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Does the identity of leaders matter for education? Evidence from the first black governor in the US*

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Abstract

This paper analyzes whether political leaders from disadvantaged minorities improve educational outcomes of teenagers and young adults from the same minority. Specifically, we analyze the impact of the first African American governor ever elected in the United States, Douglas Wilder, who became governor of the State of Virginia in 1990. Using individual level survey data, we study how the educational achievements of black teenagers from Virginia evolved after the election of Douglas Wilder and we study the channels for the effect. The empirical specification follows a double and triple-difference strategy, using whites and other states as controls. The results show that, following the election, there was a significant and sizeable increase in the probability of getting a high school diploma for black teenagers in Virginia compared to whites. Our findings suggest that policy changes alone cannot explain this increase and we find evidence that the aspirations of black students improved. This indicates that Douglas Wilder may have acted as a role model for black teenagers in Virginia.

Keywords: education; minority; political leaders; aspirations.
JEL Classification Numbers: I24; D01; O51.

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1 Introduction

In the benchmark voting model of political economy there is no room for identity to play a role: the standard preferences of the decisive voter completely determine how politicians behave. Recent developments, however, allow non-standard considerations to determine individual behavior in politics. There is growing evidence that the identity of political leaders matters for the outcomes of the group they belong to (see for example Pande, 2003; Beaman et al., 2009; Mu and Zhang, 2014). The outcomes of individuals can be affected by politicians sharing the same identity through multiple mechanisms. Politicians with a salient identity may implement policies oriented to their group or foster aspirations. The election or the achievements of politicians from a minority may also improve perceptions about the minority in the rest of the population and reduce discrimination against the minority group.

In this paper, we analyze empirically whether the ethnic identity of politicians affects the outcomes of those individuals who share the same identity. Specifically, we analyze the impact of the first black governor ever elected in the United States, Douglas Wilder, who became governor of the State of Virginia in 1990, on the educational achievements of African Americans from Virginia. The case of Douglas Wilder is of particular interest because his election had symbolic importance and raised a lot of expectation and hope among the black[1] community (Jeffries, 2000). This is in part due to the fact that Virginia was a slave State, and Richmond, its capital, the capital of the Confederacy. It is also related to Douglas Wilder's personal story, with whom ordinary citizens could easily identify: Douglas Wilder was the grandson of slaves and suffered from discrimination, in particular during his studies (Jeffries, 2000).

In the first part of the paper we study how schooling outcomes of African American teenagers evolve after Douglas Wilder arrives in power using individual level data from the Current Population Survey (CPS), which is a monthly nationally representative pooled cross-section. Specifically, we study if high school graduation rates of 18-19 year old blacks are significantly different before and after Douglas Wilder arrives in power. To take into account that any change in the schooling outcomes of black teenagers might be driven by other changes in Virginia at that time, we first apply a Differences-in-Differences strategy, comparing the evolution in schooling outcomes between blacks and whites in Virginia. To control for the fact that the evolution of educational outcomes of blacks in Virginia can be driven by a shock happening outside of Virginia, we also apply a triple-difference strategy, using the other states within the United States with more than 10% of black population as

[1]For sake of simplicity, we will use African American and black interchangeably, but note that we will exclude from the analysis individuals of black ethnicity who belong to other salient identity groups, notably Hispanics.

controls. Our results show that following the election of the first black governor of the United States there is a significant and sizeable increase in the probability of getting a high school diploma for blacks with respect to whites in the state where he was elected. The estimations suggest that the arrival in power of the governor is related to an increase in the probability of having a high school diploma among 18-19 year old blacks of 14 percentage points (pp.). These results are robust to the addition of different control variables and state-race specific time trends. Moreover, falsification tests show that the effects are not driven by pre-existing changes.

In the second part of the paper we provide suggestive evidence on the channels underlying the observed effect. First, using additional data on aspirations, we analyze whether the aspirations of black students improve after the election of the governor. We find that during the period where Douglas Wilder is in power, aspirations of black students, as measured by self-rated drive to achieve and academic ability, improve. We then study if higher expected returns of education may play a role by looking at the evolution of wages and unemployment among black young adults. We do not find any evidence that labor market outcomes improve for blacks after the election of Douglas Wilder. Finally, using data on per-pupil spending and age profile and timing of dropout we analyze the role of the main changes in educational policies during the period. Our results suggest that educational policies alone cannot explain the differential change that we observe for blacks.

This paper relates to the literature that studies how the identity of elected leaders affect individual outcomes and in particular educational outcomes. Bhalotra et al. (2014) for example show that the religion of State legislators in India matters for health and educational outcomes. Clots-Figueras (2012) shows that female State legislators in India have a positive impact on the educational attainment of individuals who grow up in the districts where they are elected. These papers provide quantitative evidence that the identity of politicians matters for educational outcomes.

This paper also relates to the literature that focuses on the channels through which politicians from a certain group affect the outcomes of that group, in particular the impact of the identity of politicians on policies and aspirations. There is large evidence showing that the identity of politicians impact the types of policies that are implemented. For instance, Chattopadhyay and Duflo (2004) show that female local leaders tend to invest more in infrastructure that is targeted to women. Regarding ethnicity, Pande (2003) finds that an increase in the political representation of discriminated groups in India increases redistribution towards those groups. However, she also finds that expenditure on education decrease. Another literature studies the role of politicians as models. Beaman et al. (2012) find that the increase in female representation in India, following the implementation of

a system of quotas for women, improve educational aspirations and achievements of girls. Wolbrecht and Campbell (2007) find evidence of a role model effect in political participation: female politicians tend to increase girls' participation in politics. The evidence for developed countries is however more limited. DellaVigna (2010) studies the effect of the election of Obama on the outcomes and perception of potential achievements among African Americans. He finds a positive, though weak, effect on the number of applications of African Americans to one Law School.

The rest of the paper is organized as follows: section 2 describes the context of the case study; section 3 explains the source of the data and shows some descriptive statistics; section 4 describes the empirical strategy; section 5 shows the main results; section 6 explores the channels; section 7 concludes.

2 Context

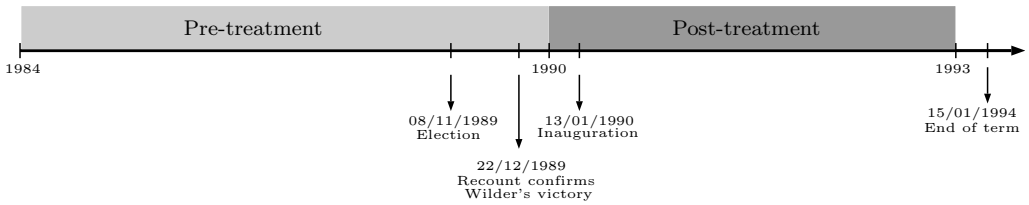
Douglas Wilder is the first person of African American origin to have been elected at the position of Governor in the United States.[2] While African Americans are nowdays better represented in top political positions, it was not the case in 1990. For example, African Americans were accounting for only 5.7 % of the seats in the House of Representative whereas they account for 12% of the population.[3] Therefore, as it is explained in more detail in section 6.1, the election of Douglas Wilder was an important event for Virginia and had symbolic importance. It is worth noting that the turnout rate was particularly high for a gubernatorial election despite the polls predicted a large victory for Douglas Wilder. 66.7% of the registered voters came to the booth in 1989, whereas only 53% voted in the election of 1985. The exit polls also measured that between 92% and 94% of black voters voted for Douglas Wilder (Traugott and Price, 1992), which reveals a strong collective identity.

