth centuries (reaching an average of 40 per cent by the 1750s), the average slave share in a typical Northern colony was less than 10 per cent during this period. Moreover, these differences in labour market structure tracked closely the evolution of political institutions in the two regions. In the seventeenth century, the franchise in the South was in fact very liberal (by around 1.3 restrictions as compared to the North). In contrast, an average Southern colony in the eighteenth century now
required voters to satisfy 1.5 more requirements in order to vote, as compared to a colony in the North.\(^{61}\) Nevertheless, the most dramatic change was observed in the South–North difference of the share of the black population: before 1700, this difference was only 5.9 percentage points, but after 1700 it increased nearly fivefold.

To study in more detail this reversal in Southern representative institutions, Figure 2 graphs, for each of the Southern colonies, the joint evolution of suffrage and labour markets. Figure 3 does the same for suffrage and inequality. Despite some existing difference in climate, crops and the timing of settlement across the Southern colonies, the regional-level relationships are consistent with this more disaggregated analysis. All four colonies started off with liberal suffrage institutions, but they deteriorated sharply in the late seventeenth and early eighteenth centuries. This political transformation was accompanied by an equally dramatic rise in the share of the slave population, which in all colonies exceeded 25 per cent of the population by the mid-1700s. Slavery was most prevalent in South Carolina, where, in 1700, nearly half of the population was black.

Figure 3 shows that the Southern political reversal is unlikely to have been driven by rises in inequality following the arrival of slavery. While inequality did increase to some extent in Maryland in the early eighteenth century and beyond, this was not the case in the other three colonies: in Virginia, the percentage of white landless persons stayed relatively constant, while in South and North Carolina, it actually went down.\(^{62}\) In the North, both suffrage institutions and the composition of colonial labour markets changed little, while inequality shifts do not seem to correspond to movements in the suffrage.

\(^{61}\) Table A1 also shows that the South–North inequality gap (proxied by the regional difference in the percentage of the white landless population) did increase from 3.7 percentage points before 1700 to 11.2 percentage points.\(^{62}\) For comparability, Figures A6–A9 in the online appendix present the same disaggregated graphical analysis of suffrage, inequality and the share of blacks for the Northern colonies.

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*Destined for Democracy?*
EMPIRICAL SETUP

Base Model

While the previous subsection has uncovered correlations that are consistent with the presented theory linking labour markets and the suffrage, it is important to examine this relationship in a more systematic way. In order to do so, I employ the following econometric model:

\[
\text{Suffrage}_{ct} = \alpha + \beta_1 \text{Suffrage}_{c(t-1)} + \theta_1 \text{Labour}_{c(t-1)} + \theta_2 \text{Inequality}_{c(t-1)} + \\
\beta_2 \text{Urbanization}_{c(t-1)} + \beta_3 \text{Density}_{c(t-1)} + \mathbf{X}_{c(t-1)} \beta_4 + \gamma_t + \mu_c + \epsilon_{ct}
\]

where \(\text{Suffrage}_{ct}\) is the suffrage index in colony \(c\) and time period \(t\); \(\text{Suffrage}_{c(t-1)}\) is lagged suffrage; \(\text{Labour}_{c(t-1)}\) is percentage black; \(\text{Inequality}_{c(t-1)}\) is percentage white landless; \(\text{Urbanization}_{c(t-1)}\) is the share of the urban population; \(\text{Density}_{c(t-1)}\) is population density; \(\mathbf{X}_{c(t-1)}\) is a vector of additional controls (dummies for the years in which each colony was proprietary or charter colony, with royal colony the omitted category); \(\gamma_t\) is a year control; \(\mu_c\) is a colony fixed effect; and \(\epsilon_{ct}\) is the disturbance term. All independent variables are lagged by one period (three years, see more details below). Since a higher value of suffrage implies better political institutions, I expect \(\theta_1\) and \(\theta_2\) to be negative. As the share of whites, relative to blacks, increases, and percentage of white landless persons decreases (implying that inequality is lower), democratic institutions are more likely to emerge and survive.\(^{63}\)

The dataset uses an unbalanced time-series cross-section that covers the years 1619–1774. I have dropped observations for the Northern colonies during Dutch or Swedish rule in order to avoid any confounding effects arising from the differing identity of the colonizers. I also did not

\(^{63}\) A wide suffrage may decrease population income differences through transfers to the poor. However, such an effect will be a long-term one and should not be present when inequality is lagged.
include observations for the years 1775–76, as the American Revolution was under way in this period. Furthermore, I excluded all the observations for Georgia, as Georgia was only established in 1732.\textsuperscript{64} Since political institutions are ‘sticky’, I created three-year panels by taking three-year averages for all variables (results were similar when I used shorter or longer averages or an annual panel). I used robust standard errors as clustered standard errors are not accurate when the number of clusters is small, but also experimented with wild bootstrapped errors in Table 3 to account for the small number of clusters and minimize serial correlation, and obtained very similar results.\textsuperscript{65} I captured the effect of permanent colony-level differences, such as climate or geography, by including colony fixed effects, while controls for urbanization, population density and the type of colonial settlement control for time-varying colonial characteristics.

