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Research Paper

Legacies of loss: The health outcomes of slaveholder compensation in the British Cape Colony

Igor Martins[a,b,*], Jeanne Cilliers[a], Johan Fourie[c]

[a] Department of Economic History, Lund University, Sweden
[b] Faculty of History, University of Cambridge, United Kingdom
[c] Department of Economics, Stellenbosch University, South Africa

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ABSTRACT

Can wealth shocks have intergenerational health consequences? We use the partial compensation slaveholders received after the 1834 slave emancipation in the British Cape Colony to measure the intergenerational effects of a wealth loss on longevity. We find that a greater loss of slave wealth shortened the lifespans of the generation of slaveholders that experienced the shock albeit these effects are usually small and mostly confined to older cohorts of slaveholders who likely exploited slaves both as labor and capital inputs. The lifespans of those of the second generation who survived infancy were unaffected by the shortfalls and no effects of the shortfall were found for the third generation.

1. Introduction

Can wealth shocks have intergenerational health consequences? For a slaveholder in the Cape Colony, could the loss of his slaves after emancipation, with only partial compensation, negatively effect his health to such an extent as to shorten his life and the lives of his children and perhaps even those of his grandchildren?

We know that health and wealth are positively correlated across a range of dimensions (Smith 1999; Deaton 2003; Cutler et al. 2008), but the causal mechanisms remain unclear. This is because health and wealth are inextricably bound up with each other, as Cutler et al. (2008, p. 36) cryptically note: “Some dimensions of socioeconomic status cause health, some are caused by health, and some are mutually determined with health; some fall into all three categories at once”.

The question of how later-life outcomes respond to the gain or loss of wealth and how persistent these effects are over time remains open. Experimentation is understandably difficult. Randomizing the wealth of people to test its effects on health would be plainly unethical. Researchers have therefore resorted to quasi-experimental designs, most commonly involving lottery winnings (Lindahl 2005; Apouey and Clark 2015; Cesarini et al. 2016), stock or housing price fluctuations (Boen and Yang 2016; Fichera and Gathergood 2016; Engelberg and Parsons 2016; Schwandt 2018) and policy changes (Duflo 2000; Case 2004; Frijters et al. 2005;

* Corresponding author.
E-mail addresses: igor.martins@ekh.lu.se (I. Martins), jeanne.cilliers.7367@ekh.lu.se (J. Cilliers), johanf@sun.ac.za (J. Fourie).

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Snyder and Evans 2006; Erixson 2017). Most of this literature deals with shocks to wealth through price fluctuations or cash windfalls. Few studies deal with shocks in the form of wealth losses (González et al. 2017) and even fewer with the relationship between wealth shocks and health in historical settings (Bleakley and Ferrie 2016; Ager et al. 2021).

To attempt an answer, we turned to the 1834 emancipation of slaves in the Cape Colony, an event whose social and historical significance for the marginalized populations of the British Empire of course cannot be overstated. But an aspect of particular interest to economic historians is the cash compensation paid to slave owners. The records show that they received, on average, between 40 and 50% of the value of their slaves. From an economic standpoint, therefore, emancipation represented the loss of wealth or, put differently, the loss of an asset. We were interested in identifying any health-related outcomes of this loss, and we found the means to do this by linking data from three different datasets containing compensation claims, tax returns, and genealogical records, respectively.

We began by digitizing the claims records kept in the Cape Town Archives in conjunction with the work already started by Ekama et al. (2021). These contain details of more than 30,000 slaves living in the British Cape Colony at the southern tip of Africa. The records include, most importantly for us, the value assigned to each slave. We combined this information with the compensation paid to each slaveholder, which is generally well below the aggregated value of the slaves owned. We claim that the differences in the percentages of compensation paid are random, and we support this with extensive archival evidence. We then used the average uncompensated value, i.e. shortfall, per slave, our variable of interest, to measure the shock to the former slaveholders. Since our study aimed to verify the intergenerational effects of property losses, we also linked the compensation claim to information on settler families between 1652 and 1910 from the South African Families database. Finally, we linked a sub-sample of slaveholders from the district of Stellenbosch, to the 1834 tax returns, which contain the slaveholders' details that enable us to propose potential transmission mechanisms to the effects we observe.

We believe that using an individual's lifespan as a proxy for health offers some advantages. Firstly, longer lifespans can be directly interpreted as improvements in health. Indeed, life expectancy is one of the key indicators in the Human Development Index. Secondly, years of life are methodologically constant over time and space, which allows for better comparability between individuals from different generations or countries.[1] If variations in wealth can explain variations in later-life outcomes, we speculate that the differences between the slaveholders' compensation shares might be the reason for the observable differences between their lifespans.

Our estimation strategy consisted of a Poisson regression, a generalized linear model that allowed us to fit the distribution of lifespan more effectively. We estimated the effects of the average shortfall per slave on the lifespan of individuals who were slaveholders in 1834 (the first generation) and extended the analysis to their children (the second generation) and their grandchildren (the third generation). We found the shortfall to be negative and significant for the first generation, which implies that slaveholders who received a greater proportion of compensation were likely to live longer. These findings, however, are not homogeneous across birth cohorts. Older cohorts who were likely to have more slaves and whose wealth was more reliant on the exploitation of slaves both as labor and capital inputs were responsible for most of the negative effects verified across our sample.

We found that the effects we verified in the first generation could be passed on to the second generation, but only when analyzing the sub-sample of Stellenbosch slaveholders and only if we included infant mortality. When we excluded this from the base estimates, we could not verify any statistically significant effects of the wealth shock on the lifespans of the second generation. In other words, only the survival of infants was influenced by the shock; the lifespans of those of the second generation who survived infancy were unaffected by the shortfalls. We could not confidently estimate the results for the third generation, however, we argue it is unlikely that such a shock trickled that far down the family line given the relatively small economic magnitude of this shock already by the first generation.

The economic significance of the shortfalls was systematically smaller than the economic significance of any of the relevant demographic covariates we could control for. This is in line with the literature that suggests the effects of exogenous shocks on later-life outcomes are marginal and mostly confined in the short and medium run (Frijters et al. 2005; Cesarini et al. 2016; Erixson 2017) although we use a shock consisting of a wealth loss rather than a gain.[2]

2. Literature review

The literature reveals a great variety of wealth shock measurements. Several studies say that findings of causal links to explain the wealth-health gradient should be viewed with skepticism (Frijters et al. 2005; Snyder and Evans 2006; Cesarini et al. 2016; Erixson 2017), while others draw conclusions that suggest these links do exist (Duflo 2000; Case 2004; Lindahl 2005; Fichera and Gathergood 2016; Schwandt 2018). The long-run, intergenerational effect of wealth shocks remains unclear, however, because measuring such effects over more than one lifetime requires exceptionally rich data.

Bleakley and Ferrie (2016) is one of the exceptions. Their wealth shock example is the Cherokee Land Lottery in the US state of Georgia in 1832, in which virtually every adult male participated and large tracts of land were distributed to winners. They linked intergenerational information to the dataset of winners but unfortunately did not measure health-related outcomes. They did,

[1] The use of lifespan as a proxy for other later-life outcomes, such as occupational mobility, has been acknowledged in the literature. Two examples are Piraino et al. (2014) and Parman (2016).

[2] Using a similar setting to ours, Ager et al. (2021) suggests that economic shock when dealing with the nullification of slave wealth after the U.S. Civil War was not marginal. The authors, however, do emphasize the quick recovery experienced by sons and grandsons of slaveholders in education and occupation attainment already by the 1940s.

however, measure the later-life fertility of winners, and the literacy, wealth, and income of their children and grandchildren, as a measure of human capital, and found that winners had slightly more children than non-winners, but were not more likely to send them to school. They found that the outcomes of the lottery had no significant effect on the two succeeding generations' literacy, wealth, or income.

Because Bleakley and Ferrie (2016) used property as their wealth shock, and because people in the 19th century tended to depend heavily on this asset for their livelihood, we could expect transmission mechanisms from wealth to health to be visible and strong. Yet they found that the wealth gains produced only relatively small changes in fertility, which might be considered to be connected with health, and no significant intergenerational outcomes. Should we expect to find the same effects in studies of a *loss* of wealth?

González et al. (2017) provide a starting point. They analyzed the 1864 emancipation of slaves in the US, looking for possible links between the loss of slave-wealth and the likelihood of slaveholders starting a business in the post-emancipation period. They conclude that the possession of slave-wealth causally explains variations in the likelihood of starting a business, which was lower after 1864, suggesting that slave-wealth was better collateral for credit than any additional income that wage labor could have yielded in that period. They did not investigate any later-life outcomes *per se*, but their study is the first, to our knowledge, that explores the causal links between the loss of an asset and people's subsequent behavior. We thus chose to use the wealth loss suffered by slaveholders after the 1834 emancipation in the British Cape Colony to fill this gap in the literature by measuring the effects on their lifespan and those of their offspring up to two generations.

3. Historical background

Compensation paid to slave owners for the expropriation of their capital was not unique to the British Empire, and the compensation was not homogeneous across all British colonies. We, therefore, provide a brief history of abolitionism in the UK, followed by its ramifications in the Cape Colony.

3.1. Abolitionism in the United Kingdom

The case Somerset v. Stewart in 1772[3], often taken to signal the end of slavery in Britain, shifted the political momentum irreversibly in favor of emancipation and influenced abolitionist movements in several parts of the British Empire (Drescher 1987; Davis 1999; Carey et al. 2004). Shortly thereafter, in 1787, a group of twelve abolitionists created the Society for the Abolition of the Slave Trade, to raise public awareness of the horrific treatment of slaves by slave traders and holders and pressure the British Parliament to take a stand on the issue. The campaign was successful and the Slave Trade Act of 1807 finally outlawed the slave trade within the British Empire.[4]

The emancipation of slaves was the next item on the abolitionists' agenda. But there was division in the ranks of the Anti-Slavery Society, the most prominent movement working towards this goal in the UK, as to how emancipation should take place. One group advocated a gradual process, through the ratification of amelioration laws, and the other wanted immediate action. The former approach was adopted, as evidenced by the numerous ordinances that appeared in some British overseas territories allowing slaves to get married, prohibiting the separation of married slaves by sale, preventing children under 10 from being separated from their parents, restricting corporal punishment, regulating the number of working hours, among other amelioration requirements (Dooling 2007; Spence 2014).

Some authors argue that the amelioration program was in part responsible for the increase in slave uprisings in the period after 1807, suggesting that the enslaved population saw the 1807 Act as a sign that freedom was within reach (Holt 1992; Dunkley 2012). Vernal (2011), for example, suggests that slaves in South Africa had incorporated into their expectations and perceptions the discourse of freedom and universal rights which ultimately transformed the interaction between slaves and masters. This view is corroborated by Spence (2014) who claims that opportunities for slaves to organize resistance were increasing by the nineteenth century. In practice, however, very little changed for the bulk of the enslaved population. It became clear to abolitionists that a gradual emancipation process was, if anything, merely ameliorating the circumstances of servitude, since slaveholders could easily avoid the enforcement of ordinances while using amelioration laws only to delay real emancipation (Lambert 2005). Coupland (1933, p. 130) notes that "virtually nothing had been done by way of 'amelioration' except in three or four of the lesser islands with small slave populations".

The perceived inefficiency of the amelioration program prompted many moderate abolitionists who had been pushing for a gradual reform to declare support for an immediate process of emancipation. This, together with the poor economic performance of the British West Indies in the 1820s, created the political momentum that abolitionists had envisaged. It also gave free trade movements a chance to disrupt the West Indies' sugar monopoly by destabilizing its core mode of production.[5] The confluence of these political forces led to the Slavery Abolition Act of 1833, which came into effect on 1 August 1834 (Williams 1944).

[3] For more information about the case, see Blumrosen and Blumrosen (2006) and Hinks and McKivigan (2007).

[4] See Farrell (2007) for a comprehensive discussion on the parliamentary struggle behind the Act's approval.

[5] According to Hinks and McKivigan (2007), the abolition of the slave trade in 1807, slavery in 1834, and the sugar monopoly in 1846 are inseparable events that constituted a systematic attack on the British West Indies operation. Engerman (1986) provides an interesting discussion on the moral, social and economic aspects of emancipation.

3.2. Cash compensations as a wealth shock in the Cape Colony

The 1833 Act determined how emancipation would come into effect and established an 'apprenticeship' period of six years together with financial compensation for slaveholders.[6] The compensation, as defined by Fogel and Engerman (1974, p. 401), was "philanthropy at bargain prices" since slaveholders saw slaves' freedom as "a commodity they were prepared to purchase only if it could be obtained at a very moderate cost".

For farmers in the Cape Colony, the future was uncertain. Hengherr (1953, p. 37) notes that "until the Abolition Act was published, the inhabitants were uncertain whether any amends at all would be made for the loss of capital or even what Britain's plans were for changing the status of the slaves". Cape Colony slaveholders, unlike their counterparts in the Caribbean, were mostly small landowners owning only a few slaves. Of the more than 700,000 slaves who were emancipated in 1834, fewer than 40,000 were in the Cape Colony. Most of the slaveholders in the Colony, and certainly those in the Stellenbosch district, were of Dutch origin and had few, if any, connections in London where political developments could be observed.

Parliament decided that the slaveholders would be entitled to half of Britain's annual budget in 1835, which amounted to 20 million pounds. The money was distributed among the colonies in proportion to the value of the enslaved populations. In the Cape, the entire process was conducted by the Office of Commissioners of Compensation. On 2 April 1835, the OCC released the general rules of the compensation scheme.[7] Two forms had to be completed for each slaveholder, the Slave Returns and the Form of Claim.

The Slave Returns assessed the Colony's slave-wealth.[8] The OCC assigned appraisers to cover the colonial territory and determine the value of all the slaves. The Slave Returns classified slaves according to sex and occupation. The occupations were divided into two categories: 'predial', i.e. employed in agriculture, and 'non-predial'. Each category had sub-classifications according to the task performed by the slave.[9] The value of the slaves was reached using prices from public and private sales between 1823 and 1830 and a Slave Return was produced for each slaveholder. In total, more than 38,000 slaves were valued and the total slave-wealth in the Colony was estimated at £2,800,000 (Hengherr 1953; Meltzer 1989; Dooling 2007).

The Form of Claim was a simple form in which the slaveholder was identified and declared the number of slaves he or she owned at the time. This form was cross-checked against the Slave Returns and if the OCC deemed the information to be correct, the claimant had the right to be compensated.

When this information was collected by the OCC, the Cape slaveholders hoped their slave-wealth would be fully compensated. Their concerns can be understood if we consider the importance of slaves as part of their total wealth. No precise estimate exists, but an analysis by Fourie (2013b) of more than 2,500 probate inventories in combination with auction rolls for the first half of the 18th century found that slaves represented 24% of the total wealth auctioned.[10] As not all the individuals whose records Fourie analyzed were slaveholders, 24% can be interpreted as a conservative estimate.

Given that the compensation scheme paid slaveholders an average of 40-50% of their wealth worth of slaves, this would place the economic shock at a 10-12% loss of total wealth. However, despite significant, this is still potentially smaller than what other slaveholders experienced, for example, in the United States. González et al. (2017, p. 390) note that "the appraised value of a 25-year old male slave in Maryland in 1860 ($1350) was more than 50 percent of the total wealth of the median entrepreneur".

The compensation values, nevertheless, were a big concern for the slaveholders. In 1834 Jacob Wouter du Preez, a farmer from the Swellendam district, wrote to Benjamin D'Urban, at the time governor and commander in chief of the Cape Colony, to relate how a "succession of misfortunes" had induced him to give over his estate for sequestration.[11] His property consisted of "18 valuable slaves, who if disposed of under the present crisis" would not only hurt his creditors but also himself.

Added to the slaveholders' worries was uncertainty as to when the payments would be made. Du Preez hoped that the compensation money would enable him to settle some of his most pressing debts, but neither he nor his creditors knew when compensation would arrive. He begged to be informed "whether the compensation is to be paid in December next, immediately upon the enfranchisement of this slaves and if not, whether Your Excellency cannot then inform the memorialist when the payment will take place, which will entail him to make arrangements with his creditors both for their benefit and his ones". Du Preez did not elaborate in his letter about the 'succession of misfortunes' that caused him such financial distress; however, we can speculate that he had mortgaged some, or even all, of his slaves and expected to settle his debts through agricultural surpluses produced by the slaves themselves.

The practice of mortgaging slaves was well incorporated into the Cape's slave economy (Dooling 2007; Green 2014; Swanepoel 2017). In April 1834, for example, a letter signed by more than 260 former slaveholders addressed to the governor of the colony requested an advance of £400,000 of compensation money to settle outstanding mortgages where slaves and their labor had been used as collateral.[12] The request was denied.

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[6] The emancipation scheme was not identical for every British colony. In Bermuda and Antigua, for example, emancipation was granted immediately. In India, slavery was deemed a local tradition and was not abolished until 1843.

[7] Cape Archives General Dispatches GH 1-105, General rules drawn up and framed by the commissioners of compensation in pursuance of the 47th & 55th clauses of the act 3 & 4 Wm.IV., Ch, 73, for the colonies of the Cape of the Good Hope and Mauritius. 2 April 1835.

[8] The sum of the value of all slaves in the Colony.

[9] Predial slaves were classified as 'Head People', 'Tradesmen', 'Inferior Tradesmen', 'Field Laborers', and 'Inferior Field Laborers'. Non-predial slaves were classified as 'Head Tradesmen', 'Inferior Tradesmen', 'Head People employed on Wharfs, Shipping, or other Avocations', 'Inferior People employed on Wharfs, Shipping, or other Avocations', 'Head Domestic Servants', and 'Inferior Domestics'.

[10] Probate inventories are detailed lists of settlers' household assets at death.

[11] Cape Archives Memorials, vol. 6, CO 3973. Letter from J.W. du Preez to Benjamin D'Urban. 6 October 1834.

[12] Cape Archives Memorials, vol. 7, CO 3974. Letter from slaveholders to Benjamin D'Urban. 7 April 1834

It was not until 1835 that the apportionment of the compensation was completed. Britain made a provision for £1,247,000 to be paid to Cape slaveholders, less than half of the slave-wealth that had been estimated. Furthermore, the claims were calculated solely based on the sex and occupation of the slaves, meaning that slaves within the same category were considered homogeneous and interchangeable (Draper 2008). This process created an arbitrary gap between an individual's slave-wealth and the compensation awarded. Slaveholders who had different slave-wealth despite having the same number of slaves were eligible for the same compensation if their slaves were classified as having the same sex and occupation.

To add to the perceived injustice, the compensation could only be claimed in London. This was directly contrary to the claimants' expectations – they had hoped the compensation would be remitted directly to the Cape Colony. The general feeling towards the compensation scheme was negative and former slaveholders used all the means available to criticize the system, saying it was the most "signally unjust, as well as offensively arbitrary, proceedings we ever heard of" and "a transaction discreditable to any government laying claim to fair and honest dealing with the public creditor".[13]

The process of repayment was also fraught with difficulty. Several payment delays – some claims were only settled as late as 1845 – added to the atmosphere of uncertainty. Around £250,000 worth of claims were later contested and, despite the limited success, it suggests that the evaluation and subsequent compensation process was far from straightforward (Hengherr 1953).

Considering that slaves were at the heart of the productive activity in the British Cape Colony and their role went beyond their employment in agricultural production – for example, they were also used as collateral for loans (Swanepoel 2017), as leasing assets (Green 2014), as domestic servants (Fourie 2013b) and as semi-skilled and skilled staff on farms (Fourie 2013a; Green 2014) – it is not surprising that the period immediately following emancipation was characterized by uncertain labor relations and production activity.

We use the average shortfall per slave as our variable of interest firstly because slaveholders until the very onset of abolition were unsure about the compensation scheme and secondly because the difference between the evaluation of their slave assets and the amount received in London was random. This is not to say, however, that either the assessment of the slave-wealth or the compensation awarded was randomly generated. They were not. But the difference between these two variables is random because considerably different criteria were used to quantify them. While the compensation was based solely on the sex and occupation of the slave, slave-wealth was based on market prices that considered a wider range of characteristics such as age, place of origin, height, and weight, besides, of course, sex and occupation. Anecdotal accounts presented above support our claim; so, too, does our empirical analysis – we show that the difference between the value and the amount received was not correlated to observable characteristics.

4. Data

The data for this study came from three sources that we linked manually to produce a unique dataset from which all our estimates derive: the valuation records matched to the compensation amounts, the South African Families Database (SAF) genealogical records, and the tax records (also known as *opgaafrollen*).

The slave valuation and compensation records were initially collected by Ekama et al. (2021). It contains information on more than 30,000 slaves who were emancipated in 1834 together with their names, sex, age, place of birth, owner and, importantly for us, their value. Some basic genealogical information about the slaveholder is also available.[14] The slaves were distributed among roughly 6,000 slaveholders. Because the compensation scheme was a function of slaves' characteristics and not just the total number of slaves owned, we worked with the average shortfall per slave as a measure of the magnitude of the shock to the slaveholders' wealth. This reduces our sample to 3,182 slaveholders as the value of slaves and/or the compensated value could not be retrieved from the majority of the sample.

We linked the sample of 3,182 slaveholders to the SAF database, which contains records of all settler families in the Cape Colony between 1652 and 1910. This allowed us to append information about each slaveholder's year of birth, year of death, number of siblings, rank among siblings, sex, and lifespan of parents. Each individual in this dataset has a unique identity that can be linked to the identity of his or her relatives. This, then allowed us to link slaveholders in 1834 to their children and grandchildren, referred to here as the 1st, 2nd and 3rd generations. Here we divided our sample between slaveholders from Stellenbosch (1,024) and slaveholders from other districts (2,158). The reasoning behind this division stems from the fact that the tax returns were only available for the Stellenbosch district. By momentarily excluding slaveholders from Stellenbosch, we link 2,158 farmers against the SAF to obtain 665 matches corresponding to our 1st generation. This group, when linked to their offspring, yielded 4,319 children (2nd generation) and 8,204 grandchildren (3rd generation). As is, we would still need to include Stellenbosch slaveholders. We do so after analyzing the tax records.

