

Identifying the Rich:
Registration, Taxation, and Access to the State in Tanzania
Supplementary Materials

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A Supplementary information

A.1 Legal history of compulsory birth registration in Tanzania

The legal framework for birth registration in Tanzania is provided through Chapter 108 of the Tanzanian legal code. Chapter 108, the Birth and Death Registration Act, was originally passed in 1920 and came into force on 1 April, 1921. The Act has been repeatedly amended since then. No provision for the compulsory registration of any births was made until 1949, when the *Births (Non-Native Compulsory Registration) Order* amended Section 26 of the Act to read:

“The registration of the birth of a child shall be compulsory if either one or both parents are of European or American origin or descent or, in the case of a child born out of wedlock and not recognised by its father, if the mother is of European or American origin or descent.”

The registration of Tanzanians across the country remained voluntary. In 1962 the Act was amended as per Government Notice (G.N.) 478/62¹ to state the following in Section 28:

“The Minister may, by order published in the Gazette, extend, from a date to be named in the order, the provisions of this Act relating to the compulsory registration of births and deaths to all persons in Tanzania of any particular race, class, tribe or other group, or to all or some of the inhabitants of any particular town, district, or other area, and from and after the said date the registration of births and deaths shall, in such cases, be compulsory instead of being optional.”

Applying this amendment, the provisions relating to compulsory registration were first extended to the districts comprising Dar es Salaam. Under G.N. 58/66, published 9 February 1966, the *The Births and Deaths Registration (Dar es Salaam Municipality) Order*, the registration at birth of all individuals born after 1 March 1966 was made compulsory. Compulsory registration was then extended to a further set of districts under G.N. 175/66 published on 11 June 1966, the *The Births and Deaths (Compulsory Registration) Order*, to all individuals born in those districts after 1 July 1966. These districts are listed in the order as Arusha, Bukoba, Dodoma, Iringa, Kigoma, Lindi, Mbeya, Morogoro, Moshi, Mtwara, Musoma, Mwanza, Tabora, and Tanga.

This extension of compulsory registration was accompanied by changes to the price of registering births under G.N. 275 on 18 September 1966, the *The Registration of Births and Deaths (Amendment) Rules*. Under this notice, the cost of registration for individuals born *either* in a district without compulsory registration *or* before the date when registration became compulsory in a given district were set at 5 TSh for individuals under 5 years, 10 TSh for individuals between five and ten years old, and 30 TSh for individuals above 10 years. For those individuals born *after* registration had become compulsory in a given district, the cost of registration was 5 TSh for individuals registered within three months of birth and 30 TSh for individuals registered more than three months after their birth. 30 TSh was equal to approximately \$4 in 1966 and approximately \$33 today.²

¹I follow the standardized syntax of the *African Law Digest* where the initial digits reflect the relevant Government Notice number in a given year and the final two digits reflect the year.

²U.S. Treasury (1966) cites an exchange rate of 7.133 TSh per USD on 30 September 1966.

Citizens during this initial period were not registered in hospitals, but rather had to travel to administrative centers to register. A final change, made shortly afterwards, made it extremely onerous to obtain a certificate more than five years after birth in these districts: through a long process of examination by district magistrates and the local Branch Executive Committee and involving multiple trips to the capital.

Compulsory birth registration was not extended to any more districts until 1981, under the decentralized reforms discussed in the paper.³ This sequence of extending compulsory registration comprised the *Births and Deaths Registration (Kinondoni, Ilala, Temeke, Bagamoyo and Moshi Rural District) Order* (1981), the *Births and Deaths Registration (Morogoro Rural District) Order* (1982), the *Births and Deaths Registration (Specified Districts) Order* (1982), the *Births and Deaths Registration (Specified Districts) Order* (1986), the *Births and Deaths Registration (Specified Districts) Order* (1988), the *The Births and Deaths (Compulsory Registration) Order* (1994) and the *Births and Deaths Registration (Mufindi District) Order* (1996).⁴

Even after these reforms birth registration remained voluntary in a substantial amount of the country. Birth registration became *de facto* compulsory for all births in 2002 under the UNICEF-sponsored *Compulsory Registration Programme* (Registrar General's Office, 2005). However, the law to enforce compulsory birth registration across the whole country was only finally amended under the *Written Laws (Miscellaneous Amendments) Act* of 2009. This amendment changed Section 26 of the Act to read:

"The registration of birth and death shall be compulsory."

Regarding punishments for violation, Section 29 of the Act states that:

"Any person who, being under an obligation to register the birth or death of any person, refuses to register or to state any of the prescribed particulars, shall be guilty of an offence and shall be liable on conviction to a fine not exceeding five hundred shillings or to imprisonment for a term not exceeding one month, or to both such fine and imprisonment..."

Figure A10 plots this sequential expansion of compulsory birth registration orders across the districts of mainland Tanzania from 1950 to 2018. A number of other countries in sub-Saharan Africa implemented similarly targeted reforms in the early post-independence period intended to register citizens. These, broadly, were unsuccessful in inducing citizens' compliance beyond a narrow portion of the population. Makannah (1981) documents how birth registration was often rendered 'compulsory' by the state in a geographically selective fashion, very similarly to the Tanzanian case, with wealthier urban areas targeted first before registration was declared a legal requirement across the whole country.⁵ Part of the reason for the failure of these reforms was attributed to the prohibitively high cost of infrastructure to register citizens, but other work makes clear that the benefits of registering with the state were often diffuse from the perspective

³Since a handful of districts received multiple reforms over time, I consider them to be 'treated' in the year in which a registration reform was first applied to them.

⁴It should be noted that some districts listed in the 1966 reforms are also listed in this later wave. This is because some of the districts where birth registration was made compulsory in 1966 were used in the pilots of the decentralized system of the 1980s. In any such cases, I use the first date where a district has Section 26 of the law applied to it.

⁵In former French colonies, states often enforced requirements on registration if citizens lived within a given radius of a registration center rather than in a given district (Brass, 1968).

of poorer citizens (Linder, 1982; Powell, 1981). Scholarly work at the time noted how, though states might benefit from improved systems of vital registration, political will to broadly expand these schemes was often missing (Podlewski, 1971).