Using a lagged dependent variable is important, since it not only controls for institutional persistence, but also removes serial correlation. Although there may be a bias when colony fixed effects are included together with the lagged dependent variable, this bias is small when the number of time periods per item is more than twenty or thirty (in my case, it is nearly forty periods per colony).\textsuperscript{66} Even so, in the robustness section I have also obtained very similar results with the Arellano-Bond GMM estimator, suggesting that any fixed effects–lagged dependent variable bias is not a source of concern.

One issue about this econometric setup is that, by including colony fixed effects and a lagged dependent variable in the regressions, it may simply capture rapid responses to shifting circumstances very different from the historical events on which the paper focuses. I present results in Table A6 in the online appendix to address this concern: (1) without colony fixed effects; (2) without a lagged dependent variable; and (3) without both. While the coefficients on the labour variable are (unsurprisingly) several times stronger in the regressions without a lagged dependent variable, they are negative and highly significant in all specifications. Secondly, in the same table I have also constructed a ten-year panel, where all regression variables are averaged over ten years, rather than three, as in the baseline specification. Again, I obtained very similar results.\textsuperscript{67}

\textit{Instrumental Variables Approach}

While the developed theoretical framework posits that the composition of colonial labour markets has a direct effect on the suffrage, it is plausible that this relationship may be confounded by reverse causality, with political institutions affecting migration, and thus the future composition of labour markets. In addition, the share of each colony’s black population may be endogenous to a variety of unobserved variables, such as differences in colonial leaders.

I addressed these concerns by instrumenting labour markets with a crop suitability index (crop index), calculated as follows. For each colony, I collected data on its (fixed) propensity to produce one of the two labour intensive colonial export crops (tobacco and rice). I compiled the same information for wheat, which can be grown in virtually any climate without significant amounts of labour. I interacted each colony’s suitability for rice and tobacco with their

\textsuperscript{64} To alleviate any concerns about selectivity, Table A3 presents regression results which include all excluded years and observations.
\textsuperscript{65} Cameron, Gelbach and Miller 2008.
\textsuperscript{66} Beck and Katz 2011; Judson and Owen 1999.
\textsuperscript{67} In a companion paper (see Nikolova 2014), I also focus on a historical examination of the evolution of political institutions in colonial Virginia. I also supplement these econometric results with a detailed historical discussion of the underlying link between labour markets and suffrage in the colonies in the online appendix (Part 4).
respective colonial prices, which change over time, and divided this sum by the suitability of each colony to produce wheat interacted with its price (I took the logarithm of the final quantity). Therefore, the instrument measures each colony’s revenue earning potential for tobacco and rice, relative to that of wheat. Changes in the instrument within colonies are thus driven purely by price shocks to the three crops, while cross-colony differences could also arise because of differing crop suitabilities across colonies.

The logic behind the instrumental variable (IV) is as follows. Once the prices for tobacco and rice increase, landowners located in colonies which are suitable for producing the labour-intensive crops will seek to acquire additional labour. If the supply of English indentured servants is inelastic (as was the case in the late seventeenth and early eighteenth centuries), those farmers will turn to slaves, leading to an increase in the share of the black population. Although I do not have data on the export price of these three commodities during the time period in question, historians point out that the colonies were largely price takers, so it is unlikely that the prices used in the construction of the IV were endogenous to colony-level factors. I discuss in more detail the exclusion restrictions of the IV in the next section.

I compiled the fixed crop suitability weights from the Food and Agriculture Organization of the United Nations Global Agro-Ecological Zones (GAEZ) 2010 database. Although the latter data are not available historically, this should be a minor concern, as climate and soil conditions likely changed very little in the United States since colonial times. For each cell of approximately 56 by 56 kilometers, FAO combined information on the physical environment and the requirements for growing 154 crops, assuming different levels of input use and crop management. I made use of the published crop summary tables, which provided crop suitability and potential yield data for each of the American states. I defined land to be suitable for either tobacco or rice if it yields at least 40 per cent of the maximum possible yield for these crops. I also assumed that cultivation occurs under rain-fed conditions (as mechanical irrigation did not become popular in the colonies and in the United States until after the Revolution), and low input intensity.