The tax records, collected annually by the British colonial authorities, contain information about residents' livestock, agricultural output, related capital, and taxation. This information is important because it allows us to observe these residents' wealth and specialization – i.e. grain farmer, wine farmer, farmer of both, and non-farmer –, helping us explore potential transmission mechanisms through which wealth losses may have been translated to these slaveholders' health outcomes. Unfortunately, these tax censuses are currently only available for Stellenbosch. We matched using slaveholders' first and last names[15] and classified four types of match

[13] Grahamstown Journal, January 19 , 1837 as quoted in Hengherr (1953).

[14] Despite its paucity, this information was vital for us to link these individuals to the South African Families database where more complete genealogical information can be found. The compensation records contain the slaveholder's first and last name and the name of his father. In some cases, his wife's name is also provided.

[15] The matching process was done manually. See Appendix F for details of our strategy.

Table 1
Descriptive statistics - analytical sample, all districts

Variable	Obs	Mean	Std. dev.	Min	Max
1st generation					
Slave-wealth (£)	340	659.98	797.16	0	5160
Compensated wealth (£)	334	240.75	309.44	0	2779.35
Avg. shortfall (£)	324	65.93	30.48	0.88	180
Lifespan	411	66.81	13.61	27	95
Total slaves	411	8.04	9.48	1	53
Year of birth	411	1794.09	11.87	1760	1822
Year of death	411	1860.88	15.26	1834	1898
2nd generation					
Lifespan	1346	53.10	26.07	0	97
Age father at birth	1227	34.58	9.15	18	72
Age mother at birth	887	28.74	7.41	16	49
Nr. of siblings	1345	8.57	4.43	0	25
Rank among siblings	1340	5.68	3.83	1	26
Sex (Male=0)	1346	0.36	0.48	0	1
Year of birth	1346	1827.04	14.02	1784	1879
Year of death	1346	1880.14	29.32	1789	1970
3rd generation					
Lifespan	2244	54.87	27.22	0	100
Age father at birth	2143	34.06	8.52	18	69
Age mother at birth	1496	29.44	7.27	16	49
Nr. of siblings	2240	7.76	3.82	0	17
Rank among siblings	2237	5.32	3.47	1	18
Sex (Male=0)	2244	0.35	0.48	0	1
Year of birth	2244	1859.75	16.50	1808	1913
Year of death	2244	1914.62	31.51	1822	1993

[Notes] Because slaveholders had to be alive in 1834 to receive compensation, we have age truncation for the 1st generation, resulting in the observed mean lifespan of the 1st generation. The result is that individuals born between 1760 and 1780, for example, could only be observed if they had long lifespans. Slave-wealth represents the wealth worth of slaves assessed by colonial authorities as part of the compensation scheme. The compensated wealth represents the value slaveholders effectively received as compensation.

– perfect, semi-perfect, weak, and impossible – but used only those in the first two categories.[16] This procedure yielded 551 unique observations corresponding to Stellenbosch slaveholders who are then linked to the SAF, producing 314 successful matches. This group, when linked to their offspring, yielded 1,744 children (2nd generation) and 2,458 grandchildren (3rd generation). These groups can then be combined with the sample of slaveholders – and their offspring – who resided elsewhere in the colony. Ultimately, our population of interest consists of 979 slaveholders (1st generation) who produced 5,938 children (2nd generation) and 10,662 grandchildren (3rd generation).[17] Our replication codes are available in Martins et al. (2022).

Historical records, however, often lack complete and consistent micro-level information, resulting in smaller analytical samples. In our study, a large number of missing values for both birth and death year made it difficult to assess people's lifespans. Our sample size, therefore, was limited by the availability of data for this specific variable, as Table 1 shows.[18]

Because slaveholders had to be alive in 1834 to receive compensation, we have age truncation for the 1st generation.[19] This is reflected in the observed mean lifespan of the 1st generation when compared to the 2nd and 3rd generations. The result is that individuals born between 1740 and 1760 could only be observed if they had long lifespans, as shown in Fig. 1.

Consequently, the average lifespan for older cohorts will be systematically longer than for younger ones. Restricting our population of interest to younger cohorts, therefore, allowed us to have a wider distribution of lifespans and more intra-cohort variability. This procedure was not necessary for 2nd and 3rd generations since we were able to observe complete life cycles from infancy to old age as Fig. 2 shows.

[16] Perfect matches were those where the combination of first and last names was unique and exactly matched between the compensation records and the tax returns. Semi-perfect matches were similar, but we verified minor spelling differences in last names (e.g. Rous-Roux, Liebentrau-Liebentrouw, Bergh-Berg). Weak matches were those where the combination of first and last names was not unique and, lacking additional information, we could not match these with a reasonable degree of confidence. Impossible matches were those we did not find in the tax returns and therefore could not match.

[17] Sample sizes did not grow exponentially across generations due to 3rd generation's birth spanning between the end of the 19th and the beginning of the 20th century when the demographic transition was already underway; and migration from the Cape Colony caused some attrition in the sample. See Cilliers (2021) for more details on the SAF.

[18] See Table A1 for descriptive statistics for Stellenbosch's farmers and Table A2 for descriptive statistics for the full sample, both located in Appendix A.

[19] There are a few exceptions to this rule, where the claims records report the name of the deceased slaveholder and instruct the compensation to be paid to the widow. and 3rd generations. The result is that individuals born between 1740 and 1760 could only be observed if they had long lifespans, as shown in Figure 1.

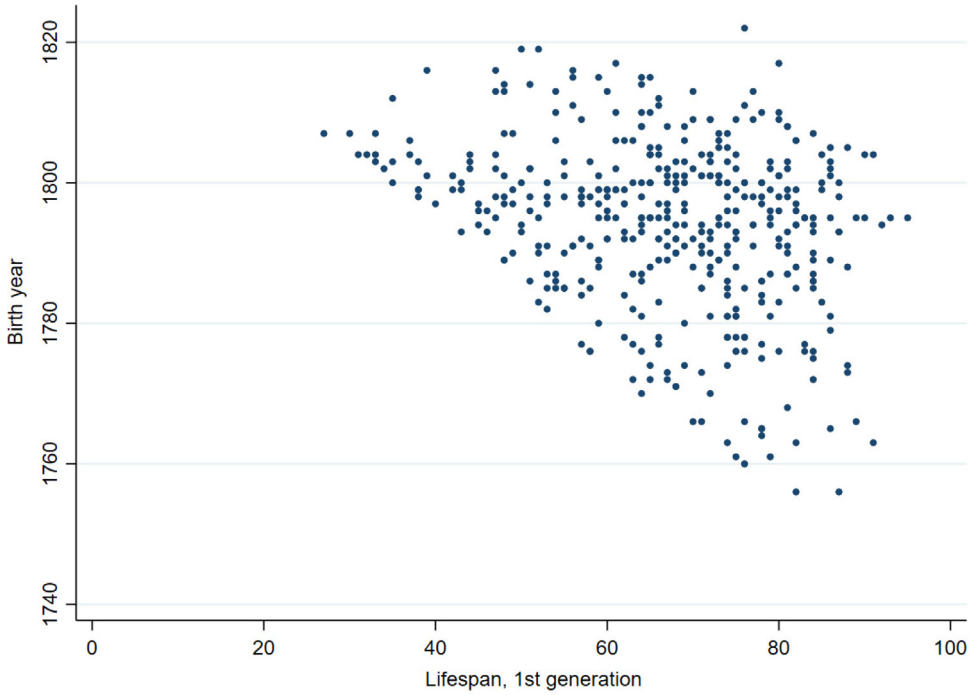

Fig. 1. Lifespan in years per year of birth - analytical sample, all districts

As an additional robustness check, we also added a control group of individuals we assume were living in the Stellenbosch district in 1834 and did not own slaves. To produce this group, we used the SAF to select men who were born or baptized in Stellenbosch and were alive in 1834. Since we could not link them to the claims records, they were unlikely to have been slaveholders. More than one thousand individuals met these criteria and we found their offspring in the SAF database, which meant that we could test the validity of our results against three generations of a group of presumed non-slaveholders.[20]

5. Methods

We start from the assumption that lifespan y – or, putting differently, the age at death – of an individual is a function of wealth. Wealth, in the context of this study, can be divided into slave-wealth – i.e. wealth worth of slaves – (S) and other wealth (W). While S is directly inferred by the appraisal process conducted before the compensation was paid, we need a proxy to capture W since it is not possible to monetize the assets registered on the tax census due to the lack of a systematic price series covering the region during the period of interest. Instead, we rely on the total taxes paid in 1834 as a proxy for wealth.

Taxation is based on the number of individuals in a household (capitation tax), wealth (agricultural and livestock) and off-farm income.[21] The tax collected by British colonial authorities was based on a fixed rate per asset, for example, 1 shilling per horse or 2 shillings for every 16 cows. Our sample registers taxation amounting to 3 pounds per household on average. Using probate inventories capturing all the assets, credits, and debts of members of Cape households after death in the 18th century shows that, on average, cash reserves at the time of death amounted to 334 rijksdaalder, or 83 pounds using an exchange rate of 1 rijksdaalder per 5 shillings (Swanepoel and Fourie 2018). Therefore, taxation in 1834 represents roughly 4% of the mean value of cash reserves individuals at the Cape had at the time of death. We write their lifespan as a function of both types of wealth and an error term μ:

$$y_i = f_i(W, S) + \mu_i \quad \text{(I)}$$

After emancipation in 1834, slaveholders were not allowed to access S and, in turn, received compensation C. The function f, therefore, can be re-written as:

$$f = W + (C - pS) \quad \text{(II)}$$

[20] See Appendix D for a detailed analysis of the presumed non-slaveholders.

[21] This is relatively rare among Stellenbosch residents as this was a predominantly farming economy.

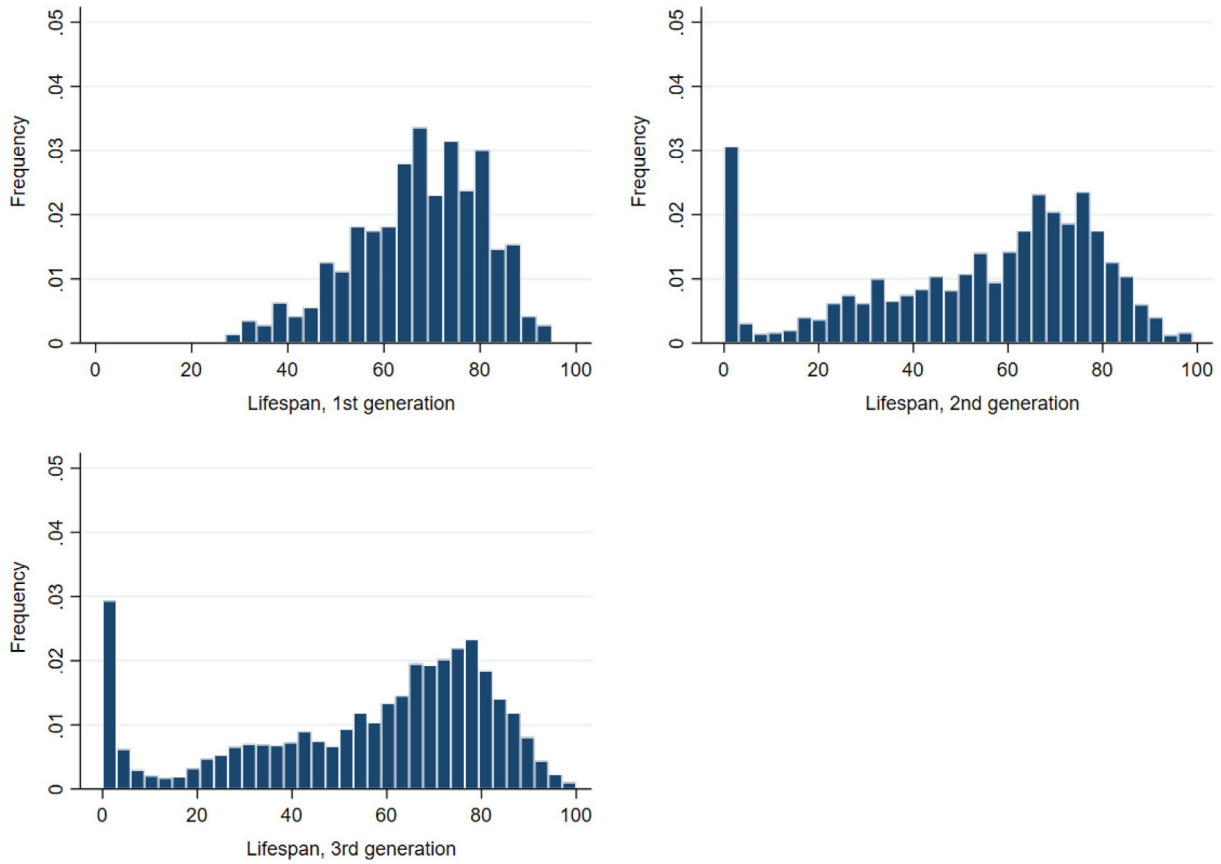

Fig. 2. Distribution of lifespan in years for each population of interest - analytical sample, all districts. Note that the lifespan of the 1st generation is truncated due to the nature of our cross-sectional data as displayed in Fig. 1.

In Eq. (II), p represents the value assigned to each slave during the appraisal process. C is a direct function of the number of slaves, therefore, the more slaves owned, the bigger C will be. This would not necessarily mean, however, a better compensation deal since pS, in this case, would also be proportionally bigger. We, therefore, will consider a function g where lifespan is a function of the wealth *per slave*. In this case:

$$y_i = g_i(W, S, C) + \mu_I \tag{III}$$

And g, therefore, is:

$$g = \frac{W}{S} + \frac{(C - pS)}{S} \tag{IV}$$

The component $\frac{(C-pS)}{S}$ in Eq. (IV) captures the average shortfall per slaveholding. We use this as our shock measurement and we expect it, *a priori* to have a negative effect on a slaveholder's lifespan.

Using the *average* shortfall instead of the total shortfall offers some advantages. Firstly, it is important to note that even though the compensation records offer the value appraised for each slave, it only displays the total compensation received by slaveholders. Secondly, measuring the shortfall per slave minimizes the caveat of not having the total net worth of each slaveholder since the tax censuses are not monetized. Ideally, this paper would benefit from measuring the total shortfalls *vis-a-vis* slaveholders' net worth. Assuming, however, that slaves are a good proxy for wealth, computing the shortfalls per slave provides a value relative to slaveholders' wealth. Thirdly, bigger absolute losses of wealth do not necessarily translate to a worse compensation scheme nor a greater loss proportional to net worth, something that average shortfalls per slave can capture. Lastly, total shortfalls increase proportionately to slaveholders' wealth worth of slaves but no exogenous wealth variation among slaveholders can be effectively captured through total shortfalls alone as Fig. 3 shows:

To estimate Eq. (III), aside from slaveholders' average shortfall per slave and their wealth, we will also add a range of genealogical covariates.[22] Because our population of interest is dispersed across a long period, we also add five-year birth cohorts interacting with

[22] As shown in Table 1, these controls are the age of mother and father at birth, number of siblings, rank among siblings, the lifespan of mother and father, and individual's sex.

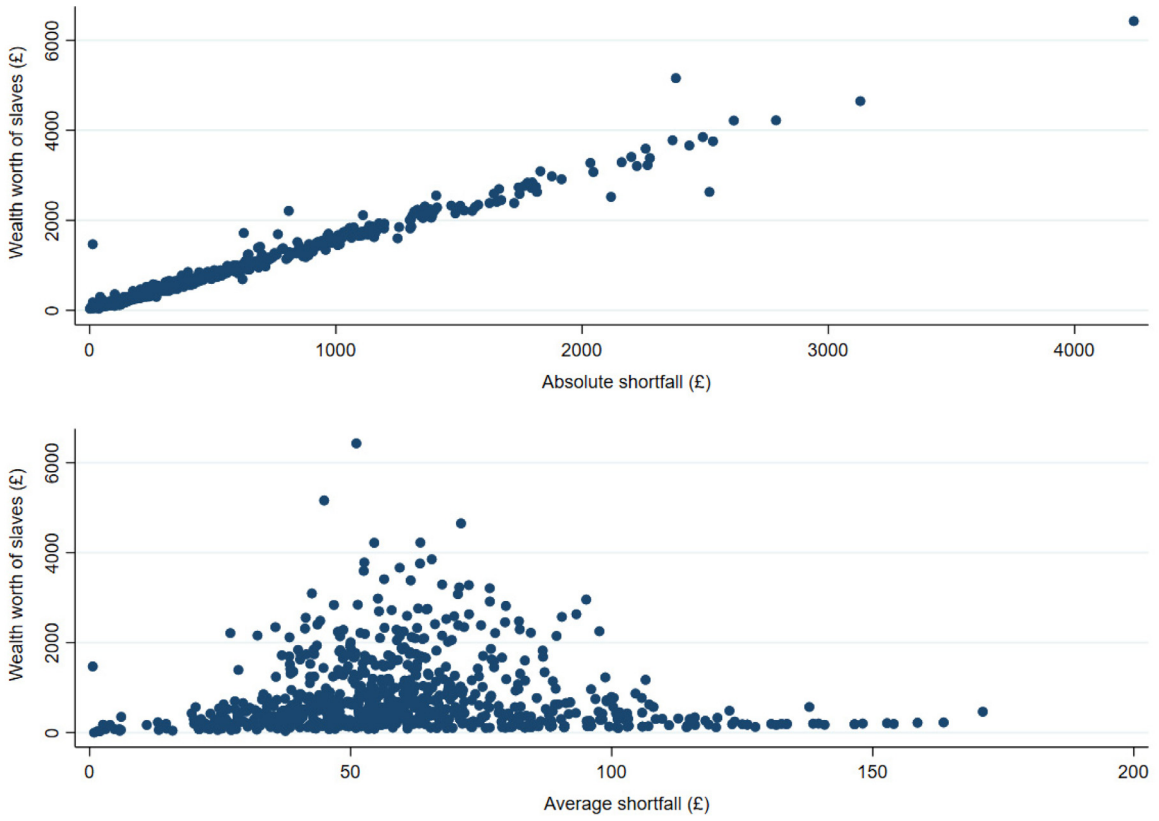

Fig. 3. Total wealth worth of slaves versus total shortfalls and average shortfalls in pounds - analytical sample, all districts.

the average shortfall to capture cohort-specific effects. Finally, the basic functional form can be written as:

$$y_i = \beta_1 U_i + \beta_2 B_i + \beta_3 U_i B_i + \beta_4 \frac{W_i}{S_i} + \sum_z \beta_5 X_{zi} + \mu_i \quad \text{(V)}$$

The subscript i represents each slaveholder. U_i and B_i represent each individual's average shortfall per slave and birth cohort respectively. $U_i B_i$ represents the interaction between those terms. The term $\frac{W_i}{S_i}$ indicates the individual's wealth per slave through the amount of taxation paid in 1834. X_{zi} represents the range z of genealogical covariates for each individual i. Finally, μ is the error term. We derive the lifespan of slaveholders and their offspring by subtracting the year of birth from the year of death. All lifespans are thus integers and, by definition, non-negative values. Given these characteristics, linear regressions will produce unreliable results. We instead opt for a Poisson regression. Eq. (V) is thus altered and takes an exponentiated form to ensure positive outcomes:

$$y_i = e^{\beta_1 U_i} + e^{\beta_2 B_i} + e^{\beta_3 U_i B_i} + e^{\beta_4 \frac{W_i}{S_i}} + e^{\sum_z \beta_5 X_{zi}} + e^{\mu_i} \quad \text{(VI)}$$

Equation VI is estimated for each generation separately. A visual inspection of Fig. 4 does not enable us to draw any *a priori* conclusions as lifespan seems to behave quite independently of the average shortfall across generations. An assumption in Eq. (VI), however, is that the individual's average shortfall is uncorrelated with wealth. Even though historical records do not suggest that the compensation scheme was biased towards richer slaveholders, an assessment of such a relationship is imperative for our empirical strategy. We estimate, therefore, the average shortfall as a function of the slaveholder's wealth alongside the characteristics of the slaves in his or her possession, such as the slave's place of origin, sex, and age cohort. This exercise is only possible within the sub-sample of Stellenbosch farmers due to the linkages produced by the tax censuses, as shown below:

$$U_i = \beta_4 W_i + \sum_k \beta_k X_{ki} + \xi_i \quad \text{(VII)}$$

The covariate X_{ki} represents the range k of slaves' characteristics by individual i. ξ is the error term. Our findings for Eq. (II) can be seen in Table B1 in Appendix B. They suggest that the average shortfall is uncorrelated with slaveholders' wealth regardless of

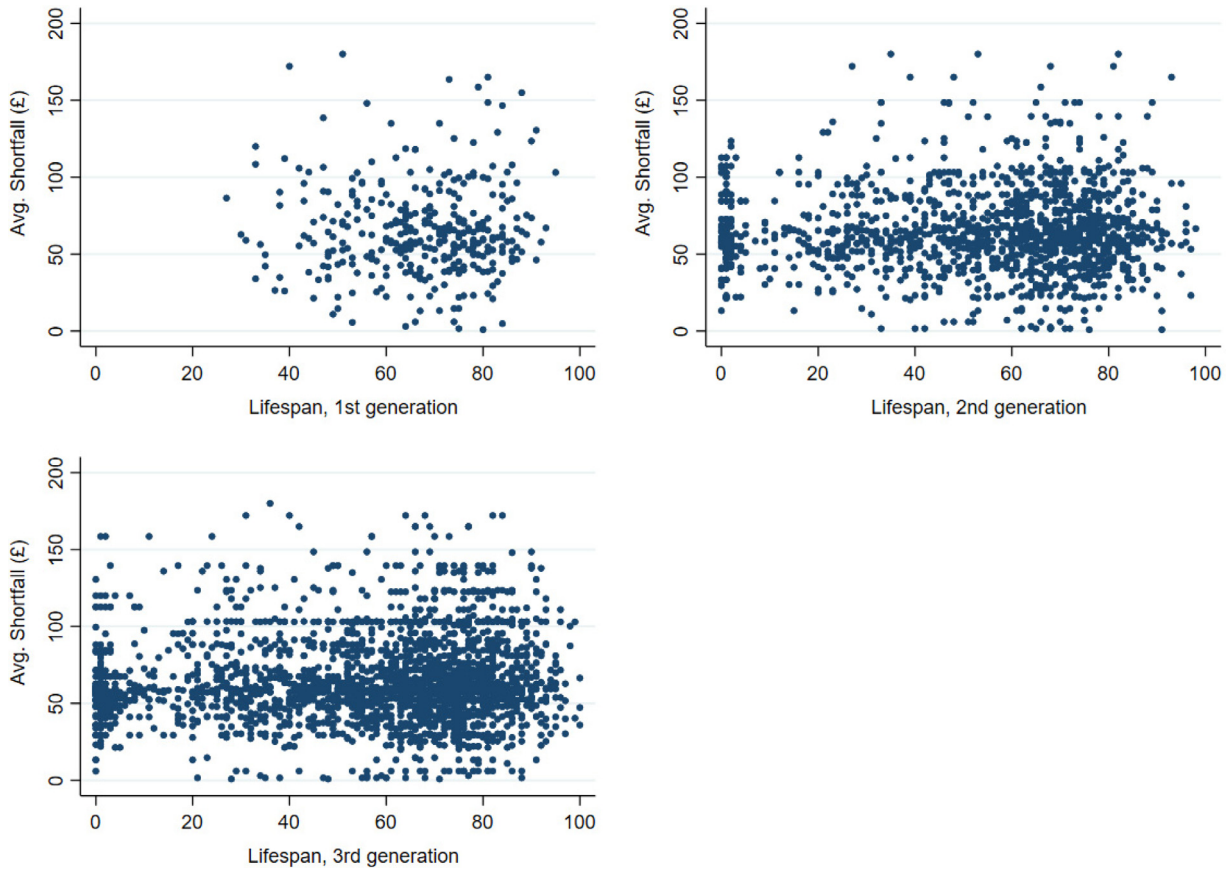

Fig. 4. Relationship between the average shortfall and lifespan across generations - analytical sample, all districts. Note that the lifespan of the 1st generation is truncated due to the nature of our cross-sectional data as displayed in Fig. 1.

the functional form of both variables.[23] These results are in line with the plotted average shortfall and total tax in Fig. 5. [24] While dispersion is greater at the lower end of the distribution of total tax, the average values do not seem to differ substantially.

