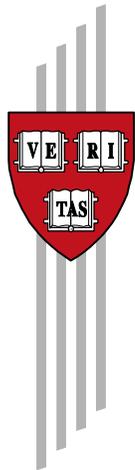


The Long-Run Effects of South Africa's Forced Resettlements on Employment Outcomes

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Abstract

Can South Africa's segregation policies explain, at least partially, its current poor employment outcomes? To explore this question, we study the long-term impact of the forced resettlement of around 3.5 million black South Africans from their communities to the so-called "homelands" or "Bantustans", between 1960 and 1991. Specifically, we look at places that lost population due to the resettlements. Our empirical strategy exploits the variability in the magnitude of resettlements across places. Two main findings. First, the magnitude of outgoing internal migrations was largest for districts close to former homelands. Second, districts close to former homelands have higher rates of non-employed population in 2011. Together the evidence suggests that districts that experienced racial segregation policies most intensely, as measured by outgoing forced resettlements, have worse current employment outcomes.

Keywords: Homelands; Employment; Apartheid; Segregation policies.

JEL classification: J15; J21; J61; J71; N37.

I. Introduction

The unemployment rate in South Africa ranks as one of the highest in the world.¹ However, the unemployment rate has not always been this high. At the time of democratic transition in 1994, the unemployment rate was substantially lower than it is today (Banerjee et al. 2008). Proposed explanations for the poor employment outcomes observed in the post-apartheid period include strong political and bargaining power of trade unions, lack of interest and support for entrepreneurs, poor government policies, labor market inflexibility, and lack of appropriate infrastructure.² This paper proposes a complementary explanation that has been largely overlooked in the Economics literature: the long-lasting effects of South Africa's racial segregation policies on places that lost social and human capital due to forced resettlement policies.

Since midst of the 20th century, South Africa experienced harsh racial segregation policies (apartheid). One of the trademarks of South Africa's apartheid was the creation of homelands, special land reserves for black people. The creation of homelands led to massive migrations: in the period 1960 to 1991, around 3.5 million black South Africans were forcefully relocated to specific areas designated to them, the so-called "homelands" or "Bantustans". These massive displacements destroyed a range of existing relationships between people (Sharp and Spiegel 1985), with potential effects on multiple socio-economic dimensions.

In this paper, we study the long-term impact of South Africa's forced displacements on the labor market. In particular, we exploit the variability in the proximity to former homelands, which we report is associated to the magnitude of forced resettlements, to study the impact of forced resettlements on current employment outcomes. The identification assumption in our Two-Stages

¹ The unemployment rate was 44.4 percent in the second quarter of 2021, the highest on a global list of 82 countries monitored by Bloomberg (<https://www.bloomberg.com/news/articles/2021-08-24/south-african-unemployment-rate-rises-to-highest-in-the-world>). In this paper we focus on the rate of non-employed, which includes not only actively work-seeking individuals, but also those inactive in search but potentially eligible to work.

² For a discussion on causes, problems, and policies associated to the high unemployment rate in South Africa, see Kingdon and Knight (2007) and Banerjee et al. (2008).

Least Squares (2SLS) estimates is that, conditional on the rich set of control variables available, the distance of a given district to the closest homeland only affects district's employment outcomes through its effect on forced displacements. First-stage estimates indicate that those districts located close to former homelands lost a higher proportion of black population between 1960 and 1991. 2SLS estimates indicate that districts that experienced higher levels of forced resettlements perform poorly in terms of employment outcomes. Results are robust to alternative specifications. Overall, our findings indicate a high-persistent effect of racial segregation policies, in particular forced resettlements, into nowadays.

Our paper relates to a literature that looks at the socio-economic impact of large-scale removals of people, including slaves exports from Africa (Nunn 2008), the persecution and mass murder of Russian Jews by the Nazis during World War II (Acemoglu, Hassan, and Robinson 2011), and the 1609 expulsion of Moriscos from Spain (Chaney and Hornbeck 2016). As in our paper, this literature focuses on the study of areas where people were removed from. There is a related and complementary literature that focuses on the impacts of forced migrations on migrants and the impacts of forced migrations on the host communities (see Ruiz and Vargas-Silva 2013).