RESULTS

Table 1 reports Ordinary Least Squares (OLS) and instrumental variable (IV) estimates for Equation 1, using four different specifications. First, the table shows that there is a negative relationship between the share of each colony’s black population and the suffrage index, both in column 1, which excludes colony fixed effects and inequality, and in column 2, which presents the full specification. In fact, the coefficient on labour markets in column 2 is higher than that in column 1, with inequality having, as hypothesized, a negative effect on the quality of political institutions that is significant but nearly two times weaker than that of labour markets. In addition, the impact of labour markets on the suffrage is quantitatively important. A 10 point increase in the percentage of the population that is black leads to a decrease in the suffrage

---

68 Cotton production did not start in the South until after the Revolution.
69 Figure A10 plots the variation in the instrument for each of the colonies included in the analysis.
70 Kulikoff 1986; Purvis 1999.
72 Nunn and Qian 2011.
73 Easterly (2007) and Nunn and Qian (2011) provide additional information on how these data were constructed. Results using the 20 per cent and 60 per cent yield cutoffs are similar but weaker, and assuming medium output intensity does not change the estimates.
index of approximately 0.159 restrictions, or close to 4.4 per cent, relative to the sample mean. Because I am also controlling for the lagged value of the suffrage index, it is more appropriate to consider the long-run effect of labour markets: a 10 percentage point increase in the percentage of the population that is black leads to a decrease in suffrage of roughly 0.773 restrictions, or 21.2 per cent.74

Column 3 instruments labour market composition with the crop index variable. The coefficient on the percentage of population that is black is still negative and significant, and its magnitude is nearly 1.6 times stronger than that in the OLS specification. As argued earlier, since the percentage of the population that is black is calculated using population data, rather than labour force estimates, it is likely to measure the composition of colonial labour markets with error. If this measurement error is classical, its coefficient in the OLS regressions may be biased downward.

In the final column of Table 1, I restrict the sample to those observations that have a value of inequality (percentage of population landless) above the median value in the sample. The negative and significant relationship between the share of each colony’s black population and the suffrage index survives even when inequality is kept constant in this sample of year-colonies with unequal incomes, which makes it less likely that the percentage black is simply a proxy for economic inequality.

The results in Table 1 also suggest that variables such as urbanization, population density, and differences in colonial settlement patterns have limited impact on the quality of colonial political institutions. Unreported estimates in which urbanization and population density were entered separately, rather than together produced very similar results. In estimations which are available upon request, I also allowed inequality to vary non-linearly, which did not produce significant coefficients on the higher-order inequality terms and had little effect on the overall results.

Table 2 shows that the results in Table 1 are robust to using alternative measures of labour markets. Columns 1–3 substitute the share of each colony’s black population with a binary variable that is 1 for the South after 1700, and 0 for all other colonies and years.75 Although crude, a significant relationship between this variable and the suffrage index should alleviate concerns that the labour markets–suffrage relationship is driven by something idiosyncratic in the percentage black measure. Not surprisingly, the coefficient estimates are significant, albeit much weaker than those in Table 1.

In columns 4–5, I use Caribbean slave prices as a measure of labour market structure. Since the Caribbean was the largest slave market throughout the colonial period which set prices for the rest of the New World, high Caribbean slave prices should decrease the demand for — and the number of — new slaves in the South. The expected relationship between this measure of labour markets and the suffrage index is, therefore, positive. I prefer to use Caribbean slave prices instead of prices in North America, as the latter are likely to be endogenous to domestic demand.

Because the number of slaves in the North was very small, it is likely that Northern slave-owners obtained black labourers from a different market, and at different prices, than did Southern slave-owners.76 Unfortunately, I do not have data on Northern slave prices, so I need

74 The cumulative effect is calculated by dividing the coefficient on labour by the quantity (1- coefficient on lagged suffrage) (column 2).
75 Using alternative years for the cutoff (1690, 1695, 1705 and 1710) did not change the results.
76 Although there were some slaves in the Northern colonies, they were very few and had little economic significance. They did not come directly from Africa, but were either unwanted blacks from the Caribbean or the South, or those captured by privateers or pirates operating from the northern ports. Such slaves were ‘[b]roken,
to restrict my analysis to colonies in the South. Moreover, the small sample size prevents me from conducting the IV analysis in this specification. Despite these caveats, the coefficient on Caribbean slave prices is – as expected – positive and significant. The estimates in column 5 imply that a one standard deviation increase in the price of a single slave improves the suffrage index in the South by around 0.420 restrictions, or approximately 13.4 per cent relative to the sample mean in the short run.77

