Suffrage, labour markets and coalitions in colonial Virginia

Appendix

This Appendix consists of four parts. Part 1 presents additional figures and tables. Part 2 presents robustness checks. Part 3 discusses alternative mechanisms. Part 4 provides supplementary information about the data.

**Part 1: Additional figures and tables**

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**Fig. A1.** Suffrage and inequality in Virginia

Notes: The shaded grey areas indicate periods without an elected Assembly. The broken line represents the share of the white male landless population (as a fraction of the total white male population).



|  |  |
| --- | --- |
| Panel A: Suffrage in Virginia versus the rest of the South | Panel B: Suffrage in Virginia versus the North |

**Fig. A2.** Suffrage in Virginia compared to suffrage in the South and in the North

Source: McKinley (1905).

Notes: The South includes Maryland, South Carolina and North Carolina, while the North includes Massachusetts, Rhode Island, Connecticut, New Hampshire, New York, New Jersey, Pennsylvania and Delaware. We do not include Georgia as part of the Southern colonies as it was established only in 1732, more than 100 years after Virginia. See the text on how the suffrage index is constructed. The broken lines are obtained by locally weighted least squares smoothing (lowess) with a bandwidth of 80% over all colony-year observations for the South (without Virginia) (Panel A) and the North (Panel B).



**Fig. A3.** Average real earnings in the United Kingdom, 1600-1775

Source: Officer (2008).

Notes: This graph shows the evolution of average real earnings in the United Kingdom in the 17th and 18th centuries, using five-year averages in order to minimise data volatility. The wage index is normalised so that 1913=100.

**Table A1**

 Estimated population and population composition of Virginia, 1610-1780

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year | Total | White | Black | %Black | $∆$%Black |
| 1610 | 350 | 350 | 0 | 0.00% |  |
| 1620 | 2,200 | 2,180 | 20 | 0.91% | 0.91pp |
| 1630 | 2,500 | 2,450 | 50 | 2.00% | 1.09pp |
| 1640 | 10,442 | 10,292 | 150 | 1.44% | -0.56pp |
| 1650 | 18,731 | 18,326 | 405 | 2.16% | 0.73pp |
| 1660 | 27,020 | 26,070 | 950 | 3.52% | 1.35pp |
| 1670 | 35,309 | 33,309 | 2,000 | 5.66% | 2.15pp |
| 1680 | 43,596 | 40,596 | 3,000 | 6.88% | 1.22pp |
| 1690 | 53,046 | 43,701 | 9,345 | 17.62% | 10.74pp |
| 1700 | 58,560 | 42,170 | 16,390 | 27.99% | 10.37pp |
| 1710 | 74,513 | 55,163 | 19,350 | 25.97% | -2.02pp |
| 1720 | 87,757 | 61,198 | 26,559 | 30.26% | 4.30pp |
| 1730 | 120,600 | 84,000 | 36,600 | 30.35% | 0.08pp |
| 1740 | 180,440 | 120,440 | 60,000 | 33.25% | 2.90pp |
| 1750 | 236,681 | 129,581 | 107,100 | 45.25% | 12.00pp |
| 1760 | 339,726 | 199,156 | 140,570 | 41.38% | -3.87pp |
| 1770 | 447,016 | 259,411 | 187,605 | 41.97% | 0.59pp |
| 1780 | 538,004 | 317,422 | 220,582 | 41.00% | -0.97pp |

Source: Historical Statistics of the United States (2006, Table Eg1-59).

**Table A2**

Slave ownership in four Virginia counties, 1751-1778

|  |  |  |  |
| --- | --- | --- | --- |
| County | Total | Slaveownership among all family heads | Slaveowners holding five or fewer slaves |
| Norfolk | 1751 | 42.3% | 91% |
| Norfolk | 1771 | 45.6% | 81.4% |
| Lancaster | 1745 | 68.1% | 80.2% |
| Lancaster | 1775 | 77.5% | 63.6% |
| Amelia | 1768 |  70.5% | 65.6% |
| Amelia | 1778 | 77.3% | 67.2% |
| Lunenburg | 1750 | 22.8% |  |
| Lunenburg | 1769 | 53.3% | 82% |

Source: Price (1995, pp. 7-8)

Notes: The records used for Lancaster (both years) and Amelia (1768) are incomplete. The data for Lunenburg use the percentage of households owning slaves.