This paper also ties in with a literature that explores the long-run effects of apartheid policies in South Africa (Dinkelman 2013; Erikson 2014; Fourie and Mariotti 2014; Abel 2019). In particular, there is a literature that suggests that segregation policies during the apartheid period have long lasting effects on the development of the people who were resettled into former homelands areas (see, among others, Von Fintel 2014; David et al. 2018; Abel 2019; Schotte, Zizzamia, and Leibbrandt 2022). To the best of our knowledge, we are the first to look at the long-term effects of racial segregation policies on employment outcomes.

Finally, our findings on the long-lasting effects of segregation policies contribute to the economic history literature that highlights the importance of the longevity of institutions and path

dependence (North 1990; Acemoglu et al. 2005). As pointed out by Fourie and Mariotti (2014) “(T)he South African economy today is still tied to the apartheid era economy, that there is indeed path dependence and that we have to understand the economy of the twentieth century in order to improve outcomes in the twenty-first.”

The paper continues as follows. Section II provides an historical background of South Africa racial segregation policies, with a focus on migrations associated to the creation of homelands. Section III describes the data. Section IV presents the identification strategy, reports the results, and discuss possible explanations to our findings. Section V concludes.

II. Historical background

We aim to study the impact of one measurable dimension of South Africa’s apartheid policies on current labor market’s outcomes, namely the resettlement process in the context of the homelands policy. To understand the nature of the resettlement process, this section acknowledges and outlines the colonial history and processes that went into the creation of the homelands.

Spatial segregation policies have been prominent in South Africa long before the apartheid government. South Africa’s colonial roots under both the Dutch and British rule came with some spatial segregation policies that progressed through to the early 1900s (Christopher, 1994), followed by exacerbation of spatial segregation through policies such as the Native Lands Act of 1936 (which revoked right to own or rent land for Black South Africans). The white population in the early 1900s only comprised of approximately 18% of the country’s population (around 4 million people), but formed the majority of the government and did not want to cede power to the majority black population (see Malan and Hattingh 1976).

Thus came the creation of homelands, “Bantustans”, territorially consolidated black areas divided by ten linguistically defined groups (see Figure 1 green outlines as outlines of former homelands areas). Essentially, the government’s chief aim with the creation of homelands was to extinguish African political presence in white areas and only keep those who were essential as

surplus labor pools. According to Christopher (1994), the government had two goals in removing Africans into homelands: the first was to “whiten” the rural areas of white South Africa, and the second was to “blacken” the black designated areas. This goal lent itself to a series of policy targeted towards creating homelands, where old reserves dedicated for black people were deemed to become separately independent states. More specifically, the homelands officially entered the language of South African politics as part of the victory of the National Party in 1948, where the homelands were given rights to their self-government, though considerable debate persists on the extent of legitimacy given to this “self-government” (Christopher, 1994). Wittenberg (2003) describes the partition as one that was never intended to be an equitable process, with its main intention to maintain control over the African population. Bantustans had restricted access to certain public goods and opportunities, with industrial development taking place primarily in white-dominated areas as it was restricted in Bantustans in the earlier decades of apartheid (Christopher, 1994). The inequalities were exaggerated by laws that restricted movement to white areas and urban centers, mostly to migratory laborers who supplied labor to white industries.

Black South Africans were resettled gradually and forcibly into the Bantustans. In addition to the inherently racist policy aims of the homeland resettlements, there were logistical issues in resettling entire populations to their newly designated areas. One of the most prominent problems was the small proportion of black population that actually resided in the homelands areas. In 1951, over 60 percent of the black population lived in the areas designated as forming part of the future white areas (Christopher, 1994).

Even though the resettlement processes manifested in many types of relocations, the evidence indicates that removals of black populations from their communities into homelands were largely forced, as reported by The Surplus People Project (SPP) (1983), a data collection effort on mass removals of population relocation in South Africa. The removals involved intimidation practices and violence, with demolition of physical property, closure of shops and schools, building

restrictions, and farm removals. Due to increasingly international pressure, the State eventually transitioned to using more indirect coercion tools, pressuring people to move on their own, though leaving them little choice in reality (Surplus People Project, 1983).

The forced nature of resettlement was, thus, a shock to places and to people, who could not choose whether to leave and where to leave. Whereas there is some research that shows the long-term adverse effects that apartheid policies had on people who were resettled into homelands, there is, to the best of our knowledge, no research that investigates what happened to the left-behind places that were emptied of people in the context of this resettlement process. Many places suffered from a large loss of population, and, as we show in the next sections, these population losses have long lasting effects.