Douglas Wilder was elected as a democratic candidate. As the previous governor of Virginia was also from the democratic party, the election of Douglas Wilder did not create any

[2]The office of Governor was once before held by a person from African descent, Pinckney Benton Stewart Pinchback in Louisiana in 1872-1873. P.B.S. Pinchback was lieutenant governor and had to take office during 15 days to transition in a period of election from the previous governor to the next governor. P.B.S. Pinchback was not elected. After Douglas Wilder, only two African Americans became Governors: Deval Patrick, who was elected in 2007 in Massachussets, and David Paterson, who was sworn in as governor in 2008 in the state of New-York. In this paper we do not study these other two cases. There are data limitations to study the impact of the election of Deval Patrick because Massachussets is a small state and the number of observations for blacks in the CPS is too small. David Paterson was not elected but nominated after the resignation of the previous governor and stayed in office only two years.

[3]Source: History, Art and Archives website of the United States House of Representatives http://history.house.gov/Exhibitions-and-Publications/BAIC/Historical-Data/Black-American-Representatives-and-Senators-by-Congress/.

Figure 1: Timing of the election and strategy



political rupture. The electoral law of Virginia forbids incumbents from being candidates, so Douglas Wilder did not stand for the 1993 election and was followed by a republican governor.

The timeline in Figure 1 shows the timing of the election of Douglas Wilder. He was elected on November 8, 1989. Because the margin of victory was very small (less than 7.000 votes), his opponent asked for a recount and the victory of Douglas Wilder was confirmed in December 1989. He took office as governor of Virginia on January 13, 1990 and left on January 15, 1994. For sake of simplicity, we assume that the mandate of Douglas Wilder began at the beginning of January 1990, and we consider the period from January 1984 to December 1989 as the "pre-treatment" period and the period from January 1990 to December 1993 as the "treatment" period.[4]

3 Data

Our main source of data is the Current Population Survey (CPS) from 1984 to 1993, downloaded from IPUMS-CPS (King et al., 2010) as well as from NBER for the period 1984-1988. The CPS is a nationally representative pooled cross-section, which provides monthly individual data on school enrolment and attainment since 1984. We focus on individuals aged 18 and 19[5] that declare themselves as white or black[6], and we only use states that have at least 10% of blacks in their population in 1990.[7] Our educational outcome of interest is high

[4]The pre-treatment period is determined by data availability: the CPS does not include data on school graduation before 1984.

[5]We focus on this age range because the large majority of individuals that will ever get a high school diploma gets it between 18 and 19 years old. For example, for the cohort of individuals that were 18 in 1990 and the sample of states that we use in the analysis, 79% of the individuals that declare having a high school diploma at age 24 got it between the age of 18 and 19, 9.5% got it before the age of 18 and 11.5% got it between the age of 20 and 24 (source: authors' calculation using the CPS data).

[6]We exclude individuals from other races because of the small sample size.

[7]The states that are included as controls are shown in Figure A.1 in the Appendix. They are: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Illinois, Louisiana, Maryland, Michican, Mississippi, Missouri, New-Jersey, New-York, North-Carolina, Ohio, Pennsylvania, South Carolina, Tennessee,

school diploma, which is defined by a dummy equal to one if the individual has graduated from high school, zero otherwise. We also use the information on individual educational attainment from the Census of population of 2000 to check the robustness of the results.

To shed light on the potential mechanisms underlying the effects on school outcomes we use additional datasets. To test the effect of educational policies, we exploit data on per-pupil spending from the Census of Governments between 1987 and 1992. To test the channel of aspirations, we use a nationally representative survey of first year college students, the CIRP freshman survey from the Higher Education Research Institute (HERI).

Table A.1 in the Appendix provides sample means from the CPS for the outcome and control variables, both for Virginia and control states, before and after the election of Douglas Wilder. Before the election (hereafter "pre-treatment"), the sample in the control states has slightly larger families but at the same time the share of individuals living alone is higher than in Virginia. The education level of the adults in the household is slightly larger in Virginia with respect to the control states. In all the specifications, we control for age, household size, an indicator for whether the individual lives alone and a proxy for having only one parent at home. Since the variable that proxies for education of adults in the household is only available for individuals that do not live alone, we include them as additional controls in one specification.

4 Empirical strategy

4.1 Difference-in-difference

To estimate the effect of the governor on the outcomes of black teenagers, we first use a difference-in-difference (DD) approach. We use whites in Virginia as controls, so that we compare changes in high school graduation rates of black teenagers to changes in high school graduation rates of white teenagers before and after the election. This allows us to take into account the fact that any observed change in the educational outcomes of black teenagers might be driven by some trend or other events happening in Virginia. We estimate the following equation:

$$Y_{itrm} = \alpha_0 + \alpha_1 Bl_r \times Post_t + \alpha_2 Bl_r + \alpha_3 Post_t + X_i'\omega + \theta_m + \epsilon_{itrm} \quad (1)$$

where Y_{itrm} is the school outcome of interest of individual i of race r at year t and month

Texas. The cut-off at 10% is due to data constraints: given the sample size of the CPS, the states with less than 10% of blacks do not have enough black teenagers in the data.

m, Bl_r is a dummy equal to 1 for blacks, $Post_t$ is a dummy equal to 1 for the period when Douglas Wilder is the governor of Virginia, *i.e.* 1990-1993[8], X_i is a set of individual control variables including sex, age, household size and household composition.[9] In some specifications, we add parental education as a control. To control for the fact that there are seasonal variations in school attendance we add a set of monthly dummies, θ_m. The coefficient of interest is α_1, which measures the change in the outcomes of blacks in Virginia with respect to whites. The standard errors are clustered at the race-year level, which is the level of the variable of interest ($Bl_r \times Post_t$).[10]

4.2 Triple difference

The previous specification might capture shocks that affect blacks all over the US, even in absence of the governor. To account for this, we also use a triple difference strategy (DDD), where the other states are used as controls. We estimate the following equation:

$$\begin{aligned} Y_{istrm} = \beta_0 + \beta_1 Bl_r \times VA_s \times Post_t + \beta_2 Bl_r \times VA_s + \beta_3 Bl_r \times Post_t + \\ \beta_4 VA_s \times Post_t + \beta_5 Bl_r + \beta_6 Post_t + \beta_7 VA_s + X_i'\eta + \delta_m + \zeta_{istrm} \end{aligned} \tag{2}$$

where VA_s is a dummy that indicates residence in Virginia. The rest of the variables are defined as earlier. The coefficient of interest here is β_1, which indicates the change in the outcomes of black teenagers in Virginia with respect to whites and with respect to the evolution of black vs. whites in other states. The standard errors are clustered at the state-year level.[11]

4.3 Parallel trends assumption

The main assumption of our empirical strategy is the parallel trends assumption. The DD strategy requires the high school graduation rates of blacks and whites in Virginia to evolve in a parallel way in absence of the election of the black governor. Similarly, the DDD strategy requires the difference-in-difference in high school graduation rates of blacks and whites to evolve similarly in Virginia compared to other states in absence of the treatment. Table 1

[8]The exact term of the governor's office was January 13$^{\text{th}}$, 1990 to January 15$^{\text{th}}$, 1994. For sake of simplicity, we include the whole month of the inauguration but exclude January of 1994 from the term.

[9]We include dummy variables indicating if the individual lives alone and if she/he lives with only one parent.

[10]It is not possible to cluster at other levels, such as race or year, because the number of clusters would not be large enough.

[11]While the variable of interest ($Bl_r \times VA_s \times Post_t$) is at the state-race-year level, this level of cluster is more conservative because it allows for any autocorrelation with a state-year cell. However, clustering at the state-race-year level holds similar results (results available upon request).