**Table A3**

Suffrage in colonial Virginia, 1619-1775 (three-year averages)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
|  | OLS Base | OLSSlave sugarratio | Tobit | OLSSuffr.Dinkin | OLSSuffr.Ordinal | OLSSuffr.binary |
| Lagged Suffrage | $$0.853^{\*\*\*}$$$$(0.0647)$$ | $$0.855^{\*\*\*}$$(0.0747) | $$1.180^{\*\*\*}$$(0.169) | $$0.851^{\*\*\*}$$(0.0836) | $$0.877^{\*\*\*}$$(0.0822) | $$0.525^{\*\*}$$(O.211) |
| Labour (%black) | $$-9.398^{\*\*}$$(4.087) |  | $$-9.402^{\*}$$(5.461) | $$-11.49^{\*\*}$$(4.710) | $$-11.40^{\*\*}$$(4.819) | $-4.669^{\*\*}$(1.874) |
| Labour (slave-sugar Caribb.) |  | $$0.940^{\*}$$(0.457) |  |  |  |  |
| Inequality (%white l.less) | $$7.616^{\*\*}$$(3.376) | 1.734(2.141) | $$34.06^{\*\*}$$(13.49) | $$8.648^{\*\*}$$(3.793) | $$6.019^{\*}$$(3.367) | 0.852(1.201) |
| Urb. Diff | $-$53.06(70.23) | $$-14.68$$(71.16) |  | $$-58.87$$(75.16) | $-$16.42(49.23) | $$-4.072$$(31.52) |
| Pop. dens. diff | $$-0.0536$$(0.0990) | $$-0.102$$(0.111) | $$-0.268$$(0.212) | $$-0.0432$$(0.116) | $$-0.00151$$(0.0983) | $$-0.00760$$(0.0648) |
| Year control | X | X | X | X | X | X |
| Observations | 31 | 31 | 31 | 31 | 31 | 31 |
| Mean suffrage | 3.392 | 3.392 | 3.392 | 3.554 | 2.215 | 0.161 |
| $$R^{2}$$ | 0.883 | 0.848 | 0.899 | 0.905 | 0.901 | 0.774 |

Sources: See text. Notes: All independent variables are averaged over a three-year period and are lagged by one period (three years). A linear trend is used as “Year control”. We omit the urbanisation control in the tobit procedure. Robust standard errors are in parentheses. \*\*\*p ≤ 0.01, \*\*p ≤ 0.05, \*p ≤ 0.1.

**Part 2: Robustness Checks**

In this section, we detail several identification threats and show robustness checks, which confirm the validity of our econometric work.

 What if the arrival of slavery in Virginia was *not* exogenous? Our use of the ratio of Caribbean slave-sugar prices in the regressions partially mitigates such a concern. Moreover, two additional and plausibly exogenous events drove the spread of slavery in the South. First, data on English average real earnings (from Officer (2008)) in the 17th and 18th centuries suggest that rising incomes during the period 1655-1705 decreased the supply of indentured servants, thus prompting Southern planters to switch from indentured servants to slaves (Figure A3). Second, the dissolution of the Royal African Company in 1698, the entity that managed the English slave trade since 1662, increased the supply of black workers by opening the slave trade to private merchants.

 In addition, omitted variables, which are correlated both with the composition of the labour markets and with the extent of the suffrage could be biasing the results. For example, we lack information on the educational attainment of the population and education not only affects labour markets but also the extent of the franchise as it is typically associated with reform. Unmeasurable cultural factors, to the extent that they vary over time, could also be biasing the results. We mitigate the latter issue by adding time dummies. Data on education are unfortunately unavailable.

In Table A4, we probe the robustness of our results in several ways. In column 1, we include an alternative measure of economic development calculated by Allen et al. (2012, pp. 871-879) for Maryland. 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.[[1]](#footnote-1) Including this variable in our regressions makes little difference to our results, while rendering its own coefficient insignificant.

Reverse causality, which in our case would imply that suffrage restrictions determined the labour market composition in colonial Virginia via encouraging or discouraging international and cross-colony migration, is theoretically possible. To alleviate concerns about endogeneity related to reverse causality, in column 2 we take labour markets as a dependent variable and regress it on lagged suffrage and our usual set of controls. We obtain a very small *positive* coefficient on the suffrage index, suggesting that reverse causality is unlikely to drive our results. In the next two columns of Table A4, we conduct Granger causality tests between our proxy for labour markets and the suffrage index, using three lags of each.[[2]](#footnote-2) Unreported tests for joint significance of the coefficients indicate that labour markets matter for political institutions, but not vice versa. Results using a VAR model for suffrage and labour markets (reported in the last two columns of the table) are very similar. In Table A5, we present specifications which include additional lags of the dependent variable, which also suggest that our baseline results are robust.

Our final approach exploits the data’s dynamic nature to explore possible structural breaks in the suffrage index and the share of Virginia's black population.[[3]](#footnote-3) If our labour market argument is correct (See Section 2.1), structural breaks in the percent black variable would precede or at least coincide with those observed in the franchise index. While such an exercise is informative, the small sample and measurement error in the historical variables imply that any results should be interpreted with caution. In addition, the share of blacks is unlikely to reflect the improved life chances among whites which increased labour supply in the mid-17th century. Using the Zivot-Andrews test (allowing for one endogenously determined structural break), we find that the optimal break for the labour markets variable is 1682, while for the suffrage index it is 1705. Allowing for two structural breaks (using the Clemente-Montanes-Rey test), we obtain that percent black breaks in in 1667 and 1702 (with the former marginally significant), while suffrage has shifts in 1701 and 1751. In other words, both tests support the idea that labour markets are likely to have a causal effect on Virginia’s franchise.[[4]](#footnote-4)