III. Data

Our main source of data is the South African National Census of 2011, which provides information at the “main place” level. Main places define community boundaries. They are small towns, rural villages, townships, and suburbs in large towns and cities.

Since at the main place level we do not have data that is reliably and consistently over time, we choose to work with the “magisterial district” level, following Giraut and Vacchiani-Marcuzzo (2009).³ Magisterial districts are the legal districts in South Africa and overlap somewhat, but not fully, with municipality borders. There are 251 magisterial districts. To aggregate data up from the main place level to the magisterial level, we perform an overlay of the spatial boundaries.

Our main outcome variable is *Rate of non-employed*. This variable fully captures the working-age population that is not employed, including discouraged work-seekers and other non-economically active people alongside those who are indicated in the census as being unemployed. Including these “inactive” people in the analysis, in addition to those who actively seek for work, helps providing a more accurate picture of the extent to which working-age people are not employed in South Africa. In order to place the location of magisterial districts with respect to

former homelands, we overlay the boundaries of the districts with the boundaries of former homelands areas, and we generate the variable *Distance to closest homeland*. This is the linear distance, in kilometers, from the centroid of the magisterial district to the border of the closest former homeland. Figure 1 plots the distance of each magisterial district to the closest former homeland border. The right hand-side bar shows distance in kilometers on a purple to yellow color scheme, the green outline on the maps are the former homelands areas.

In order to capture the distance to other economically relevant places in South Africa, we use data from the GHS Urban Centre database 2015, and we generate two additional distance variables. *Distance to closest city* is the linear distance, in kilometers, to the closest urban center with more than 50,000 population. *Distance to closest port* is the linear distance, in kilometers, to the closest port.

We use information from the Agro-Ecological Zones (AEZ) modelling framework and databases to construct a variable that captures suitability for agricultural land utilization (*Agriculture potential*). AEZ relies on well-established land evaluation principles to identify resource limitations and opportunities based on plant eco-physiological characteristics, climatic, and edaphic requirements of crops and it uses these to evaluate suitability and production potentials.

Aside from the 2011 census data, we use the “Territories and urbanization in South Africa Atlas and geo-historical information system (DYSTURB)” database (Giraut and Vacchiani-Marcuzzo 2009). The database is a geo-referenced database that harmonizes administrative boundaries at different levels of aggregation in South Africa between 1911 and 2001. This allows us to generate demographic data at the district level, including the pre-resettlement total population (*Population in 1960*). We also construct a variable to capture the change in demography during

³ We exclude places with rate of non-employed equal to zero or one, which are places that are not only outliers in terms of employment outcomes, but also in terms of unusually small size.

the resettlement period (1960 to 1991): *Change in population density* is the district's change in population density between 1960 and 1991.

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Finally, we construct a variable that captures the magnitude of outgoing forced migrations during the resettlement period: *Forced resettlement* is the difference between the district's proportion of black population on total population between 1960 and 1991.

We focus on those areas of South Africa that are outside former homelands. There are 186 districts outside former homelands. The summary statistics in Table 1 indicate an average rate of non-employed of 63.5 percent for areas located outside former homelands.

IV. Econometric methods and results

We are interested in estimating the causal effect of forced migrations on the rate of non-employed. Formally, we estimate the following regression:

$$\text{Rate of non-employed}_i = \alpha_1 + \beta_1 \text{ Forced resettlement}_i + \delta_1 X_i + \varepsilon_{1i} \quad (1)$$

where i indexes districts and ε_{1i} is an error term. The vector of control variables, X , includes *Distance to closest city*, *Distance to closest port*, *Agriculture potential*, and *Population in 1960*. Since everything that happened after the apartheid period is a potential outcome, to avoid including bad controls, we restrict the set of control variables to those that are either time invariant or previous to the resettlement period.

To address potential endogeneity concerns, we estimate equation (1) using 2SLS, where we use *Distance to closest homeland* as an instrument for the potentially endogenous variable *Forced resettlement*. The identification assumption is that, conditional on the X s, the distance of a given district to the closest homeland only affects district's rate of non-employed through its effect on *Forced resettlement*.

The first two columns in Table 2 report reduced-form estimates, without and with controls. The estimated coefficient on *Distance to closest homeland* in column (1) is negative and statistically significant at the 1% level, indicating that district located more distant from former homelands have lower rates of people non-employed than those communities located closer to former homelands' borders. The magnitude of the estimated coefficient is important: an increase of 100 kilometers in the distance to the closest homeland border is associated to a decrease in the rate of non-employed of 1.8 percentage points.