Table 1: Test for parallel trend before treatment

Dependant variable:	High school diploma	
	(1) DD Virginia	(2) DDD all States
Black x VA x Year		-0.006
		(0.010)
Black x Year	-0.002	0.004
	(0.011)	(0.005)
Black	-0.243***	-0.170***
	(0.037)	(0.023)
Year	0.005	-0.003
	(0.005)	(0.003)
Black x VA		-0.073*
		(0.044)
VA x Year		0.008
		(0.006)
VA		-0.017
		(0.022)
Constant	0.717***	0.734***
	(0.019)	(0.011)
Observations	4642	161210
r2	0.055	0.021

Source: CPS basic, 1984-1989. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The standard errors are clustered at the race-year level in column 1 and at the state-year level in column 2.

reports the pre-treatment trends between 1984 and 1989. Column 1 shows the pre-treatment trends for blacks compared to whites (DD specification) and column 2 checks if blacks relative to whites in Virginia have a differential trend compared to blacks relative to whites in the control states (DDD specification). In Column 1 the coefficient on the interaction term between Black and the trend ($Black \times Year$) is close to zero and not statistically significant, showing that the trend in high school diploma is not statistically different between blacks and whites before Douglas Wilder arrives in power. The coefficient on $Black \times VA \times Year$ is also very small and not statistically significant so we cannot reject that the trends are parallel before the election. Using DD and DDD to understand the changes in schooling outcomes of black teenagers once Douglas Wilder arrives in power can be arguably considered as a valid strategy.

5 Results

In this section we present the results on the evolution of the educational outcomes of black teenagers before and after Douglas Wilder arrives in power. Section 5.1 shows the results with

the DD and DDD specifications. Section 5.2 studies if the changes in educational outcomes vary with the gender of individuals and if the effect lasts. Section 5.3 checks the robustness of the results using an alternative dataset. Section 5.4 provides additional evidence that the results are not driven by pre-trends or statistical artefacts.

5.1 Main results

5.1.1 Differences-in-Differences

We first estimate the evolution of educational outcomes with the DD specification, which compares the evolution of outcomes among black teenagers in Virginia before and after 1990 with respect to the evolution of outcomes of white teenagers in the same state (Table 2).

Columns (1) to (4) show the changes in high school graduation rates among individuals aged 18 to 19. The coefficient on $Black \times Post$ measures the evolution for blacks with respect to whites and is therefore the one that interests us. In the basic DD specification in column (1) this coefficient is highly significant and shows that blacks in Virginia have a significant increase in their probability of getting a high school diploma after 1990 with respect to whites. Controlling for time effects that are common across groups by including year dummies does not change the results (column (2)). Column (3) additionally allows for a different time trend for blacks and whites. The results are very close across specifications. Finally, column (4) additionally controls for the highest level of education in the household. Because we only have information for the individuals that live with their parents, the sample is slightly smaller. But the results confirm the previous findings: there is a significantly higher probability of getting a high school diploma for blacks with respect to whites after the election of Douglas Wilder. The magnitude of the coefficient implies an increase in the probability of getting a high school diploma of around 14 percentage points.

5.1.2 Triple difference

Next, we estimate the effect of the election of Douglas Wilder on high school diploma controlling for the evolution of blacks versus whites in other states. This specification allows us to verify that the impact in Table 2 is not driven by events affecting blacks all over the United States after 1990. Table 3 shows the results.

The results are similar in size and significance to the results in Table 2. Blacks in Virginia experience a significant increase in their probability of getting a high school diploma with respect to whites and to the evolution of blacks versus whites in other states after Douglas Wilder arrives in power. Column (1) shows the basic specification, column (2) additionally controls for race specific year and state dummies that allow for a different intercept for

Table 2: Governor from minority and high school diploma. Differences-in-Differences.

Dep. variable:	High school diploma			
	(1)	(2)	(3)	(4)
Black x Post	0.159***	0.157***	0.138**	0.140***
	(0.035)	(0.028)	(0.055)	(0.025)
Black	-0.195***	-0.194***	-0.207***	-0.137***
	(0.024)	(0.014)	(0.041)	(0.019)
Post	-0.058***			
	(0.019)			
Female	0.127***	0.127***	0.127***	0.119***
	(0.019)	(0.019)	(0.019)	(0.018)
Household size	-0.029***	-0.029***	-0.029***	-0.022**
	(0.008)	(0.008)	(0.008)	(0.008)
Lives alone	-0.207***	-0.204***	-0.204***	
	(0.040)	(0.040)	(0.040)	
Single parent	-0.122***	-0.123***	-0.123***	-0.059**
(proxy)	(0.026)	(0.025)	(0.025)	(0.025)
Medium-educated				0.247***
household				(0.032)
High-educated				0.398***
household				(0.034)
Constant	0.707***	0.710***	0.712***	0.426***
	(0.041)	(0.040)	(0.038)	(0.049)
Year dummies	No	Yes	Yes	Yes
Time trends	No	No	Yes	No
Observations	7020	7020	7020	6383
R^2	0.153	0.156	0.156	0.239

Source: CPS basic, 1984-1989. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The sample is composed of individuals that are 18 and 19 years old. The standard errors are clustered at the race-year level. The extra controls are a set of dummies indicating the level of education of the most educated adult member of the household.

blacks in each state and for blacks in each year. Finally, columns (3) to (5) control for state-year dummies that take into account time effects by state that are common across groups. Column (4) also allows for a different trend for blacks and whites in each state, and column (5) additionally controls for parental education. The magnitude of the increase in graduation rates does not vary much across specifications. Interestingly, the coefficient on VA x Post, which represents the coefficient for whites in Virginia after 1990, is not significantly different from zero and is very small. This seems to indicate that whites in Virginia did not experience a significant change in the probability of getting a high school diploma after the election. Thus, we can rule out the hypothesis that the effect observed for blacks is driven by a discouraging effect among whites instead of an improvement among blacks.

Table 3: Governor from minority and high school diploma. Triple difference.

Dep. variable:	High school diploma				
	(1)	(2)	(3)	(4)	(5)
Black x VA x Post	0.173***	0.178***	0.175***	0.156**	0.165***
	(0.037)	(0.037)	(0.037)	(0.074)	(0.032)
Black x VA	-0.087***				
	(0.016)				
Black x Post	-0.013				
	(0.013)				
VA x Post	-0.030	-0.032			
	(0.020)	(0.021)			
Black	-0.102***	-0.006	-0.003	0.044	0.029
	(0.009)	(0.028)	(0.028)	(0.046)	(0.027)
VA	0.003				
	(0.015)				
Post	-0.027***				
	(0.008)				
State dummies	No	Yes	No	No	No
Year dummies	No	Yes	No	No	No
Black-state & black-year dummies	No	Yes	Yes	Yes	Yes
State-year dummies	No	No	Yes	Yes	Yes
Time trends	No	No	No	Yes	No
Extra controls	No	No	No	No	Yes
Observations	251213	251213	251213	251213	222593
R^2	0.142	0.149	0.151	0.152	0.209

Source: CPS basic, 1984-1993. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The standard errors are clustered at the state-year level. The control variables include the sex of the individual, the size of his household and two dummies that indicate if he lives alone and in case he lives with adults, if there is one or more adults. The extra controls are a set of dummies indicating the level of education of the most educated adult member of the household.

The results are similar when equation (2) is estimated using a non-linear (logistic) specification that takes into account the fact that the outcome variable is a dummy variable (see table A.2 in the Appendix).

5.2 Additional specifications

In this section we further explore the increase in the probability of getting a high school diploma for blacks in Virginia after the election of Douglas Wilder. In particular, we analyze heterogeneous effects among black teenagers and we study whether the changes are maintained in the medium run.

5.2.1 Heterogeneity

Does the magnitude of the increase vary with gender? For sake of space, Table 4 only reports the specification in DDD and the coefficient on $Black \times VA \times Post$ but the results are similar for DD.

Table 4: Governor from minority and high school diploma. Triple difference.