A.2 Evidence on later reforms

Following a United Nations Mission to discuss progress relating to the 1978 Census, the improvement of civil registration across the country was identified as a key issue. This was codified under project URT/79/P05 “Reorganization and Expansion of the Civil Registration System” by the United Nations Population Fund (UNFPA). Four districts were initially selected in 1981, with an initial plan to expand the reform to an additional 21 randomly-selected districts (UNFPA, 1983). Due to resource constraints, the expansion was reduced first to eight additional districts and eventually to just four. These districts, according to a later evaluation of the UNFPA Tanzania country programme, were specifically chosen on the basis of their birth registration rates and their ease of accessibility (Edouard, 1987; Padmanabha, 1993).

At the core of these reforms was the decentralization of administration which had been proposed in the early ’70s (Wood, 1971). Specifically, responsibility for the registration of births was assigned to ‘ten-cell leaders’ in a given community:

“Registration of births and deaths will be re-organised such that the registration process starts at village level. In villages with village governments, the village managers will be appointed registration officers.” (UNFPA, 1982)

Compliance with these new responsibilities, however, was limited. One progress report pointed to the “reluctance of village managers and village secretaries to complete registration forms as they do not consider such function as being part of their duties.” (UNFPA, 1982). Additionally, relatively fewer citizens in the more rural districts affected by the reforms were aware of the need to register, nor the uses of registration. This was facilitated by limited publicity or informational campaigns around the project along with high rates of personnel turnover (Edouard, 1987). As a result of these challenges, reports indicated that “a sharp decline in the number of registered events was evident in all project areas in 1983 when compared with the number of events in 1982” (UNFPA, 1982). The project effectively ended in 1987 and saw little improvement during that time. From 1987, in the midst of a deep recession, the government expanded compulsory registration to a large set of additional districts under G.N. 842/88 with little effect. A 1993 review concluded that “A review of the implementation of the project would support the view that it has not made a significant impact on the system” (Padmanabha, 1993).

Consistent with this, estimating the effects of the 1980s reform on registration rates using the census sample yields a small negative effect on registration rates. Table A11 provides results. The effects of the most recent wave of reforms, in 2009, yields a very small positive effect on registration—likely since the legal extension had already *de facto* been made several years prior.

A.3 Evidence on the exclusion restriction

The exclusion restriction assumption requires that variation in exposure to the reforms leveraged in the research design only affects outcomes through increasing the probability of being registered at birth. I provide evidence supporting the plausibility of this assumption in two ways.

First, the exclusion restriction could be violated if other contemporaneous reforms specifically targeted the set of treated districts. To evaluate this, I construct a dataset of the text of all legislation passed in Tanzania in the period around the reform using data from the Southern African Legal Information Institute (SAFLII) ($n = 528$). For each document I code the presence of relevant words to assess whether there were concurrent increases in legislation applied to the towns where the birth registration reform was passed. Figure A11 plots the frequency of these different topics for each year from 1962 to 1970. The plot suggests that the incidence of legislation specifically mentioning the reform districts was minimal during this period, and legislation mentioning towns, or town councils, was generally decreasing. Analysis of all such laws mentioning these towns provides little evidence of other confounding reforms, nor of changes to the administration of town councils during this period. Thorough qualitative analysis of the Government Gazette and all supplemental notices issued by the Tanzanian government held by the Tanzania National Archives during this period provides little evidence of reforms applied specifically to this set of districts in a window around the reforms that were not additionally applied to the control districts.

Second, the exclusion restriction could be violated if broader changes during this period had particular effects on individuals born after the reform year in treated areas relative to those born in control areas. The clearest such candidate is the passage of the *Arusha Declaration* in 1967, which marked Tanzania's shift towards socialism under the *ujamaa* philosophy of self-reliance and rural development. Three points suggest that *Arusha* is not a major threat for the empirical strategy. First, *Arusha* had almost entirely rural implications. The most rural districts are excluded from the baseline analysis sample by construction and results are robust to different specifications of control districts (see Panel D of Table A4). If anything, any hypothetical *Arusha*-related effects should bias the IV coefficients *downwards* as development priorities shifted away from urban localities and towards the increased provision of state services in more rural localities. Second, scholarly accounts suggest that *Arusha* had limited effects even on rural development until well into the 1970s, when efforts to reorganize the countryside significantly intensified (Hyden, 1975). Third, since exposure to the reform is defined by year of birth, any *Arusha*-based argument would have to link the year of individuals' birth with a confounding story in a way that also explains the observed pattern of estimates. Existing evidence suggests that the most plausible short-run effect of variation in exposure to *ujamaa* was through differences in *primary* educational outcomes (Carlitz, Morjaria and Mueller, 2022). This is inconsistent with the observed pattern of results, which finds a null effect on primary education but much stronger effects on post-primary educational attainment.

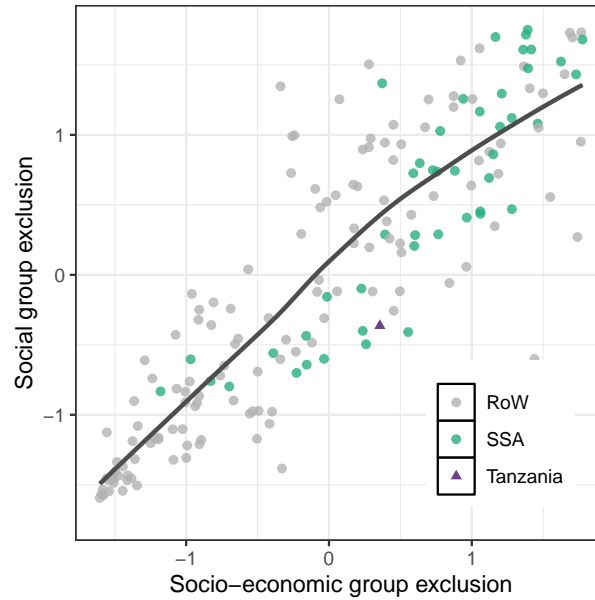
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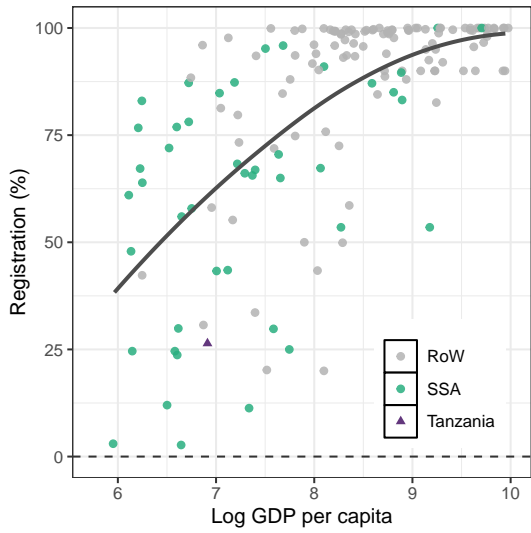
B Figures