As shown in column (2), results are robust to controlling for *Distance to closest city*, *Distance to closest port*, *Agriculture potential*, and *Population in 1960*. Most of the signs of the control variables are as expected: communities closer to important urban centers and with higher agriculture potential have lower rates of people non-employed.

Since we aim to explain the dynamics of those districts exposed to outgoing forced resettlements, in column (3) we restrict the sample to districts with a decrease in the proportion of black population between 1960 and 1991. In this specification, the estimated coefficient on

Distance to closest homeland remains negative and statistically significant at the 1% level.

Figure 2 depicts the histogram of the variable *Distance to closest homeland*. Most districts are located relatively close to former homelands (less than 100 kilometers), though there are a few districts farther away. As shown in Figure 1, districts that are farther away from former homelands are mostly located at the southwest of the country. A potential concern, therefore, would arise if there is unobserved heterogeneity that correlates with being located in the southwest of the country. Column (4) in Table 2 reports our preferred specification, where we further exclude districts located more than 700 kilometers from former homelands. In this preferred specification, the coefficient on *Distance to closest homeland* is still negative and statistically significant at the 1% level. The point estimate indicates an increase of 100 kilometers in the distance to the closest homeland border is associated to a decrease in the rate of non-employed of 2.9 percentage points.⁴ Since *Forced resettlement* is potentially endogenous in a model to explain the rate of people that are non-employed, we estimate equation (1) by means of 2SLS, using *Distance to closest homeland* as an instrument for *Forced resettlement*. Column (1) in Table 3 reports first-stage estimates. The coefficient on *Distance to closest homeland* is negative and statistically significant, indicating that districts located closer to former homelands were more affected by forced resettlements.

Column (2) in Table 3 reports 2SLS estimates of equation (1). The estimated coefficient on *Forced resettlement* is positive and statistically significant, suggesting that today's rate of people non-employed is higher in those districts that experienced higher levels of outgoing forced migrations. The point estimate indicates that a one standard deviation increase in *Forced resettlement* leads to an increase in the rate of non-employed of about 29 percentage points.

⁴ Results are robust to excluding districts located more than 400, 500, 600, or 800 kilometers from former homelands. All results mentioned and not shown are available from the authors upon request.

Further results

Our findings so far suggest that districts that experienced forced migrations most intensely show poorer employment outcomes. We now discuss potential explanations to these findings. In particular, we explore whether forced resettlements may have affected the socio-demographic structure of communities. We use the change in population density as a secondary outcome that could potentially capture changes in district's socio-demographic structure. In principle, we expect to observe a lower population density in those districts that experienced higher levels of forced resettlements.

To explore if the change in population density mediates the causal pathway between forced migrations and the current rate of non-employed, we estimate the following reduced-form equation:

$$\text{Change in population density}_i = \alpha_2 + \beta_2 \text{Distance to closest homeland}_i + \delta_2 X_i + \varepsilon_{2i} \quad (2)$$

Column (1) in Table 4 reports OLS estimates of equation (2). The coefficient on *Distance to closest homeland* is positive and statistically significant, indicating that districts located farther away from former homelands (and thus less exposed to forced migrations) show higher increases in population density compared to those districts located closer to former homelands' borders. This is in line with expectations, and suggests that the change in population density may be mediating the causal relationship between forced resettlement policies and current rates of people without employment.

The next step is to explore if this potential mediator is statistically significant to explain current rates of non-employed, conditional on *Distance to closest homeland* and the set of control variables. We do so by estimating the following equation:

$$\begin{aligned} \text{Rate of non-employed}_i = & \alpha_3 + \beta_3 \text{Distance to closest homeland}_i + \delta_3 X_i \\ & + \zeta_3 \text{Change in population density}_i + \varepsilon_{3i} \quad (3) \end{aligned}$$

As shown in column (2) in Table 4, the estimated coefficient on *Change in population density* is negative and statistically significant, suggesting that an increase in population density is associated to a decrease in district's rate of non-employed.

The underlying assumption for a causal interpretation of ζ_3 is the absence of unobserved covariates that affect both the change in population density and current rates of non-employed. Taking into account this caveat, estimates of equation (3) provide evidence that the change in population density may have triggered an increase in the rate of people without employment in the post-apartheid period.

Mechanism discussion and case study

In this section, we discuss our findings on places that lost an important share of their black population, and that decades later are less dense and have lower employment rates than other places.