Dep. variable:	High school diploma				
	(1)	(2)	(3)	(4)	(5)
Sex: male					
Black x VA x Post	0.199***	0.206***	0.202***	0.184	0.209***
	(0.067)	(0.067)	(0.068)	(0.123)	(0.059)
Observations	122301	122301	122301	122301	113487
Sex: female					
Black x VA x Post	0.130***	0.136***	0.132***	0.104**	0.097***
	(0.031)	(0.035)	(0.036)	(0.044)	(0.035)
Observations	128912	128912	128912	128912	109106
Controls	Yes	Yes	Yes	Yes	Yes
State dummies	No	Yes	No	No	No
Year dummies	No	Yes	No	No	No
Black-state dummies	No	Yes	Yes	Yes	Yes
Black-year dummies	No	Yes	Yes	Yes	Yes
State-year dummies	No	No	Yes	Yes	Yes
Time trends	No	No	No	Yes	No
Extra controls	No	No	No	No	Yes

Source: CPS basic, 1984-1993. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The standard errors are clustered at the state-year level. The control variables include the sex of the individual, the size of his household and two dummies that indicate if he lives alone and in case he lives with adults, if there is one or more adults. The extra controls are a set of dummies indicating the level of education of the most educated adult member of the household.

Although the estimations show that there is a significant increase in the probability of getting a high school diploma for both groups, the magnitude of the change is quite different depending on the gender. Boys have a significant increase in their probability of graduating from high school of 18% points according to the most demanding specification (column 4), whereas girls experience an increase of "only" 10 % points. Although we cannot test it, this could be due to the fact that boys can more easily identified with the governor.

5.2.2 Does the improvement last?

We now turn to analyze what happens after Douglas Wilder leaves power, *i.e.* after 1993. To assess whether the effects last, we include information from the CPS up to 2000, and we check if there is an increase in high school graduation rates for blacks with respect to whites and with respect to other states during the period 1994-2000. Table A.3 in the Appendix reports the results for the DDD specification. According to the results, the increase is persistent. As it might be expected, the lasting effect is smaller in magnitude than the effect for the period when Douglas Wilder is in power. There is a significant increase of approximately 11 pp. in the graduation rates of blacks compared to the period from 1984 to 1989. The results also indicate that there is no significant change for whites in Virginia for the period from 1994 to 2000 ($VA \times Post_{1994\text{-}2000}$) and no change for blacks in other states ($Black \times Post_{1994\text{-}2000}$).

5.3 Robustness check: alternative dataset

In this section we test the robustness of our results by using an alternative data source to the CPS, the census data. We use the public 5% micro sample from 2000 and we focus on individuals who were 18-19 years old between 1984 and 1993 and who were born in Virginia. To have the same population as in the CPS, we restrict our analysis to non-institutionalized individuals.[12]

As individuals provide their highest educational level, we can see if blacks that were 18-19 years old when Douglas Wilder was in power tend to have a higher probability of having a high school diploma than blacks from previous cohorts, with respect to whites and to other states. Table A.4 in the Appendix shows that it is the case, and that, consistent with the CPS data, the probability increases more for boys than for girls.[13]

[12]This means that we exclude from the sample individuals in the military who reside in military barracks, inmates in old age homes, prisons and mental institutions.

[13]The magnitude of the effect is much smaller with the census data than with CPS. This can be due to several factors. First, the way high school diploma is measured in the census is different from the CPS. In the census we do not know when the individuals got their high school diploma. Thus, individuals who got their high school diploma after the age of 19 are classified as having a high school diploma in the census whereas they are marked as not having a high school diploma in the CPS. Second, the census provides information on recalled highest educational attainment, which may be less accurate than current educational attainment as provided by the CPS. Third, the econometric specification is not exactly the same: with the census data we can only control for year of birth dummies, but not for year dummies.

5.4 Falsification tests

5.4.1 Placebo tests

In order to check if the changes in high school graduation rates are really concomitant with the election of Douglas Wilder, we first run a placebo regression, where we assign the treatment - the election of Douglas Wilder - to Virginia in a pre-treatment period. Specifically, we use only pre-treatment data, and we test whether there is any differential effect on high school graduation for blacks in Virginia in 1988-1989 with respect to the previous period (1984-1987). This allows us to check if changes in educational outcomes begin before Douglas Wilder arrives in power.

Table 5: Governor from minority and high school diploma. Placebo test: treatment in 1988-1989. Triple difference.

Dep. variable:	High school diploma				
	(1)	(2)	(3)	(4)	(5)
Black x VA x Post	-0.021	-0.017	-0.023	0.025	0.000
	(0.024)	(0.019)	(0.020)	(0.024)	(0.025)
Controls	Yes	Yes	Yes	Yes	Yes
State dummies	No	Yes	No	No	No
Year dummies	No	Yes	No	No	No
Black-state dummies	No	Yes	Yes	Yes	Yes
Black-year dummies	No	Yes	Yes	Yes	Yes
State-year dummies	No	No	Yes	Yes	Yes
Time trends	No	No	No	Yes	No
Extra controls	No	No	No	No	Yes
Observations	161210	161210	161210	161210	142558
R^2	0.137	0.145	0.147	0.147	0.203

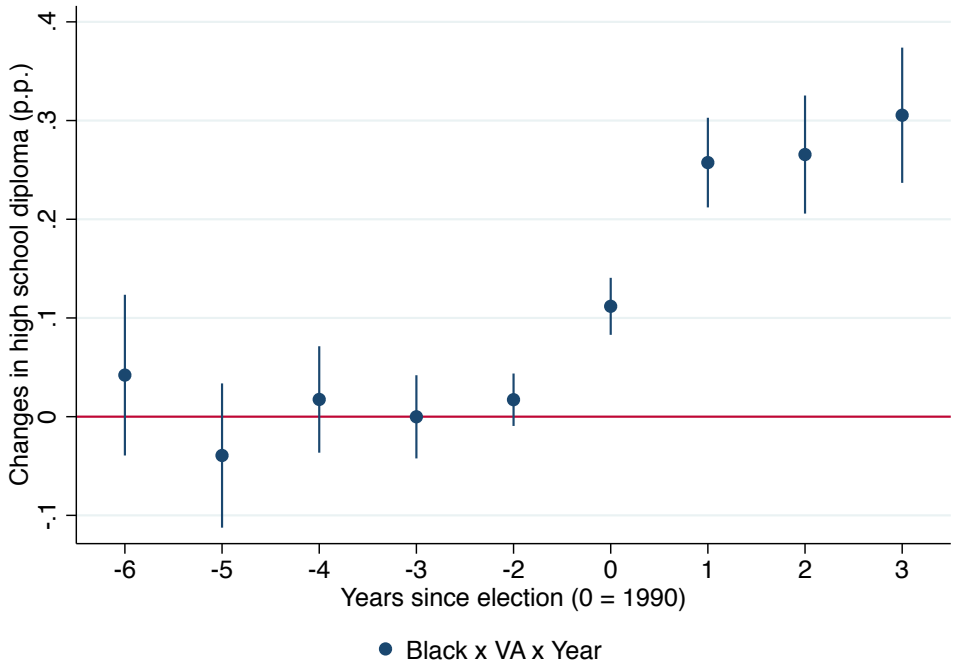
Source: CPS basic, 1984-1989. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The standard errors are clustered at the state-year level. The control variables include the sex of the individual, the size of his household and two dummies that indicate if he lives alone and in case he lives with adults, if there is one or more adults. The extra controls are a set of dummies indicating the level of education of the most educated adult member of the household.

Table 5 provides the results of the estimation in DDD. The results show that there is no significant change in the educational outcomes of blacks before 1990 in Virginia: the coefficient on the interaction term is quite small and not significantly different from zero. Therefore, it seems that the change in educational outcomes for blacks is not driven by events that happened before the election of Douglas Wilder.