Figure A1: Exclusion from public resources based on economic versus social status

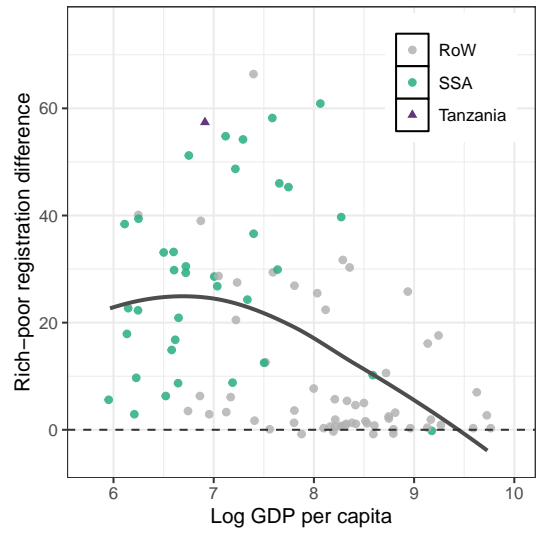


Source: V-DEM v.12 dataset. Figure plots the average country-level extent of exclusion from public resources based on socioeconomic group status against exclusion from public resources based on social group status. Variables are standardized and averaged across the period 1960-2015. “ROW” refers to rest-of-world; “SSA” refers to sub-Saharan Africa.

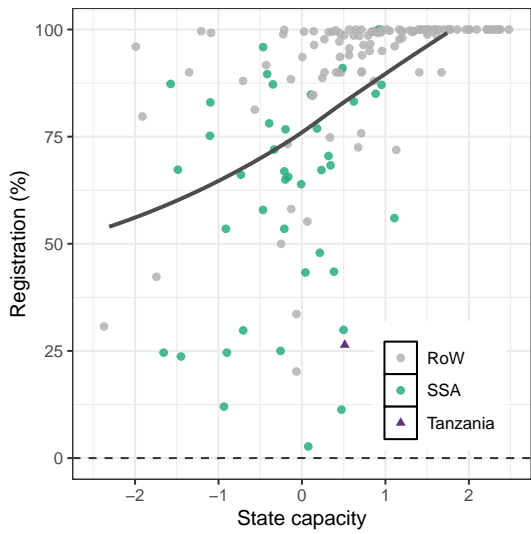
Figure A2: Income, registration, and inequality (supplementary)



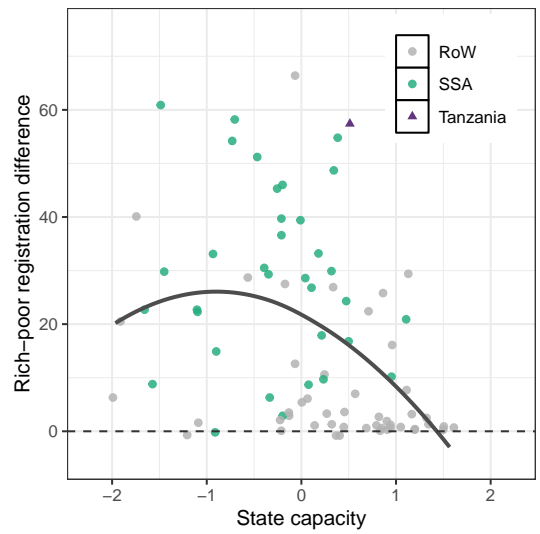
(a) Income and registration rates



(b) Income and registration inequality



(c) Hanson and Sigman (2021) measure of state capacity and registration rates



(d) Hanson and Sigman (2021) measure of state capacity and registration inequality

Sources: World Bank, UNICEF, Hanson and Sigman (2021). “ROW” refers to rest-of-world; “SSA” refers to sub-Saharan Africa.

Figure A3: Measure of Tanzania's state capacity over time

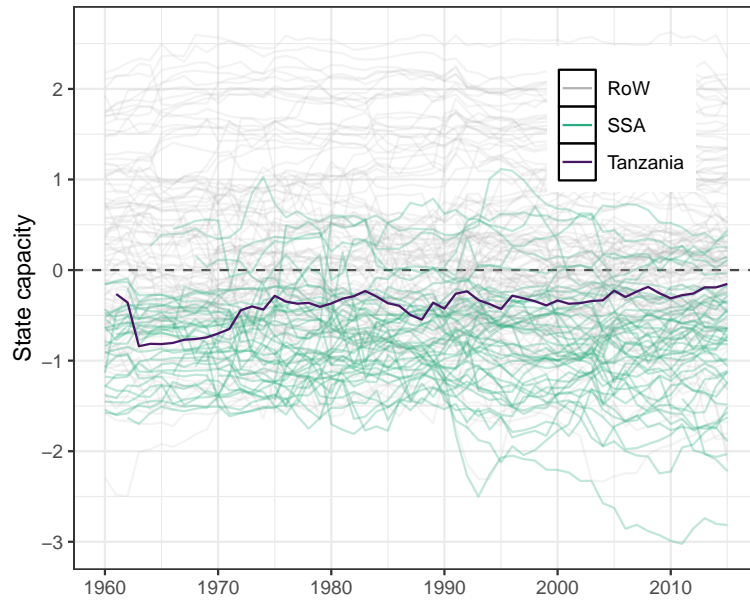


Figure plots the [Hanson and Sigman \(2021\)](#) measure of state capacity at the annual level (standardized within year). Tanzania gains independence in 1961. “ROW” refers to rest-of-world; “SSA” refers to sub-Saharan Africa.