We discuss potential labor market effects in the context of a simple labor demand – labor supply framework. In the context of a forced mass resettlement policy, we expect to see a sudden decrease in labor supply, which leads to a short-term labor shortage. This shortage is likely to persist in a world that does not leave room nor incentive for in-migration to emptied places that compensates the scale of out-migration. This imbalance of labor outflows and inflows makes labor supply relatively inelastic, making it insensitive to changes in wages. As a result, overall labor demand is expected to decrease, shrinking the local labor market. Potential adjustment mechanisms from the labor demand side include firm exit through closure or relocation, and heavy investment into technology.⁵ In the case of South Africa, today we observe that productive

⁵ Dicarolo (2022) finds a decrease in firm survival following a large negative labor supply shock through out-migration in the case of Italy. Burstein et al. (2020) discuss how a labor supply shock can affect the local labor market differently, depending on whether the supply shock affects the tradable or non-tradable sector. It is important to note that both studies study economies that are open and potentially able to balance the labor market shocks through the labor supply side. This might not be true to the case of South Africa during the resettlement process, where labor inflows to emptied villages were not as straightforward. In fact, when we correlate the change in share of black population, with the total

industries are geographically concentrated and highly capital intensive (see, among others, Black, Craig, and Dunne 2016). Firm exit and capital intensification, triggered by an irreplaceable labor supply shock, hence result a long-run decrease of the size of the local labor market. Lack of attention by the public sector, with lack of public infrastructure investment, further damages the economic environment, and hinders agglomeration. Symptoms of this downward spiral are small and inefficient labor markets accompanied with low population density – both features we observe for places in South Africa that suffered from high loss of population.

As a case study, we look at Umzinto in KwaZulu-Natal.⁶ Umzinto lies close to the coast, at about 45 minutes' drive from Durban, and 8 kilometers from the border of a former homeland. Between 1960 and 1991, Umzinto's share of Black population decreased from 80% to 35%, making it the district in our sample with the second highest decrease in the share of black population during the time of resettlement. As of 2011, the rate of non-employed in the area that corresponds to the magisterial district of Umzinto is 81%, one of the districts with the highest rates of non-employed.⁷ Before the Group Areas Act and its extensions in the 1960s, Umzinto was home to large textile mills that used to be important exporters, a big sugar cane factory, as well as a railway transport node.⁸ Today, most of these industries have disappeared, as has the railway. Umzinto's news as of today reflect a struggle of lacking job opportunities, broken roads, lack of reliable access to water, and withheld public funds.⁹ Disconnected social housing complexes, and growing informal housing around the few remaining industries, add to the struggle.¹⁰ Umzinto

change in population of other population groups (White, Asian, Colored) between 1960 and 1991, we see a coefficient close to zero and not significant. When correlated with each population group singularly, there is an increase in White population in places of resettlement, yet not large enough in size to offset the loss of Black population.

⁶ It is important to note that we refer here to geographic boundaries of the *Umzinto 1991 magisterial district*. This does not strictly correspond to the *Umzinto main place* administrative borders from the 2011 population census: the main place area is smaller than the magisterial district area.

⁷ The rate of non-employed of Umzinto main place is 61% as of 2011, and the share of black population is 55%.

⁸ Information on industries from Wikipedia.org. The railway to Donnybrook via Ixopo does no longer exist.

⁹ See, among others, <https://midsouthcoastrisingsun.co.za/37247/umzinto-is-going-to-the-dogs-say-residents/>.

¹⁰ Authors' observations from Planet.com.

went from a once growing economic centre to a place that lacks economic opportunity and suffers from malfunctioning infrastructure.

Understanding if, and how, once thriving economic ecosystems like Umzinto could be revived, can help inform vertical and horizontal industrial policy in South Africa.

Robustness test

To test the robustness of our findings, and add statistical power to the estimates, we run our reduced form model with data from the South African National Census 2011 at the “main place” level. There are 1,992 main places that are in our estimation sample in the areas outside of the former homelands areas. Since we do not have population changes between 1960 and 1991 at the main place level, we can only estimate the reduced form regressions for this sample, where i in equation (4) represents “main place”.

$$\text{Rate of non-employed}_i = \alpha_2 + \beta_2 \text{Distance to closest homeland}_i + \delta_2 X_i + \varepsilon_{2i} \quad (4)$$

The results to these regressions are in Appendix table A1. Compared with our reduced form results in table 2, we find the estimates to be robust.