**Table A4**

 Suffrage in colonial Virginia, 1619-1775 (annual data): Robustness

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
|  | OLS Welfare ratio MD | OLSDep. Var. Labour | OLSGranger - dep. var. Labour | OLSGranger - dep. var. Suffrage | VAR - Suffrage | VAR - Labour |
| Suffrage t-1 | $$0.932^{\*\*\*}$$$$(0.0326)$$ | $$0.00247^{\*\*\*}$$(0.000424) | $$-0.000489$$(0.000645) | $$0.819^{\*\*\*}$$(0.0900) | $$0.819^{\*\*\*}$$(.0998) | $$-0.000$$(0.001) |
| Suffrage t-2 |  |  | $$0.00197$$(0.00165) | $$0.0154$$(0.0422) | $$0.0154$$(0.131) | $$0.002$$(0.001) |
| Suffrage t-3 |  |  | $$-0.00107$$(0.00144) | $$0.0892^{\*}$$(0.0535) | $$0.0892$$(0.100) | $$-0.001$$(0.001) |
| Labour t-1 | $$-2.786^{\*\*}$$(1.365) | $$0.943^{\*\*\*}$$(0.0178) | $$1.744^{\*\*\*}$$(0.130) | $$-15.29^{\*}$$(7.885) | $$-15.29$$(10.929) | $$1.744^{\*\*\*}$$ (0.103) |
| Labour t-2 |  |  | $$-0.778^{\*\*\*}$$(0.124) | $$34.83^{\*\*}$$(16.76) | $$34.83^{\*}$$(20.098) | $$-0.778^{\*\*\*}$$(0.190) |
| Labour t-3 |  |  | $$-0.00278$$(0.0261) | $$-23.44^{\*}$$(12.11) | $$-23.44^{\*\*\*}$$(10.601) | $$-0.003$$(0.100) |
| Welf.rat. MD | $$0.0581$$ (0.0517) |  |  |  |  |  |
| Inequality (%white l.less) | $$2.018^{\*\*}$$(0.986) | $$0.0543^{\*\*\*}$$(0.0183) | $$0.0183^{\*}$$(0.00945) | $$2.081^{\*\*}$$(0.975) | $$2.081^{\*}$$(1.163) | $$0.0183^{\*}$$(0.011) |
| Year control | X | X | X | X | X | X |
| Other controls | X | X | X | X | X | X |
| Observations | 93 | 93 | 93 | 93 | 93 | 93 |
| $$R^{2}$$ | 0.939 | 0.998 | 0.999 | 0.943 | 0.943 | 0.999 |

Sources: See text. Notes: All independent variables are lagged by one period (one year). A linear trend is used as “Year control". Controls for differenced urbanisation and population density are included but not shown. Robust standard errors are in parentheses. \*\*\*p ≤ 0.01, \*\*p ≤ 0.05, \*p ≤ 0.1.

**Table A5**

 Suffrage in colonial Virginia, 1619-1775 (annual data): Additional suffrage lags

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
|  | OLS Welfare ratio MD | OLSDep. Var. Labour | OLSGranger - dep. var. Labour | OLSGranger - dep. var. Suffrage |
| Lagged suffrage (1) | $$0.947^{\*\*\*}$$$$(0.0255)$$ | $$0.864^{\*\*\*}$$(0.0723) | $$0.858^{\*\*\*}$$(0.0752) | $$0.851^{\*\*\*}$$(0.0787) |
| Lagged suffrage (2) |  | $$0.0873$$(0.0592) | $$0.0131$$(0.0555) | $$0.0135$$(0.0578) |
| Lagged suffrage (3) |  |  | $$0.0863$$(0.0618) | 0.00641 (0.0553) |
| Lagged suffrage (4) |  |  |  | 0.0936(0.0612) |
| Labour (%black) | $$-3.027^{\*\*}$$(1.516) | $$-3.290^{\*\*}$$(1.647) | $$-3.578^{\*\*}$$(1.790) | $$-3.898^{\*\*}$$(1.941) |
| Inequality (%white l.less) | $$2.004^{\*\*}$$(0.983) | $$2.202^{\*\*}$$(1.076) | $$2.440^{\*\*}$$(1.192) | $$2.708^{\*\*}$$(1.317) |
| Year control | X | X | X | X |
| Other controls | X | X | X | X |
| Observations | 93 | 93 | 93 | 93 |
| $$R^{2}$$ | 0.938 | 0.939 | 0.939 | 0.940 |

Sources: See text. Notes: All independent variables (except where indicated) are lagged by one period (one year). Additional suffrage lags are included in columns (2)-(4). A linear trend is used as “Year control”. Controls for differenced urbanisation and population density are included but not shown. Robust standard errors are in parentheses. \*\*\*p ≤ 0.01, \*\*p ≤ 0.05, \*p ≤ 0.1.

**Part 3: Alternative explanations**

In this section, we explore the potential intervening impacts of income inequality, the threat of revolution, the differential costs of democracy, ethnic fractionalisation and racism, and ideology. We conclude that our results are robust to these alternative explanations.