An alternative way to explore if the timing of the change in high school graduation rates

is the same as the arrival to power of Douglas Wilder is to plot the results of the regression of high school diploma on $Black \times VA \times Post$ where we allow the coefficient on the interaction term to vary by year. Figure 2 graphically provides the results from such a regression, where the controls are the same as in column 4 of table 3. The reference point is 1989 (-1). From this graph we can see that the probability to graduate from high school for a black teenager is not statistically different between 1984 and 1988 compared to 1989, but increases significantly between 1990 and 1993. The timing of the election of Douglas Wilder and of the increase in high school diploma is therefore the same.

Figure 2: Governor from minority and high school diploma. Yearly estimates. Triple difference.



Source: CPS basic, 1984-1993. The graph plots the coefficients of $Black \times VA \times Year$ estimated following the specification of equation 2. The vertical bars indicate the 95% confidence interval. The horizontal axis indicates the number of years where Douglas Wilder has been in power. The vertical axis indicates the changes in high school diploma graduation rates with respect to the missing category, -1, i.e. 1989.

5.4.2 Permutation tests

Next, we run placebo regressions where we assign the treatment to the period 1990-1993 successively in each of the 20 control states. We exclude the state of Virginia. The objective here is to see if we observe changes in the educational outcomes of blacks with respect to whites with respect to other states of the same magnitude or higher than in Virginia (+ 16

pp.) in the control states between 1990 and 1993. If we do observe changes of comparable magnitude in the control states, then we would not be able to exclude that the changes for blacks in Virginia are driven by a different event than the election of Douglas Wilder.[14] The results of the DDD estimation are shown in Table A.5 in the Appendix. For the most demanding specification (column 4), we observe a significant increase at the 5% level in the probability of getting a high school diploma in New-Jersey and South Carolina. However, the magnitude of the change is much smaller than in Virginia (respectively 8 and 11 percentage points). The estimated coefficient when the treatment is falsely attributed to these two states is also not stable across specifications and is much smaller and not significant in the other four specifications. Overall these results tend to support the hypothesis that the sharp increase after 1990 of high school diploma graduation rates among black young adults is an event that is specific to the State of Virginia.

6 Channels

The previous section shows that there is a significant increase in the probability of graduating from high school for the 18-19 year old blacks in Virginia when Douglas Wilder is in power. In this section we explore three channels that could lead to these changes. Section 6.1 analyzes whether the aspirations of black teenagers of the same age in Virginia also change during that period. Section 6.2 looks at the evolution of expected returns to education for black young adults by looking at the evolution of contemporary labor market outcomes. Section 6.3 studies if the effects are driven by changes in educational policies.

6.1 Aspirations

We first explore whether the aspirations of black students improve after the election of the first black governor of the US. Previous literature from psychology shows that adults that act as role models for adolescents can foster self-efficacy beliefs, *i.e.* beliefs in own's ability to achieve a goal (Zimmerman, 2000). In turn, self-beliefs are highly correlated with academic performance (Pajares and Urdan, 2006). Populations that suffer from negative stereotypes with respect to their performance, such as African American students, tend to have lower self-beliefs and interventions aiming at improving their self-beliefs can improve their educational outcomes (Cohen et al., 2009). With respect to role models, the economic literature has mostly focused on the identity of professors and has shown that these authority figures tend

[14] Bertrand et al. (2004) also show that the use of the differences-in-differences methodology in contexts where the outcome is serially correlated may lead to an overestimation of the t-statistics. These placebo regressions also provide a test to check if our estimates suffer from such a problem.

to influence the educational aspirations and outcomes of the students sharing their identity (Bettinger and Long, 2005). Beaman et al. (2012) also find that female local leaders in India act as role models and tend to improve adolescent girls' educational aspirations in India through their influence as role models.

Could the improved educational outcomes of black teenagers after 1990 come from an improvement in their self-efficacy beliefs following Douglas Wilder's election? As underlined in sections 1 and 2, the election of Douglas Wilder had symbolic importance and this is due to several factors. He was the first black governor ever elected in the US and as such his election raised a lot of attention from the whole country. Reverand Jesse Jackson, a civil act activist, claimed that the election was "a victory for America".[15] The fact that Virginia used to be the capital of the Confederacy and a very active state in slave trade reinforced the symbol. Moreover, Douglas Wilder was "a grandson of slaves"[16] that grew up in a poor family, and suffered from discrimination. He had to leave Virginia to study Law because blacks were forbidden from studying in Virginia law schools.[17] All these characteristics led the journalist David Lerman from the newspaper Dailypress to call him "a superstar role model for many black Virginians."[18]

But is it actually the case? Did Douglas Wilder play a role model effect on black teenagers? To study this question we look at how the self-efficacy beliefs of blacks compared to whites compared to other states changed after the election of Douglas Wilder. We exploit a survey of first-year college students, the CIRP Freshman Survey, which includes questions on self-efficacy beliefs. Specifically, we look at how self-rated academic ability and drive to achieve of blacks changed after the election of Douglas Wilder. They are both categorical variables that take values from 1 to 5. Higher values imply higher self-rated ability or drive to achieve. Table A.6 in the Appendix shows that the parallel trends assumption holds for both variables for blacks compared to whites in Virginia before 1990 (columns 1 and 3), and for blacks compared to whites compared to others states (columns 2 and 4). We estimate equation 2 using an ordered logit model.

As the sample of students that are surveyed in this dataset is very different to the CPS sample from which the main results come from, the results reported in Table 6 should only be considered as suggestive evidence. But they show that black first-year college students tend to rate their academic ability and their drive to achieve higher (although not always significantly) after 1990. We find that blacks in Virginia after the election increase their odds ratio of being in a higher category of self-rated academic ability by 17 to 44% depending

[15]Quote from the newspaper USA Today, "Historic gains for Blacks", November 8, 1989.
[16]Quote from the newspaper USA Today, "Historic gains for Blacks", November 8, 1989.
[17]Source: Virginia Union University online Library.
[18]Source: the Daily Press, September 5, 1994.

Table 6: Governor from minority and aspirations. Triple difference. Ordered logit.

	(1)	(2)	(3)	(4)	(5)
Academic ability					
Black x VA x Post	0.373***	0.314***	0.220*	0.303***	0.175*
	(0.089)	(0.056)	(0.122)	(0.066)	(0.106)
Black x Post	0.087*				
	(0.051)				
Observations	945290	945290	945290	945290	945290
Drive to achieve					
Black x VA x Post	0.146*	0.117*	0.218*	0.092	0.169
	(0.084)	(0.066)	(0.118)	(0.069)	(0.120)
Black x Post	0.070*				
	(0.041)				
Observations	944247	944247	944247	944247	944247
Controls	Yes	Yes	Yes	Yes	Yes
Year dummies	No	Yes	Yes	No	No
State dummies	No	Yes	Yes	No	No
Black-state dummies	No	Yes	Yes	Yes	Yes
Black-year dummies	No	Yes	Yes	Yes	Yes
Time trends	No	No	Yes	No	Yes
State-year dummies	No	No	No	Yes	Yes

Source: Freshmen survey, 1985-1993. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The reported coefficients are in log-odd units. The standard errors are clustered at the state-year level.

on the specification. They also increase their odds ratio of being in a higher category of self-rated drive to achieve by 10 to 17%. These results provide suggestive evidence that the increase in high school graduation rates of blacks students after 1990 may have partially acted through an improvement in their self-efficacy beliefs at that time. Table 6 also reports the coefficients for $Black \times Post$, which indicates how black teenagers outside of Virginia rate their academic ability and drive to achieve after 1990. Although the size of the coefficient is much smaller than for $Black \times VA \times Post$, it is positive and significant, which indicates that the election of Douglas Wilder could have had spillovers in terms of self-confidence on black teenagers outside of Virginia.