I test the robustness of these results in Table 3 below.78 First, in Table 3 I include colony-specific trends, in addition to the colony fixed effects (columns 1–2). The labour coefficient is slightly smaller in magnitude but still significant, while inequality loses significance. Results are similar when I instead use regional trends (columns 3–4). In column 5, I use an annual panel to calculate the standard errors using the wild bootstrap method,79 which is a more appropriate way for modelling within-colony correlation of the errors when the number of clusters is small, as compared to the conventional clustered errors method. Results are analogous to those

### Table 1: Suffrage in the Thirteen Colonies: Main Specification

<table>
<thead>
<tr>
<th></th>
<th>(1) OLS</th>
<th>(2) OLS</th>
<th>(3) 2SLS</th>
<th>(4) OLS Inequality above median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagged suffrage</td>
<td>0.785***</td>
<td>0.794***</td>
<td>0.769***</td>
<td>0.773***</td>
</tr>
<tr>
<td>(0.0429)</td>
<td>(0.0405)</td>
<td>(0.0529)</td>
<td>(0.0637)</td>
<td></td>
</tr>
<tr>
<td>Labour (% black)</td>
<td>−1.149***</td>
<td>−1.593***</td>
<td>−2.608**</td>
<td>−2.587***</td>
</tr>
<tr>
<td>(0.226)</td>
<td>(0.505)</td>
<td>(1.324)</td>
<td>(0.868)</td>
<td></td>
</tr>
<tr>
<td>Inequality (% white landless)</td>
<td>−0.683**</td>
<td>−0.691**</td>
<td>1.620</td>
<td></td>
</tr>
<tr>
<td>(0.321)</td>
<td>(0.316)</td>
<td>(1.122)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urbanization</td>
<td>0.0478</td>
<td>0.161</td>
<td>0.140</td>
<td>0.838*</td>
</tr>
<tr>
<td>(0.172)</td>
<td>(0.235)</td>
<td>(0.223)</td>
<td>(0.446)</td>
<td></td>
</tr>
<tr>
<td>Population density</td>
<td>0.00216</td>
<td>0.00703</td>
<td>0.00554</td>
<td>0.00936</td>
</tr>
<tr>
<td>(0.00552)</td>
<td>(0.00623)</td>
<td>(0.00621)</td>
<td>(0.00936)</td>
<td></td>
</tr>
<tr>
<td>Year control</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Colony fixed effects</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Additional controls</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>491</td>
<td>412</td>
<td>412</td>
<td>206</td>
</tr>
<tr>
<td>Mean suffrage</td>
<td>3.618</td>
<td>3.633</td>
<td>3.633</td>
<td>3.446</td>
</tr>
<tr>
<td>$ R^2 $</td>
<td>0.766</td>
<td>0.843</td>
<td>0.842</td>
<td>0.840</td>
</tr>
</tbody>
</table>

**First-stage results**

<table>
<thead>
<tr>
<th></th>
<th>Instrument coef.</th>
<th>First-stage $ R^2 $</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.320***</td>
<td>(0.046)</td>
</tr>
</tbody>
</table>

Sources: See text.
Notes: The dataset is obtained by taking three-year averages for each colony. Column 4 only uses those colony-year observations with above median inequality. Independent variables are lagged by one period (three years). Additional controls include a dummy for when each colony was proprietary or charter (with royal as omitted category). A linear trend is used as ‘Year control’. Robust standard errors are in parentheses. ***$ p \leq 0.01$, **$ p \leq 0.05$, *$ p \leq 0.1$.

77 The mean Caribbean slave price during this period was around 27.4 pounds sterling, with a standard deviation of 7.7.

78 See also Tables A3–A7 in the online appendix.

79 Cameron, Gelbach and Miller 2008.
presented earlier, and also survive when I experiment with other unreported specifications of the errors, such as a Prais–Winsten regression, clustered standard errors, Newey–West standard errors (with one, two or three lags), panel corrected standard errors (PCSEs),80 and the inclusion of an additional lag of the dependent variable. The last column in Table 3 implements the Arellano–Bond GMM regression to account for the possible bias arising from the simultaneous inclusion of colony fixed effects and a lagged dependent variable. The coefficient on the percentage of the population that is black is again negative and significant.81