 First, although an advanced system of taxation and redistribution did not emerge in the colony until after the American Revolution, several percentage points of the average colonist’s income went to taxes. The government used these proceeds to finance in-kind redistribution, such as poor relief and the building of roads, bridges, and schools (Rabushka, 2010, p. 14-17). As a result, increasing inequality, possibly driven by declining servant wages following the arrival of slavery, could have increased redistribution demands and prompted the establishment of autocratic institutions in the eighteenth century. Although we lack time series data on servant compensation, rising incomes in Britain in the period 1655-1705 (Figure A3) as well as increasing regulation of the servant trade by the Crown in the late 17th century decreased the supply of servants, implying that servant wages in Virginia should have increased.[[5]](#footnote-5) Similarly, while inequality did jump following the arrival of slavery (Figure A1), our analysis reveals that this rise was fairly limited and therefore cannot account for the dramatic shift in the suffrage which we observe.

Second, it is possible that greater racial heterogeneity in the 18th century led to a tightening of the franchise, as white elites sought to concentrate resources on their preferred policies. But enslaved blacks were always disenfranchised, so it is unclear why black-white divisions would influence *white* suffrage. One possibility is that, by limiting the white franchise, the politically and economically powerful attempted to neutralise potential coalitions between poor whites and blacks. As we show, however, blacks (either alone or together with whites) were not a credible security threat. Furthermore, we find little evidence that revolutionary threats more generally were responsible for political change in the colony. Virginia was relatively peaceful throughout the colonial period, and an analysis of the few rebellions that occurred shows that they had limited success in pushing for suffrage change. Finally, we also investigate and reject the ideas that the rising costs of democratic institutions and elite ideology, rather than labour market considerations, drove the tightening of the franchise in the 18th century. In what follows, we explore each explanation in further detail.

*Inequality*

Although the data on the share of the white landless population in Figure A1 start in 1682, other evidence confirms that the distribution of income in the first half of the 17thcentury was indeed egalitarian. As explained in the introduction, the average indenture length was about four years, and newly freed servants not only bought land but could also hold political office. Moreover, few planters owned large tracts of land. For example, a landowner census taken in Surry county in 1626 indicates that most of the landholdings were for less than 300 acres, with an average size of 154 acres. The low inequality also kept taxes and redistribution minimal.

However, the scarcity of white labour (and the ensuing political coalitions) were by far the primary driver of Virginia’s liberal representative institutions in the early 17th century, as tobacco production—and the prosperity of the colony— would have been impossible without a sufficient supply of English workers. Moreover, the quality of the colony’s labour market to a large extent likely determined the distribution of farm sizes, and hence income inequality, rather than the other way around. The scarcity of indentured servants, along with the unwillingness of freemen to work for someone else and the very high wages for hired labour prompted planters to break up and sell off larger landholdings which they could not exploit efficiently (Wertenbaker, 1922, pp. 44-47).

Furthermore, there is little evidence that the tightening of the franchise in the second half of the 17th century was preceded by a rise in income inequality. According to Figure A1, only approximately one third of Virginia’s white population was without land in the late 17th and early 18th centuries, which is comparable to the figures in the relatively equal Northern colonies, such as Massachusetts, New Hampshire, and Rhode Island. Data covering the distribution of servants, land transfer records and rent rolls also suggest that Virginia's inequality remained low throughout the 17th century. Small and medium sized farms (of under 200-300 acres) were wide-spread, while large landholdings (larger than 300 acres) were relatively rare (Wertenbaker, 1922, p. 43-45). Likewise, an analysis of wills in four Virginia counties (Isle of Wright, Lower Norfolk, Surry and Westmoreland) during the 1680-1689 period shows that there was little difference in the quality of possessions among different income groups. While the rich had more property than the poor, everyone owned a similar set of goods, consisting of wood or rough iron cooking utensils, boiling pots, wooden furniture, and in general little jewelry or silk clothing (Deen, 1972, p. 163-164).

Our inequality data also reveal that the arrival of slavery in the early 18th century did not significantly affect income inequality, implying that the inequality-suffrage link is less convincing. While roughly one third of Virginia’s white population was landless in the 1680s, by the 1750s, this figure increased by only around five percentage points.[[6]](#footnote-6) Slavery enabled rich farmers to amass large fortunes by substituting black labourers with servants, and thus led to the expansion of the upper class, while also impoverishing those farmers who were unable to afford slaves. However, access to cheap labour also enlarged the class of farmers who had enough capital to buy even a few slaves, which meant that a large middle class of farmers also emerged.

The distribution of working-age adult males resident in a household (tithables) across colonial households confirms this trend. Households with one tithable usually engaged in subsistence farming, while the number of tithables was higher for those farmers holding servants or slaves. As Table A6 shows, throughout the 17th and 18th centuries, most families held small farms that had between 2 and 5 tithables. Table A7, which uses the distribution of tithables to calculate Gini coefficients, also suggests that the distribution of resources stayed fairly constant during the colonial period. Will evidence from Deen (1972, pp. 163-170) covering the years 1700-1719 is consistent with these findings. Although only large planters owned items such as carriages and horses, slaves, jewelry, clothes and imported furniture, the quality of the average will improved significantly for all classes of freemen. For instance, all farmers were enjoying luxury goods including silver and china utensils, silk clothing and rugs.