V. Final remarks

We provide evidence on the long-run effect of forced resettlement policies on employment outcomes in the left-behind places. Our findings suggest that areas that experienced forced resettlement policies most intensely have higher rates of people without an employment.

Our hypothesis is that, in South Africa, forced population resettlement and relocation may have interrupted agglomeration economies that are crucial for economic development (see von Fintel 2018). This is in line with our finding that places outside former homelands areas are less dense today than in 1960 as consequence of forced resettlement policies, and that less density is associated with higher rates of non-employed.

Our findings add evidence that shows that the effects of forced resettlements and segregation policies have a long-lasting legacy that goes even beyond the former homelands areas. Our empirical

approach, however, only provide insights on the variability of employment outcomes within South Africa. That is, our results indicate that those areas within the country that were more exposed to forced resettlements show poorer employment outcomes today.

Our partial equilibrium approach is unable to provide a conclusive answer to the important question on the mechanism through which racial segregation policies in general, and forced resettlement in particular, cause long-lasting distortions in labor markets. One way to address this question would be to explore the cross-country variability in segregation policies, yet only South Africa and Namibia are similar in the exposure to this same set of policies, which limits the possibilities of doing a rigorous statistical analysis. Having said this, South Africa and Namibia rank 1st and 8th in 2022 unemployment rates out of the 51 African countries with available employment statistics.¹

Overall, our findings suggest that resettlement policies in the context of segregation may have played an important role in explaining the poor employment outcomes observed today, showing that resettlement not only affected people, but also the left-behind places. Left-behind places are different to other vulnerable places in South Africa, in that their economic and socio-demographic composition was distorted through a sudden shock in population loss. Policies to revive their economic ecosystem require an understanding of their current dynamics, as well as of their demographic and economic structure before population resettlement.

¹ <https://www.statista.com/statistics/1286939/unemployment-rate-in-africa-by-country/>