Figure A4: Introduction of civil registries across sub-Saharan Africa

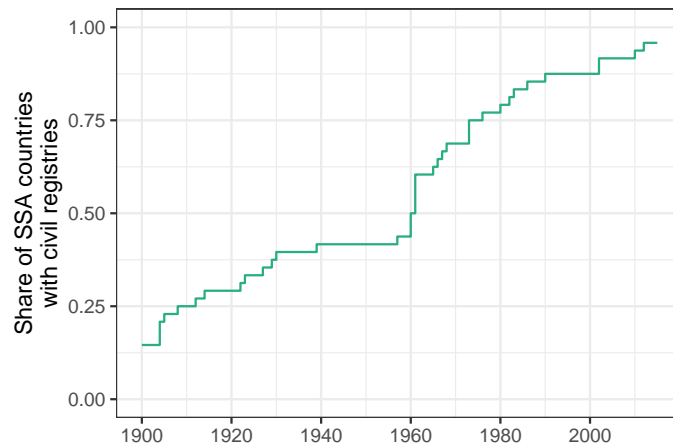


Figure plots the share of countries in sub-Saharan Africa with civil registration authorities over time. *Source:* World Bank ID4D initiative.

Figure A5: Spatial distribution of treated and control districts

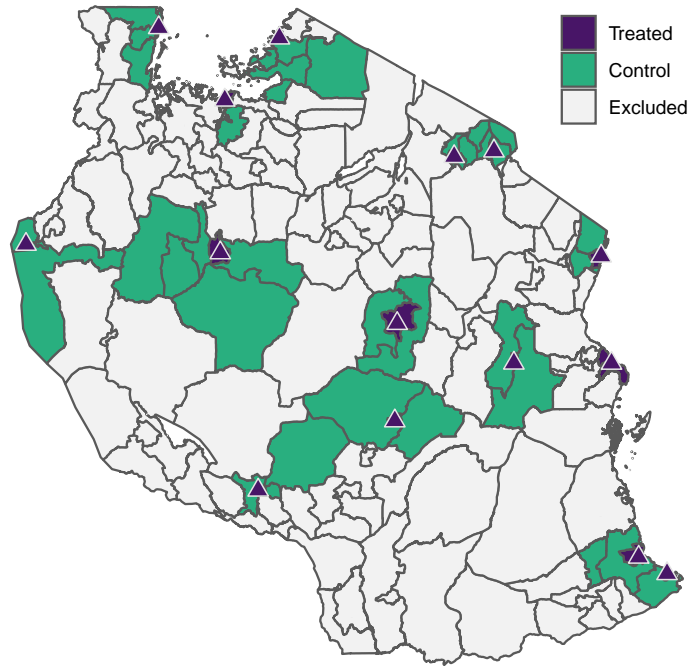
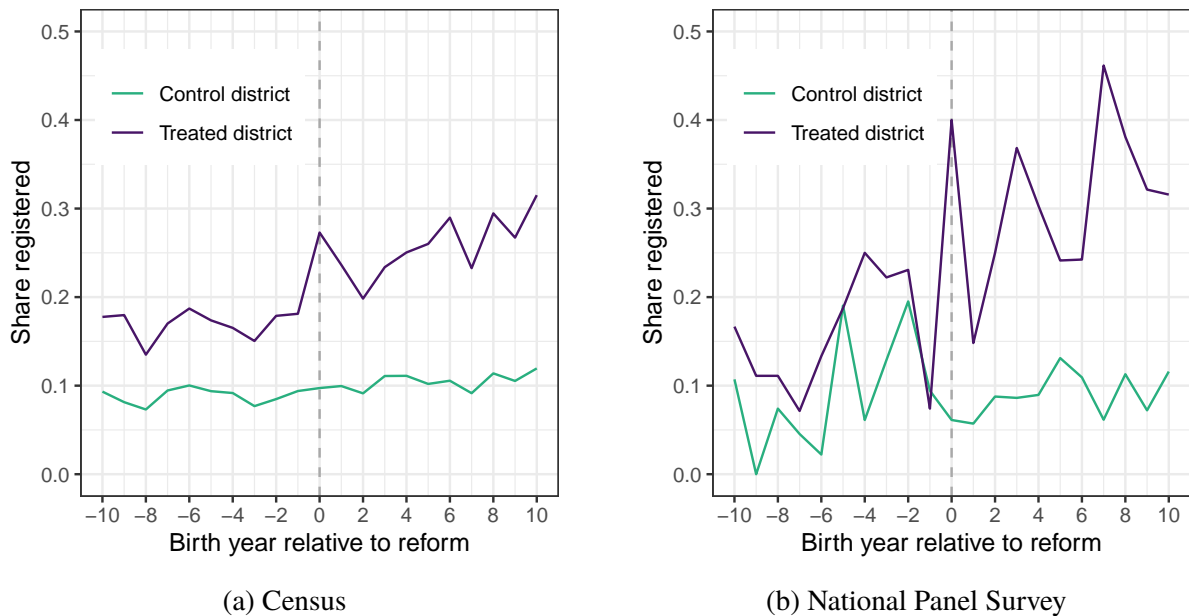


Figure plots the spatial distribution of treated (purple) and control (green) districts used in the baseline analysis. District boundaries as defined in 2012 Population and Housing Census.

Figure A6: Trends in registration rates



Figures display the average share of registered individuals across treated and control districts over time. Panel (a) uses the baseline Census sample; Panel (b) uses the baseline National Panel Survey sample.