6.2 Labor market outcomes

We now test an alternative channel that could also explain part of the increase in schooling that we observe. Better labor market conditions for black adults such as higher wages and lower unemployment rate could foster schooling among black teenagers. In other words,

blacks could be responding to an increase in returns to schooling specific to blacks. We follow the same strategy as before to test whether the labor market outcomes of black adults in Virginia improve during the time Douglas Wilder is in power.[19] We focus on young adults aged 24 to 35 as they are plausibly a reference group for the young students at high school[20] and we look at their self-reported wages and employment status from the CPS data. To test whether black teenagers are responding to a specific increase in returns to high school graduation, we run the same specification for young adults who have graduated from high school. The results are similar to the ones presented here.[21]

Table 7: Governor from minority and labor market outcomes for adults (25-34 years old). Triple difference.

	(1)	(2)	(3)	(4)
Wages				
Black x VA x Post	-0.040	-0.036	-0.026	0.070
	(0.073)	(0.062)	(0.061)	(0.098)
Observations	110188	110188	110188	110188
Unemployment				
Black x VA x Post	0.001	-0.001	-0.001	-0.019**
	(0.007)	(0.006)	(0.006)	(0.009)
Observations	1340836	1340836	1340836	1340836
Controls	Yes	Yes	Yes	Yes
State dummies	No	Yes	No	No
Year dummies	No	Yes	No	No
Black-state dummies	No	Yes	Yes	Yes
Black-year dummies	No	Yes	Yes	Yes
State-year dummies	No	No	Yes	Yes
Time trends	No	No	No	Yes

Source: IPUMS-CPS, 1984-1993. 25-34 years old. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The standard errors are clustered at the state-year level.

Results in table 7 show that the labor market conditions of young black adults, as measured by wages and unemployment, do not improve after the arrival of Douglas Wilder to power. The coefficients are close to zero and not significant in most specifications for both wages and unemployment. Improvements in expected returns to education among black Virginians are therefore unlikely to be the main drivers of the increase in educational achievement that we observe.

[19] We do not show estimates from the last specification with additional controls, because it excludes all the 25-34 year old adults who live alone, *i.e.* around 27% of the sample.

[20] We estimate the same regression for a set of different age groups. No improvement on labor market conditions was found for any group. Results are available upon request.

[21] Results available upon request.

6.3 Educational policies

Finally, the changes in educational outcomes that we observe could also be explained by educational policies introduced in Virginia immediately before or during the time the governor was in power. Two major educational policies were introduced in 1989 and 1990 in Virginia: a school funding reform and a change in the compulsory school attendance age. We consider these two policies successively.

6.3.1 The school funding reform

A legislative school funding reform (SFR) was introduced in Virginia in 1989. The objective of the reform was to distribute resources more equally between school counties. This reform may affect the educational outcomes of blacks compared to whites under two circumstances: if following this reform per-pupil spending increases *and* the marginal return from spending is higher for blacks than for whites, or if counties with a larger proportion of black population have a faster increase in their resources compared to other counties. We check these two hypotheses successively.

With respect to the first hypothesis, we cannot easily check if blacks have a marginal return from spendings that is higher than whites. But we can check if per-pupil spending increased at a higher speed after 1989 in Virginia, using data from the Government finances report of the annual Census of Government.

Figure 3 plots the evolution of current per-pupil spending in Virginia between 1987 and 1991.[22] Spendings are adjusted for inflation, using the annual average of the CPI index for all urban consumers from the Bureau of Labor statistics. The graphic shows that there is an increase in per-pupil spending over the period, but this increase is relatively stable and if anything tends to slow down after 1990.

To check if the evolution in per-pupil spending in Virginia is similar to the evolution in other states, table 8 also reports the evolution of per-pupil spending in Virginia after 1989 compared to other states using a differences-in-differences strategy. The coefficients are small and not significantly different from zero, showing that per pupil spending did not evolve differently in Virginia compared to other states after 1989. As policy changes are likely to take time to be implemented, we also check the effect for 1990 and 1991, and the results are similar. The changes in educational outcomes of black teenagers can therefore not be driven by a faster increase in per-pupil spending after 1989, 1990 or 1991.

Could it be that counties with a higher share of black population get more money per

[22] We focus on the period after 1987 because the way per-pupil spending are calculated changes after 1986, so figures before 1987 are not strictly comparable.

Figure 3: Evolution of per-pupil spending

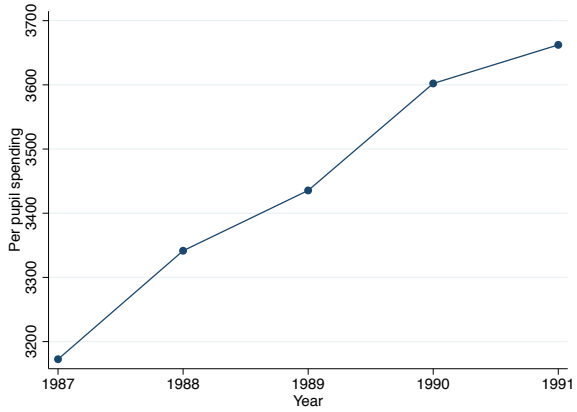


Table 8: Changes in per-pupils spendings. Double difference.

Dep. variable:	Current per-pupil spendings		
	(1)	(2)	(3)
VA x Post 1989	72.31	72.31	-30.60
	(901.77)	(913.42)	(204.57)
VA x Post 1990	99.17	99.17	76.85
	(902.84)	(913.40)	(204.42)
VA x Post 1991	68.24	68.24	-23.43
	(1108.71)	(1118.73)	(177.17)
Year dummies	No	Yes	Yes
State time-trend	No	No	Yes
Observations	105	105	105

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Source: Government finances report of the annual Census of Government, 1987-1991. The amounts are in dollars adjusted for inflation, using the annual average of the CPI index for all urban consumers from the Bureau of Labor statistics.

pupil after the reform? To check this hypothesis, we use available data on per-pupil spending at the county level before and after the school funding reform, in 1987 and 1992, from the Census of governments.[23] We estimate the correlation between county-level changes in per-pupil spendings and the share of black population in the county in 1990 in absolute and percentage terms using the Census of 1990. Figures 4 and 5 show that there is no correlation between the change in per-pupil spending and the share of black population in the county. The absence of correlation is robust to the exclusion of the point the furtherest on the right. Counties with more blacks did not seem to have benefitted more from the school funding reform.

The empirical evidence shown here does not support this policy as being one of the driver of the increase in educational outcomes of blacks after the election of Douglas Wilder.

6.3.2 Compulsory school attendance age

The second educational reform that we study changed the compulsory school attendance age (CSAA). In July 1990, the state of Virginia increased the compulsory school attendance age from 17 to 18 years old. Is it likely that this reform explains part of the increase in the

[23]Data at the county level in the Census of Governments are only available every five years.

Figure 4: Net increase in per-pupil spending between 1987 and 1992

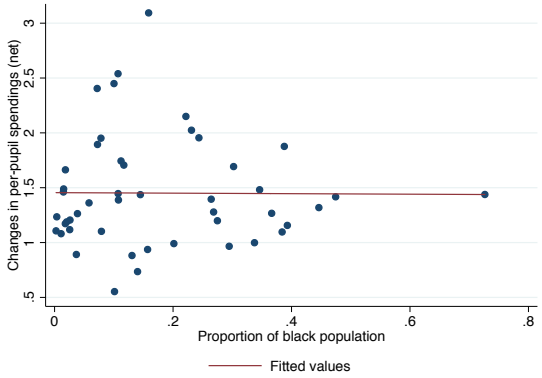
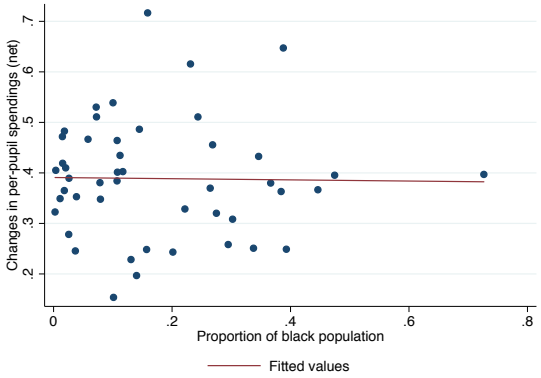


Figure 5: Percentage increase in per-pupil spending between 1987 and 1992



Source: Census of governments.

probability of graduating from high school of black young adults? While the reform concerns everybody in Virginia, it may have a differential impact on blacks with respect to whites given that blacks have on average a lower attainment rate before the reform (see table A.1 in the Appendix).