**Table A6**

 Distribution of household tithables in Virginia in the 17th and 18th centuries

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| County | Averagetithablesper HH | HHs withjust 1tithable | HHs with2-5tithables | HHs with5+tithables | HHs with2+tithables |
| **Before 1700** |  |  |  |  |  |
| Accomack (1679) | 2.49 | 45.6% | 47.1% | 7.3% | 54.4% |
| Henrico (1679) | 2.72 | 37.5% | 55% | 7.5% | 62.5% |
| Lancaster (1679) | 3.18 | 36.4% | 52.3% | 11.4% | 63.7% |
| Northampton (1677) | 2.29 | 53.7% | 39% | 7.3% | 46.3% |
| Northumberland (1679) | 2.27 | 33.9% | 55.4% | 10.7% | 66.1% |
| Surry (1679) | 1.98 | 58% | 36.7% | 5.3% | 42% |
| **After 1700** |  |  |  |  |  |
| Amelia (1753) | 3.31 | 39% | 45% | 16% | 61% |
| Chestereld (1756) | 3.17 | 41% | 43% | 16% | 59% |
| Goochland (1754) | 3.46 | 31% | 53% | 16% | 69% |
| Lancaster (1745) | 4.34 | 19% | 54% | 27% | 81% |
| Loudoun (1760) | 2.67 | 45% | 44% | 11% | 55% |
| Lunenburg (1748) | 1.95 | 64% | 30% | 6% | 36% |
| Norfolk (1754) | 2.79 | 46% | 43% | 11% | 54% |
| Orange (1755) | 4.22 | 25% | 48% | 27% | 75% |
| Prince William (1747) | 2.7 | 38% | 53% | 9% | 62% |
| York (1763) | 6.03 | 22% | 45% | 33% | 78% |

Source: Morgan (1975, p. 228 and p. 342).

Notes: The definition of a tithable is as follows. Until 1662, a tithable was defined as any male over 15 and any imported male servant of whatever age. In 1658, imported black and Indian females over 15 were added to the category. In 1662, any women servant who “worked the ground,” all blacks and all Indians over 15 were counted as tithable. In 1672, it was decided that all Virginia-born black women over 16 would be tithable. In 1680, imported Christian servants were made tithable after reaching the age of 14, and imported black children at the age of 12. In 1705, all males and coloured women over 16 were made tithable (Morgan, 1975, p. 400-401).

**Table A7**

 Distribution of household tithables in eight Virginia counties, 1699-1775

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year | County | Average tithables | % largeplanters | % small and middle planters | Gini |
| 1737 | Amelia | 5.107 | 12.1 | 64.4 | 0.424 |
| 1756 | Amelia | 9.320 | 25.5 | 66.4 | 0.471 |
| 1770 | Amelia | 14.077 | 43.0 | 52.7 | 0.476 |
| 1748 | Goochland | 9.309 | 23.7 | 65.6 | 0.504 |
| 1754 | Goochland | 8.783 | 22.2 | 68.5 | 0.480 |
| 1770 | Goochland | 13.883 | 37.1 | 54.7 | 0.513 |
| 1699 | Surry | 3.972 | 5.5 | 69.6 | 0.361 |
| 1699 | Lancaster | 8.141 | 17.7 | 71.6 | 0.492 |
| 1720 | Lancaster | 11.865 | 28.6 | 58.6 | 0.567 |
| 1761 | Loudoun | 4.726 | 9.4 | 61.4 | 0.436 |
| 1775 | Loudoun | 6.663 | 16.2 | 60.2 | 0.510 |
| 1748 | Lunenburg | 3.982 | 4.9 | 62.4 | 0.411 |
| 1774 | Lunenburg | 7.227 | 17.8 | 73.4 | 0.365 |
| 1731 | Norfolk | 5.069 | 12.1 | 58.9 | 0.448 |
| 1751 | Norfolk | 6.399 | 12.7 | 70.6 | 0.462 |
| 1771 | Norfolk | 7.278 | 20.5 | 63.9 | 0.462 |
| 1739 | Orange | 5.922 | 12.5 | 74.5 | 0.369 |
| 1756 | Orange | 9.948 | 25.0 | 65.5 | 0.481 |
| 1769 | Orange | 10.239 | 28.8 | 63.9 | 0.445 |

Source: Price (1995).

Notes: See the notes to Table A6 for the definition of a tithable. Large planters are those with more than 11 tithables, while small and middle planters are those with 2-10 tithables. The Gini calculations use data on the distribution of tithables.

*The threat of revolution*

A further scenario predicts that elites will extend the right to vote in order to credibly commit themselves to economic concessions in the face of organised mass resistance (Acemoglu and Robinson, 2006). Although the colony was peaceful for most of the 18th century, it experienced a series of uprisings in the period 1660-1683, among which the servant uprising of 1663, Bacon´s rebellion in 1676, and the tobacco cutting riots of 1683. Those that chose to rebel included a small number of slaves, poor whites and indentured servants who protested against their working conditions and the gradual loss of political rights (Breen, 1973, pp. 10-12).