These findings allow us to draw two different conclusions. Firstly, we rule out the possibility of endogenous effects arising from the relationship between the compensated values and slaveholders' wealth. Characteristics that are usually correlated with wealth, such as political savvy, are therefore unlikely to be a source of endogeneity. Secondly, the independence through several functional forms allows us to choose the estimates from which the economic significance of the coefficients can be more easily assessed. In a Poisson regression, for a one unit change in X, y is expected to change by β_i log-points since Eq. (VII) can be re-written, as:

$$\log y_i = \beta_1 U_i + \beta_2 B_i + \beta_3 U_i B_i + \beta_4 \frac{W_i}{S_i} + \sum_z \beta_5 X_{zi} + \mu_i \quad \text{(VIII)}$$

Because the logarithmic function can be approximated to a percentage change, the results can be interpreted as the percentage change in y after a unit change in X. All coefficients estimated in the next sections should be understood, therefore, as the percentage change in slaveholders' lifespan for a one-unit change in any given covariate.

6. Results

To make it easier to visualize our results, we present a simplified version of our estimates in Table 2. This table contains only information about the average shortfall without other relevant covariates or statistics.[25] It shows results for the three generations of interest divided between the sub-sample of farmers from Stellenbosch and the entire colony.[26] Since we are not able to observe

[23] Level-level, level-log, log-level, and log-log.

[24] Figure 5 only uses farmers from Stellenbosch due to the fact they are the only ones who can be linked to the *opgaafrolle*, as explained in Section 4.

[25] See Appendix C for complete regression tables.

[26] The sub-sample of Stellenbosch farmers is included when producing estimates for the entire sample.

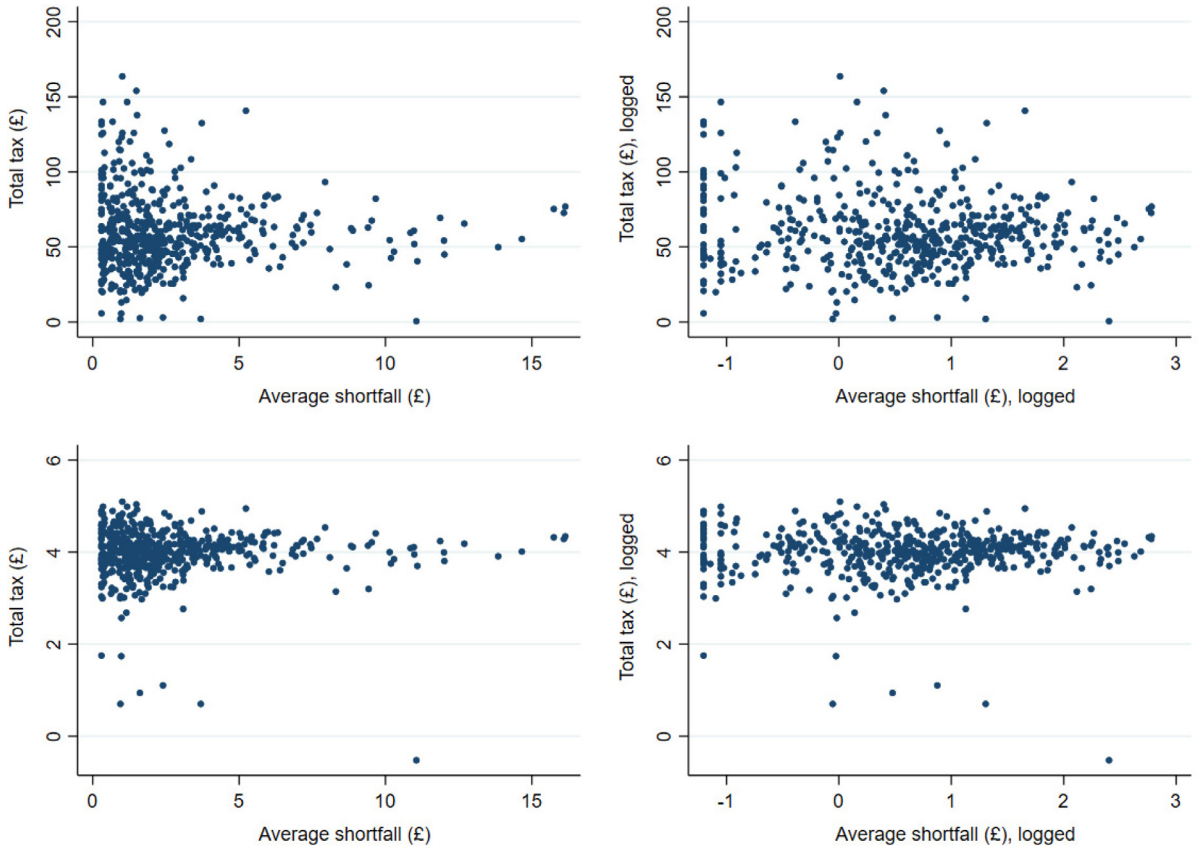

Fig. 5. Relationship between average shortfall and total tax, Stellenbosch district

mortality among older cohorts, we divided our sample into five-year birth cohorts and successively restrict our sample to cohorts where the variability of lifespan is greater. The closer a cohort is to 1834, the wider the distribution of the lifespan of slaveholders.[27] By doing this, we minimize the effects deriving from the bias produced by older cohorts and at the same time verify that the main effect of the average shortfall becomes negative, significant and progressively bigger as we increase the variability of lifespans through cohort restriction.[28]

Considering slaveholders belonging to our 1st generation, we can infer that a £10 increase in the average shortfall reflects a 0.07% decrease in the expected lifespan for a slaveholder in Stellenbosch and a 0.04% decrease when considering all districts. A stronger effect in Stellenbosch is expected as this is the most important farming district of the Cape Colony and concentrated the majority of slaves at the time. An average shortfall of £65, therefore, implies a mean reduction of 0.29% in the former slaveholders' years of life. The average lifespan of these farmers was 67 years – as shown in Table 1. The estimates, therefore, suggest that the shortfalls had an average impact of roughly 0.2 years of life if the slaveholder was subjected to a shortfall equivalent to the mean.

The results are robust to different estimation strategies such as OLS and also to different functional forms. Treating lifespan as a continuous variable did not significantly affect either the direction or the size of the coefficients. Our conclusions are similar after logging the average shortfall despite the consequent rescaling of the log function. The validity of our results can be further assessed by using another variable of interest, such as compensation ratios.[29] A Cox Proportional-Hazards Model where the chances of survival are modeled as a function of the average shortfalls also confirmed the findings presented. The conclusions derived from the estimates presented in Table 2 for the 1st generation are also robust to the inclusion of a control group of non-slaveholders.[30] Fig. 6 illustrates the main effects stemming from the 1st generation estimates.

To analyze the effects of the average shortfall on the lifespan of the 2nd generation, we only considered individuals born after 1816. As this subpopulation would be older than 18 in 1834, they were more likely to have their own farms and, in some cases, slaves. If these conditions are satisfied, then this particular subpopulation – from an economic perspective – resembles their parents more

[27] As already explained in Section 5 referring to Figures 1 and 2.
[28] See Tables C1 and C4 in Appendix C.
[29] Ratio of compensation to assessed slave-wealth.
[30] See Appendix D for the results of our estimates when the control group is included in our analytical sample of Stellenbosch farmers.

Table 2
Effects of the average shortfall on lifespan, all generations

y=Lifespan	Stellenbosch			All districts		
	1st gen	2nd gen	3rd gen	1st gen	2nd gen	3rd gen
Avg. Shortfall (AS)	-0.0073***	-0.0183***	0.0019	-0.0046***	-0.0026	-0.0005
	(0.0016)	(0.0049)	(0.0356)	(0.0010)	(0.0028)	(0.0032)
Total Tax/Slave	-0.0048	-0.1755	-0.1433	-	-	-
	(0.0514)	(0.1539)	(0.2036)			
1st generation						
1795-1799 x AS	ref			ref		
1800-1804 x AS	0.0093***			0.0057***		
	(0.0019)			(0.0011)		
1805-1809 x AS	0.0055***			0.0043***		
	(0.0020)			(0.0012)		
>1809 x AS	0.0102***			0.0032**		
	(0.0025)			(0.0014)		
2nd generation						
1816-1820 x AS		ref			ref	
1821-1825 x AS		0.0122			0.0013	
		(0.0081)			(0.0033)	
1826-1830 x AS		0.0131*			0.0029	
		(0.0070)			(0.0035)	
1831-1835 x AS		0.0172***			0.0014	
		(0.0057)			(0.0037)	
1836-1840 x AS		0.0157**			0.0007	
		(0.0070)			(0.0044)	
>1840 x AS		0.0140**			-0.0005	
		(0.0060)			(0.0034)	
3rd generation						
<1846 x AS			ref			ref
1846-1850 x AS			-0.0002			0.0035
			(0.0309)			(0.0037)
1851-1855 x AS			-0.0112			0.0026
			(0.0377)			(0.0036)
1856-1860 x AS			-0.0041			0.0044
			(0.0375)			(0.0032)
1861-1865 x AS			-0.0007			0.0035
			(0.0354)			(0.0034)
1866-1870 x AS			-0.0013			0.0008
			(0.0362)			(0.0033)
1871-1875 x AS			-0.0042			0.0042
			(0.0361)			(0.0045)
>1875 x AS			-0.0007			0.0033
			(0.0360)			(0.0041)
Constant	4.5398***	5.1224***	3.8626*	4.4012***	3.9135***	4.0668***
	(0.1081)	(0.6823)	(1.9867)	(0.0620)	(0.3534)	(0.3625)
Observations	61	239	398	143	442	827
Pseudo-R^2	0.0485	0.0965	0.0647	0.0269	0.0451	0.0366

[Notes] Estimates for the 1st generation refer to individuals born after 1797. Estimates for the 2nd generation refer to individuals born after 1816. Estimates for the 3rd generation refer to individuals whose fathers were born after 1816. All estimates use clustered standard errors at the individuals' father level. It means that 2nd generation estimates are clustered at their father belonging to the 1st generation and 3rd generation estimates are clustered at their father belonging to the 2nd. Complete estimates of the Stellenbosch sub-sample can be found in Tables C1, C2, and C3. For estimates pertaining to all districts, see Tables C4, C5, and C6. "All districts" estimates incorporate the observations from Stellenbosch.

than their younger siblings. Producing estimates for this generation using only individuals born after 1816 allows us, consequently, to control for individuals who were more likely to live in the same household as their parents in 1834.

After implementing the considerations mentioned above, we do not find any statistically significant effects of the average shortfall on the lifespan of the 2nd generation when considering the colony as a whole but, interestingly, we verify significant and relatively large effects of the wealth shock in the 2nd generation of Stellenbosch farmers. Cohort-specific effects largely offset the main effect. Individuals who were born before 1834 have bigger net effects than those born after that date. These findings suggest that better compensation schemes had a greater impact on older cohorts in the 2nd generation.

The results of the average shortfall, together with other covariates (Tables C2 and C5, Appendix C), also show that the lifespan of the father is a significant determinant of children's lifespan. The genealogical covariates, despite their statistical significance, are

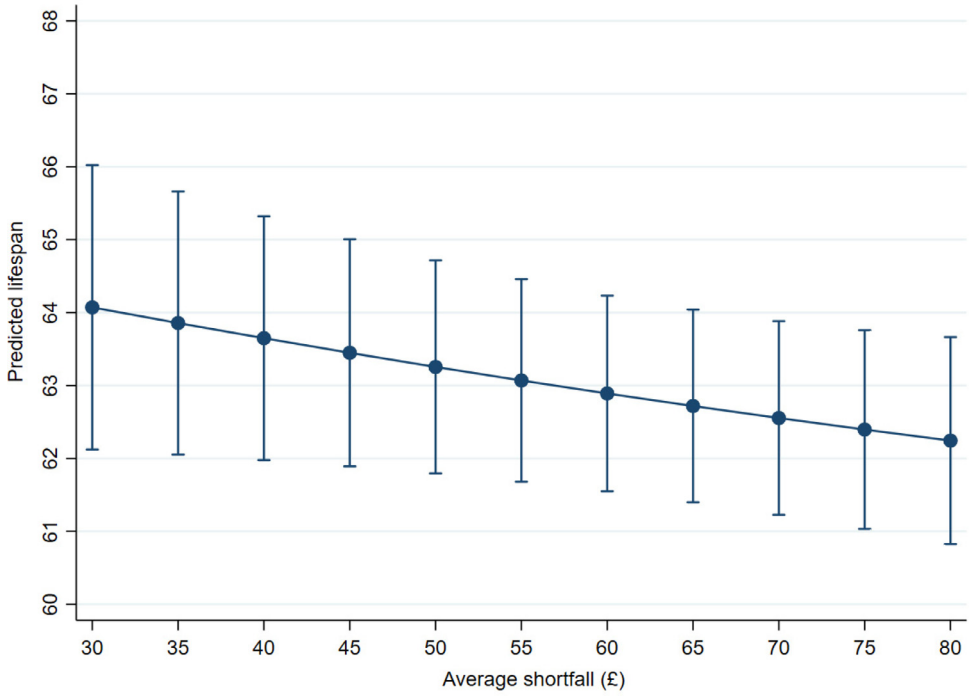

Fig. 6. Marginal effects of the average shortfall using all districts' 1st generation estimates produced in Table 2.

usually bigger than the net effect produced by the average shortfall. These results are in line with the findings of Frijters et al. (2005) and Erixson (2017), who say that although they found significant effects of wealth shocks on later-life outcomes, the size of the coefficient was small enough for the effect to be labeled marginal.

These findings, however, say little about the transmission mechanisms. While resource allocation within the household and changing patterns of consumption of the 1st generation in Stellenbosch may have indirectly affected their offspring, it is important to note that infant mortality strongly influences the average lifespan of the 2nd generation as Fig. 2 has already suggested. We need, therefore, to establish the effects of the average shortfall when we isolate the population of interest from the effects of infant mortality. We do this in Table 3:

Column (1) excludes individuals whose lifespan was shorter than one year while column (2) also excludes individuals who did not live past their second year. As we continue to limit the minimum lifespan to 5, 10, 15, 20 and 25 years of age, the significance of the economic shock disappears as the size of the coefficients diminishes. The estimates in Table 3 suggest that the observed effect of the average shortfall is channeled through infant mortality but, once individuals survive infancy, they are not likely to be affected by the economic shock undergone by their parents. While our dataset does not allow us to establish what was the driver behind infant mortality in the post-emancipation period, we can demonstrate that infants were more vulnerable than non-infants after slaveholders' capital losses. Fig. 7 shows the marginal effects from columns (1) to (6). These effects start unusually large in the first two graphs but quickly normalize into a pattern similar to the one verified for the 1st generation. The strong downward slope at the beginning can be fully attributed to the effects of infant mortality and does not necessarily reflect an intergenerational health effect stemming from the shortfalls. The inclusion of the control group does not cause considerable changes to the above analysis. As with the 1st generation, these results can be found in Appendix D. The results were also tested using a Cox Proportional-Hazards Model. No significant differences were found between the different methodologies.

From an intergenerational perspective, the effects of the shortfalls, therefore, are quite limited. With that considered, the effects of the economic shock on the 3rd generation are unlikely to have any significant effect from a statistical standpoint. This is exactly what we see in the columns representing this generation in Table 2. The effects of the size of the average shortfall on the 3rd generation are systematically smaller than they are for the previous generations. While this suggests that the effects dissipate over time, none of the coefficients suggest that they were different than zero, reflecting our inability to capture any potential shortfall residual so far down the family line.

7. Transmission mechanisms

Our analysis shows that the shortfalls directly affected two groups of individuals: the first-generation slaveholders, regardless of the district of residence, and potentially the infants of farmers from Stellenbosch. Regarding the latter, however, we were not able to

Table 3
Estimates of the average shortfall on the 2nd generation's lifespan conditional on infant mortality, Stellenbosch

y=Lifespan	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Avg. Shortfall (AS)	-0.0197***	-0.0094**	-0.0062	-0.0063	-0.0036	-0.0036	-0.0035
	(0.0067)	(0.0043)	(0.0049)	(0.0048)	(0.0047)	(0.0044)	(0.0043)
Total Tax/Slave	-0.3019*	-0.2165	-0.1448	-0.1385	-0.1556	-0.1525	-0.1917
	(0.1756)	(0.1440)	(0.1479)	(0.1457)	(0.1521)	(0.1412)	(0.1399)
<1816 x AS	–	–	–	–	–	–	–
1816-1820 x AS	ref	ref	ref	ref	ref	ref	ref
1821-1825 x AS	0.0164	0.0033	0.0090	0.0089	0.0061	0.0060	0.0064
	(0.0116)	(0.0065)	(0.0056)	(0.0056)	(0.0048)	(0.0042)	(0.0042)
1826-1830 x AS	0.0179**	0.0069*	0.0040	0.0041	0.0016	0.0011	0.0010
	(0.0073)	(0.0038)	(0.0042)	(0.0042)	(0.0040)	(0.0037)	(0.0037)
1831-1835 x AS	0.0172**	0.0112**	0.0062	0.0067	0.0040	0.0041	0.0042
	(0.0075)	(0.0049)	(0.0050)	(0.0049)	(0.0047)	(0.0045)	(0.0043)
1836-1840 x AS	0.0152*	0.0071	0.0048	0.0048	0.0021	0.0041	0.0008
	(0.0083)	(0.0059)	(0.0062)	(0.0062)	(0.0059)	(0.0056)	(0.0048)
>1840 x AS	0.0154**	0.0057	0.0050	0.0051	0.0036	0.0037	0.0034
	(0.0073)	(0.0047)	(0.0051)	(0.0051)	(0.0048)	(0.0045)	(0.0043)
Constant	5.1896***	4.6471***	4.4719***	4.4866***	4.3133***	4.3516***	4.4979***
	(0.6467)	(0.4262)	(0.3806)	(0.3754)	(0.3604)	(0.3278)	(0.3001)
Observations	223	193	178	177	174	170	166
Birth Restriction	yes	yes	yes	yes	yes	yes	yes
Pseudo-R^2	0.0922	0.0867	0.0317	0.0353	0.0302	0.0264	0.0342

[Notes] The estimates refer to individuals who survived past the age of 0, 1, 5, 10, 15, 20 and 25 years old respectively. All estimates use clustered standard errors at the individuals' father level. These results concern only the Stellenbosch sub-sample. Complete estimates can be found in Table C7.

* p<0.10
** p<0.05
*** p<0.01

verify any significant effect when individuals lived beyond the second year of life. In this section, we look at possible transmission mechanisms that might have caused these effects.

The loss of slaves meant the loss of an asset. Slaves generated incomes for slaveholders mostly, but not exclusively, through their employment in agriculture. The tax composition extracted from the *opgaafrolle* (tax records) showed that more than 84% of the farmers did not declare any income from non-farming activities. This means that a large majority of our sample was made up of individuals who derived their income only from farming. Since slaves were a major component of the workforce on the farms, the loss of labor was a heavy blow.

The Abolition Act ruled that slaves had to serve their former masters for six years after 1834 in what was labeled an 'apprenticeship' period. At the Cape, however, this period was shortened to four years because the local government was unable to enforce the legislation. And the farmers were unable to compel the slaves to continue working. Isaac van der Merwe from Worcester, for example, in 1834 claimed that his former slaves "were all in disorder" and "in open resistance to lawful commands".[31] Many slaves left their former masters as soon as the Abolition Act came into effect, believing they were illegally held in bondage. Some slaves were captured and returned for the completion of their 'apprenticeship' but many others were still at large up to 1838 (Dooling 2007). While many slaves undoubtedly did leave their masters for good, their freedom was still limited. Giliomee (2003) notes that the colonial government did not make any land available for small-scale farming and most of the slaves had very few options other than to remain farm laborers.