Figure A7: Estimates of first stage while excluding districts

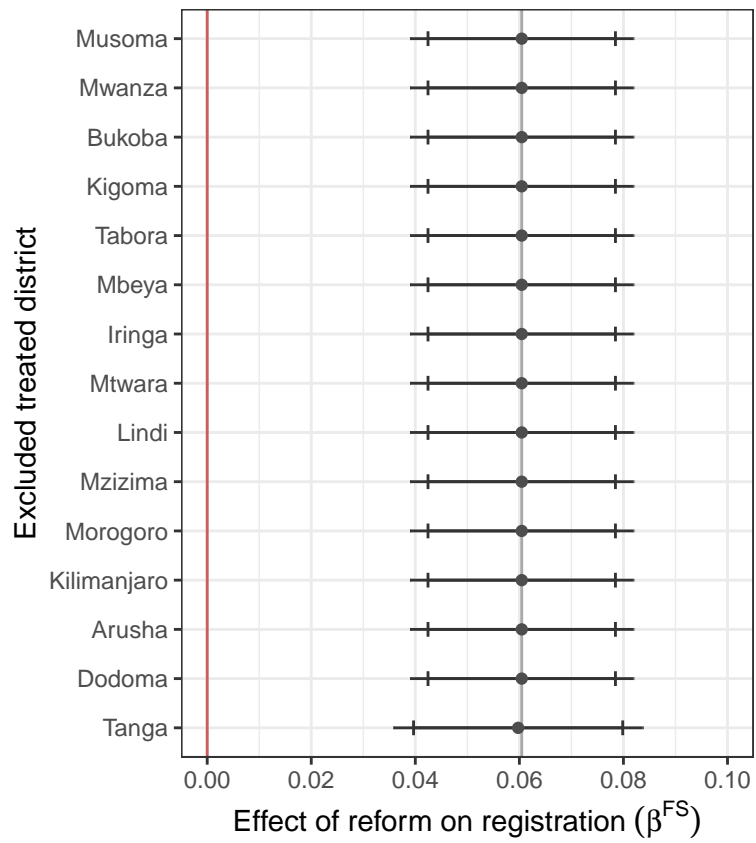
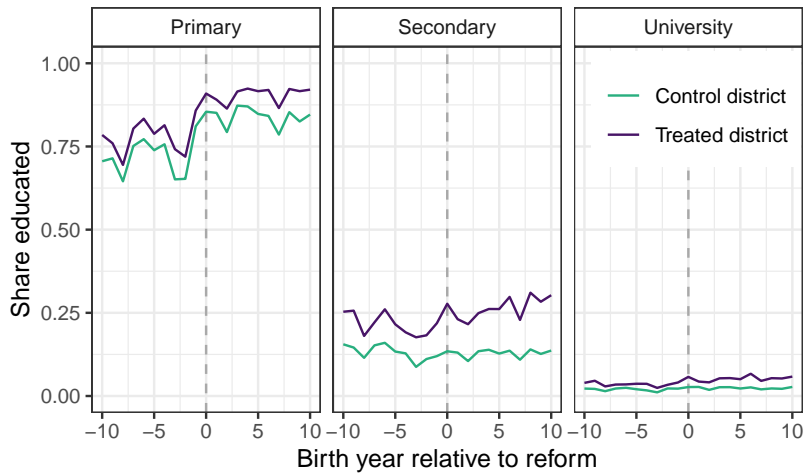
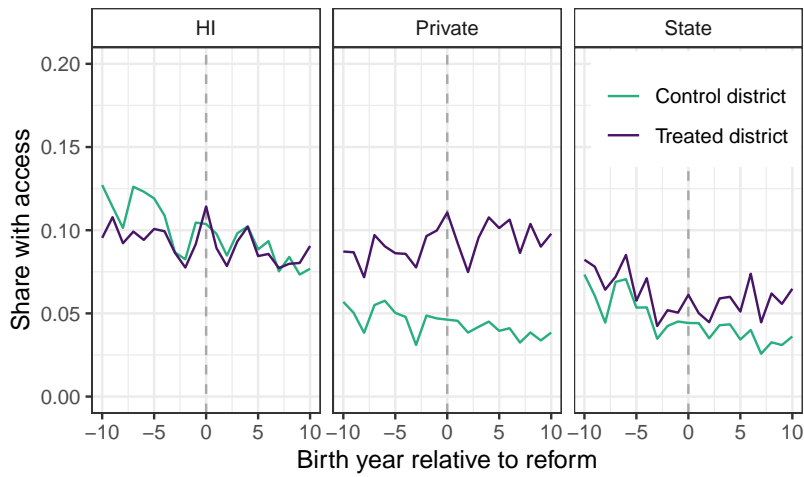


Figure estimates the first stage coefficient (β^{FS}) using Equation (2) while excluding a given treated district. Vertical gray line provides the overall first stage coefficient from column 1 of Table 1. 90% and 95% confidence intervals plotted.

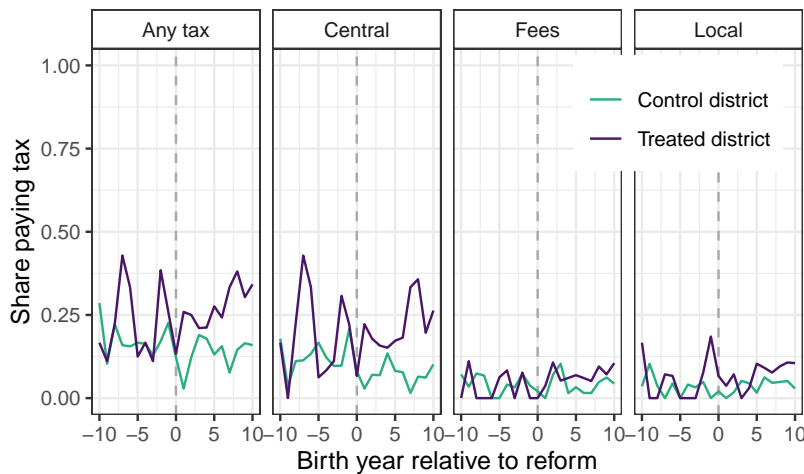
Figure A8: Trends in outcome variables



(a) Trends in education access



(b) Trends in social security access



(c) Trends in tax payment

Figure displays the average value of variables measuring access to education (Panel A, Table 2); access to social security (Panel B, Table 2); and tax payment (Table 3) across treated and control districts over time using the baseline census and NPS samples.

Figure A9: Effects on education access by grade

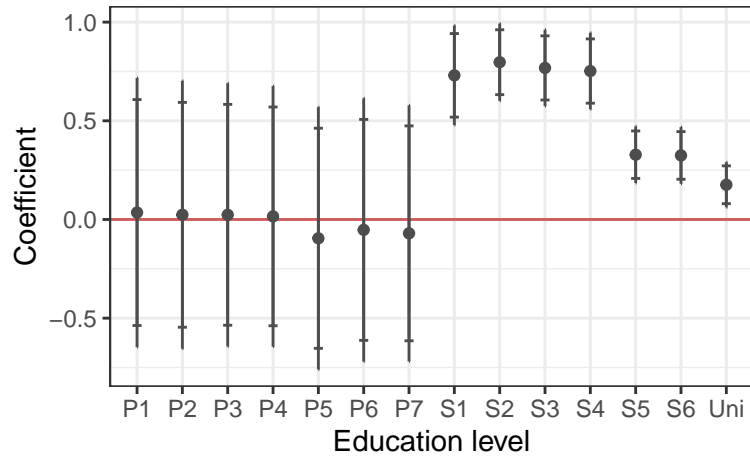


Figure estimates treatment effects (β^{IV}) on having completed a given grade of education using Equation (3). Primary education runs from P1 to P7; Secondary education runs from S1 to S4 ('Ordinary level') or to S6 ('Advanced level'). 90% and 95% confidence intervals plotted.