Bacon’s rebellion followed the decision of the House to limit the suffrage to householders and freeholders in 1670, but had mixed success in pushing for long-term policies expanding popular participation in government. On the one hand, a representative county levy court was established, in which members were elected by the majority of freemen in each parish county. Similarly, previously appointed offices in the vestries and militia were made elective (McKinley, 1905, p. 33). On the other hand, the 1676 decision to extend the suffrage to all freemen was rescinded in the same year, and only freeholders and householders could vote until 1683. Although a new law was passed which allowed essentially *all* freemen to vote, the suffrage was limited to freeholders again in 1699.

Furthermore, Table 2 shows that the most liberal political institutions (which allowed even indentured servants to vote) were adopted in the early 17th 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 18th century that underlied *both* Virginia’s stability and its restrictive representative institutions (Breen, 1973, pp. 13-17). As we argued in the analytic narrative, 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 tightening of the franchise to freeholders in 1699, but also made it increasingly costly for small farmers to participate in lower class collective action, thus improving the security situation in the colony.

*The costs of democracy*

It may be possible that even in an environment of stable labour markets and inequality, the continued redistribution burden of a democratic regime becomes unsustainable, prompting elites to constrain the franchise. For instance, even small amounts of redistribution may put significant pressure on cash strapped governments that need to service debt or have high war expenses. As a result, financial concerns and not labour markets may dictate if democracy is feasible or not.

The major sources of taxation and redistribution in the colony were the poll tax and the export duty on tobacco, amounting to 2 shillings per hogshead. The poll tax was levied on all white males above 16, as well as on male and female servants and slaves, and consisted of public, county and parish levies. At first glance, an examination of Figure A4 and Table A8 below suggests that 17th-century democracy may indeed have been expensive. The tax burden of the average colonist was much higher in the 17th century, when democratic institutions prevailed, relative to the 18th century, when the suffrage was tightened. However, the spike in tax rates in the early years of settlement was not due to increased redistribution, but rather to increased military spending needed to ward off Indian attacks. Since a portion of colonial taxes went to the English government, tax rates also rose when the mother country demanded more funds, such as during the English Civil War of 1642-1651, as well as when the English Parliament expanded public spending after the Glorious Revolution.



Fig. A4. Virginia poll tax rates, 1619-1775

Source: Rabushka (2010). Data for 1629-1686: p. 243-244; data for 1687-1710: p. 426; data for 1711-1739: p. 535; data for 1739-1762: p. 671; data for 1763-1772: p. 840.

Notes: Poll tax rates are in pounds of tobacco per person. The figures covering 1711 to 1718 are estimates.

It is possible that the multiple financial burdens placed on the Virginia government made a generous suffrage regime unsustainable in the longer term. There are at least three reasons that make such a conclusion less plausible. Virginia’s issuance of debt was minimal throughout the colonial period and even during periods of increased expenses, such as the French and Indian war of 1754-1763. Second, the increase in tobacco exports and prices after 1700 suggests that the colony, using receipts from export duties, could afford *more* liberal representative institutions and the arising redistribution. In addition, Virginia’s ability to raise revenue through land sales improved in the eighteenth century, as relatively developed land markets allowed the governor to trade unpatented land (Kulikoff, 2000, pp. 110-111).

**Table A8**

 Average annual combined county and public levy

in four Virginia counties, 1660-1750

|  |  |  |  |
| --- | --- | --- | --- |
| County | 1660s | 1690s | 1740s/1750s |
| Norfolk | 81.4 | 53.5 | 18.5 |
| Lancaster | 59.2 | 45.8 | 10 |
| Surry |  | 35 | 5 |
| Northumberland |  | 45 | 10.5 |
| Virginia (public levy only) | 45 | 11 | 4.6 |

Source: Morgan (1975), pp. 345-346.

Notes: Levies are expressed in pounds of tobacco per person. The 1660s

refer to the period 1660-1686, 1690s to the period 1687-1700, and

1740s/1750s to the period 1701-1750.

*Ethnic fractionalisation and racism*

A large literature has argued that religious or ethnic differences may create powerful constituencies implementing policies that benefit only their own community, suggesting that Virginia’s suffrage may have been contracted in response to rising ethnic fractionalisation and racism following the arrival of slavery (Alesina et al., 1999). Alternatively, the burgesses may have disfranchised landless whites if there was fear that politically powerful white settlers may align themselves with blacks in order to rebel against colonial authority.

These arguments are less convincing for a number of reasons. White planters did regard blacks as inferior and limited their rights (Kulikoff, 1986, p. 381-420). Slaves were considered property, and in the late 17th and early 18th century, even the small number of free blacks in the colony lost a number of privileges held previously, such as the right to employ white indentured servants, the ability to hold political office and the right to vote. However, the rising disapproval of blacks cannot adequately explain why *white* freemen without land or property were deprived of the right to vote only after the arrival of slavery and not before. Most blacks did not have a voice in colonial politics, and therefore it is less likely that the division of whites versus blacks directly influenced *white* suffrage. In addition, the suffrage was changed very shortly after the arrival of slavery, or much before whites and blacks could interact extensively and develop attitudes toward each other.

Moreover, it is less likely that slaves, either alone or in a coalition with poor whites, presented a credible security threat to whites. In the 18th century, capital crimes (excluding burglary) were rare in Virginia, and data in Kulikoff (1986, p. 390) show that blacks were on average only involved in one act of violence per county per decade.[[7]](#footnote-7) Slaves also did not attack whites: between 1740 and 1779, there were only three cases of arson, one of perjury and three assaults by slaves against whites.