Despite the conflicting views as to whether freed slaves would make a reliable form of labor, it is a fact that in the short term the Cape's agricultural output fell dramatically. In Stellenbosch alone, between 1828 and 1834, annual wine output declined by roughly 50%. From 1834 to 1842, barley and wheat production dropped by a third. It was only by the mid-1840s that agricultural output was back at its pre-emancipation levels (Giliomee 2003; Dooling 2006).

Could this drop in output for a short period explain the intergenerational effects we find? To some extent, this is plausible, especially when one considers the literature exploring the causes of infant mortality. Theoretical frameworks constructed to synthesize the determinants of infant mortality, such as those by Mosley and Chen (1984) and van Norren and van Vianen (1986), emphasize the malnutrition-infection syndrome. Infants whose immune systems do not develop properly because breastfeeding is inadequate due to maternal nutritional deprivation are more susceptible to infection.

It is, unfortunately, impossible to determine the exact consequences of the Cape's output decline between 1834 and 1842 for the residents' nutritional status with the available data. What we do know is that in societies where people mostly derive their income from farming a shock in output is likely to have direct consequences on economic and demographic variables such as lifespan, fertility and mortality. As Hedefalk et al. (2017, p. 1041) point out, "common factors that affected nutritional status [in preindustrial societies]

[31] As quoted in Worden (2017).

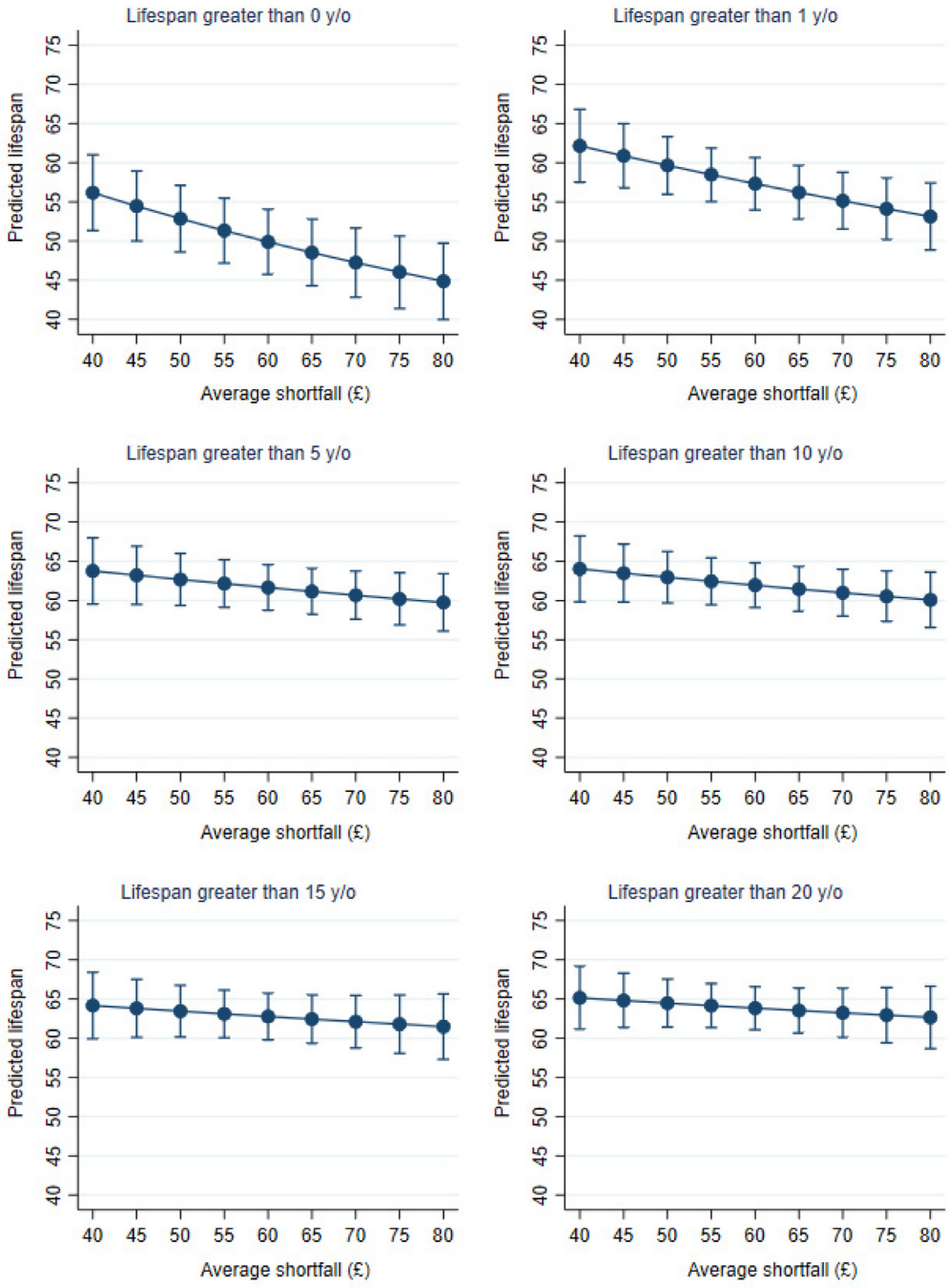

Fig. 7. Marginal effects average shortfalls conditional to a minimum lifespan, 2nd generation of Stellenbosch farmers. Estimates refer to individuals who survived past the age of 0, 1, 5, 10, 15, 20, and 25 years old respectively following Eqs. (1) to (7) from Table 3. The curve becomes flatter as the effects of shortfalls on lifespan are indistinguishable from zero once we control for infant mortality.

were income and wealth, which [...] were mostly determined by the ability of individuals to support themselves from the land they owned or worked on", or had slaves working on. Output levels, if low enough, could affect societies across generations. Evidence suggests that slaveholders were aware of this problem since they feared that labor withdrawal would lead to an unprecedented economic and social crisis after 1838 when no slaves would be legally bound to their former masters. A letter from the inhabitants of

Worcester addressed to Benjamin D'Urban[32] in August of 1834, for example, expresses the fear that if laws to prevent vagrancy were not approved it would permit "wanderers to roam about unpunished" and "may be detrimental to good order, and have a pernicious effect on the minds of the slaves to be emancipated".[33]

As vagrancy laws were not approved, slaveholders adopted stronger language in an attempt to pressure the colonial government to address their fears. *De Zuid-Afrikaan*, one of the most read newspapers of the colony, was slaveholders' preferred outlet to manifest their opinions. In July of 1838, a letter from A.J. Louw, a farmer from Koeberg, to the editor of *De Zuid-Afrikaan* mentions the "fast-approaching moment when the crops on the fields will be exposed to destruction, and thousands of untutored, mostly immoral beings, are incorporated with civil society, without proper laws to check the ungovernable passions inherent to uncivilized beings". On May 3rd 1839, *De Zuid-Afrikaan*'s editorial read "Protect the Blacks, but protect equally the Whites.[34]

While there is evidence suggesting that the labor market at the Cape Colony became under-supplied after 1840 (Shell 1994; Dooling 2007; Worden 2017), the effects of emancipation on agricultural output at the Cape are still not well understood. Anecdotal evidence points to slaves leaving their former masters "as if by arrangement" (Krauss 1966, p. 42) or "en masse" (Dooling 2007, p. 116), at the same time, it is also possible to find accounts of slaves remaining "on the farms as low-paid laborers" (Worden 1992, p. 20) resulting, if anything, on short-lived agricultural losses (Shell 1994). Conflicting accounts are magnified, as already discussed, by evidence suggesting that the employment of slaves as agricultural workers alone would not be sufficient to ensure the profitability of the system at the Cape (Worden 1985; Fourie 2013a) except for large-scale landowners who could achieve economies of scale (Du Plessis et al. 2015).

The idea that slaves mostly remained in the districts they previously resided and still provided former slaveholders with seasonal paid labor has two significant implications. Firstly, slaveholders' fears of labor withdrawal were unsubstantiated. Secondly, divergences among scholars on the effects of emancipation at the Cape might stem from the excessive attention that was given to the slaves' role as farm laborers while neglecting slaveholders' ability to employ alternative forms of exploitation. Slaveholders' shortfalls, therefore, might have consequences extending beyond the ability to procure labor.

Mortgaging slaves was a well-established practice at the Cape. The oldest mortgage secured against human property at the Cape was registered in 1713 and involved the Dutch Reformed Church and slaveholder Johannes Craa (Worden 1985; Armstrong and Worden 1989; Dooling 1992). Evidence suggests that this practice became widespread since short-term credit was essential to the operation of slaveholding estates (Shell 1994; Dooling 2007). Swanepoel (2017, p. 40) recently demonstrates that "slave ownership seems to be the only significant characteristic to determine debt, even when controlling for other production inputs" and further suggests that large-scale landowners resorted to debt mostly to cover investment – as opposed to consumption – indicating the employment of slaves as assets to finance business ventures, echoing an argument earlier proposed by Dooling (1992), Dooling (2006), and Fourie (2013a). Slaveholding served as a viable mechanism enabling settlers to access credit.

The issue of capital is further magnified when considering that the Cape Colonial economic system strongly relied on what Dooling (2007, p. 128) classifies as "networks of indebtedness and patronage". More recent research on the role of slaves in the Cape Colony shows that their owners perceived them as capital investments (Fourie 2013a; Fourie 2013b; Green 2014; Du Plessis et al. 2015; Swanepoel 2017). They were an integral part of a credit market, serving as collateral for loans and as means for settling long-distance payments. Slaves were also mortgaged and many slaveholders were still paying for their slaves by the onset of emancipation. In fact, many farmers declared insolvency in the years following emancipation and blamed the shortfalls, together with difficulties in hiring labor, as major causes of their financial situation (Shell 1994; Dooling 2007). Social networks and moral obligations provided many former slaveholders with a safety net, yet, many faced years of economic hardship after emancipation, especially the highly indebted ones. Anecdotal evidence shows that some farmers were mortgaged up to 160% of the value of their estate (Theal 1891; Hengherr 1953; Ross 1993; Dooling 2007). Worden (2017) suggests that the compensation money alleviated the short-term economic difficulties caused by the new mode of production, paid labor, but clearly, the effect was short-lived. Dooling (2007, p. 138) notes that between 1841 and 1843 more than 60 farmers in the Cape declared bankruptcy.

Economic hardship and debt are triggers for psychological stress (Gallo and Matthews 2003; Drentea and Reynolds 2015). A clear relationship between psychological stress and physical health has been demonstrated through enzymatic (Hajat et al. 2010; Cohen et al. 2012; Boen and Yang 2016) and consumption patterns (Catalano et al. 2011; Black et al. 2015), both of which cause poor health.[35] Because the declines in output experienced by the Cape Colony were of short duration and the effects of the shortfalls in compensation unlikely affected second-generation individuals who lived past the second year, we speculate that another transmission mechanism must be at play through the role of slaves as capital investments since output declines would not explain such selectivity of generations affected by the shortfalls. Here, we are capable to substantiate our claims with quantitative evidence.

Farmers were dependent on their slaves at different levels and for different purposes. Large-scale wine farmers, for example, were more likely to draw their incomes through the employment of slaves as agricultural workers, while small-scale grain farmers could hardly profit from enslavement if they did not employ slaves in other activities aside from farm labor alone (Du Plessis et al. 2015). To understand how the wealth shock affected different slaveholders, we divided the first generation of slaveholders from Stellenbosch according to agricultural specialization, reported in the *opgaafrolle* of 1834, in four different categories: strictly grain producer,

[32] Governor (1834–1838) and commander in chief (1834–1846) of the British Cape Colony.

[33] Extracted from Du Toit and Giliomee (1983, p. 72).

[34] Extracted from Du Toit and Giliomee (1983, pp. 73–74).

[35] Kalwij (2018), using a natural experiment to investigate the effects of competition results on the health of US Olympic medalists, offers an interesting example of psychological effects on later-life outcomes. He found that the outcomes for bronze and gold medalists did not differ significantly, but silver medalists lived 2.4 years less than bronze and 3.9 years less than gold medalists.

Table 4
Mean taxation, output, livestock and slaves per slaveholders' specialization - 1st generation, Stellenbosch

Specialization	Birth year	Total tax	Grain	Wine	Cattle	Sheep	Slaves
Grains only	1796.14	2.52	217.50	0	25.44	63.09	7.23
Wine only	1793.46	2.37	0	24.22	18.78	11.45	10.05
Grains and wine	1792.91	4.34	119.48	35.39	47.84	59.61	18.41
None	1794.24	1.33	0	0	3.81	4.91	5.29

[Notes] Birth year is reported as a mean. Total tax is reported in pounds. Grains are reported in muids, a South African dry measure of capacity equivalent to about 109 liters. Wine is reported in leggers, equivalent to 516 liters.

strictly wine producer, producer of both crops and non-producer. Some descriptive statistics concerning this division are presented in Table 4.

Table 4 shows that farmers that invested in grains and wine simultaneously were also the ones with the biggest number of slaves and livestock on top of being the oldest group and subjected to the highest taxation. They are the wealthiest strata among slaveholders. This group is followed by the farmers who specialized in either grains or wine and, at the bottom of the wealth distribution among slaveholders, we find the ones who were producing neither wine nor grains. This is also the group that possesses the least cattle and sheep, suggesting that the absence of crop farming was not translated into livestock farming. The group of non-producers, surprisingly, despite the absence of agricultural output, averages more than 5 slaves per farm, in line with the evidence that slaves were integrated into the Cape's economy through a wide range of activities aside from agricultural work (Fourie 2013a; Green 2014; Swanepoel 2017).

The analysis of Table 4 suggests that farming diversification is a proxy for farm wealth. Wealthy farmers operated larger farming units and were capable of profiting from diverse crops through economies of scale and scope (Fourie 2013a). Poorer farmers, on the other hand, did not have this option and resorted to specialization. Our argument is centered on the effects stemming from uncompensated values to be related to the economic performance of Stellenbosch in the years after emancipation. This lies on the assumption that former slaveholders remained in Stellenbosch after emancipation and, therefore, potential transmission mechanisms are inherently tied to the local agricultural economy. To verify the validity of this assumption we resort to the Bewaarders Van Ons

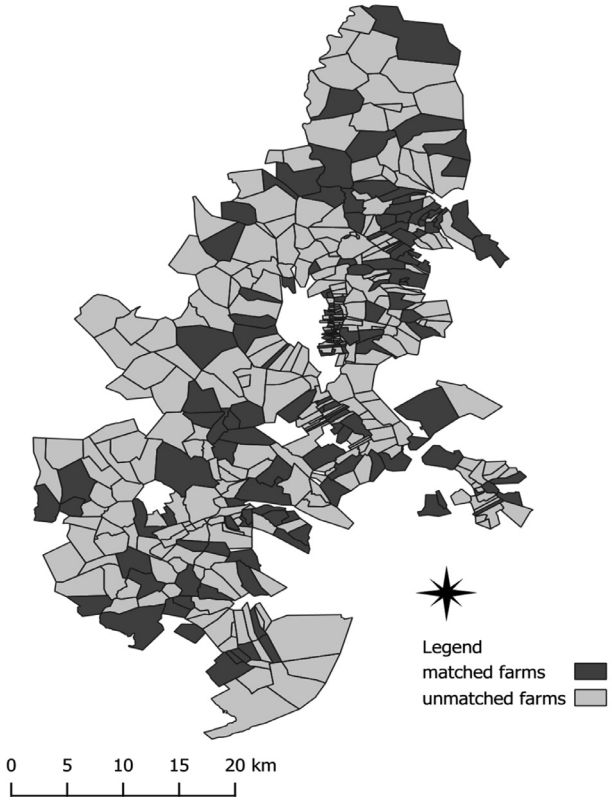

Fig. 8. Farms owned by former slaveholders, Stellenbosch

Table 5
Effects of the average shortfall on lifespan including crop type, Stellenbosch 1st generation

y=Lifespan	(1)
Avg. Shortfall (AS)	−0.0088***
	(0.0021)
Total Tax/Slave	0.0503
	(0.0588)
None x AS	ref
Grain only x AS	0.0034*
	(0.0020)
Wine only x AS	0.0031
	(0.0019)
Grain & Wine x AS	−0.0041**
	(0.0018)
Constant	4.5822***
	(0.1499)
Observations	61
R^2	0.1035

[Notes] Estimates refer to individuals born after 1797. Complete estimates of the equations represented by the columns above can be found in Table C8.
* p<0.10
** p<0.05
*** p<0.01

Erfenis – BVOE, "custodians of our heritage"–, a transcribed index of all farm owners in 1850 in all the Cape Colony districts and maps of the farms within the various districts based on contemporary plans.

This index makes it possible to link farmers appearing in the tax censuses to their respective farm locations. While an immediate weakness is that we do not observe farm ownership between 1834 and 1850, these data do allow us to identify slaveholders who were still in the Stellenbosch district 16 years after emancipation. We were able to find 160 slaveholders from the original 314 (who are the farmers from Stellenbosch who were successfully linked across all the datasets presented in the paper), suggesting that a significant majority – especially if we attribute some unsuccessful linkages to death (5% of the 1834 sample was older than 65 years by emancipation) – remained in the district as farmers. Fig. 8 shows the distribution of former slaveholders in the Stellenbosch district in 1850. Yet, to understand the effects of the economic shock on these very distinct groups of slaveholders, we still need to understand how the average shortfall interacted with each farmer's agricultural specialization. Table 5 contains this regression output.[36]

Our results suggest that farmers who produced both grain and wine in their units were subjected to the most negative effects of the shock on their lifespans. On the other hand, specialized producers seem to have been affected less in comparison to non-producers. The implications from Table 5, therefore, are clear: conditional on the same shortfall, non-producers and diversified producers were the most vulnerable groups of slaveholders after the economic shock. Transmission mechanisms acted at both ends of wealth distribution. Wealthier farmers were more likely to experience both labor *and* capital withdrawal after emancipation and, consequently, appear to have been the group where living standards were the most attached to slave ownership. This group is also the oldest among our sample, which helps with the interpretation of the results from Table 2 where it was clear that older cohorts experienced a larger shock in relation to shortfalls.

In closing, we must emphasize that our database did not allow for a conclusive investigation of all possible transmission mechanisms or the magnitude of the influence of each source of economic and psychological distress in 1834. It is, nevertheless, clear that understanding slaves as both labor and assets allows us to infer mechanisms through which economic shocks may affect longevity across more than one generation.

8. Conclusions

We contribute to the literature that explores the effects of exogenous shocks on later-life outcomes by presenting a novel strategy that accounts for the loss of property and wealth while investigating its intergenerational effects in a historical setting. To do so, we exploit exogenous variations in differential compensation schemes of former slaveholders in the Cape Colony to test if the partial compensation received after the emancipation of slaves in 1834 had any significant role in explaining variation in these individuals' lifespans.

Our empirical strategy reveals that the slaveholders who suffered the biggest shortfalls lived shorter lives. We believe that the loss of slave-wealth and the high level of debt verified in the Stellenbosch district were major causes of the economic duress experienced

[36] See Appendix E, Table C8 for the complete regression table.

by the former slaveholders in the post-emancipation years. Shortly after emancipation, the Cape's agricultural output suffered a short-term decline. While it is impossible to determine with the data currently available to us how this affected the lifespan of these former slaveholders, we recognize that living standards in farming societies are directly dependent on agricultural output.

These direct effects, however, were mostly overcome by the second generation, the slaveholders' children, in line with Ager et al. (2019). Lifespan conditional on infancy survival was largely unaffected by the wealth shock. Our investigation of fertility for all generations produced a series of null results.

Our findings are broadly in agreement with the literature suggesting that the effects of wealth shocks on later-life outcomes are marginal, despite their statistical significance (Frijters et al. 2005; Cesarini et al. 2016; Erixson 2017). The same literature finds that the effects are mostly observable in the short and medium run. This is particularly interesting given the nature of the shock we are studying: we are not looking at an exogenous wealth *gain*, but rather at the *loss* of an asset that was the most important source of wealth for our population of interest. In that context our findings agree with those of González et al. (2017) who demonstrate that the absence of slaves limited the former slaveholders' access to the credit market, hindering their ability to start a business.

Our study benefits from a historical setting, because individuals had fewer coping mechanisms to deal with wealth losses. Studies of present-day settings find that extensive social security nets reduce the effects of wealth on wealth-mortality gradients (Deaton 2003; Cesarini et al. 2016). While anecdotal evidence suggests that the population of slaveholders at the Cape were able to rely upon social networks and moral obligations in times of economic duress (Shell 1994; Dooling 2007), this is far from comparable to social security systems in the developed countries of the 21st century. This increased our ability to capture the potential effects of shocks.

This paper also contributes to research on the history of slavery and emancipation. While our population of interest in this study consisted of slaveholders and their offspring – which limits the scope of our findings – it does offer some food for thought. As we noted in Section 3, the emancipation process can appear somewhat counter-intuitive to modern readers. Slaveholders, and not the enslaved, were the ones who received reparations. This shows that the British government recognized that the loss of their slaves would have a severe effect on slaveholders' livelihoods. The greater the loss, the greater the drop would be in their living standards. Our evidence suggests that while partial compensation did not completely offset the negative effects of the wealth differential experienced by the Cape Colony slaveholders, it certainly allowed the transition to happen without serious political resistance.

Data Availability

Data will be made available on request.

Acknowledgments

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Appendix A: Descriptive Statistics - alternative samples

Table A1 presents a sub-sample of farmers from Stellenbosch and Table A2 presents the complete matched sample. Table A2 differs from Table 1 since the latter presents the descriptive statistics of our analytical sample (i.e. the sample used to obtain our estimates for all districts).