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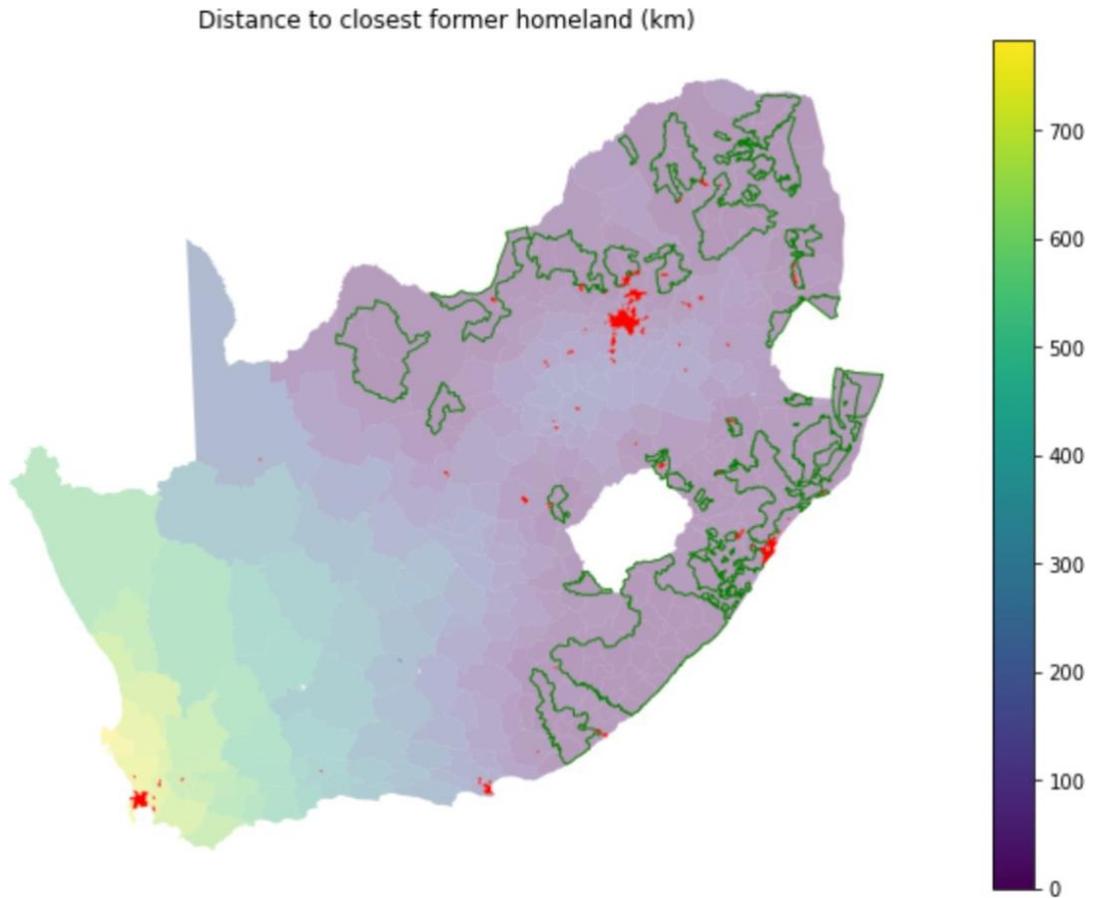
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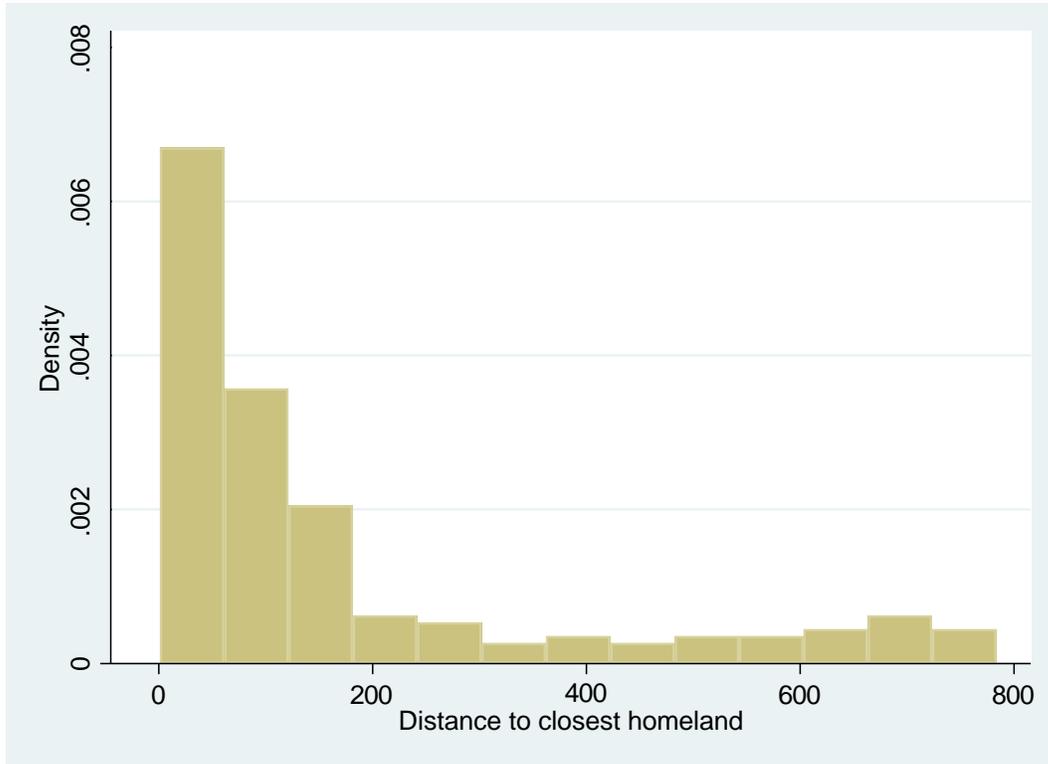
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Figure 1. Distance of all magisterial districts to closest former homelands border



Source: Author's own calculations of distance in km to closest former homeland border. Data is from the DYSTURB database, 2009. Green lines show the former homelands borders. Former homelands are outlined in green lines. Red dots are urban centers.

Figure 2. Histogram of Distance to closest former homeland



Source: Author's own calculations of distance in km to closest former homeland border. Data is from the DYSTURB database, 2009.