Figure A10: Expansion of compulsory registration across districts over time

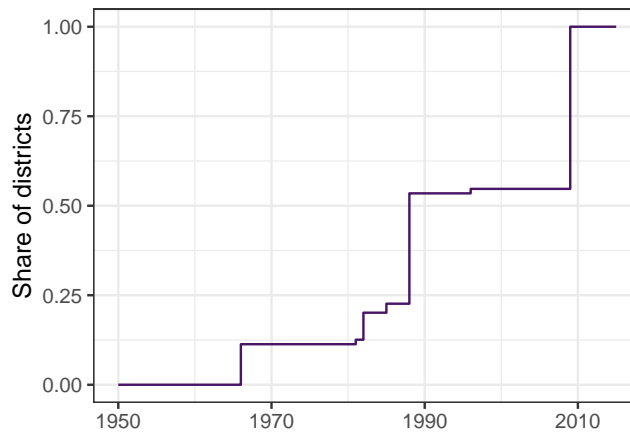


Figure displays the cumulative share of districts targeted by a compulsory registration order by year. *Source:* Tanzania National Archives.

Figure A11: Relevant legislation during reform period



Figure displays the share of relevant legislation being passed in a given year.
Source: Southern African Legal Information Institute.

C Tables

Table A1: Descriptive statistics (Census)

	Both		Treated		Control	
	Mean	SD	Mean	SD	Mean	SD
A. Sample characteristics						
Age	44.06	5.73	43.35	5.57	44.27	5.76
Male	0.48	0.50	0.48	0.50	0.47	0.50
Tanzanian citizen	0.99	0.08	0.99	0.10	0.99	0.07
Father alive	0.38	0.49	0.40	0.49	0.38	0.48
Mother alive	0.61	0.49	0.61	0.49	0.61	0.49
B. First stage variables						
Registered	0.13	0.33	0.23	0.42	0.10	0.30
Born in treated district	0.23	0.42	1.00	0.00	0.00	0.00
Born after reform	0.15	0.36	0.68	0.47	0.00	0.00
<i>Reform</i>	0.15	0.36	0.68	0.47	0.00	0.00
C. Outcome variables						
Education: Primary	0.80	0.40	0.86	0.35	0.79	0.41
Education: Secondary	0.15	0.36	0.24	0.43	0.12	0.33
Education: University	0.03	0.16	0.05	0.21	0.02	0.15
National Health Insurance Fund	0.09	0.29	0.09	0.28	0.09	0.29
Private pension	0.05	0.22	0.09	0.29	0.04	0.20
State pension	0.04	0.21	0.06	0.23	0.04	0.20
Observations	193648		44124		149524	

Data source is the 2012 National Population and Housing Census. Sample restricted to cohorts born within ten years of reform in either treated or control districts.

Table A2: Descriptive statistics (NPS)

	Both		Treated		Control	
	Mean	SD	Mean	SD	Mean	SD
A. Sample characteristics						
Age	44.51	6.07	43.43	5.89	45.01	6.08
Male	0.47	0.50	0.47	0.50	0.47	0.50
Parent has primary education	0.60	0.49	0.70	0.46	0.55	0.50
Parent has secondary education	0.09	0.28	0.16	0.37	0.05	0.22
Parent has university education	0.02	0.15	0.05	0.21	0.01	0.11
B. First stage variables						
Registered	0.15	0.35	0.27	0.44	0.09	0.29
Born in treated district	0.32	0.47	1.00	0.00	0.00	0.00
Born after reform	0.23	0.42	0.72	0.45	0.00	0.00
<i>Reform</i>	0.23	0.42	0.72	0.45	0.00	0.00
Paid any tax	0.19	0.39	0.27	0.44	0.15	0.36
Paid fees	0.05	0.21	0.06	0.23	0.04	0.20
Paid local tax	0.05	0.21	0.07	0.26	0.04	0.18
Paid central tax	0.13	0.34	0.22	0.41	0.09	0.29
Observations	1571		498		1073	

Data source is National Panel Survey (2010, 2014). Sample restricted to cohorts born within ten years of reform in either treated or control districts.

Table A3: Assigning district of birth to treatment

District (1966)	District (2012)
Arusha	Arusha Urban
Arusha	Arusha Rural
Arusha	Meru
Bukoba	Bukoba Urban
Bukoba	Bukoba Rural
Bukoba	Muleba
Bukoba	Misenye
Dodoma	Dodoma Urban
Dodoma	Dodoma Rural
Dodoma	Bahi
Iringa	Iringa Urban
Iringa	Iringa Rural
Iringa	Kilolo
Kigoma	Kigoma Urban
Kigoma	Kigoma Rural
Kigoma	Uvinza
Kilimanjaro	Moshi Urban
Kilimanjaro	Moshi Rural
Kilimanjaro	Siha
Kilimanjaro	Rombo
Kilimanjaro	Hai
Lindi	Lindi Urban
Lindi	Lindi Rural
Lindi	Ruangwa
Mbeya	Mbeya Urban
Mbeya	Mbeya Rural
Mbeya	Mbarali
Morogoro	Morogoro Urban
Morogoro	Morogoro Rural
Morogoro	Mvomero
Mtwara	Mtwara Urban
Mtwara	Mtwara Rural
Musoma	Musoma Urban
Musoma	Musoma Rural
Musoma	Bunda
Musoma	Butiama
Musoma	Serengeti
Mwanza	Ilemela
Mwanza	Nyamagana
Mwanza	Busega
Mwanza	Missungwi
Mzizima	Ilala
Mzizima	Kinondoni
Mzizima	Temeke
Tabora	Tabora Urban
Tabora	Kaliua
Tabora	Sikonge
Tabora	Urambo
Tabora	Uyui
Tanga	Tanga Urban
Tanga	Mkinga
Tanga	Muheza

Table lists all treated districts (bold) and all control districts (non-bold) in the baseline specification.