80 Beck and Katz 2011.

81 In the online appendix, I present and discuss several additional robustness tables, which again preserve the main results. Tables A3 and A4 experiment with various aggregations of the dependent variable, as well as regressions with an annual panel. Table A5 instead investigates the impact of ethnic and religious fractionalization on the suffrage, and the role of the Scottish–Irish migration of 1717–75 (see more discussion on the latter below). Table A6 shows that the baseline results survive when I drop the colony fixed effects, the lagged dependent variable and when I use a ten-year average panel. Table A7 replicates the results in Table 1 but without including inequality. See online appendices.
Instrumental Variable Validity and Exclusion Restrictions

The adopted IV strategy would be valid provided that three conditions are satisfied. First, the empirical analysis above illustrates that the relationship between the instrument and the share of each colony’s black population is indeed strong, with F-statistics significantly above 10. Moreover, the effect of crop index on the suffrage must work only through labour markets. More precisely, the IV should not affect the dependent variable directly, or through variables omitted from the model. I examine the validity of each of these assumptions below.

Could the crop index variable have a direct effect on political institutions? For example, a rise in the prices of labour intensive crops will make farmers expand production, and consequently increase their demands for labour. If slaves are not available, planters will respond by liberalizing the suffrage, and thus the crop index might affect the suffrage directly, even if the

### Table 3: Suffrage in the Thirteen Colonies: Robustness Checks

<table>
<thead>
<tr>
<th></th>
<th>(1) OLS Colony FEs and colony trends</th>
<th>(2) 2SLS Colony FEs and colony trends</th>
<th>(3) OLS Colony FEs and regional trends</th>
<th>(4) 2SLS Colony FEs and regional trends</th>
<th>(5) Wild bootstrap</th>
<th>(6) Arellano Bond</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagged suffrage</td>
<td>0.745*** (0.0482)</td>
<td>0.743*** (0.0475)</td>
<td>0.791*** (0.0413)</td>
<td>0.784*** (0.0462)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labour (% black)</td>
<td>-1.488* (0.772)</td>
<td>-2.556 (2.465)</td>
<td>-1.524** (0.729)</td>
<td>-2.640 (2.476)</td>
<td>-1.073** (0.440)</td>
<td>-5.649*** (1.773)</td>
</tr>
<tr>
<td>Inequality (%)</td>
<td>-0.181 (0.662)</td>
<td>0.00511 (0.708)</td>
<td>-0.206 (0.549)</td>
<td>-0.148 (0.548)</td>
<td>-0.346*** (0.123)</td>
<td>-1.255</td>
</tr>
<tr>
<td>Urbanization</td>
<td>-0.290 (0.349)</td>
<td>-0.318 (0.342)</td>
<td>0.0925 (0.273)</td>
<td>-0.00502 (0.345)</td>
<td>0.161 (0.390)</td>
<td>-2.036</td>
</tr>
<tr>
<td>Population density</td>
<td>-0.00651 (0.342)</td>
<td>-0.00964 (0.342)</td>
<td>0.00249 (0.273)</td>
<td>0.00184 (0.345)</td>
<td>0.00657 (0.345)</td>
<td>-0.0264</td>
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<td>Year control</td>
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<td>✓</td>
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<tr>
<td>Colony fixed effects</td>
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<td>✓</td>
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</tr>
<tr>
<td>Additional controls</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
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<td>412</td>
<td>412</td>
<td>412</td>
<td>1,246</td>
<td>1,245</td>
</tr>
<tr>
<td>R²</td>
<td>0.851</td>
<td>0.850</td>
<td>0.844</td>
<td>0.843</td>
<td>0.877</td>
<td></td>
</tr>
</tbody>
</table>

**First-stage results**

<table>
<thead>
<tr>
<th>Instrument coefficient</th>
<th>(0.036)</th>
<th>(0.040)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First-stage R²</td>
<td>0.961</td>
<td>0.953</td>
</tr>
</tbody>
</table>

**Sources:** See text.

**Notes:** The dataset used in columns 1–4 is obtained by taking three-year averages for each colony. Columns 5 and 6 use annual data. All independent variables are lagged by one period (three years for columns 1–4 and one year for columns 5 and 6). A linear trend is used as ‘Year control’. Additional controls include a dummy when each colony was proprietary or charter (with royal as omitted category). Robust standard errors are in parentheses. ***p ≤ 0.01, **p ≤ 0.05, *p ≤ 0.1.
proportion of blacks in the population is constant. However, the evolution of tobacco, rice and wheat prices reveals that the only crop whose prices might justify a direct link between


crop index and the suffrage is tobacco, as its prices rose rapidly during the period 1647–75.\textsuperscript{82}

Even so, tobacco planters would have been ambivalent about attracting additional labour, as this upward surge was volatile and relatively short lived. Indeed, when I drop from the regressions all years previous to 1675, the (unreported) results are nearly identical to those presented in Table 1.