It is possible to observe that Table A2 has some inconsistencies such as the minimum age of the father and the age of the mother at birth concerning the 2nd generation – which is too low by any standards, or even negative – alongside the negative figures of the average shortfall for the 1st generation.

We believe that these unexpected values derive from digitization problems since none of these caveats can be observed systematically. For example, the minimum of 2 years old for the age of the father at birth for the 3rd generation refers to only one observation. If excluded from the sample, the minimum becomes 13 years, again referring to a single observation. When this is excluded, then this variable does not present any obvious odd feature. Similarly, the minimum age of the mother at birth is affected by very few observations (15 in a universe of 1,133 complete records). If excluded, the minimum becomes 17 years old. Concerning the negative figures for the average shortfall, it is important to note that they represent less than 3% of the sample (29 individuals). While is theoretically possible that few slaveholders were over-compensated, it is not always possible to determine if the over-compensation was real or if it was merely a transcription/recording problem.

While the exclusion of the inconsistent observations concerning the age of the father and the age of the mother at birth and the average shortfall would be justified on demographic and historical grounds respectively, that was not needed since lifespan, due to its several missing values, acts as a natural filter to the dataset. Consequently, these inconsistencies were not carried on to the estimates.

Table A1
Descriptive statistics - analytical sample, Stellenbosch

Variable	Obs	Mean	Std. dev.	Min	Max
1st generation					
Slave-wealth (£)	130	978.93	1,009.85	37.5	5160
Compensated wealth (£)	130	362.17	395.00	0	2779.35
Avg. shortfall (£)	130	60.27	25.30	5.70	163.58
Lifespan	130	64.46	15.34	30	93
Total slaves	130	10.90	10.68	1	53
Total tax (£)	130	2.923	2.99	0.30	15.75
Year of birth	130	1,795.04	11.81	1761	1819
Year of death	130	1,859.50	15.96	1834	1897
2nd generation					
Lifespan	570	47.68	30.51	0	97
Age father at birth	525	34.86	9.05	20	71
Age mother at birth	402	29.21	7.36	17	49
Nr. of siblings	570	9.20	4.59	0	20
Rank among siblings	570	5.81	3.85	1	21
Sex (Male=0)	570	0.39	0.49	0	1
Year of birth	570	1,828.60	13.80	1784	1871
Year of death	570	1,876.28	33.88	1789	1953
3rd generation					
Lifespan	889	49.88	30.50	0	100
Age father at birth	853	34.93	7.96	19	64
Age mother at birth	634	30.67	7.21	17	49
Nr. of siblings	886	7.76	3.47	0	17
Rank among siblings	885	5.20	3.31	1	18
Sex (Male=0)	889	0.40	0.49	0	1
Year of birth	889	1,862.83	15.79	1810	1905
Year of death	889	1,912.72	34.63	1828	1993

[Notes] Because slaveholders had to be alive in 1834 to receive compensation, we have age truncation for the 1st generation. This is reflected in the observed mean lifespan of the 1st generation when compared to the 2nd and 3rd generations. The result is that individuals born between 1760 and 1780, for example, could only be observed if they had long lifespans. Total tax refers to wealth tax collected by British colonial authorities based on a fixed rate per asset, for example, 1 shilling per horse or 2 shillings for every 16 cows. Slave-wealth represents the wealth worth of slaves assessed by colonial authorities as part of the compensation scheme. The compensated wealth represents the value slaveholders effectively received as compensation.

Table A2
Descriptive statistics - full matched sample, all districts

Variable	Obs	Mean	Std. dev.	Min	Max
1st generation					
Slave-wealth (£)	1,022	660.59	766.40	0	6428.87
Compensated wealth (£)	1,047	247.30	285.85	0	2779.35
Avg. shortfall (£)	1,021	59.13	39.33	-402.07	180
Lifespan	441	67.12	13.62	26.94	95.49
Total slaves	1,216	7.64	8.62	1	83
Year of birth	821	1793.10	13.05	1748	1823
Year of death	508	1860.61	15.54	1834	1908
2nd generation					
Lifespan	1769	53.38	25.88	0	99
Age father at birth	1612	34.39	9.13	16	72
Age mother at birth	1133	28.48	9.57	-81	49
Nr. of siblings	1767	8.36	4.47	0	25
Rank among siblings	1761	5.57	3.80	1	26
Sex (Male=0)	1769	0.36	0.48	0	1
Year of birth	1769	1,826.70	14.14	1760	1879
Year of death	1769	1,880.08	28.91	1789	1970
3rd generation					
Lifespan	2941	55.46	26.83	0	100
Age father at birth	2785	34.15	8.57	2	69
Age mother at birth	1970	29.03	9.18	-77	49
Nr. of siblings	2933	7.79	3.82	0	22
Rank among siblings	2929	5.32	3.45	1	23
Sex (Male=0)	2941	0.35	0.48	0	3
Year of birth	2941	1,859.14	17.35	1782	1913
Year of death	2941	1,914.60	31.91	1819	1993

[Notes] Because slaveholders had to be alive in 1834 to receive compensation, we have age truncation for the 1st generation. This is reflected in the observed mean lifespan of the 1st generation when compared to the 2nd and 3rd generations. The result is that individuals born between 1760 and 1780, for example, could only be observed if they had long lifespans. Slavewealth represents the wealth worth of slaves assessed by colonial authorities as part of the compensation scheme. The compensated wealth represents the value slaveholders effectively received as compensation.

Appendix B: Endogeneity check

Table B1
Endogeneity check

	y=Avg. Shortfall		y=log(Avg. Shortfall)			
Variable	(A)	(B)	(C)	(D)	(E)	(F)
Total Tax	0.497		−0.041**	−0.017		
	(0.750)		(0.019)	(0.011)		
Total Tax, squared	−0.055		−0.003**	−0.001		
	(0.061)		(0.002)	(0.001)		
Total Tax, logged		0.272			0.032	0.017
		(0.796)			(0.020)	(0.012)
Ratio of females	−22.095***	−22.031***	−0.327***	−0.282***	−0.325***	−0.281***
	(3.211)	(3.213)	(0.081)	(0.047)	(0.081)	(0.047)
Ratio of child (0-5 y/o)	−71.632***	−71.251***	−1.451***	−1.251***	−1.437***	−1.248***
	(7.266)	(7.254)	(0.183)	(0.108)	(0.183)	(0.108)
Ratio of child (5-10 y/o)	−69.030***	−68.607***	1.255***	−1.202***	−1.236***	−1.197***
	(8.572)	(8.557)	(0.216)	(0.126)	(0.216)	(0.126)
Ratio of adult (10-20 y/o)	11.629*	11.968*	0.121	0.130	0.136	0.134
	(6.178)	(6.173)	(0.156)	(0.091)	(0.156)	(0.091)
Ratio of adult (20-40 y/o)	25.061***	25.334***	0.324**	0.293***	0.336**	0.297***
	(5.229)	(5.221)	(0.132)	(0.077)	(0.132)	(0.077)
Ratio of adult (40-60 y/o)	−15.970***	−15.708***	−0.454***	−0.163**	−0.444***	−0.161**
	(4.732)	(4.712)	(0.120)	(0.072)	(0.120)	(0.071)
Ratio of elder (60+ y/o)	−80.444***	−79.830***	−1.950***	−1.510***	−1.922***	−1.502***
	(8.702)	(8.672)	(0.219)	(0.145)	(0.219)	(0.145)
Ratio of origin at Cape	10.694**	10.539***	0.356***	0.170***	0.347***	0.168***
	(3.862)	(3.857)	(0.098)	(0.058)	(0.098)	(0.058)
Constant	73.837***	74.019***	4.167***	4.265***	4.202***	4.282***
	(4.029)	(3.860)	(0.102)	(0.060)	(0.097)	(0.057)
Observations	522	522	521	505	521	505
R^2	0.5653	0.5645	0.4117	0.6031	0.4088	0.6028

[Notes] Estimates (D) and (F) exclude 16 outliers whose average shortfall per slave holding (avg. shortfall) was lower than £21.
* p<0.10
** p<0.05
*** p<0.01

Appendix C: Full regression tables, main results

Table C1
Regression output, 1st generation - Stellenbosch

y=Lifespan	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Avg. Shortfall (AS)	0.0013***	0.0029	0.0034	0.0020	0.0016	−0.0061***	−0.0073***
	(0.0005)	(0.0023)	(0.0026)	(0.0017)	(0.0013)	(0.0016)	(0.0016)
Birth year, continuous	−0.0068***						
	(0.0009)						
Total Tax/Slave	−0.0270*	−0.0344**	−0.0333*	−0.0110	0.0397	−0.0082	−0.0048
	(0.0160)	(0.0173)	(0.0174)	(0.0248)	(0.0460)	(0.0500)	(0.0514)
<1780		ref					
1780-1784		−0.0805	ref				
		(0.1990)					
1785-1789		−0.0249	0.0495				
		(0.1530)	(0.1763)				
1790-1794		−0.1348	−0.0607	ref			
		(0.1565)	(0.1796)				
1795-1799		−0.0917	−0.0182	0.0155	ref	ref	ref
		(0.1425)	(0.1682)	(0.1118)			
1800-1804		−0.2193	−0.1458	−0.1114	−0.2199**	−0.4652***	−0.5850***
		(0.1402)	(0.1662)	(0.1088)	(0.1082)	(0.1178)	(0.1245)
1805-1809		0.0842	0.1571	0.1792	0.0425	−0.1762	−0.2979**
		(0.1552)	(0.1796)	(0.1301)	(0.1278)	(0.1343)	(0.1391)
>1809		−0.2174	−0.1443	−0.1178	−0.2442*	−0.4726***	−0.5935***
		(0.1660)	(0.1888)	(0.1418)	(0.1399)	(0.1464)	(0.1512)
<1780 x AS		ref					
1780-1784 x AS		0.0005	ref				
		(0.0035)					
1785-1789 x AS		−0.0010	−0.0015				
		(0.0026)	(0.0029)				
1790-1794 x AS		−0.0004	−0.0009	ref			
		(0.0028)	(0.0031)				
1795-1799 x AS		−0.0018	−0.0023	−0.0010	ref	ref	ref
		(0.0025)	(0.0028)	(0.0019)			
1800-1804 x AS		−0.0007	−0.0012	0.0001	0.0033**	0.0081***	0.0093***
		(0.0024)	(0.0028)	(0.0019)	(0.0015)	(0.0018)	(0.0019)
1805-1809 x AS		−0.0048*	−0.0052*	−0.0038*	−0.0003	0.0043**	0.0055***
		(0.0026)	(0.0029)	(0.0021)	(0.0017)	(0.0020)	(0.0020)
>1809 x AS		−0.0001	−0.0006	0.0009	0.0045**	0.0090***	0.0102***
		(0.0030)	(0.0033)	(0.0026)	(0.0023)	(0.0025)	(0.0025)
Constant	16.2676***	4.1721***	4.0987***	4.0658***	4.1776***	4.4198***	4.5398***
	(1.6393)	(0.1265)	(0.1549)	(0.0907)	(0.0893)	(0.1004)	(0.1081)
Observations	130	130	117	91	67	64	61
Pseudo-R^2	0.0473	0.0581	0.0427	0.0193	0.0180	0.0419	0.0485

[Notes] Estimates (3) to (7) refer to individuals born after 1780, 1790, 1795, 1796, and 1797 respectively.
* p<0.10
** p<0.05
*** p<0.01

Table C2
Regression output, 2nd generation – Stellenbosch

y=Lifespan	(1)	(2)	(3)	(4)	(5)	(6)
Avg. Shortfall (AS)	-0.0058	-0.0067*	-0.0168***	-0.0169***	-0.0190***	-0.0183***
	(0.0060)	(0.0040)	(0.0058)	(0.0058)	(0.0050)	(0.0049)
Total Tax/Slave	0.0814	0.0822	-0.0055	-0.0745	-0.1773	-0.1755
	(0.0760)	(0.0772)	(0.1693)	(0.1808)	(0.1541)	(0.1539)
<1816	ref					
1816-1820	-0.0241	ref	ref	ref	ref	ref
	(0.2796)					
1821-1825	-0.6913*	-0.6672**	-0.6848	-0.6865	-0.8093*	-0.7666*
	(0.4017)	(0.3238)	(0.4830)	(0.4752)	(0.4441)	(0.4337)
1826-1830	-0.0575	-0.0334	-0.4013	-0.3640	-0.5865	-0.5659
	(0.3546)	(0.2848)	(0.4526)	(0.4362)	(0.4373)	(0.4331)
1831-1835	-0.2933	-0.2692	-0.8737**	-0.8372**	-1.0828***	-1.0259***
	(0.3689)	(0.2832)	(0.4030)	(0.3978)	(0.3253)	(0.3429)
1836-1840	-0.1419	-0.1178	-0.6423	-0.6547	-0.8571*	-0.7923*
	(0.3778)	(0.3159)	(0.4900)	(0.4673)	(0.4805)	(0.4679)
>1840	-0.2093	-0.1855	-0.5033	-0.5493	-0.6901**	-0.6683**
	(0.3282)	(0.2526)	(0.3504)	(0.3647)	(0.3142)	(0.3140)
<1816 x AS	ref					
1816-1820 x AS	-0.0009	ref	ref	ref	ref	ref
	(0.0056)					
1821-1825 x AS	0.0094	0.0103*	0.0113	0.0113	0.0131	0.0122
	(0.0076)	(0.0060)	(0.0091)	(0.0090)	(0.0083)	(0.0081)
1826-1830 x AS	0.0015	0.0024	0.0113	0.0108	0.0136*	0.0131*
	(0.0067)	(0.0051)	(0.0080)	(0.0077)	(0.0071)	(0.0070)
1831-1835 x AS	0.0036	0.0045	0.0165**	0.0157**	0.0182***	0.0172***
	(0.0069)	(0.0050)	(0.0069)	(0.0069)	(0.0056)	(0.0057)
1836-1840 x AS	0.0024	0.0032	0.0148*	0.0145*	0.0168**	0.0157**
	(0.0071)	(0.0055)	(0.0082)	(0.0078)	(0.0073)	(0.0070)
>1840 x AS	0.0046	0.0055	0.0126*	0.0129*	0.0145**	0.0140**
	(0.0065)	(0.0048)	(0.0069)	(0.0070)	(0.0060)	(0.0060)
Lifespan, father			0.0079***	0.0070**	0.0089***	0.0091***
			(0.0029)	(0.0031)	(0.0028)	(0.0028)
Lifespan, mother			0.0042	0.0034	-0.0002	-0.0001
			(0.0053)	(0.0051)	(0.0038)	(0.0038)
Age of father at birth				-0.0195	-0.0223	-0.0225
				(0.0158)	(0.0196)	(0.0200)
Age of mother at birth				0.0251*	0.0050	0.0053
				(0.0148)	(0.0150)	(0.0150)
Number of siblings					-0.0642***	-0.0652***
					(0.0191)	(0.0192)
Rank among siblings					0.0686	0.0699
					(0.0435)	(0.0440)
Sex (ref=Male)						-0.0610
						(0.0833)
Constant	4.2039***	4.1797***	3.8869***	3.9696***	5.1517***	5.1224***
	(0.3027)	(0.2048)	(0.4653)	(0.4875)	(0.6766)	(0.6823)
Observations	570	482	239	239	239	239
Birth Restriction	no	yes	yes	yes	yes	yes
Pseudo-R^2	0.0152	0.0158	0.0457	0.0601	0.0954	0.0965

[Notes] Columns (2) to (6) consider only individuals born after 1816. All estimates use clustered standard errors at the individuals' father level.

* p<0.10

** p<0.05

*** p<0.01

Table C3
Regression output, 3rd generation – Stellenbosch

y=Lifespan	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Avg. Shortfall (AS)	-0.0024	-0.0031	0.0074	0.0040	0.0016	0.0019	0.0099
	(0.0034)	(0.0053)	(0.0228)	(0.0244)	(0.0356)	(0.0356)	(0.0230)
Total Tax/Slave	0.1078**	0.1341*	-0.1417	-0.1595	-0.1428	-0.1433	-0.0752
	(0.0486)	(0.0753)	(0.2042)	(0.2033)	(0.2043)	(0.2036)	(0.1805)
<1846	ref	ref	ref	ref	ref	ref	ref
1846-1850	-0.0812	-0.1960	0.1811	0.0893	-0.0109	0.0093	0.4083
	(0.2396)	(0.3294)	(1.3236)	(1.3662)	(1.7835)	(1.7864)	(1.3719)
1851-1855	0.1958	0.2102	0.9234	0.7999	0.6337	0.6586	0.9364
	(0.4049)	(0.4659)	(1.3571)	(1.4350)	(2.0357)	(2.0367)	(1.3795)
1856-1860	-0.1786	-0.1983	0.4531	0.4057	0.2597	0.2798	0.7165
	(0.3473)	(0.3949)	(1.3460)	(1.4200)	(2.0338)	(2.0333)	(1.3431)
1861-1865	0.0297	0.1008	0.5154	0.5104	0.2906	0.3124	0.7575
	(0.2941)	(0.3417)	(1.2449)	(1.3257)	(1.9429)	(1.9418)	(1.2550)
1866-1870	0.0276	0.0293	0.7432	0.7137	0.4661	0.4873	0.9911
	(0.2658)	(0.3190)	(1.2736)	(1.3538)	(1.9761)	(1.9740)	(1.2953)
1871-1875	0.2015	0.2230	0.9440	0.8757	0.5882	0.6058	1.2443
	(0.2895)	(0.3386)	(1.2687)	(1.3509)	(1.9690)	(1.9687)	(1.2872)
>1875	-0.1120	-0.0903	0.4417	0.4152	0.1996	0.2178	0.5137
	(0.2718)	(0.3197)	(1.2617)	(1.3377)	(1.9570)	(1.9570)	(1.2807)
<1846 x AS	ref	ref	ref	ref	ref	ref	ref
1846-1850 x AS	0.0005	0.0031	-0.0047	-0.0023	0.0001	-0.0002	-0.0082
	(0.0038)	(0.0058)	(0.0228)	(0.0237)	(0.0308)	(0.0309)	(0.0229)
1851-1855 x AS	-0.0059	-0.0054	-0.0174	-0.0138	-0.0108	-0.0112	-0.0163
	(0.0072)	(0.0088)	(0.0255)	(0.0270)	(0.0376)	(0.0377)	(0.0257)
1856-1860 x AS	0.0007	0.0020	-0.0094	-0.0062	-0.0038	-0.0041	-0.0119
	(0.0058)	(0.0072)	(0.0251)	(0.0265)	(0.0374)	(0.0375)	(0.0244)
1861-1865 x AS	-0.0002	-0.0001	-0.0070	-0.0036	-0.0004	-0.0007	-0.0093
	(0.0052)	(0.0066)	(0.0229)	(0.0244)	(0.0354)	(0.0354)	(0.0228)
1866-1870 x AS	0.0015	0.0023	-0.0084	-0.0042	-0.0010	-0.0013	-0.0105
	(0.0042)	(0.0059)	(0.0236)	(0.0252)	(0.0362)	(0.0362)	(0.0236)
1871-1875 x AS	-0.0018	-0.0012	-0.0127	-0.0078	-0.0040	-0.0042	-0.0159
	(0.0047)	(0.0062)	(0.0235)	(0.0251)	(0.0361)	(0.0361)	(0.0235)
>1875 x AS	0.0009	0.0015	-0.0074	-0.0031	-0.0004	-0.0007	-0.0064
	(0.0045)	(0.0060)	(0.0235)	(0.0250)	(0.0360)	(0.0360)	(0.0235)
Lifespan, father			0.0038	0.0035	0.0035	0.0035	0.0011
			(0.0036)	(0.0035)	(0.0031)	(0.0031)	(0.0031)
Lifespan, mother			0.0058**	0.0056**	0.0049**	0.0049**	0.0049**
			(0.0024)	(0.0026)	(0.0024)	(0.0024)	(0.0023)
Age of father at birth				-0.0141	-0.0151	-0.0149	-0.0113
				(0.0111)	(0.0113)	(0.0115)	(0.0121)
Age of mother at birth				-0.0006	-0.0051	-0.0053	-0.0058
				(0.0104)	(0.0122)	(0.0125)	(0.0119)
Number of siblings					-0.0382**	-0.0383**	-0.0359***
					(0.0152)	(0.0152)	(0.0137)
Rank among siblings					0.0260	0.0260	0.0170
					(0.0274)	(0.0274)	(0.0249)
Sex (ref=Male)						0.0138	0.0109
						(0.0641)	(0.0575)
Constant	4.0382***	4.0119***	2.7683**	3.3323**	3.8890*	3.8626*	3.5378***
	(0.2100)	(0.2762)	(1.2558)	(1.3665)	(1.9933)	(1.9867)	(1.3219)
Observations	889	758	400	399	398	398	381
Father Restriction	no	yes	yes	yes	yes	yes	yes
Pseudo-R^2	0.0178	0.0210	0.0446	0.0539	0.0647	0.0647	0.0661

[Notes] Columns (2) to (6) consider only individuals whose father was born after 1816. Column (7) considers only individuals whose fathers were born after 1816 and excludes individuals whose lifespan was smaller than 1 year. All estimates use clustered standard errors at the individuals' father level.