Table A4: First stage (Robustness)

	+/- 5 cohorts			All cohorts		
	(1)	(2)	(3)	(4)	(5)	(6)
A. Varying included cohorts						
<i>Reform</i>	0.05*** (0.01)	0.05*** (0.01)	0.06*** (0.02)	0.15*** (0.03)	0.15*** (0.01)	0.05** (0.02)
Time trends	None	Region	District	None	Region	District
Outcome mean	0.12	0.12	0.12	0.20	0.20	0.20
Observations	102836	102836	102836	1327672	1327672	1327672
	-Reform year			-Heaped ages		
B. Excluding birth years	(1)	(2)	(3)	(4)	(5)	(6)
<i>Reform</i>	0.06*** (0.01)	0.05*** (0.00)	0.03** (0.01)	0.06*** (0.01)	0.05*** (0.00)	0.04*** (0.01)
Time trends	None	Region	District	None	Region	District
Outcome mean	0.13	0.13	0.13	0.13	0.13	0.13
Observations	187300	187300	187300	170292	170292	170292
	District-level			Individual-level		
C. Control variables	(1)	(2)	(3)	(4)	(5)	(6)
<i>Reform</i>	0.06*** (0.00)	0.06*** (0.00)	0.05*** (0.01)	0.05*** (0.01)	0.05*** (0.00)	0.04*** (0.01)
Time trends	None	Region	District	None	Region	District
Outcome mean	0.13	0.13	0.13	0.13	0.13	0.13
Observations	193648	193648	193648	193648	193648	193648
	Urban			Unrestricted		
D. Changing control districts	(1)	(2)	(3)	(4)	(5)	(6)
<i>Reform</i>	0.05*** (0.01)	0.05*** (0.01)	0.03** (0.01)	0.06*** (0.01)	0.06*** (0.01)	0.04*** (0.01)
Time trends	None	Region	District	None	Region	District
Outcome mean	0.13	0.13	0.13	0.08	0.08	0.08
Observations	118829	118829	118829	619982	619982	619982
	2012 district FEs			District-cohort clustering		
E. Varying estimation	(1)	(2)	(3)	(4)	(5)	(6)
<i>Reform</i>	0.06*** (0.01)	0.05*** (0.00)	0.04*** (0.01)	0.06*** (0.01)	0.05*** (0.00)	0.04*** (0.01)
Time trends	None	Region	District	None	Region	District
Outcome mean	0.13	0.13	0.13	0.13	0.13	0.13
Observations	193648	193648	193648	193648	193648	193648
	+/- 10 cohorts			All cohorts		
F. National Panel Survey dataset	(1)	(2)	(3)	(4)	(5)	(6)
<i>Reform</i> (β^{FS})	0.13*** (0.03)	0.10*** (0.03)	0.14** (0.05)	0.17*** (0.03)	0.17*** (0.02)	0.14*** (0.04)
Time trends	None	Region	District	None	Region	District
Outcome mean	0.15	0.15	0.15	0.25	0.25	0.25
Observations	1571	1571	1571	11692	11692	11692

DV: respondent has a birth certificate. Panel A: sample restricted to cohorts born within 5 year of reform, or no restriction. Panel B: excluding individuals born in reform year, or those who report their age rounded to five years (Rosenzweig, 2021). Panel C: interacting vector of district-level controls with post-reform year indicator, or linearly adding additional individual-level controls. Panel D: redefining the set of control districts to comprise other districts classified as urban in 1967 census (Table A5), or all other districts in the country. Panel E: using district of birth fixed effects based on modern administrative units, or clustering at pre-reform \times cohort level. Panel F: replicating the first stage using the NPS sample while varying included cohorts.

Specifications estimated using OLS including district of birth and year of birth fixed effects and control for gender. Exposure to reform is an indicator for being born after reform in a *treated* district. Standard errors clustered at the district of birth-level in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.01.

Table A5: Assigning district of birth to treatment (Supplementary)

A.	Town	District in 2012 Census
	Arusha	Arusha Urban
	Bukoba	Bukoba Urban
	Dar es Salaam	Ilala, Kinondoni, Temeke
	Dodoma	Dodoma Urban
	Iringa	Iringa Urban
	Kigoma	Kigoma Urban
	Lindi	Lindi Urban
	Mbeya	Mbeya Urban
	Morogoro	Morogoro Urban
	Moshi	Moshi Urban
	Mtwara	Mtwara Urban
	Mwanza	Ilemela, Nyamagana
	Musoma	Musoma Urban
	Tabora	Tabora Urban
	Tanga	Tanga Urban
B.	'Former town'	District in 2012 Census
	Bagamoyo	Bagamoyo
	Chunya	Chunya
	Kahama	Kahama Urban
	Kilosa	Kilosa
	Kimamba	Kilosa
	Konoo	Konoo
	Korogwe	Korogwe Urban
	Lushoto	Lushoto
	Mpwapwa	Mpwapwa
	Mwadi	Kishapu
	Nachingwea	Nachingwea
	Nansio	Ukerewe
	Pangani	Pangani
	Shinyanga	Shinyanga Urban
	Singida	Singida Urban
	Songea	Songea Urban
	Tukuyu	Rungwe

Table lists all localities classified as urban in the 1967 Census (Volume II). All districts in Panel A had the reform applied. Districts in Panel B did not have the reform applied. Employed to define control districts in Panel D of Table A4.

Table A6: First stage (Alternative estimation)

A. Regression discontinuity	(1)	(2)	(3)	(4)	(5)	(6)
Born after reform	0.08*** (0.03)	0.05*** (0.02)	0.04*** (0.01)	0.03** (0.01)	0.01 (0.01)	0.00 (0.01)
Bandwidth	2	5	10	15	20	30
Outcome mean	0.20	0.21	0.23	0.25	0.28	0.35
Observations	10827	22689	44124	72740	106205	190696
B. Household fixed effects	(1)	(2)	(3)	(4)	(5)	(6)
<i>Reform</i>	0.04** (0.02)	0.04*** (0.01)	0.04*** (0.01)	0.06*** (0.02)	0.07*** (0.02)	0.10*** (0.03)
Bandwidth	2	5	10	15	20	30
Outcome mean	0.12	0.12	0.12	0.13	0.14	0.19
Observations	5419	25417	78027	155313	252715	543094

Outcome variable is whether respondent has a birth certificate. Panel A: estimated using a local linear regression in the set of treated districts. Coefficient represents the change in registration probability among cohorts just after, versus just before, the reform. Panel B: Equation (2) estimated using household-level fixed effects.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Standard errors clustered at the district of birth-level in parentheses.