*Ideology*

Many historians, such as Israel (2009), emphasise the importance of ideology in the development of democratic institutions. Is it possible that Virgnia’s less liberal regime in the late 17th and early 18th centuries was driven by politicians who were simply more conservative or by changes in ideology?

There are four pieces of evidence which speak against this scenario. First, the political experience of European migrants arriving in Virginia and the rest of the Southern colonies was very similar throughout the colonial period. Although by 1680, nearly 90% of colonial Americans were English, by the early 18th century more and more non-English migrants were arriving in the colonies, with the largest groups including Scotch-Irish, Germans and Dutch (Ward, 1991, pp. 109-116). In both the 17th and 18th centuries, the franchise in all these sending countries was less inclusive than the one in the Southern colonies.[[8]](#footnote-8)

Second, many of the same families which controlled Virginia’s Assembly in the 17th century were also in charge of politics after the arrival of slavery. Given a large literature on the intra-family transmission of cultural values (Bisin and Verdier, 2000), it is unlikely that such politicians were affected by changes in ideology. For example, in Virgnia dynastic groups like the First Families sent succeeding generations into public service. Similarly, in New Jersey more than half of all assembly members elected since 1703 were related to representatives who sat in either house of the legislature before their own election. This was due not only to the property qualifications imposed upon candidates, but also because attendance of assembly sessions required a lot of time and resources, particularly because politician compensation was often set at minimum levels (Purvis, 1999, pp. 193-194).

Third, even if conservative ideology did not spread through Virginia via immigration (from Europe or the other colonies), could it have taken root in the colony due to changes in educational policy? Although the College of William and Mary was established in Williamsburg 1693, in 1705 a fire and shortage of senior staff forced the administration to offer classes only at the grammar-school level. By 1750, only 100 students had entered the college, but none had matriculated (Purvis, 1999, p. 242). It is therefore unlikely that an ideological shift among Virginia’s elite would have taken place without the existence a strong educational institution.

Finally, the inclusion of year dummies in all specifications in the regressions makes it less likely that time-variant ideological shifts among Virginia’s politicians can explain away the empirical results in the paper.

**Part 4: Supplementary data information**

**Suffrage**

These data are available annually from the first year of each colony’s settlement to 1775 from McKinley (1905). The complete list of franchise regulations across all colonies includes: (1) being a free person (indentured servants were not considered free during the terms of the indenture); (2) the possession of land, or the combination of house and land (“freeholding”); (3) the possession of income or property; (4) whether a minimum freeholding, property or income amounts were required; (5) tax paying (such as income or poll taxes); (6) residency in the colony in which voting was taking place; (7) holding any particular religious belief; (8) being a non-felon; (9) being white; (10) the possession of a house; (11) having a particular social status, such as men with a family, being the son of a freeholder, or being a person of “good moral character”; (12) any other requirements, such as having one’s land formally patented. Since all colonies allowed only men aged 21 and above to vote, we do not account separately for restrictions related to gender or age. We do not focus on requirements for voting in local elections, as these not only were similar to those for colony elections, but also are not available consistently.

Section 4.1.1 in the main text describes how the suffrage variable is calculated in colonial Virginia. To calculate suffrage in the rest of the colonies, we need to consider that in some colonies (other than Virginia) voters were given the freedom to pick from two or more requirements in order to vote, which likely implied that the size of the electorate was larger than those in colonies which imposed only one of those restrictions. For example, while from 1698 onward, North Carolina required all voters to be free-holders, Maryland allowed electors who did not possess land to vote if they owned property worth at least 40 pounds. We therefore give 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, respectively. As we 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 one fourth, respectively.

To illustrate how this coding works for non-Virginia colonies, 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)). In 1692, electors instead had to possess income or property worth ten pounds, and to take an oath, so we code 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. We give 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).

This weighting scheme is clearly imprecise. Given that estimates on the proportion of voters under each suffrage regulation are unavailable for any of the colonies, Nikolova (Forthcoming) experiments with several alternative operationalisations of the suffrage index, including (1) assigning equal weights to all component restrictions (which implies not accounting 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. As comparing combinations of restrictions across colonies is arguably less precise, we do not implement the ordinal coding approach used for Virginia (described below) for the rest of the colonies. The cross-colony suffrage variable is also reasonably well correlated with data on suffrage extensiveness (covering mostly the 18th century), as well as when the suffrage coding is extended to cover the period 1775-1860. Although admittedly we cannot claim to remove all sources of bias from these data, this information, along with the several different coding approaches implemented in this paper, makes us more confident that our results are not driven by the idiosyncrasies of a particular coding approach.

The ordinal coding (for Virginia only) takes the following values. First, we calculate a raw suffrage index as follows: 0 if there were no restrictions; 1 if voters needed to be freemen; 2 if, in addition to 1, voters also needed to be both freeholders and households; or householders with a family (regardless of whether a minimum freeholding requirement existed or not); 3 if voters had to be freeholders and of a particular religion; OR if voters had to be tax-paying freemen resident in the colony; 4 if voters had to satisfy restrictions for freeholding, religion and race; 5 if voters had to satisfy restrictions for freeholding, residency, religion and race; and 6 if no elections were held in the colony. We then subtract the raw suffrage index from the maximum number of restrictions in the sample (6.5) to obtain the ordinal suffrage index used in the regressions which ranges from 0.5 to 6.5.