* p<0.10
** p<0.05
*** p<0.01

Table C4
Regression output, 1st generation - all districts

y=Lifespan	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Avg. Shortfall (AS)	0.0004*	0.0008	0.0004	-0.0006	-0.0020***	-0.0026***	-0.0046***
	(0.0002)	(0.0007)	(0.0019)	(0.0007)	(0.0006)	(0.0007)	(0.0010)
Birth year, continuous	-0.0054***						
	(0.0006)						
<1780		ref					
1780-1784		-0.0411	ref				
		(0.1260)					
1785-1789		-0.1764***	-0.1411				
		(0.0677)	(0.1321)				
1790-1794		-0.0432	-0.0079	ref			
		(0.0585)	(0.1276)				
1795-1799		-0.1125**	-0.0772	-0.1048*	ref	ref	ref
		(0.0555)	(0.1262)	(0.0594)			
1800-1804		-0.2037***	-0.1684	-0.1960***	-0.1690***	-0.1902***	-0.3201***
		(0.0552)	(0.1261)	(0.0591)	(0.0578)	(0.0617)	(0.0721)
1805-1809		-0.0731	-0.0378	-0.0654	-0.0384	-0.0596	-0.1895**
		(0.0678)	(0.1321)	(0.0711)	(0.0700)	(0.0732)	(0.0822)
>1809		-0.1259*	-0.0906	-0.1182	-0.0912	-0.1124	-0.2423***
		(0.0742)	(0.1355)	(0.0772)	(0.0762)	(0.0792)	(0.0875)
<1780 x AS		ref					
1780-1784 x AS		-0.0004	ref				
		(0.0020)					
1785-1789 x AS		0.0010	0.0014				
		(0.0010)	(0.0020)				
1790-1794 x AS		-0.0010	-0.0006	ref			
		(0.0009)	(0.0020)				
1795-1799 x AS		-0.0008	-0.0004	0.0006	ref	ref	ref
		(0.0009)	(0.0020)	(0.0008)			
1800-1804 x AS		0.0003	0.0007	0.0017**	0.0030***	0.0037***	0.0057***
		(0.0008)	(0.0020)	(0.0008)	(0.0008)	(0.0008)	(0.0011)
1805-1809 x AS		-0.0011	-0.0007	0.0003	0.0017*	0.0023**	0.0043***
		(0.0010)	(0.0020)	(0.0010)	(0.0009)	(0.0010)	(0.0012)
>1809 x AS		-0.0022*	-0.0018	-0.0007	0.0006	0.0012	0.0032**
		(0.0012)	(0.0021)	(0.0012)	(0.0011)	(0.0012)	(0.0014)
Constant	13.7849***	4.2847***	4.2495***	4.2770***	4.2501***	4.2713***	4.4012***
	(1.0278)	(0.0411)	(0.1206)	(0.0462)	(0.0446)	(0.0495)	(0.0620)
Observations	324	324	283	222	160	152	143
Pseudo-R^2	0.0291	0.0351	0.0204	0.0163	0.0186	0.0234	0.0273

[Notes] Estimates (3) to (7) refer to individuals born after 1780, 1790, 1795, 1796, and 1797 respectively. "All districts" estimates incorporate the observations from Stellenbosch.

* p<0.10
** p<0.05
*** p<0.01

Table C5
Regression output, 2nd generation – all districts

y=Lifespan	(1)	(2)	(3)	(4)	(5)	(6)
Avg. Shortfall (AS)	-0.0006	0.0004	-0.0021	-0.0018	-0.0029	-0.0026
	(0.0012)	(0.0015)	(0.0036)	(0.0036)	(0.0033)	(0.0028)
<1816	ref					
1816-1820	-0.0418	ref	ref	ref	ref	ref
	(0.1169)					
1821-1825	-0.1344	-0.0926	-0.0922	-0.0929	-0.1558	-0.1106
	(0.1192)	(0.1404)	(0.2478)	(0.2446)	(0.2196)	(0.2026)
1826-1830	-0.0752	-0.0334	-0.0888	-0.0784	-0.1687	-0.1603
	(0.1172)	(0.1359)	(0.2533)	(0.2491)	(0.2374)	(0.2202)
1831-1835	-0.1754	-0.1336	-0.0832	-0.0764	-0.1694	-0.1131
	(0.1275)	(0.1416)	(0.2653)	(0.2621)	(0.2422)	(0.2355)
1836-1840	-0.1731	-0.1313	-0.0189	-0.0239	-0.1110	-0.0529
	(0.1486)	(0.1656)	(0.3164)	(0.3059)	(0.3032)	(0.2998)
>1840	-0.0095	0.0323	0.0585	0.0553	-0.0272	-0.0122
	(0.1022)	(0.1261)	(0.2341)	(0.2270)	(0.2044)	(0.1830)
	ref					
1816-1820 x AS	0.0010	ref	ref	ref	ref	ref
	(0.0019)					
1821-1825 x AS	0.0018	0.0009	0.0015	0.0012	0.0021	0.0013
	(0.0017)	(0.0020)	(0.0042)	(0.0041)	(0.0037)	(0.0033)
1826-1830 x AS	0.0008	-0.0002	0.0024	0.0020	0.0030	0.0029
	(0.0018)	(0.0020)	(0.0043)	(0.0042)	(0.0040)	(0.0035)
1831-1835 x AS	0.0019	0.0010	0.0023	0.0018	0.0027	0.0014
	(0.0018)	(0.0020)	(0.0043)	(0.0043)	(0.0039)	(0.0037)
1836-1840 x AS	0.0015	0.0006	0.0011	0.0008	0.0017	0.0007
	(0.0020)	(0.0022)	(0.0049)	(0.0047)	(0.0046)	(0.0044)
>1840 x AS	0.0001	-0.0009	-0.0008	-0.0011	-0.0001	-0.0005
	(0.0016)	(0.0019)	(0.0041)	(0.0041)	(0.0038)	(0.0034)
Lifespan, father			0.0062***	0.0064***	0.0070***	0.0073***
			(0.0021)	(0.0023)	(0.0023)	(0.0023)
Lifespan, mother			0.0022	0.0015	0.0007	0.0011
			(0.0027)	(0.0028)	(0.0024)	(0.0023)
Age of father at birth				-0.0058	-0.0067	-0.0073
				(0.0081)	(0.0091)	(0.0094)
Age of mother at birth				0.0081	0.0013	0.0009
				(0.0079)	(0.0087)	(0.0086)
Number of siblings					-0.0278*	-0.0312**
					(0.0147)	(0.0147)
Rank among siblings					0.0257	0.0310
					(0.0241)	(0.0245)
Sex (ref=Male)						-0.1833***
						(0.0570)
Constant	4.0289***	3.9871***	3.4565***	3.4490***	3.8779***	3.9135***
	(0.0682)	(0.0969)	(0.2950)	(0.3055)	(0.3689)	(0.3534)
Observations	1357	1091	445	443	442	442
Birth Restriction	no	yes	yes	yes	yes	yes
Pseudo-R^2	0.0026	0.0028	0.0186	0.0214	0.0318	0.0451

[Notes] Columns (2) to (6) consider only individuals born after 1816. All estimates use clustered standard errors at the individuals' father level. "All districts" estimates incorporate the observations from Stellenbosch.

* p<0.10
** p<0.05
*** p<0.01

Table C6
Regression output, 3rd generation – all districts

y=Lifespan	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Avg. Shortfall (AS)	0.0010	0.0006	0.0005	0.0005	-0.0002	-0.0005	-0.0004
	(0.0007)	(0.0014)	(0.0021)	(0.0020)	(0.0032)	(0.0032)	(0.0030)
<1846	ref	ref	ref	ref	ref	ref	ref
1846-1850	-0.0421	-0.0920	-0.2694	-0.2475	-0.3292	-0.3336	-0.3400
	(0.0890)	(0.1349)	(0.2045)	(0.2025)	(0.2366)	(0.2408)	(0.2260)
1851-1855	-0.1824	-0.1500	-0.1467	-0.2182	-0.3134	-0.3353	-0.2513
	(0.1160)	(0.1506)	(0.1934)	(0.2250)	(0.2571)	(0.2570)	(0.2204)
1856-1860	-0.2193**	-0.2269*	-0.3803*	-0.4090*	-0.4657*	-0.4750**	-0.3910*
	(0.0948)	(0.1354)	(0.2085)	(0.2091)	(0.2378)	(0.2372)	(0.2124)
1861-1865	-0.0250	0.0125	-0.1499	-0.1912	-0.3069	-0.3210	-0.2416
	(0.0897)	(0.1285)	(0.1993)	(0.2138)	(0.2527)	(0.2533)	(0.2251)
1866-1870	0.1030	0.1269	0.0687	0.0968	-0.0334	-0.0481	0.0058
	(0.0955)	(0.1305)	(0.1773)	(0.1818)	(0.2308)	(0.2297)	(0.2050)
1871-1875	0.0463	0.0737	-0.1516	-0.1347	-0.2825	-0.2936	-0.1916
	(0.1249)	(0.1564)	(0.2494)	(0.2588)	(0.3064)	(0.3086)	(0.2866)
>1875	-0.0130	0.0082	-0.1263	-0.1904	-0.3329	-0.3440	-0.4022*
	(0.0955)	(0.1315)	(0.1653)	(0.2226)	(0.2610)	(0.2635)	(0.2424)
<1846 x AS	ref	ref	ref	ref	ref	ref	ref
1846-1850 x AS	0.0001	0.0012	0.0029	0.0028	0.0034	0.0035	0.0034
	(0.0012)	(0.0018)	(0.0029)	(0.0029)	(0.0036)	(0.0037)	(0.0035)
1851-1855 x AS	0.0013	0.0015	0.0004	0.0017	0.0023	0.0026	0.0021
	(0.0015)	(0.0019)	(0.0026)	(0.0030)	(0.0036)	(0.0036)	(0.0031)
1856-1860 x AS	0.0022**	0.0028*	0.0033	0.0043*	0.0042	0.0044	0.0036
	(0.0011)	(0.0016)	(0.0027)	(0.0026)	(0.0032)	(0.0032)	(0.0030)
1861-1865 x AS	0.0005	0.0008	0.0012	0.0027	0.0033	0.0035	0.0027
	(0.0013)	(0.0017)	(0.0026)	(0.0026)	(0.0034)	(0.0034)	(0.0031)
1866-1870 x AS	-0.0012	-0.0009	-0.0008	-0.0001	0.0006	0.0008	0.0001
	(0.0013)	(0.0018)	(0.0025)	(0.0024)	(0.0032)	(0.0033)	(0.0030)
1871-1875 x AS	-0.0008	-0.0006	0.0020	0.0031	0.0040	0.0042	0.0029
	(0.0016)	(0.0020)	(0.0034)	(0.0038)	(0.0045)	(0.0045)	(0.0043)
>1875 x AS	-0.0009	-0.0005	-0.0002	0.0023	0.0032	0.0033	0.0048
	(0.0013)	(0.0017)	(0.0022)	(0.0034)	(0.0040)	(0.0041)	(0.0037)
Lifespan, father			0.0047*	0.0044*	0.0053**	0.0052**	0.0034*
			(0.0024)	(0.0024)	(0.0022)	(0.0022)	(0.0020)
Lifespan, mother			0.0032**	0.0028*	0.0026*	0.0026*	0.0027*
			(0.0015)	(0.0015)	(0.0015)	(0.0015)	(0.0014)
Age of father at birth				-0.0058	-0.0072	-0.0074	-0.0064
				(0.0070)	(0.0073)	(0.0074)	(0.0074)
Age of mother at birth				0.0003	-0.0065	-0.0062	-0.0064
				(0.0057)	(0.0060)	(0.0060)	(0.0057)
Number of siblings					-0.0248***	-0.0247***	-0.0210***
					(0.0089)	(0.0088)	(0.0080)
Rank among siblings					0.0291*	0.0291*	0.0235
					(0.0167)	(0.0166)	(0.0166)
Sex (ref=Male)						-0.0565	-0.0410
						(0.0417)	(0.0374)
Constant	3.9732***	3.9543***	3.4734***	3.6455***	4.0189***	4.0668***	4.1431***
	(0.0504)	(0.1034)	(0.2371)	(0.2598)	(0.3569)	(0.3625)	(0.3270)
Observations	2255	1812	843	828	827	827	799
Father Restriction	no	yes	yes	yes	yes	yes	yes
Pseudo-R^2	0.0077	0.0088	0.0223	0.0278	0.0353	0.0366	0.0320

[Notes] Columns (2) to (6) consider only individuals whose father was born after 1816. Column (7) considers only individuals whose fathers were born after 1816 and excludes individuals whose lifespan was smaller than 1 year. All estimates use clustered standard errors at the individuals' father level. "All districts" estimates incorporate the observations from Stellenbosch.

* p<0.10
** p<0.05
*** p<0.01

Table C7
Regression output, 2nd generation conditional on infant mortality – Stellenbosch

y=Lifespan	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Avg. Shortfall (AS)	-0.0197***	-0.0094**	-0.0062	-0.0063	-0.0036	-0.0036	-0.0035
	(0.0067)	(0.0043)	(0.0049)	(0.0048)	(0.0047)	(0.0044)	(0.0043)
Total Tax/Slave	-0.3019*	-0.2165	-0.1448	-0.1385	-0.1556	-0.1525	-0.1917
	(0.1756)	(0.1440)	(0.1479)	(0.1457)	(0.1521)	(0.1412)	(0.1399)
<1816	ref	ref	ref	ref	ref	ref	ref
1816-1820							
1821-1825	-1.0457	-0.3080	-0.5652.	-0.5606*	-0.4063	-0.3561	-0.3798
	(0.6908)	(0.3616)	(0.3235)	(0.3226)	(0.2792)	(0.2456)	(0.2465)
1826-1830	-0.8674**	-0.2798	-0.1110	-0.1110	-0.0117	0.0281	0.0316
	(0.4335)	(0.2448)	(0.2546)	(0.2542)	(0.2501)	(0.2280)	(0.2259)
1831-1835	-1.0431**	-0.6919**	-0.2911	-0.2874	-0.1733	-0.1948	-0.1880
	(0.4518)	(0.3197)	(0.3062)	(0.3043)	(0.3014)	(0.2871)	(0.2745)
1836-1840	-0.7925	-0.3866	-0.2669	-0.2613	-0.1513	-0.2734	0.0281
	(0.5063)	(0.4055)	(0.3880)	(0.3889)	(0.3789)	(0.3712)	(0.2884)
>1840	-0.7940*	-0.2987	-0.2051	-0.2035	-0.1364	-0.1746	-0.1372
	(0.4083)	(0.3178)	(0.3168)	(0.3143)	(0.3028)	(0.2814)	(0.2700)
<1816 x AS	ref	ref	ref	ref	ref	ref	ref
1816-1820 x AS							
1821-1825 x AS	0.0164	0.0033	0.0090	0.0089	0.0061	0.0060	0.0064
	(0.0116)	(0.0065)	(0.0056)	(0.0056)	(0.0048)	(0.0042)	(0.0042)
1826-1830 x AS	0.0179**	0.0069*	0.0040	0.0041	0.0016	0.0011	0.0010
	(0.0073)	(0.0038)	(0.0042)	(0.0042)	(0.0040)	(0.0037)	(0.0037)
1831-1835 x AS	0.0172**	0.0112**	0.0062	0.0067	0.0040	0.0041	0.0042
	(0.0075)	(0.0049)	(0.0050)	(0.0049)	(0.0047)	(0.0045)	(0.0043)
1836-1840 x AS	0.0152*	0.0071	0.0048	0.0048	0.0021	0.0041	0.0008
	(0.0083)	(0.0059)	(0.0062)	(0.0062)	(0.0059)	(0.0056)	(0.0048)
>1840 x AS	0.0154**	0.0057	0.0050	0.0051	0.0036	0.0037	0.0034
	(0.0073)	(0.0047)	(0.0051)	(0.0051)	(0.0048)	(0.0045)	(0.0043)
Lifespan, father	0.0091***	0.0068***	0.0025	0.0028	0.0016	0.0009	0.0004
	(0.0030)	(0.0021)	(0.0022)	(0.0021)	(0.0021)	(0.0019)	(0.0016)
Lifespan, mother	-0.0019	-0.0033	-0.0023	-0.0021	-0.0016	-0.0012	-0.0007
	(0.0032)	(0.0027)	(0.0020)	(0.0020)	(0.0022)	(0.0020)	(0.0017)
Age of father at birth	-0.0178	-0.0030	-0.0012	-0.0020	-0.0002	-0.0005	-0.0022
	(0.0184)	(0.0074)	(0.0051)	(0.0050)	(0.0038)	(0.0038)	(0.0034)
Age of mother at birth	0.0079	0.0018	0.0020	0.0015	0.0038	0.0044	0.0019
	(0.0139)	(0.0086)	(0.0075)	(0.0073)	(0.0070)	(0.0068)	(0.0061)
Number of siblings	-0.0462***	-0.0322**	-0.0018	-0.0031	0.0018	-0.0022	-0.0094
	(0.0167)	(0.0130)	(0.0109)	(0.0108)	(0.0106)	(0.0103)	(0.0087)
Rank among siblings	0.0445	0.0250	-0.0025	-0.0006	-0.0112	-0.0045	0.0031
	(0.0360)	(0.0221)	(0.0167)	(0.0169)	(0.0154)	(0.0144)	(0.0132)
Sex (ref=Male)	-0.0806	-0.0967	-0.0114	-0.0195	-0.0211	-0.0236	-0.0049
	(0.0863)	(0.0695)	(0.0530)	(0.0550)	(0.0504)	(0.0499)	(0.0497)
Constant	5.1896***	4.6471***	4.4719***	4.4866***	4.3133***	4.3516***	4.4979***
	(0.6467)	(0.4262)	(0.3806)	(0.3754)	(0.3604)	(0.3278)	(0.3001)
Observations	223	193	178	177	174	170	166
Birth Restriction	yes	yes	yes	yes	yes	yes	yes
Pseudo-R^2	0.0922	0.0867	0.0317	0.0353	0.0302	0.0264	0.0342

[Notes] The estimates refer to individuals who survived past the age of 0, 1, 5, 10, 15, 20 and 25 years old respectively. All estimates use clustered standard errors at the individuals' father level.

* p<0.10
** p<0.05
*** p<0.01

Table C8
Regression output, 1st generation of Stellenbosch farmers including crop type

y=Lifespan	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Avg. Shortfall (AS)	0.0011**	0.0027	0.0041	0.0005	-0.0053***	-0.0077***	-0.0088***
	(0.0005)	(0.0025)	(0.0030)	(0.0019)	(0.0019)	(0.0021)	(0.0021)
Birth Year, continuous	-0.0066***						
	(0.0009)						
Total Tax/Slave	-0.0211	-0.0341*	-0.0354**	-0.0097	0.0839*	0.0411	0.0503
	(0.0163)	(0.0179)	(0.0180)	(0.0260)	(0.0505)	(0.0561)	(0.0588)
<1780		ref					
1780-1784		-0.1191	ref				
		(0.2041)					
1785-1789		-0.0364	0.0741				
		(0.1636)	(0.1956)				
1790-1794		-0.0786	0.0235	ref			
		(0.1588)	(0.1874)				
1795-1799		-0.0334	0.0805	0.0102	ref	ref	ref
		(0.1502)	(0.1802)	(0.1195)			
1800-1804		-0.2357	-0.1256	-0.1793	-0.3260**	-0.4742***	-0.5885***
		(0.1444)	(0.1769)	(0.1126)	(0.1275)	(0.1360)	(0.1408)
1805-1809		0.107	0.2105	0.1605	0.0626	-0.0841	-0.1988
		(0.1578)	(0.1854)	(0.1344)	(0.1310)	(0.1389)	(0.1423)
>1809		-0.2189	-0.1057	-0.1939	-0.3838**	-0.5481***	-0.6688***
		(0.1718)	(0.2006)	(0.1465)	(0.1559)	(0.1637)	(0.1665)
<1780 x AS		ref					
1780-1784 x AS		0.0014	ref				
1785-1789 x AS		(0.0036)					
		-0.0007	-0.0021				
1790-1794 x AS		(0.0028)	(0.0032)				
		-0.0016	-0.0028	ref			
1795-1799 x AS		(0.0029)	(0.0032)				
		-0.0033	-0.0047	-0.0012	ref	ref	ref
1800-1804 x AS		(0.0026)	(0.0030)	(0.0020)			
		-0.0002	-0.0016	0.0018	0.0069***	0.0096***	0.0106***
1805-1809 x AS		(0.0025)	(0.0030)	(0.0020)	(0.0019)	(0.0021)	(0.0022)
		-0.0052**	-0.0065**	-0.0032	0.0008	0.0039*	0.0049**
>1809 x AS		(0.0026)	(0.0030)	(0.0022)	(0.0018)	(0.0020)	(0.0021)
		-0.0001	-0.0015	0.0024	0.0079***	0.0109***	0.0120***
None	ref	ref	ref	ref	ref	ref	ref
Grain only	-0.0436	-0.1236	-0.1125	-0.1883*	-0.2379*	-0.2567*	-0.2695**
	(0.0400)	(0.1004)	(0.1075)	(0.1118)	(0.1344)	(0.1341)	(0.1344)
Wine only	0.0346	-0.1349	-0.1640*	-0.1416	-0.1871	-0.0862	-0.089
	(0.0298)	(0.0922)	(0.0969)	(0.1039)	(0.1301)	(0.1333)	(0.1335)
Grain & Wine	0.0213	0.2223**	0.2123**	0.2115**	0.1758	0.1341	0.1399
	(0.0276)	(0.0919)	(0.0971)	(0.1004)	(0.1218)	(0.1225)	(0.1230)
None x AS		ref	ref	ref	ref	ref	ref
Grain only x AS		0.0017	0.0014	0.0021	0.0029	0.0035*	0.0034*
		(0.0017)	(0.0017)	(0.0018)	(0.0020)	(0.0020)	(0.0020)
Wine only x AS		0.0029**	0.0031**	0.0027*	0.0050***	0.0030	0.0031
		(0.0014)	(0.0014)	(0.0015)	(0.0018)	(0.0019)	(0.0019)
Grain & Wine x AS		-0.0036**	-0.0036**	-0.0039**	-0.0044**	-0.0039**	-0.0041**
		(0.0014)	(0.0015)	(0.0016)	(0.0018)	(0.0018)	(0.0018)
Constant	15.8722***	4.1758***	4.0736***	4.1476***	4.3113***	4.4633***	4.5822***
	(1.6546)	(0.1406)	(0.1793)	(0.1056)	(0.1385)	(0.1465)	(0.1499)
Observations	130	130	117	91	67	64	61
R^2	0.0506	0.0771	0.0612	0.0449	0.0878	0.0928	0.1035

[Notes] Estimates (3) to (7) refer to individuals born after 1780, 1790, 1795, 1796, 1797 and 1798 respectively.
* p<0.10
** p<0.05
*** p<0.01

Appendix D: Placing the results into a broader scope

Historical perceptions on post-emancipation

The main results of this paper are focused on the slaveholders and the effects of compensation money on their living standards. We established that compensation values were usually smaller than the appraised slave wealth and that slaveholders who earned a bigger share lived, on average, longer. Little was said, however, about the aforementioned effects when compared to the considerable fraction of society who did not own slaves. While the loss of assets is intuitively thought as damaging to the ones who lose it, this feeling was not necessarily unanimous within the Cape society, as this fragment from the South African Commercial Advertiser – the first privately owned newspaper in Cape Colony and the leading English newspaper in the Western Cape at the time – suggests:

"One million sterling (...) is to be added to the Capital of the Colony at once, (...) Passing over immediate and temporary effects, such as the advance of prices and the decline in the rate of the interest, the ultimate effect will be a great improvement in the style of living throughout the Country Districts. We do not refer merely to the Farmers. The numerous class of Laborers will lay out their gains on food, clothes, and furniture to an extent far beyond their present accommodation There will be a great increase of buildings, both in town and country."[37]

The Commercial Advertiser had its editorial based on the humanistic views of its owner – John Fairburn – and it is not surprising that from the very onset of emancipation talks the newspaper took a positive stance toward the freedom of slaves. The *De Zuid-Afrikaan*, on the other hand, more fiercely advocated in favor of slaveholders. During the 1820s when several amelioration laws came into effect, for example, the newspaper fiercely served as a spokesman and apologist for the Afrikaans-speaking community of slaveholders. Yet, by the early 1830's the *De Zuid-Afrikaan* shifted its editorial and began to "talk of a general desire of owners for the abolition of slavery" (Giliomee 2003, p. 113).