Table A7: Placebo outcomes

	Male (1)	Tanzanian (2)	Father alive (3)	Mother alive (4)
<i>Reform</i>	0.00 (0.01)	-0.00 (0.00)	-0.00 (0.01)	-0.00 (0.01)
Outcome mean	0.48	0.99	0.38	0.61
Observations	193648	193648	193648	193648

Table uses individual-level characteristics as dependent variables in Equation (1). DVs: (1) individual is male; (2) individual is Tanzanian; (3) individual's father is alive; (4) individual's mother is alive.

Specifications estimated using OLS including district of birth and year of birth fixed effects. Exposure to reform is an indicator for being born after reform in a *treated* district. Standard errors clustered at the district of birth-level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A8: Effects on literacy

	Any (1)	Kisw. (2)	Eng. (3)
Registered (β^{OLS})	0.12*** (0.02)	0.11*** (0.02)	0.35*** (0.01)
$\widehat{\text{Registered}} (\beta^{IV})$	0.04 (0.31) [0.90]	0.06 (0.31) [0.87]	0.58*** (0.13) [0.00]
DV Mean	0.79	0.79	0.16
FS F-statistic	29.79	29.79	29.79
$\rho(\text{Wealth, DV})$	0.13	0.13	0.41
Observations	193648	193648	193648

DVs are all indicators. (1) individual is literate in any language; (2) individual is literate in Kiswahili; (3) individual is literate in English.

β^{OLS} estimated using Equation (1); β^{IV} estimated using Equation (3). All specifications include district of birth and year of birth fixed effects and control for gender. Standard errors clustered at the district of birth-level in parentheses; bootstrapped p -values in square brackets. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A9: Effects on access to social security

			Private		State			Other (8)
	Any (1)	HI (2)	NSSF (3)	PPF (4)	PSPF (5)	GEPF (6)	LAPF (7)	
Registered (β^{OLS})	0.23*** (0.02)	0.11*** (0.01)	0.09*** (0.00)	0.03*** (0.00)	0.09*** (0.01)	0.01*** (0.00)	0.02*** (0.00)	0.01*** (0.00)
Registered (β^{IV})	0.33* (0.18) [0.10]	0.21 (0.13) [0.17]	0.18*** (0.05) [0.00]	-0.04 (0.04) [0.36]	0.12* (0.06) [0.08]	0.03** (0.01) [0.03]	0.03 (0.02) [0.12]	0.01 (0.03) [0.61]
DV Mean	0.16	0.09	0.04	0.01	0.03	0.00	0.01	0.02
FS F-statistic	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8
$\rho(\text{Wealth, DV})$	0.32	0.17	0.28	0.19	0.23	0.07	0.12	0.02
Observations	193648	193648	193648	193648	193648	193648	193648	193648

DVs are all indicators. (1) individual in a household with access to any social security fund; (2) individual in a household with access to National Health Insurance Fund (NHIF); (3) individual in a household with access to National Social Security Fund (NSSF); (4) individual in a household with access to Parastatal Pension Fund (PPF); (5) individual in a household with access to Public Service Social Security Fund (PSSSF); (6) individual in a household with access to Government Employees Provident Fund (GEPF); (7) individual in a household with access to Local Authorities Pension Fund (LAPF); (8) individual in a household with access to any other social security fund.

β^{OLS} estimated using Equation (1); β^{IV} estimated using Equation (3). All specifications include district of birth and year of birth fixed effects and control for gender. Standard errors clustered at the district of birth-level in parentheses; bootstrapped p -values in square brackets. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A10: Effects on exposure to taxation (All cohorts)

	All	Fees	Local	Central
	(1)	(2)	(3)	(4)
Registered (β^{OLS})	0.12*** (0.02)	0.00 (0.01)	0.03*** (0.01)	0.12*** (0.01)
$\widehat{\text{Registered}} (\beta^{IV})$	0.36** (0.14) [0.02]	0.10 (0.10) [0.50]	0.12 (0.10) [0.30]	0.32** (0.16) [0.04]
DV Mean	0.18	0.05	0.04	0.11
FS F-statistic	43.6	43.6	43.6	43.6
$\rho(\text{Wealth, DV})$	0.29	0.03	0.23	0.33
Observations	11692	11692	11692	11692

DVs are all indicators. (1) individual in a household which has paid any tax in the last year; (2) individual in a household which has paid any fees to the government in the last year; (3) individual in a household which has paid council rates in the last year; (4) individual in a household which has paid taxes to the central government in the last year. NPS sample restricted to all adults born in either *treated* or *control* districts. β^{OLS} estimated using Equation (1); β^{IV} estimated using Equation (3). All specifications include district of birth and year of birth fixed effects and control for gender. Standard errors clustered at the district of birth-level in parentheses; bootstrapped p -values in square brackets. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A11: Comparison of registration reform effects

	Pooled	'66	'80s	'09
	(1)	(2)	(3)	(4)
<i>Reform</i>	0.16*** (0.01)	0.06*** (0.01)	-0.01*** (0.01)	0.01*** (0.00)
<i>Reform</i> × '80s	-0.17*** (0.02)			
<i>Reform</i> × '09	-0.17*** (0.02)			
Outcome mean	0.13	0.08	0.15	0.14
Observations	4188733	619982	1673553	1788643

Table estimates the effects of the '66 reform, '80s reforms, and '09 reform on registration as discussed in Appendix A.2. Column (1) estimates using the complete census sample and tests for differences between the effects of later reforms compared to '66. Columns (2) to (4) separately estimate effects of each reform, restricting each sample to cohorts born close to reform year. All specifications are estimated using OLS and include district of birth and year of birth fixed effects and control for gender. * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors clustered at the district of birth-level in parentheses.