In order to answer this question, we first study the timing and age group of blacks concerned by the increase in educational attainment and compare it to the timing and age group of individuals concerned by the CSSA reform. The increase in educational attainment concerns 18-19 year old blacks and as shown in figure 2 begins in 1990. In comparison, the CSSA reform takes place in mid-1990 and concerns 17 year olds. While part of the increase in high school graduation rates from 1991 onwards could be related to this reform, it is highly unlikely that the large increase we observe in 1990 is driven by this reform. Those for which we observe an increase, the 18-19 year old blacks, are too old to be affected by the reform.

Let us now look at an alternative educational outcome, dropout. In the data we have information about dropout for individuals that are more than 15 years old. We can therefore study the educational outcomes for individuals that are directly affected by the CSSA reform, the 16-17 year old age group. Table 9 shows that there was no decrease in dropout for blacks aged 16-17 in Virginia compared to the control groups after 1990. Instead, there is a significant decrease in dropout for blacks aged 18 to 19 years old. This population, however, is too old to be affected by the policy for each year after treatment. These results provide additional evidence that the observed improvement in school outcomes for blacks after 1990 is unlikely to be mainly driven by the CSAA reform.

Table 9: Dropout for 16-17 and 18-19. DDD

Dep. variable:	Dropout				
	(1)	(2)	(3)	(4)	(5)
Age: 16-17					
Black x VA x Post	0.006	0.006	0.003	0.041**	0.006
	(0.015)	(0.012)	(0.013)	(0.020)	(0.014)
Observations	242425	242425	242425	242425	237454
Age: 18-19					
Black x VA x Post	-0.087**	-0.090**	-0.093**	-0.063	-0.080***
	(0.036)	(0.038)	(0.038)	(0.097)	(0.029)
Observations	229719	229719	229719	229719	201423

Source: NBER-CPS, 1984-1988 and IPUMS-CPS, 1989-1993. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The standard errors are clustered at the state-year level.

7 Concluding remarks

This paper aims at analyzing whether political leaders from disadvantaged minorities impact the educational outcomes of teenagers and young adults from the same minority. We have focused our analysis on the first black governor ever elected in the US. This election was a major event for the black community in Virginia, and thus we can expect the election to have important effects among blacks. We focus our analysis on teenagers aged 18 to 19 and study the evolution of high school graduation after the election with respect to whites and other states as controls. Our results point out a sizeable increase in high school graduation rates among blacks. Interestingly, the increase does not seem to be explained by the main changes in educational policies at that time. It can neither be explained by an increase in returns to schooling for blacks. Instead, our results provide some evidence that the effect could have been channeled by an increase in the aspirations of black students. These results provide support to the existence of a role model effect of the first elected black governor in the United States.

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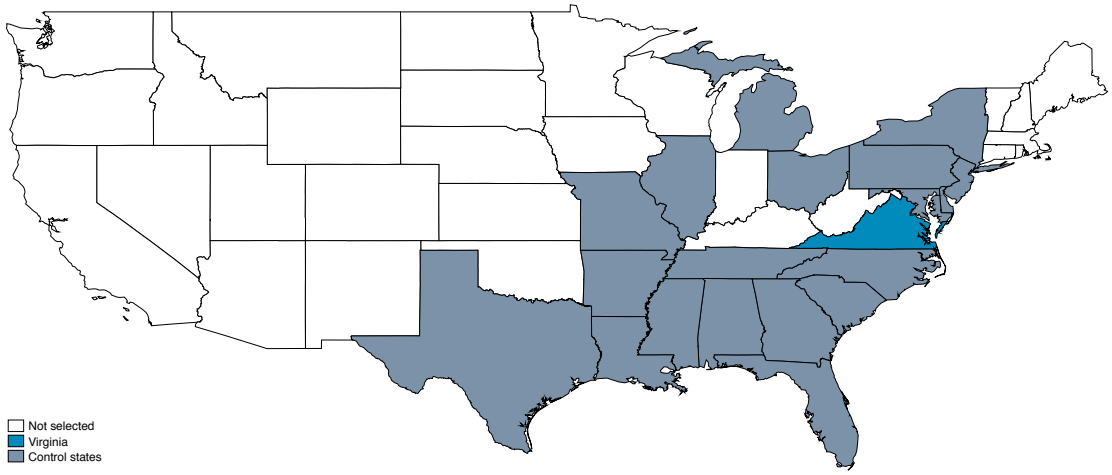
A Appendix

A.1 Identification strategy

Figure A.1: Control states



A.2 Data

Table A.1: Descriptive statistics

	Virginia		Control States	
	Post=0	Post=1	Post=0	Post=1
HS diploma				
All	0.669	0.669	0.692	0.667
White	0.735	0.686	0.725	0.708
Black	0.484	0.617	0.565	0.534
Gender (1=Women)				
All	0.469	0.498	0.510	0.504
White	0.473	0.495	0.505	0.498
Black	0.459	0.507	0.530	0.523
Race (1=Black)				
All	0.260	0.253	0.207	0.233
Age				
All	18.496	18.518	18.496	18.516
White	18.512	18.539	18.500	18.525
Black	18.450	18.456	18.480	18.485
Household size				
All	4.052	3.982	4.159	4.015
White	3.935	3.921	4.027	3.900
Black	4.384	4.162	4.664	4.395
Lives alone				
All	0.096	0.080	0.119	0.114
White	0.101	0.090	0.127	0.121
Black	0.080	0.050	0.087	0.092
Single parent (proxy)				
All	0.216	0.214	0.220	0.229
White	0.160	0.164	0.164	0.166
Black	0.375	0.362	0.435	0.435
Education of adults				
All	13.024	13.330	12.904	13.207
White	13.542	13.699	13.280	13.547
Black	11.585	12.287	11.522	12.123
N	4,642	2,378	168,034	93,548

Source: CPS basic, 1984-1993.

A.3 Results

Table A.2: Governor from minority and educational outcomes. Triple difference. Logit.

Dep. variable:	High school diploma				
	(1)	(2)	(3)	(4)	(5)
Black x VA x Post	-0.063	-0.061	-0.052	-0.012	-0.076*
	(0.040)	(0.045)	(0.044)	(0.081)	(0.041)
Controls	Yes	Yes	Yes	Yes	Yes
State dummies	No	Yes	No	No	No
Year dummies	No	Yes	No	No	No
Black-state dummies	No	Yes	Yes	Yes	Yes
Black-year dummies	No	Yes	Yes	Yes	Yes
State-year dummies	No	No	Yes	Yes	Yes
Time trends	No	No	No	Yes	No
Extra controls	No	No	No	No	Yes
Observations	10813	10813	10813	10813	10287

Source: CPS basic, 1984-1993. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The reported coefficients are in log-odd units. The standard errors are clustered at the state-race-year level

Table A.3: Governor from minority and educational outcomes. Triple difference. From 1984 to 2000.