Indeed, many historians have described the post-emancipation Cape Colony as a dynamic economy a lot due to the compensation money that provided many former slaveholders the much-needed liquidity to invest in the most varied sectors ranging from overseas trade to the newly formed Joint Stock Companies. (Hengherr 1953; Liebenberg 1959; Meltzer 1989; Ross 1993; Dooling 2007; Graham 2021). Few scholars, however, provide a clear distinction between the urban Cape Colony – mostly centered in Cape Town – and the farmlands. Since slavery was also an urban phenomenon in the colony, this distinction is important.[38]

Dooling (2007, p. 135) is one of the exceptions. Even though he claims that "it is (...) no longer possible to uphold an older conservative historiography that saw emancipation as an economic disaster and compensation payments as hopelessly deficient", his claims pertain to Cape Town specifically. In the farming districts, it is pointed out that "the consequences of emancipation on the rural economy and individual slave-owners are harder to ascertain".

Dooling's work allows us to hypothesize that the effects of emancipation and compensation differed considerably between urban and rural areas. To what extent, then, living standards of former rural slaveholders were affected in comparison to their counterparts who did not possess any slaves by 1834? Dooling (2007) brings conflicting anecdotal evidence. Some farmers found themselves in a situation of insolvency after 1834 but others benefited from the compensation awarded and managed to expand their businesses even further. A systematic analysis of this phenomenon using quantitative data, however, can be profitable to explore the aforementioned question. We present short quantitative evidence in the subsections below.

Producing the 'control group'

To analyze the extent to which rural slaveholders' living standards changed in comparison to non-slaveholders, we append to the sub-sample of Stellenbosch farmers already presented in Section 4 a control group who is assumed not to possess any slaves.

To produce the control group, we use the SAF to filter males[39] who were born or baptized in Stellenbosch and that were alive in 1834 but, differently than individuals belonging to the 1st generation, are not present – or were not successfully liked in the Claims' Records. The control group, therefore, is formed by men who are assumed not to possess slaves. Applying these conditions to the SAF yields 1,115 individuals who, in turn, produce 3,855 children and 8,575 grandchildren.[40]

Since the assessment of the lifespan for individuals belonging to the control group is the same as the treatment group, we suffer from the same caveat where the analytical sample is considerably smaller than the full sample of our populations of interest. The descriptive statistics of the control group are presented below in Table D1:

When comparing Table D1 with Table 1 we verify that the mean lifespan of individuals belonging to the 2nd and 3rd generations of the control group is bigger than the treatment group's mean. This is mostly because infant mortality between these two populations is different, as evidenced by Fig. D1 where the distributional differences in lifespan for all populations of interest are shown.

[37] South African Commercial Advertiser edition of September 11 , 1833 (as cited in Meltzer (1989, pp. 46–47)).

[38] For a thorough description of the urban character of slavery at the Cape and its decline, see Bank (1991).

[39] Restricting the first generation control group to men allows for a closer sex ratio when compared to the treatment group where the overwhelming majority of the obserations are men. Restricting merely by place of birth or baptism would make the control group with a much more balanced sex ration than the treatment group, undermining comparability.

[40] It is important to note that the control group is not perfect since "unlinkability" is likely non-random (Güell et al. 2014; Rijpma et al. 2019). Moreover, we selected individuals who were born and/or baptized in Stellenbosch but have no way to verify if they still remained in the district in 1834.

Table D1
Descriptive statistics - analytical sample, control group

Variable	Obs	Mean	Std. dev.	Min	Max
1st generation					
Lifespan	222	66.91	14.73	22	92
Year of birth	222	1,800.54	15.19	1753	1819
Year of death	222	1,867.45	19.17	1834	1908
2nd generation					
Lifespan	1199	54.13	26.21	0	99
Age father at birth	1187	35.72	8.73	17	73
Age mother at birth	943	30.25	7.15	16	49
Nr. of siblings	1199	8.55	3.64	0	18
Rank among siblings	1199	5.67	3.58	1	19
Sex (Male=0)	1199	0.38	0.48	0	1
Year of birth	1199	1,830.76	22.16	1741	1894
Year of death	1199	1,884.89	34.21	1779	1968
3rd generation					
Lifepsan	2280	56.27	26.48	0	99
Age father at birth	2228	34.66	8.21	17	66
Age mother at birth	1439	30.27	7.38	16	49
Nr. of siblings	2274	7.90	3.57	0	17
Rank among siblings	2268	5.24	3.39	1	18
Sex (Male=0)	2280	0.35	0.48	0	1
Year of birth	2280	1,861.28	24.37	1782	1922
Year of death	2280	1,917.55	36.26	1805	2002

[Notes] To be eligible for the control group, one has to be alive in 1834, therefore, we have age truncation for the 1st generation. This is reflected in the observed mean lifespan of the 1st generation when compared to the 2nd and 3rd generations. The result is that individuals born between 1760 and 1780, for example, could only be observed if they had long lifespans. Total tax cannot be observed because these individuals could not be linked to the tax censuses.

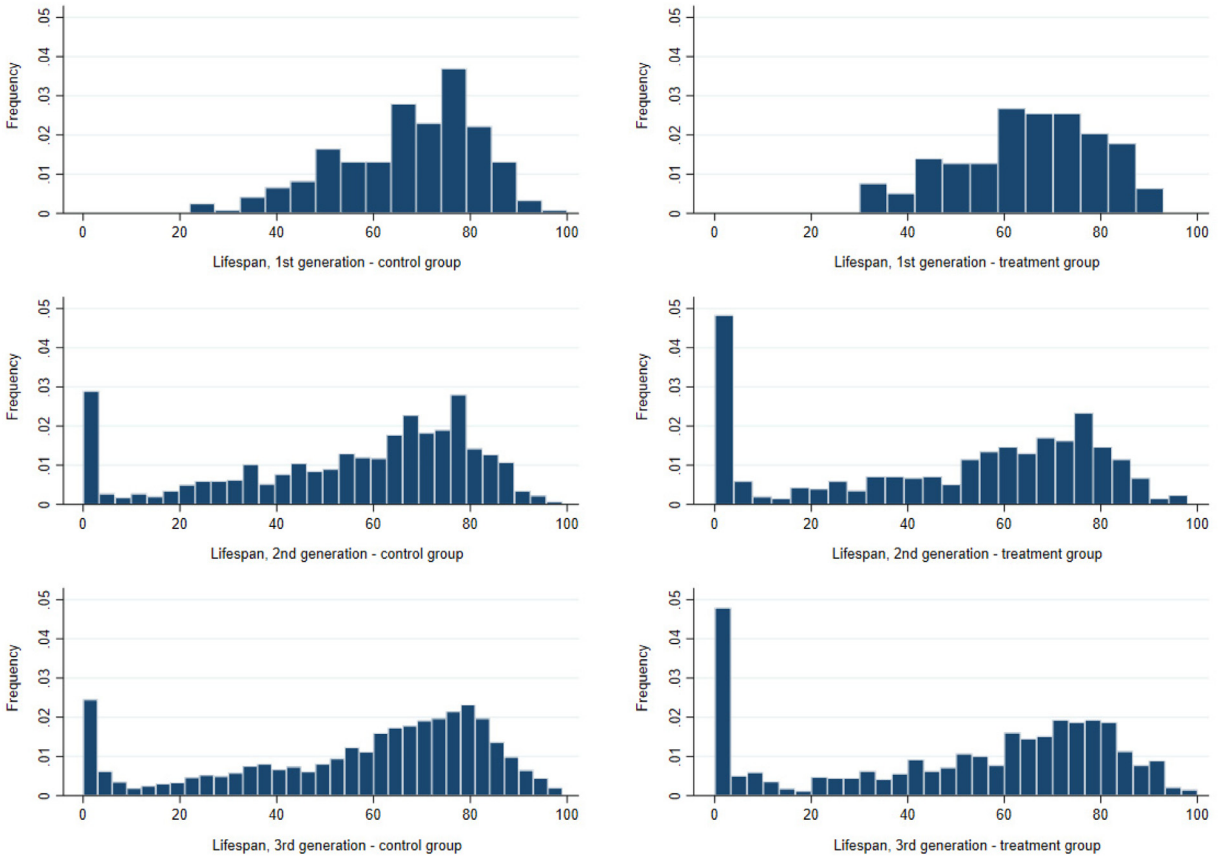

Fig. D1. Distribution of lifespan in years for each population of interest

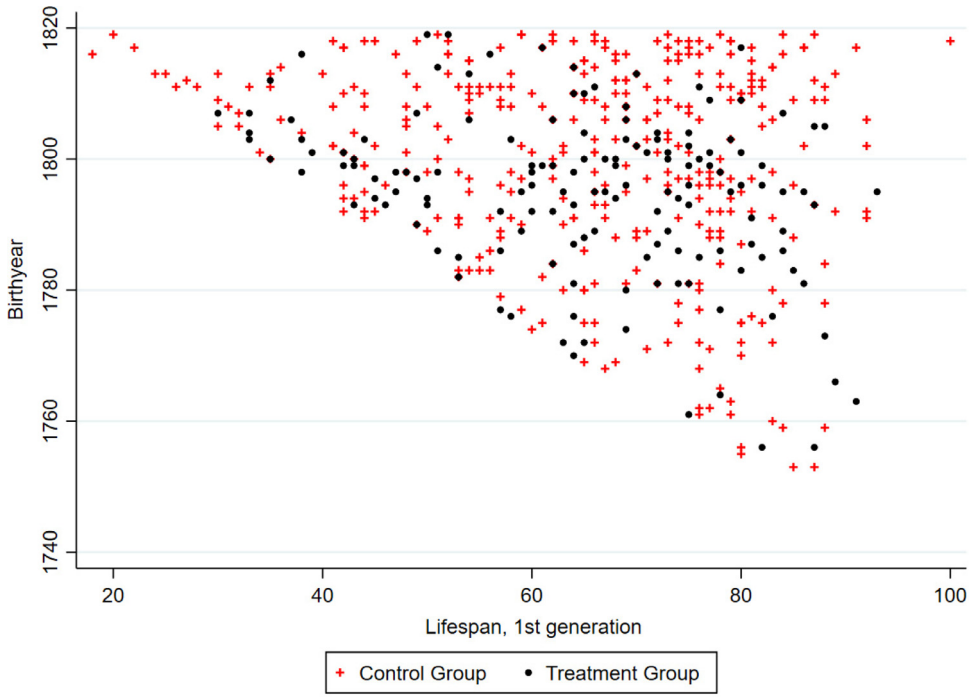

Fig. D2. Lifespan in years per year of birth

We are not capable of determining the specific reasons behind this phenomenon. We can, however, control for child mortality in our estimates.[41] It is, nonetheless, clear that distributional patterns are similar between groups.

Having this control group, however, despite important in a quasi-experimental design, does not solve the problem of survivorship bias. In fact, both groups – treatment and control – suffer from this issue within the 1st generation. To address such a problem, – similarly to what was done with the main results – we divide both groups into 5-year birth cohorts and estimate several models where we impose restrictions on individuals' year of birth.

Finally, it is important to note that we are not able to control these individuals' wealth since no matching against the tax censuses – i.e. *opgaafrollen* – was possible. The results presented in the next section, therefore, control for the average difference[42], birth cohorts, and the whole range of genealogical covariates that were included in the previous estimates.

Results

The results are presented below in their reduced forms, similar to Section 6. The full regression tables can be found in Tables E1, E2 and E3 in Appendix E . Our findings show that, indeed, the average shortfall had statistically significant effects on the lifespan of former slaveholders even when compared to a group of individuals who are assumed not to possess slaves.

Among individuals belonging to the 1st generation – similarly to the results without considering nonslaveholders – the effects seem to increase in size as we restrict the estimates to younger cohorts. Yet, the size is small. In column (1), for a £10 increase in the average shortfall, Lifespan is expected to change in

0.035%, with cohort-specific effects being even smaller. This pattern of significance but small results are also verified when analyzing the 2nd generation in column (2). Despite statistically significant results, the behavior is similar to the one already discussed in previous sections: no significant effects of the economic shock can be found on individuals' lifespan after those belonging to the 2nd generation survive their first years of life.

Among individuals belonging to the 3rd generation very little is to be said except that we do not observe any statistically significant effects of the average shortfall upon their lifespans and that the coefficients – despite not being statistically different than zero – are smaller when compared to both 1st and 2nd generations. We conclude from this brief analysis that in Stellenbosch, aside from some anecdotal cases cited by Dooling (2007), evidence suggests that the overall effect of the average shortfall remained negative even when adding a control group who, in theory, would not be directly affected by the economic shock.

[41] By excluding individuals who had a lifespan smaller than 1 year, the averages between both groups become roughly the same.

[42] Individuals who are assumed not to possess slaves are assigned 0 as their average shortfall per slave.

Table D2
Regression output, all generations including non-slaveholders

y=Lifespan	1st gen (1)	2nd gen (2)	3rd gen (3)
Avg. Shortfall (AS)	-0.0035***	-0.0058**	-0.0043
	(0.0009)	(0.0024)	(0.0041)
1st generation			
1795-1799 x AS	*ref*		
1800-1804 x AS	0.0034***		
	(0.0010)		
1805-1809 x AS	0.0020*		
	(0.0010)		
>1809 x AS	0.0026**		
	(0.0011)		
2nd generation			
1816-1820 x AS		*ref*	
1821-1825 x AS		0.0019	
		(0.0035)	
1826-1830 x AS		0.0049*	
		(0.0027)	
1831-1835 x AS		0.0037	
		(0.0028)	
1836-1840 x AS		0.0060*	
		(0.0033)	
>1840 x AS		0.0037	
		(0.0030)	
3rd generation			
<1846 x AS			*ref*
1846-1850 x AS			-0.0038
			(0.0038)
1851-1855 x AS			-0.0019
			(0.0051)
1856-1860 x AS			-0.0002
			(0.0048)
1861-1865 x AS			0.0025
			(0.0045)
1866-1870 x AS			0.0045
			(0.0044)
1871-1875 x AS			0.0051
			(0.0046)
>1875 x AS			0.0008
			(0.0044)
Constant	4.3037***	3.6981***	3.8588***
	(0.0437)	(0.2716)	(0.2510)
Observations	194	696	1171
Pseudo-R^2	0.0175	0.0380	0.0517

[Notes] Complete estimates of the equations represented by the columns above can be found in Tables E1, E2 and E3 for 1st, 2nd and 3rd generations respectively. All estimates for 2nd and 3rd generations use clustered standard errors at the individuals' father level.

* p<0.10
** p<0.05
*** p<0.01

Appendix E: Full regression tables, Stellenbosch sub-sample with control group

Table E1
Regression output, 1st generation of Stellenbosch farmers including non-slaveholders

Y = Lifespan	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Avg. Shortfall (AS)	-0.0005**	0.0005	0.0015	-0.0013*	-0.0016***	-0.0038***	-0.0035***
	(0.0002)	(0.0008)	(0.0010)	(0.0008)	(0.0006)	(0.0008)	(0.0009)
Birth Year, continuous	-0.0034***						
	(0.0005)						
<1780		ref					
1780-1784		-0.0885**	ref				
		(0.0418)					
1785-1789		-0.1096***	0.0038				
		(0.0404)	(0.0527)				
1790-1794		-0.1134***	0.00002	ref			
		(0.0353)	(0.0489)				
1795-1799		-0.1200***	-0.0066	-0.0207	ref	ref	ref
		(0.0338)	(0.0478)	(0.0365)			
1800-1804		-0.2088***	-0.0954*	-0.1095***	-0.1221***	-0.1830***	-0.1969***
		(0.0356)	(0.0491)	(0.0383)	(0.0378)	(0.0438)	(0.0509)
1805-1809		-0.1256***	-0.0122	-0.0264	-0.0389	-0.0.0998**	-0.1137**
		(0.0324)	(0.0469)	(0.0353)	(0.0347)	(0.0412)	(0.0487)
>1809		-0.1401***	-0.0267	-0.0409	-0.0535*	-0.1143***	-0.1282***
		(0.0279)	(0.0438)	(0.0312)	(0.0305)	(0.0378)	(0.0458)
<1780 x AS		ref					
1780-1784 x AS		0.0005	ref				
		(0.0012)					
1785-1789 x AS		0.0004	-0.0006				
		(0.0010)	(0.0011)				
1790-1794x AS		-0.0019*	-0.0029**	ref			
		(0.0011)	(0.0012)				
1795-1799x AS		-0.0007	-0.0017	0.0011	ref	ref	ref
		(0.0009)	(0.0011)	(0.0009)			
1800-1804x AS		-0.0007	-0.0016	0.0012	0.0015**	0.0037***	0.0034***
		(0.0010)	(0.0011)	(0.0009)	(0.0008)	(0.0009)	(0.0010)
1805-1809 x AS		-0.0021**	-0.0031***	-0.0002	0.0001	0.0022**	0.0020*
		(0.0010)	(0.0011)	(0.0010)	(0.0008)	(0.0009)	(0.0010)
>1809 x AS		-0.0015	-0.0024**	0.0004	0.0007	0.0028***	0.0026**
		(0.0011)	(0.0012)	(0.0010)	(0.0009)	(0.0010)	(0.0011)
Constant	10.3390***	4.3156***	4.2022***	4.2163***	4.2289***	4.2898***	4.3037***
	(0.8339)	(0.0243)	(0.0416)	(0.0280)	(0.0273)	(0.0352)	(0.0437)
Observations	341	341	304	255	210	199	193
R^2	0.0170	0.0288	0.0156	0.0099	0.0129	0.0214	0.0175

[Notes] Estimates (3) to (7) refer to individuals born after 1780, 1790, 1795, 1796, and 1797 respectively.
* p<0.10
** p<0.05
*** p<0.01

Table E2
Regression output, 2nd generation of Stellenbosch farmers including non-slaveholders

y=Lifespan	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Avg. Shortfall (AS)	-0.0029	-0.0017	-0.0058**	-0.0058**	-0.0060**	-0.0058**	-0.0044*
	(0.0019)	(0.0017)	(0.0025)	(0.0025)	(0.0024)	(0.0024)	(0.0025)
<1816	ref						
1816-1820	-0.1410**	ref	ref	ref	ref	ref	ref
	(0.0658)						
1821-1825	-0.1735**	-0.0325	-0.1241	-0.1249	-0.1196	-0.1196	-0.0879
	(0.0728)	(0.0840)	(0.1010)	(0.1009)	(0.1011)	(0.1006)	(0.1000)
1826-1830	-0.0903	0.0507	-0.0830	-0.0838	-0.0988	-0.0988	-0.1200
	(0.0567)	(0.0710)	(0.0822)	(0.0821)	(0.0837)	(0.0834)	(0.0805)
1831-1835	-0.0814	0.0596	-0.1058	-0.1053	-0.1217	-0.1176	-0.0540
	(0.0615)	(0.0796)	(0.0958)	(0.0973)	(0.0978)	(0.0990)	(0.1030)
1836-1840	-0.1256**	0.0154	-0.1728	-0.1763	-0.1812*	-0.1741	-0.1396
	(0.0593)	(0.0815)	(0.1077)	(0.1093)	(0.1085)	(0.1085)	(0.1012)
>1840	-0.0262	0.1148*	-0.0184	-0.0158	-0.0221	-0.0182	-0.0176
	(0.0420)	(0.0695)	(0.0843)	(0.0918)	(0.0899)	(0.0893)	(0.0910)
<1816 x AS	ref						
1816-1820 x AS	0.0012	ref	ref	ref	ref	ref	ref
	(0.0023)						
1821-1825 x AS	0.0013	0.0001	0.0021	0.0021	0.0020	0.0019	0.0009
	(0.0028)	(0.0026)	(0.0036)	(0.0036)	(0.0036)	(0.0035)	(0.0037)
1826-1830 x AS	0.0017	0.0005	0.0048*	0.0048*	0.0050*	0.0049*	0.0053**
	(0.0023)	(0.0020)	(0.0029)	(0.0028)	(0.0028)	(0.0027)	(0.0026)
1831-1835 x AS	0.0004	-0.0009	0.0040	0.0040	0.0039	0.0037	0.0019
	(0.0024)	(0.0021)	(0.0029)	(0.0029)	(0.0028)	(0.0028)	(0.0028)
1836-1840 x AS	0.0020	0.0007	0.0063*	0.0063*	0.0063*	0.0060*	0.0041
	(0.0024)	(0.0023)	(0.0035)	(0.0035)	(0.0034)	(0.0033)	(0.0033)
>1840 x AS	0.0017	0.0005	0.0037	0.0037	0.0039	0.0037	0.0024
	(0.0023)	(0.0022)	(0.0031)	(0.0031)	(0.0030)	(0.0030)	(0.0029)
Lifespan, father			0.0042**	0.0042*	0.0052**	0.0052**	0.0041*
			(0.0021)	(0.0022)	(0.0023)	(0.0024)	(0.0024)
Lifespan, mother			0.0046**	0.0047**	0.0042**	0.0043**	0.0035**
			(0.0019)	(0.0019)	(0.0018)	(0.0018)	(0.0016)
Age of father at birth				-0.0012	-0.0018	-0.0019	0.0005
				(0.0062)	(0.0067)	(0.0067)	(0.0067)
Age of mother at birth				0.0012	-0.0044	-0.0044	-0.0034
				(0.0061)	(0.0077)	(0.0076)	(0.0072)
Number of siblings					-0.0167	-0.0172	-0.0101
					(0.0131)	(0.0130)	(0.0115)
Rank among siblings					0.0159	0.0164	0.0097
					(0.0169)	(0.0169)	(0.0146)
Sex (ref=Male)						-0.0447	-0.0570
						(0.0467)	(0.0437)
Constant	4.0501***	3.9092***	3.4482***	3.4514***	3.6846***	3.6981***	3.7047***
	(0.0314)	(0.0629)	(0.1892)	(0.1901)	(0.2751)	(0.2716)	(0.2566)
Observations	1779	1399	697	696	696	696	666
Birth Restriction	no	yes	yes	yes	yes	yes	yes
Infant Mortality	no	no	no	no	no	no	yes
Pseudo-R^2	0.0145	0.0125	0.0345	0.0347	0.0371	0.0380	0.0311

[Notes] Columns (2) to (6) consider only individuals born after 1816. Column (7) considers only individuals born after 1816 and excludes individuals whose lifespan was smaller than 1 year. All estimates use clustered standard errors at the individual's father level.