A second concern is that the instrument may be correlated with other determinants of the dependent variable, either observed or unobserved. For instance, the crop index may simply capture differences in persistent factor endowments and economic inequality across colonies.\textsuperscript{83}

There are at least three reasons that mitigate this concern. On one hand, the inequality variable included in the regressions (percentage of the population landless) should capture at least some of the variation in the colonial income distribution. Moreover, the inclusion of colony fixed effects ensures that the effect of the instrument is not confounded by colony-specific fixed variables. By combining price and crop suitability data, the crop index provides information on each colony’s revenue earning potential for tobacco and rice, compared to that of wheat, without making a statement about the relative \textit{distribution} of these crop revenues. This is also confirmed by the unconditional correlation between crop index and inequality in the sample (0.250), which is not overwhelming enough to raise concern.

On the other hand, the effect of the instrument on the suffrage could work through some omitted variable from the model. The very low correlation between the instrument and the regression residuals (less than 0.00001), the inclusion of colony fixed effects and time dummies, as well as the multiple robustness tests performed in the previous section and in the online appendix suggest that this is less likely to be the case.\textsuperscript{84}

Yet another possibility is that a rise in crop prices may also increase overall welfare, which in turn may directly affect the emergence and stability of political institutions. On one hand, as government revenues (largely based on crop export duties) grow and the costs of redistribution are partially offset, elites may be more likely to extend the suffrage. On the other hand, long-term rises in income per capita may lead to attitudinal changes in the population that make a democratic regime more likely to emerge and to be sustained.\textsuperscript{85} Although some of these effects should be captured by the controls for urbanization and population density included in the regressions, these are admittedly less precise than a direct measure of income per capita, which unfortunately does not exist. An examination of one available income proxy for colonial Maryland (a welfare ratio),\textsuperscript{86} provides some suggestive evidence against these hypotheses. In fact, the disfranchisement of landless whites in Maryland in the early eighteenth century was accompanied by a welfare ratio which was rising, rather than falling.\textsuperscript{87}

\textsuperscript{82} See Figures A11a, A11b and A11c in the online appendix.
\textsuperscript{83} Engerman and Sokoloff 2000; Engerman and Sokoloff 2002; Engerman and Sokoloff 2005.
\textsuperscript{84} Table A8 in the online appendix, which further experiments with dropping (1) colony fixed effects; (2) urbanization and population density; and (3) urbanization, population density and inequality from the IV specification, also shows that the coefficient on labour (percentage of population that is black) remains remarkably stable across specifications, thus pointing away from the role of unobservables.
\textsuperscript{85} See, for instance, Limongi and Przeworski (1997), as well as Boix (2011).
\textsuperscript{86} Allen, Murphy and Schneider 2012.
\textsuperscript{87} The welfare ratio is the full-time, full-year earnings of a male unskilled worker relative to the cost of subsistence for a family of four. A welfare ratio of 1 indicates that the labourer earns just enough to keep his family at subsistence, while values greater than 1 mean that the family could afford additional items.
I conclude that, in line with Hypothesis 1, there is a consistent negative relationship between the proportion of each colony’s population that is black and the colonial suffrage. I also find support for Hypothesis 2. Inequality has a negative impact on the quality of colonial political institutions, but the magnitude of the effect is several times smaller than that of labour markets. In the next section, I discuss three potential validity concerns which may threaten the reliability of these estimates.\(^8\)

**ALTERNATIVE EXPLANATIONS**

The theoretical mechanism outlined above provides one reason why we may observe a connection between the composition of colonial labour markets and the quality of political institutions. Still, there may be several alternative explanations for this finding, which I review below.

*The Relationship between Inequality and Labour Market Composition*

An important concern about the validity of the empirical results is the potential relationship between labour market structure (proxied by percentage of the population that is black) and inequality (proxied by percentage of the population that is white landless). If percentage black simply captures the spread of plantation agriculture and thus increasing income inequality in the South, as compared to the North, the presented results will be spurious.