Dep. variable:	High school diploma				
	(1)	(2)	(3)	(4)	(5)
Black x VA x $\text{Post}_{1990\text{-}1993}$	0.173***	0.178***	0.176***	0.210***	0.163***
	(0.038)	(0.038)	(0.038)	(0.058)	(0.033)
Black x VA x $\text{Post}_{1994\text{-}2000}$	0.119***	0.124***	0.119***	0.192**	0.100***
	(0.028)	(0.027)	(0.026)	(0.075)	(0.026)
Black x VA	-0.086***				
	(0.016)				
Black x $\text{Post}_{1990\text{-}1993}$	-0.013				
	(0.013)				
Black x $\text{Post}_{1994\text{-}2000}$	0.003				
	(0.011)				
VA x $\text{Post}_{1990\text{-}1993}$	-0.029	-0.031			
	(0.021)	(0.021)			
VA x $\text{Post}_{1994\text{-}2000}$	0.024	0.020			
	(0.022)	(0.023)			
Black	-0.105***	-0.045*	-0.042	0.038	-0.018
	(0.009)	(0.026)	(0.025)	(0.036)	(0.026)
VA	0.004				
	(0.015)				
$\text{Post}_{1990\text{-}1993}$	-0.027***				
	(0.008)				
$\text{Post}_{1994\text{-}2000}$	-0.046***				
	(0.007)				
Constant	0.699***	0.652***	0.642***	0.617***	0.730***
	(0.008)	(0.015)	(0.011)	(0.013)	(0.011)
Controls	Yes	Yes	Yes	Yes	Yes
State dummies	No	Yes	No	No	No
Year dummies	No	Yes	No	No	No
Black-state dummies	No	Yes	Yes	Yes	Yes
Black-year dummies	No	Yes	Yes	Yes	Yes
State-year dummies	No	No	Yes	Yes	Yes
Time trends	No	No	No	Yes	No
Extra controls	No	No	No	No	Yes
Observations	375657	375657	375657	375657	335062
R^2	0.146	0.152	0.155	0.156	0.209

Source: CPS basic, 1984-2000. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The standard errors are clustered at the state-year level

Table A.4: Governor from minority and High School diploma. Census data. Triple difference.

Dep. variable:	High school diploma				
	(1)	(2)	(3)	(4)	(5)
Sex: male and female					
Black x VA x Post	0.021**	0.023***	0.025***	0.011	0.025***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Observations	1024709	1024709	1024709	1024709	1024709
Sex: male					
Black x VA x Post	0.032**	0.034**	0.036**	0.049***	0.036**
	(0.015)	(0.014)	(0.014)	(0.019)	(0.014)
Observations	494066	494066	494066	494066	494066
Sex: female					
Black x VA x Post	0.015	0.016*	0.018*	-0.020*	0.018*
	(0.010)	(0.009)	(0.009)	(0.012)	(0.009)
Observations	530643	530643	530643	530643	530643
Controls	Yes	Yes	Yes	Yes	Yes
State dummies	No	Yes	No	No	No
Year dummies	No	Yes	No	No	No
Black-state dummies	No	Yes	Yes	Yes	Yes
Black-year dummies	No	Yes	Yes	Yes	Yes
State-year dummies	No	No	Yes	Yes	Yes
Time trends	No	No	No	Yes	No
Extra controls	No	No	No	No	Yes

Source: Public micro census 2000 (5 % sample). * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The standard errors are clustered at the state-year level. This sample only includes individuals born between 1965 and 1975.

Table A.5: Governor from minority and high school diploma. Permutation test. Triple difference.

Dep. variable:	High school diploma				
	(1)	(2)	(3)	(4)	(5)
Alabama	-0.037	-0.032	-0.030	0.089	-0.009
	(0.051)	(0.048)	(0.049)	(0.061)	(0.045)
Arkansas	0.127***	0.132***	0.132***	0.043	0.115***
	(0.034)	(0.033)	(0.033)	(0.060)	(0.036)
Delaware	-0.043	-0.037	-0.047	-0.191	-0.061
	(0.084)	(0.085)	(0.090)	(0.150)	(0.068)
District of Columbia	0.017	0.019	0.019	0.075	0.028
	(0.048)	(0.049)	(0.049)	(0.091)	(0.046)
Florida	-0.002	0.003	0.001	-0.028	0.003
	(0.027)	(0.024)	(0.025)	(0.038)	(0.024)
Georgia	-0.002	-0.001	0.006	0.075	-0.018
	(0.053)	(0.053)	(0.054)	(0.070)	(0.047)
Illinois	0.060*	0.064**	0.064**	0.027	0.054*
	(0.030)	(0.029)	(0.027)	(0.037)	(0.028)
Louisiana	-0.134**	-0.130**	-0.130**	-0.126	-0.116**
	(0.054)	(0.051)	(0.050)	(0.078)	(0.050)
Maryland	-0.097***	-0.094***	-0.105***	-0.069	-0.083***
	(0.026)	(0.024)	(0.024)	(0.046)	(0.026)
Michigan	0.055**	0.060**	0.058**	-0.041	0.063***
	(0.028)	(0.028)	(0.027)	(0.029)	(0.023)
Mississippi	0.017	0.022	0.024	0.081*	-0.019
	(0.025)	(0.023)	(0.024)	(0.042)	(0.031)
Missouri	0.050	0.055	0.059	-0.017	0.032
	(0.058)	(0.056)	(0.055)	(0.104)	(0.048)
New Jersey	-0.012	-0.007	-0.005	0.080**	0.000
	(0.028)	(0.028)	(0.028)	(0.032)	(0.034)
New York	0.040	0.043	0.044	-0.066***	0.043*
	(0.029)	(0.029)	(0.030)	(0.024)	(0.023)
North Carolina	-0.037	-0.035	-0.036	-0.051	-0.033
	(0.028)	(0.026)	(0.026)	(0.036)	(0.027)
Ohio	-0.022	-0.017	-0.017	0.003	-0.016
	(0.033)	(0.031)	(0.030)	(0.044)	(0.033)
Pennsylvania	0.017	0.021	0.019	0.029	0.010
	(0.025)	(0.024)	(0.025)	(0.045)	(0.026)
South Carolina	-0.032	-0.027	-0.025	0.116**	-0.025
	(0.050)	(0.047)	(0.046)	(0.048)	(0.042)
Tennessee	0.009	0.013	0.013	0.003	0.021
	(0.026)	(0.023)	(0.023)	(0.032)	(0.027)
Texas	-0.052	-0.049*	-0.047	0.012	-0.025
	(0.032)	(0.029)	(0.029)	(0.036)	(0.028)

Source: CPS basic, 1984-1993. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The standard errors are clustered at the state-year level. The sample excludes the state of Virginia.

Table A.6: Test for parallel trend before treatment

Dependant variable:	Drive to achieve		Academic ability	
	(1) DD Virginia	(2) DDD all States	(3) DD Virginia	(4) DDD all States
Black x VA x Year		0.005		-0.003
		(0.034)		(0.021)
Black x Year	0.021	0.017	0.006	0.010
	(0.029)	(0.010)	(0.023)	(0.008)
Black	-0.558***	-0.380***	-0.019	0.050
	(0.154)	(0.042)	(0.120)	(0.031)
Time trend	-0.052***	-0.006	-0.011	0.010**
	(0.009)	(0.006)	(0.006)	(0.005)
Black x VA		-0.178		-0.069
		(0.176)		(0.108)
VA x Year		-0.047***		-0.021***
		(0.011)		(0.008)
VA		0.208***		0.059
		(0.043)		(0.036)
Constant	4.082***	3.875***	3.865***	3.806***
	(0.037)	(0.025)	(0.032)	(0.019)
Observations	28244	523583	28198	522852
r2	0.067	0.024	0.000	0.002

Source: Freshmen survey, 1985-1989. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The standard errors are clustered at the race-year level in column 1 and at the state-year level in column 2.