* p<0.10
** p<0.05
*** p<0.01

Table E3
Regression output, 3rd generation of Stellenbosch farmers including non-slaveholders

y=Lifespan	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Avg. Shortfall (AS)	-0.0013	-0.0021	-0.0048	-0.0049	-0.0048	-0.0044	-0.0018
	(0.0008)	(0.0022)	(0.0040)	(0.0040)	(0.0041)	(0.0040)	(0.0023)
<1846	Ref	ref	ref	ref	ref	ref	ref
1846-1850	0.1179***	0.1139	0.1494	0.1635	0.1555	0.1626	0.0811
	(0.0369)	(0.0839)	(0.1493)	(0.1487)	(0.1410)	(0.1477)	(0.1014)
1851-1855	0.0486	0.0690	-0.0191	0.0021	0.0033	0.0184	-0.0520
	(0.0418)	(0.0858)	(0.1658)	(0.1663)	(0.1586)	(0.1634)	(0.1091)
1856-1860	0.0160	0.0410	-0.0939	-0.0635	-0.0612	-0.0478	-0.0920
	(0.0424)	(0.0875)	(0.1598)	(0.1597)	(0.1508)	(0.1544)	(0.1047)
1861-1865	0.0549	0.0654	-0.0359	-0.0054	-0.0041	0.0057	-0.0323
	(0.0425)	(0.0878)	(0.1606)	(0.1614)	(0.1523)	(0.1560)	(0.1065)
1866-1870	0.0460	0.0426	-0.0424	0.0069	0.0025	0.0186	0.0394
	(0.0437)	(0.0880)	(0.1585)	(0.1595)	(0.1481)	(0.1525)	(0.0991)
1871-1875	-0.0324	-0.0273	-0.1733	-0.1249	-0.1295	-0.1149	-0.0670
	(0.0512)	(0.0927)	(0.1687)	(0.1702)	(0.1603)	(0.1641)	(0.1083)
>1875	0.0402	0.0477	-0.0652	-0.0007	-0.0146	-0.0051	-0.0251
	(0.0326)	(0.0831)	(0.1542)	(0.1565)	(0.1456)	(0.1499)	(0.1000)
<1846 x AS	ref	ref	ref	ref	ref	ref	ref
1846-1850 x AS	-0.0024*	-0.0017	-0.0040	-0.0039	-0.0037	-0.0038	-0.0043
	(0.0012)	(0.0022)	(0.0036)	(0.0036)	(0.0036)	(0.0038)	(0.0032)
1851-1855 x AS	-0.0035*	-0.0031	-0.0016	-0.0014	-0.0015	-0.0020	-0.0014
	(0.0018)	(0.0028)	(0.0050)	(0.0051)	(0.0051)	(0.0050)	(0.0033)
1856-1860 x AS	-0.0025	-0.0019	0.0001	0.0004	0.0002	-0.0002	0.0014
	(0.0017)	(0.0028)	(0.0048)	(0.0048)	(0.0048)	(0.0048)	(0.0029)
1861-1865 x AS	-0.0007	0.0003	0.0027	0.0033	0.0030	0.0025	0.0011
	(0.0017)	(0.0027)	(0.0044)	(0.0044)	(0.0045)	(0.0045)	(0.0027)
1866-1870 x AS	0.0011	0.0020	0.0048	0.0052	0.0049	0.0045	0.0012
	(0.0013)	(0.0024)	(0.0043)	(0.0043)	(0.0044)	(0.0044)	(0.0026)
1871-1875 x AS	0.0015	0.0024	0.0053	0.0058	0.0056	0.0051	0.0015
	(0.0015)	(0.0025)	(0.0046)	(0.0045)	(0.0046)	(0.0046)	(0.0030)
>1875 x AS	-0.0013	-0.0004	0.0013	0.0014	0.0012	0.0009	-0.0005
	(0.0014)	(0.0025)	(0.0044)	(0.0044)	(0.0044)	(0.0043)	(0.0027)
Lifespan, father			0.0039**	0.0043***	0.0048***	0.0046***	0.0027**
			(0.0017)	(0.0017)	(0.0017)	(0.0016)	(0.0013)
Lifespan, mother			0.0037***	0.0033***	0.0031**	0.0030**	0.0024**
			(0.0012)	(0.0013)	(0.0013)	(0.0013)	(0.0011)
Age of father at birth				-0.0068	-0.0076	-0.0081	-0.0056
				(0.0049)	(0.0055)	(0.0055)	(0.0044)
Age of mother at birth				0.0018	-0.0015	-0.0012	-0.0002
				(0.0049)	(0.0061)	(0.0061)	(0.0047)
Number of siblings					-0.0134*	-0.0124	-0.0097
					(0.0080)	(0.0080)	(0.0068)
Rank among siblings					0.0127	0.0127	0.0092
					-0.0130	-0.0129	-0.0108
Sex (ref=Male)						-0.0782**	-0.0463*
						(0.0329)	(0.0257)
Constant	4.0033***	3.9951***	3.5822***	3.7070***	3.8773***	3.9075***	4.0444***
	(0.0226)	(0.0797)	(0.2077)	(0.2135)	(0.2382)	(0.2398)	(0.1858)
Observations	3181	2377	1182	1172	1171	1171	1056
Father Restriction	no	yes	yes	yes	yes	yes	yes
Infant Mortality	no	no	no	no	no	no	yes
Pseudo-R^2	0.0128	0.0145	0.0441	0.0471	0.0491	0.0517	0.0318

[Notes] Columns (2) to (6) consider only individuals whose father was born after 1816. Column (7) considers only individuals whose fathers were born after 1816 and excludes individuals whose lifespan was smaller than 1 year. All estimates use clustered standard errors at the individual's father level.

* p<0.10
** p<0.05
*** p<0.01

Appendix F - Matching rule

The matching process among farmers from Stellenbosch was divided into two stages. In the first stage, we matched individuals between the Claims' Records and the *Opgaafrolle* using last names and names. We named the resulting dataset CR-OGR. The second stage consisted of matching the CR-OGR to the South African Families Database (SAF). The procedure adopted to match the CR-OGR to the SAF is described below.

a) If the name and last name of the individual matched perfectly between the CR-OGR and the SAF and this observation is unique in both datasets, it is a direct match.
b) If the name and last name of the individual matched perfectly between the CR-OGR and the SAF but this observation is not unique in the SAF, check for the genealogical information provided in the CR;
  b.1) If the genealogical information can be inferred in the CR and cross-checked successfully with the SAF, this is a direct match;
  b.2) If the genealogical information cannot be inferred or cannot be cross-checked successfully, seek the farm's name in the CR;
    b.2.1) If the name of the farm (defined as *'woonplek'* in the CR) can be inferred and cross-checked successfully, it is a semi-direct match;
    b.2.2) If the name of the farm can be inferred in the CR but cannot be cross-checked successfully in the SAF, seek the farm's location;
      b.2.2.1) If the farm's location in the CR matches with either the place of birth or place of death of the individual in the SAF, it is a weak match;
      b.2.2.2) If the farm's location in the CR does not match with either the place of birth or the place of death of the individual in the SAF, it is an impossible match. The observation will not be carried further in the process.
    b.2.3) If the name of the farm cannot be inferred in the CR, it is an impossible match. The observation will not be carried further in the process.
c) If the individual's name matched perfectly between the CR-OGR and the SAF, but this is not true for his/her last name, this is an impossible match;
  c.1) Exceptions are made for last names that clearly refer to the same family but contain spelling differences that can be attributed to language differences between English and Afrikaans (e.g. Berg/Bergh, Bernhardi/Bernhardie, Liebentrouw/Liebertrau, Roux/Rous). These cases were treated as direct matches.
d) If the individual's last name matched perfectly between the CR-OGR and the SAF, but this is not true for his/her name, this is an impossible match;
  d.1) Exceptions are made for names that contain spelling differences that can be attributed to style (e.g. Jan/Johan/Johannes). If the observation is unique, it is treated as a semi-direct match. If this observation is not unique, then the procedure described in **b)** is followed.
e) If the name or last name of the individual cannot be found in the SAF, it is an impossible match. The observation will not be carried further in the process.

References

Ager, P., Boustan, L.P., Eriksson, K., 2021. The intergenerational effects of a large wealth shock: white southerners after the Civil War. Am. Econ. Rev. 111 (11), 3767–3794.
Apouey, B., Clark, A.E., 2015. Winning big but feeling no better? The effect of lottery prizes on physical and mental health. Health Econ. 24 (5), 516–538.
Armstrong, J.C., Worden, N., 1989. The Slaves, 1652-1834. In: Elphick, R., Giliomee, H. (Eds.), The Shaping of South African Society, 1652-1840. Wesleyan University Press, pp. 109–162 Ed. by.
Bank, A., 1991. The decline of urban slavery at the Cape, 1806 to 1843. 22. Centre for African studies.
Black, S.E., Devereux, P.J., Salvanes, K.G., 2015. Losing heart? The effect of job displacement on health. ILR Rev. 68 (4), 833–861.
Bleakley, H., Ferrie, J., 2016. Shocking behavior: Random wealth in antebellum Georgia and human capital across generations. Q. J. Econ. 131 (3), 1455–1495.
Blumrosen, A.W., Blumrosen, R.G., 2006. Slave Nation: How Slavery United the Colonies and Sparked the American Revolution. Sourcebooks, Inc.
Boen, C., Yang, Y.C., 2016. The physiological impacts of wealth shocks in late life: evidence from the great recession. Soc. Sci. Med. 150, 221–230.
Carey, B., Ellis, M., Salih, S., 2004. Discourses of Slavery and Abolition. Springer.
Case, A., 2004. Does money protect health status? Evidence from South African pensions. Perspectives on the Economics of Aging. University of Chicago Press, pp. 287–312.
Catalano, R., et al., 2011. The health effects of economic decline. Annu. Rev. Public Health 32, 431–450.
Cesarini, D., Lindqvist, E., Ostling, R., Wallace, B., 2016. Wealth, health, and child development: evidence from administrative data on Swedish lottery players. Q. J. Econ. 131 (2), 687–738.
Cilliers, J., 2021. The South African families database. Histor. Life Course Stud. 11, 97–111.
Cohen, S., et al., 2012. Chronic stress, glucocorticoid receptor resistance, inflammation, and disease risk. Proc. Natl. Acad. Sci. 109 (16), 5995–5999.
Coupland, R., 1933. The British Anti-Slavery Movement. Thornton Butterworth.
Cutler, D.M., Lleras-Muney, A., Vogl, T., 2008. Socioeconomic status and health: dimensions and mechanisms. Tech. Rep. Natl. Bureau Econ. Res..
Davis, D.B., 1999. The problem of Slavery in the Age of Revolution, 1770-1823. Oxford University Press.
Deaton, A., 2003. Health, inequality, and economic development. J. Econ. Lit. 41 (1), 113–158.
Dooling, W., 1992. Slavery and amelioration in the graaff-reinet district, 1823–1830. South African Hist. J. 27 (1), 75–94.
Dooling, W., 2006. In search of profitability: wheat and wine production in the post-emancipation Western Cape. South African Hist. J. 55 (1), 88–105.
Dooling, W., 2007. Slavery, Emancipation and Colonial Rule in South Africa, 87. Ohio University Press.
Draper, N.A., 2008. "Possessing Slaves: Ownership, Compensation and Metropolitan British Society at the Time of Emancipation". Ph.D. thesis. University College London (University of London.
Drentea, P., Reynolds, J.R., 2015. Where does debt fit in the stress process model? Soc. Mental Health 5 (1), 16–32.
Drescher, S., 1987. Capitalism and Antislavery: British Mobilization in Comparative Perspective. Oxford University Press.
Duflo, E., 2000. Child health and household resources in South Africa: evidence from the old age pension program. Am. Econ. Rev. 90 (2), 393–398.
Dunkley, D.A., 2012. Agency of the Enslaved: Jamaica and the Culture of Freedom in the Atlantic World. Lexington Books.

Ekama, K., Fourie, J., Heese, H., Martin, L.-C., 2021. When Cape slavery ended: Introducing a new slave emancipation dataset. Explor Econ. Hist. 81, 101390.
Engelberg, J., Parsons, C.A., 2016. Worrying about the stock market: Evidence from hospital admissions. J. Finance 71 (3), 1227–1250.
Engerman, S.L., 1986. Slavery and emancipation in comparative perspective: a look at some recent debates. J. Econ. Hist. 46 (2), 317–339.
Erixson, O., 2017. Health responses to a wealth shock: evidence from a Swedish tax reform. J. Popul. Econ. 30 (4), 1281–1336.
Farrell, S., 2007. 'Contrary to the principles of justice, humanity and sound policy': the slave trade, parliamentary politics and the Abolition Act, 1807. Parliament. Hist. 26 (S1), 141–202.
Fichera, E., Gathergood, J., 2016. Do wealth shocks affect health? New evidence from the housing boom. Health Econ. 25 (S2), 57–69.
Fogel, R.W., Engerman, S.L., 1974. Philanthropy at bargain prices: notes on the economics of gradual emancipation. J. Legal. Stud. 3 (2), 377–401.
Fourie, J., 2013a. Slaves as capital investment in the Dutch Cape Colony, 1652-1795. In: Hillbom, E., Svensson, P. (Eds.), Agricultural Transformation in a Global History Perspective. Routledge, pp. 154–177 Ed. by.
Fourie, J., 2013b. The remarkable wealth of the Dutch Cape Colony: measurements from eighteenth-century probate inventories. Econ. Hist. Rev. 66 (2), 419–448.
Frijters, P., Haisken-DeNew, J.P., Shields, M.A., 2005. The causal effect of income on health: evidence from german reunification. J. Health Econ. 24 (5), 997–1017.
Gallo, L.C., Matthews, K.A., 2003. Understanding the association between socioeconomic status and physical health: do negative emotions play a role? Psychol. Bull. 129 (1), 10.
Giliomee, H., 2003. The Afrikaners: Biography of a People. University of Virginia Press.
González, F., Marshall, G., Naidu, S., 2017. Start-up Nation? Slave wealth and entrepreneurship in civil war Maryland. J. Econ. Hist. 77 (2), 373–405.
Graham, A., 2021. Slavery, banks and the ambivalent legacies of compensation in South Africa, mauritius and the caribbean. J South Afr. Stud. 47 (3), 473–487.
Green, E., 2014. The economics of slavery in the eighteenth-century Cape Colony: revising the nieboer-domar hypothesis. Int. Rev. Soc. Hist. 59 (1), 39–70.
Guell, M., Rodríguez Mora, J.V., Telmer, C.I., 2014. The informational content of surnames, the evolution of intergenerational mobility, and assortative mating. Rev. Econ. Stud. 82 (2), 693–735.
Hajat, A., Kaufman, J.S., Rose, K.M., Siddiqi, A., Thomas, J.C., 2010. Long-term effects of wealth on mortality and self-rated health status. Am. J. Epidemiol. 173 (2), 192–200.
Hedefalk, F., Quaranta, L., Bengtsson, T., 2017. Unequal lands: Soil type, nutrition, and child mortality in southern Sweden, 1850–1914. Demogr. Res. 36, 1039–1080.
Hengherr, E.C.W., 1953. "Emancipation-and after: a study of Cape slavery and the issues arising from it, 1830-1843." Ph.D. thesis. University of Cape Town.
Hinks, P., McKivigan, J., 2007. Encyclopedia of Antislavery and Abolition, 1. Greenwood Publishing Group, Westport.
Holt, T.C., 1992. The Problem of Freedom: Race, Labor, and Politics in Jamaica and Britain. Johns Hopkins University Press, pp. 1832–1938.
Kalwij, A., 2018. The effects of competition outcomes on health: Evidence from the lifespans of US Olympic medalists. Econ. Hum. Biol. 31, 276–286.
Krauss, F., 1966. A description of Cape Town and its way of life, 1838–1840. Q. Bull. S. Afr. Libr. 21, 2–12.
Lambert, D., 2005. White Creole Culture, Politics and Identity During the Age of Abolition, 38. Cambridge University Press.
Liebenberg, B.J., 1959. "Die Vrystelling Van Die Slawe in Die Kaapkolonie en die Implikasies Daarvan". MA thesis. University of the Orange Free State.
Lindahl, M., 2005. Estimating the effect of income on health and mortality using lottery prizes as an exogenous source of variation in income. J. Hum. Resour. 40 (1), 144–168.
Martins, I, Cilliers, J., Fourie, J., 2022. Legacies of Loss: The Health Outcomes of Slaveholder Compensation in the British Cape Colony. Inter-university Consortium for Political and Social Research [distributor], 2022-12-27, Ann Arbor, MI doi:10.3886/E183526V3.
Meltzer, J.L., 1989. "The Growth of Cape Town Commerce and the Role of John Fairbairn's Advertiser, 1835-1859". Ph.D. thesis. University of Cape Town.
Mosley, W.H., Chen, L.C., 1984. An analytical framework for the study of child survival in developing countries. Popul. Dev. Rev. 10, 25–45.
van Norren, B., van Vianen, H.A., 1986. The malnutrition-infections syndrome and its demographic outcome in developing countries: a new model and its application. Programm. Committee Demogr. Res..
Parman, J., 2016. Health, gender and mobility: intergenerational correlations in longevity over time.
Piraino, P., Muller, S., Cilliers, J., Fourie, J., 2014. The transmission of longevity across generations: the case of the settler Cape Colony. Res. Soc. Stratif. Mobil. 35, 105–119.
Du Plessis, S., Jansen, A., von Fintel, D., 2015. Slave prices and productivity at the Cape of Good Hope from 1700 to 1725: did everyone win from the trade? Cliometrica 9 (3), 289–330.
Rijpma, A., Cilliers, J., Fourie, J., 2019. Record linkage in the Cape of Good Hope Panel. Hist. Methods: J. Quant. Interdiscip. Hist. 1–16.
Ross, R., 1993. Emancipations and the Economy of the Cape Colony. Slavery Abolit. 14 (1), 131–148.
Schwandt, H., 2018. Wealth shocks and health outcomes: Evidence from stock market fluctuations. Am. Econ. J.: Appl. Econ. 10 (4), 349–377.
Shell, R., 1994. Children of Bondage: A Social History of the Slave Society at the Cape of Good Hope, 1652-1838. Wesleyan University Press published by University Press of New England.
Smith, J.P., 1999. Healthy bodies and thick wallets: the dual relation between health and economic status. J. Econ. Perspect. 13 (2), 145–166.
Snyder, S.E., Evans, W.N., 2006. The effect of income on mortality: evidence from the social security notch. Rev. Econ. Stat. 88 (3), 482–495.
Spence, C.Q., 2014. "Ameliorating Empire: Slavery and Protection in the British Colonies, 1783-1865". Harvard University Ph.D. thesis.
Swanepoel, C., 2017. "The Private Credit Market of the Cape Colony, 1673-1834: Wealth, Property Rights, and Social Networks". Ph.D. thesis. Stellenbosch University.
Swanepoel, C., Fourie, J., 2018. Impending Ruin' or 'Remarkable wealth'? The role of private credit markets in the 18th-Century Cape Colony. J. South Afr. Stud. 44 (1), 7–25.
Theal, G.M., 1891. History of South Africa, 1795-1834, 3. S. Sonnenschein & Company.
Du Toit, A., Giliomee, H., 1983. Afrikaner Political Thought: 1780-1850. University of California Press.
Vernal, F., 2011. Discourse networks in South African slave society. Afric. Hist. Rev. 43 (2), 1–36.
Williams, E., 1944. Capitalism and Slavery. University of North Carolina Press.
Worden, N., 1985. Slavery in Dutch South Africa, 44. Cambridge University Press.
Worden, N., 1992. Diverging histories: slavery and its aftermath in the cape colony and mauritius. South Afric Hist J. 27 (1), 3–25.
Worden, N., 2017. Adjusting to emancipation: Freed slaves and farmers in the mid-nineteenth-century South-Western Cape. In: James, W., Simons, M. (Eds.), Class, Caste and Color. Routledge, pp. 31–39 Ed. by.