Table 1. Descriptive statistics

	Mean	Standard Deviation	Minimum	Maximum
Rate of non-employed	0.64	0.11	0.25	0.88
Forced resettlement	0.03	0.11	-0.36	0.55
Distance to closest homeland	171.64	213.19	1.03	783.56
Distance to closest city	77.66	65.11	1.54	339.75
Distance to closest port	321.71	182.00	8.87	807.28
Agriculture potential	516.58	388.24	0	1395
Population in 1960	51.95	100.45	4.55	1137.81
Change in population density	0.28	0.88	-0.83	7.23
Observations	186			

Notes: The unit of observation is the district. *Rate of non-employed* is the district's ratio of people that are not employed to the working age population in 2011. *Forced resettlement* is the difference between the district's proportion of black population on total population in 1960 and 1991. *Distance to closest homeland* is the linear distance, in kilometers, to the border of the closest former homeland. *Distance to closest city* is the linear distance, in kilometers, to the closest urban center with more than 50,000 population. *Distance to closest port* is the linear distance, in kilometers, to the closest port. *Agriculture potential* captures suitability for agricultural land utilization. *Population in 1960* is in thousands. *Change in population density* corresponds to the period 1960 to 1991.

Table 2. Reduced-form estimates: unemployment and distance to former homelands

	Rate of non-employed			
	(1)	(2)	(3)	(4)
Distance to closest homeland	-0.00018*** (0.00003)	-0.00029*** (0.00004)	-0.00029*** (0.00005)	-0.00029*** (0.00005)
Distance to closest city		0.00023* (0.00013)	0.00017 (0.00017)	0.00016 (0.00018)
Distance to closest port		-0.00015*** (0.00005)	-0.00018** (0.00007)	-0.00019** (0.00007)
Agriculture potential		-0.00009*** (0.00003)	-0.00010** (0.00004)	-0.00011*** (0.00004)
Population in 1960		-0.00012 (0.00010)	-0.00042*** (0.00013)	-0.00040*** (0.00013)
Estimation method	OLS	OLS	OLS	OLS
Mean of dependent variable	0.64	0.64	0.62	0.63
Observations	186	186	107	102

Notes: Robust standard errors clustered are in parentheses. All regressions include a constant. Column (3) restricts the sample to districts with a decrease in the proportion of black population between 1960 and 1991. Column (4) further restricts the sample to districts located at less than 700 kilometers from the closest homeland. *Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level.

Table 3. Main results

	First-stage estimates Forced resettlements (1)	2SLS estimates Rate of non-employed (2)
Distance to closest homeland	-0.00011** (0.00004)	
Forced resettlements		2.67893** (1.21670)
Estimation method	OLS	2SLS
Mean of dependent variable	0.09	0.63
Observations	102	102

Notes: Robust standard errors are in parentheses. All regressions include a constant and control for *Distance to closest city*, *Distance to closest port*, *Agriculture potential*, and *Population in 1960*. The sample is restricted to districts with a decrease in the proportion of black population between 1960 and 1991 and located at less than 700 kilometers from the closest homeland. The excluded instrument for *Forced resettlement* in column (2) is *Distance to closest homeland*. The Kleibergen-Paap Wald F-statistic for weak identification test in the first-stage regression is equal to 6.08. **Significant at the 5% level.

Table 4. Additional findings

	Change in population density (1)	Rate of non-employed (2)
Distance to closest homeland	0.00099*** (0.00022)	-0.00025*** (0.00005)
Change in population density		-0.03978** (0.01987)
Estimation method	OLS	OLS
Mean of dependent variable	0.02	0.63
Observations	102	102

Notes: Robust standard errors are in parentheses. All regressions include a constant and control for *Distance to closest city*, *Distance to closest port*, *Agriculture potential*, and *Population in 1960*. The sample is restricted to districts with a decrease in the proportion of black population between 1960 and 1991 and located at less than 700 kilometers from the closest homeland. **Significant at the 5% level. ***Significant at the 1% level.

Appendix

Table A1. Reduced-form estimates: unemployment and distance to former homelands.
Observation unit: "Main Place", South African National Census 2011

	Rate of non-employed		
	(1)	(2)	(3)
Distance to closest homeland	-0.00024*** (0.00003)	-0.00039*** (0.00004)	-0.00046*** (0.00005)
Distance to closest city		0.00064*** (0.00013)	0.00072*** (0.00018)
Distance to closest port		-0.00027*** (0.00005)	-0.00027*** (0.00007)
Agriculture potential		-0.00005*** (0.00003)	-0.00006*** (0.00004)
Estimation method	OLS	OLS	OLS
Mean of dependent variable	0.62	0.62	0.62
Observations	1,992	1,992	1,851

Notes: Robust standard errors clustered are in parentheses. All regressions include a constant. Column (3) restricts the sample to districts located at less than 700 kilometers from the closest homeland. *Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level.