**Labour markets: percent black and white population density** The data are available from Historical Statistics of the United States (2006), in ten-year periods from 1610-1780. Missing values are filled in by linear interpolation. Virginia’s size is from Purvis (1999, p. 19).

**Labour markets:** **Ratio of Caribbean slave prices/sugar prices** Eltis et al. (2005) provide these data in constant prices. The years covered are 1674, as well as five-year periods from then onward until 1775 (for instance, 1675-1679).

**Inequality: percent white landless** We assemble the data set on the share of Virginia’s white male landless population from Kulikoff (1986, 2000), Main (1965), and Nash (1979). These data are available for the following years: 1682-1709; 1745-1756, 1759-1764, and 1767-1773. Remaining missing values are filled via linear interpolation (following by now a standard approach in the literature - see, for instance, Boix (2003)).

The conclusions that we draw from the percent landless data—that inequality in Virginia stayed broadly constant throughout the colonial period—square well with other historical research focusing on the post-independence period. On the eve of the American Revolution, the wealth distribution in New England, usually regarded as the most egalitarian, was actually slightly more *unequal* than that in the South (Jones, 1980, p. 289). In 1774, the richest 10 per cent of New Englanders who left probate records held 57 per cent of the net worth, compared with 49 per cent in the South and 42 per cent in the Middle colonies. This conclusion is echoed by Lindert and Williamson (2013, p. 756) who show that income inequality in 1774 New England was similar to that in the South.[[9]](#footnote-9) These results provide indirect evidence that the impact of slavery on inequality in the South was comparable to inequality shifts in the slave-free North.

Although percent landless should capture to a considerable extent movements in colonial inequality, it is of course possible that this variable also accounts for other factors that may have an important - and independent - effect on the evolution of representative institutions. A first possibility is that it simply is a proxy for poverty. A colony with many poor people may be less likely to extend the suffrage, possibly because of the high cost of sustaining a democratic system. Similarly, poor constituents may be less informed and may be less likely to demand a change in political institutions. Alternatively, it is possible that disgruntled and disenfranchised poor colonists may mobilise themselves in a rebellion with the aim of obtaining the suffrage.

Even though we cannot rule out *a priori* that percent landless also proxies for these other factors, there are several pieces of evidence that point against their importance. First, income differences are likely correlated with population density and urbanisation for which the regressions also control (as explained in Part 2 above, regression results are also robust to controlling for the Maryland welfare ratio). Second, as argued above, adequate government financing was never really an issue for Virginia. Moreover, literacy rates were uniformly high throughout the colonial period in both the Northern and the Southern colonies (mostly in the range 60%-80%), suggesting that information asymmetries across voters were less extensive.

**Urbanisation** is calculated by dividing Virginia’s total urban population (from Purvis (1999) and Purvis and Balkin (1995)) by the settled area (for the latter, see the sources in the description of population density). The urban population data include the following years and cities: Norfolk, VA: 1766-1775, and Richmond, VA: 1790 - assumed that this value was the same as in 1775. Missing data prior to the first year of available data are given a 0 value.

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1. A welfare ratio of 1 indicates that the labourer earns just enough to keep his family at subsistence, while higher values imply more prosperity. Virginia and Maryland produced predominantly tobacco, so it is reasonable to assume that real wages followed similar patterns in the two colonies. [↑](#footnote-ref-1)
2. Results using fewer lags are similar and available upon request. [↑](#footnote-ref-2)
3. See Dincecco (2011, pp. 64-72) for a similar analysis. [↑](#footnote-ref-3)
4. Neither of the tests indicate that either of the series has a unit root. [↑](#footnote-ref-4)
5. While improved life chances in Virginia in the second half of the 17th century increased labour supply, the demand for labour increased at a faster rate as tobacco production picked up and tobacco prices stayed high, which is consistent with the rising servant wages argument. Based on the available information, labourers’ compensation was 2 shillings per day from 1614 to 1621 but increased to 2.5 shillings in 1640 (Purvis, 1999, p. 113). The standard tobacco price was about 20 shillings per 100 pounds during the 1640s and 1650s. After 1655, the prices fell to about 10 shillings per 100 pounds by the 1660s and 1670s but stayed relatively stable for about half a century (Morgan, 2005, pp. 135-136, p. 302). [↑](#footnote-ref-5)
6. The unconditional correlation between percentage black (labour markets) and percent white landless (inequality) during the entire colonial period is merely -0.04. [↑](#footnote-ref-6)
7. These are defined as rape, murder, attempted murder or poisoning. Burglary was more frequent than any of the latter events: around three cases per county every two years. [↑](#footnote-ref-7)
8. See Nikolova (Forthcoming) for a detailed discussion. [↑](#footnote-ref-8)
9. As in our case, this is true when slaves are excluded from the calculation. [↑](#footnote-ref-9)