Although I attempt to address this concern by including a control for income inequality in all regressions, it is plausible that the only available inequality proxy that I have (the percentage of each colony’s white landless population) is less precise than a more direct measure (such as a Gini coefficient). Although detailed income inequality statistics for colonial America are not available, the existing evidence shows that the relationship between inequality and slavery during this time period is not clear cut. This is not surprising, as large Southern landowners were able to amass significant fortunes, as compared to indentured servants, even before slaves became widely available. In a companion paper,\(^9\) I have traced the evolution of income inequality in Virginia from the early seventeenth century until the American Revolution, using a variety of sources such as land transfer records, wills, height data, and the distribution of slave holdings to show that slavery benefited equally both small and large farmers, and that income inequality in the colony did not increase substantially in the eighteenth century. What is more, on the eve of the American Revolution, the wealth distribution in New England was actually more unequal than that in the South.\(^10\) In 1774, the richest 10 per cent of people who left probate records held 57 per cent of the net worth in New England, compared with 49 per cent in the South and 42 per cent in the Middle colonies.

Even so, it is instructive to investigate the relationship between the percentage white landless and percentage black in my dataset. If the arrival of slavery increased inequality because it gave the rich an opportunity to establish large plantations, then such a relationship should be particularly pronounced in the Southern colonies. Graphical evidence shows that there is a weak relationship between inequality and labour in the South.\(^11\) Although the unconditional correlation between

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\(^{8}\) I elaborate more on the role of (1) the Scottish-Irish migration wave of 1717–75; and (2) racially motivated conflicts in the online appendix (Part 2).

\(^{9}\) Nikolova 2014.

\(^{10}\) Jones 1980.

\(^{11}\) See the online appendix (the correlation for the whole region is 0.160; see Figures A11 and A12). Regressing (for the South only) inequality on its lagged value, labour, urbanization, population density, controls
inequality and labour in the full sample is somewhat higher than that in the South (0.322), a regression analysis shows the lack of a relationship between the two variables.92

The Threat of Revolution

A second explanation predicts that elites will extend the right to vote to the masses in order to commit themselves to economic concessions in the face of organized mass resistance.93 However, several reasons weaken the conclusion that Southern elites implemented a restrictive political regime which favoured the landholding class only after revolutionary threats from the masses subsided in the early eighteenth century.

In Virginia, a series of rebellions in the period 1660–83 – such as the servant uprising of 1663, Bacon’s rebellion in 1676, and the tobacco cutting riots of 1683 – included poor whites and indentured servants who protested against their gradual loss of political rights.94 However, subsequent gains in the franchise were short lived. For example, the 1676 decision to extend the suffrage to all freemen (rather than only freeholders) was rescinded in the same year, and only freeholders and householders could vote until 1683. Although after 1684 a new wording of the law did not prohibit landless freemen from voting and contained no punishment for irregular voting, essentially allowing all freemen to vote, this law was repealed in 1698, again granting the suffrage only to freeholders.95

What is more, Virginia’s most liberal political institutions were adopted in the early seventeenth century, at a time when there were in fact few uprisings. More importantly, it was the switch from indentured servitude to slaves in the early eighteenth century that prompted whites to view blacks as the main threat to the colony’s tranquillity, thus underlying Virginia’s stability.96 What is key, however, is that the shift to slavery also drove the tightening of the franchise in eighteenth-century Virginia. Slavery benefited not only large planters, but also smaller farmers who could afford even a few slaves. As the latter class expanded and prospered and the number of indentured servants and poor whites dwindled, the interests of big and small landholders became more closely aligned. This not only prompted the restriction of the suffrage to freeholders in 1699, but also made it increasingly costly for small farmers to participate in lower-class collective action, which improved the security situation in the colony.

Evidence from other colonies further questions the idea that colonial representative institutions were driven by revolutionary threats. In Maryland and the Carolinas, uprisings reflected disagreements within the elite as well as religious tensions, rather than franchise considerations. For instance, in the 1680s, opposers of Maryland’s proprietary government cited a list of grievances, such as Lord Baltimore’s appointment of his relatives for public offices; proprietary appointment of sheriffs; excessive fees and taxes; as well as anti-Catholic sentiments against the proprietors by the Protestant colonists. The property requirement for voting set in 1670 was also mentioned, but colonists complained about the fact that it was set by the proprietor, rather than the legislature. In North Carolina, the 1677 Culpeper Rebellion sought to stop payment to England of customs duties on exported tobacco, while Cary’s Rebellion (in 1704) resulted from a contest over the office of deputy governor. In South Carolina, political for colonial settlement patterns, and year and colony fixed effects produced a significant but very weak relationship, in which one percentage point increase in the percentage of the population that is black leads to 0.0005 percentage points increase in inequality.

92 See Figure A13 in the online appendix.
93 Acemoglu and Robinson 2006; Jack and Lagunoff 2006.
95 McKinley 1905.
instability was rooted in disagreements between the proprietors and an anti-proprietary faction. In 1690, Seth Sothel, backed by nearly 500 people, staged a coup against the proprietor, while in 1719 there were clashes between the Assembly and the proprietor motivated by the desire of the colonists to overthrow proprietary rule.\textsuperscript{97} In New England and New York, the Glorious Revolution in England prompted uprisings in Boston and New York City. Although in Massachusetts a property basis of the suffrage replaced the earlier religious qualifications, the franchise still remained rather restrictive.\textsuperscript{98} There were no changes to political institutions in New York. In sum, a possible link between representative institutions and changing revolutionary threats is less than clear.

\textit{The Importance of Culture}

In this subsection, I examine whether differences in migrants’ cultural backgrounds affected the quality of colonial political institutions, and, in particular, whether colonies with a wide franchise had a majority of inhabitants coming from more politically liberal European countries.

There is little data on the country of origin of each colony’s population until the first US census conducted in 1790. What we do know, however, is that by 1680, nearly 90 per cent of colonial Americans were English, and that by the early eighteenth century, more and more non-English migrants were arriving in the colonies, with the largest groups including the Scottish-Irish, Germans and Dutch.\textsuperscript{99} An argument emphasizing the importance of culture, however, is less compelling, for at least three reasons.

First, no European settler experienced a suffrage as broad as the one granted in the Southern colonies. In England, the forty-shilling freehold requirement excluded nearly 98 per cent of adult males,\textsuperscript{100} while in the Habsburg empire, no popular parliament existed, as Habsburg family members were routinely elected to the office of Holy Roman Emperor by seven hereditary electors. Similarly, although the Dutch republic had a relatively strong federal parliament (the States General) and a weak executive by the standards of late medieval and early modern period, popular political participation was limited. Members of the States General were selected by the provincial parliaments, selection for which was in turn limited to a list of regential families.\textsuperscript{101}

Second, any cross-colony cultural differences which were either fixed over time or followed linear time trends specific to each colony should be captured by the inclusion of colony fixed effects (present in most regressions) as well as colony time trends (see Table 3). Of course, it is possible that the rate of immigration of particular groups was non-linear. For instance, the arrival of large numbers of Scottish-Irish settlers in the South in 1717–75 may have been behind the decision of colonial elites to tighten the franchise. These migrants came from ‘lawless’ regions in Ulster, and were considered to be more violent and less hard-working than the Germans or the Dutch.\textsuperscript{102}

CONCLUSION

Why do elites choose to extend the suffrage to the masses? Using detailed data from the thirteen British American colonies, this article proposes one answer to this question: elites may wish to

\footnotesize{\textsuperscript{97} Ward 1991.}  
\footnotesize{\textsuperscript{98} McKinley 1905.}  
\footnotesize{\textsuperscript{99} Ward (1991), pp. 109–16.}  
\footnotesize{\textsuperscript{100} Acemoglu and Robinson 2012.}  
\footnotesize{\textsuperscript{101} Congleton 2010.}  
\footnotesize{\textsuperscript{102} Sowell 2013. I examine this possibility empirically in the online Appendix (Table A5) and find little support for it.}
extend the right to vote to the lower classes in order to attract migrant workers. I develop a theory in which a representative assembly serves as a commitment device for any promises made to labourers by those in power, such as those related to compensation, labour contracts, or the allocation of land grants. While the theory also accommodates a negative relationship between income inequality and the extent of the franchise (as argued by earlier literature), an examination of both quantitative and historical evidence reveals a weaker and less robust impact of income inequality.

I have tested the theory by analysing a new time-series cross-section dataset from colonial British America covering more than 150 years. Colonial governments enforced a liberal franchise only in those colonies that relied on white workers, such as the seventeenth-century South and the North, and immediately rescinded political concessions once white labourers could be substituted with black workers, as in the South after the arrival of slavery. To rule out alternative explanations, I constructed a new instrument for the composition of colonial labour markets, experimented with several different measures of labour markets, controlled for a wide range of variables, including income inequality, and included colony fixed effects in all specifications.

My work helps identify the specific conditions under which institutions can be malleable and under which they persist, a fundamental research and policy question about which we still know relatively little. By emphasizing the link between the quality of labour and that of political institutions, I have suggested that democracy is less likely to emerge and survive in countries where economic production relies on easily replaceable, low-skill workers who have limited bargaining power vis-à-vis the ruling politicians. Shedding light on where such differences in labour markets come from, both across space and throughout history, may therefore be crucial for understanding how democracies originate and evolve.

LIST OF REFERENCES


