
Calculation of Reparations

These are detailed in the following table.

The first task is to estimate the total number of "adult working lives" spent as owned people. (Upper section of the table). We need "adult working lives", not total people, for this exercise as the amount of reparations for property seizure depends on the number of working lives, not total people.

To get that, I take decadal estimates of the total slave population from 1860 back to 1790. Using the growth rates in those years (30 percent per decade), I "pre-ject" for each decade back to 1610.

Then, for each decade "census", some of the people in that decade are also present in the earlier decade "census". To yield total working lives, I have to eliminate such double-counting from these decadal census totals.

To do that, I assume that for the duration of the slavery period, the average working life of an owned-person was 20 years.

This estimate may seem low. But this assumption is congruent with the "at least" spirit of all elements of the calculation. It also reflects that although people typically began slave work shortly after their infancy, life expectancy in the conditions was low, and that for the very large cohort which was emancipated, half of these were emancipated with half of their working lives still ahead of them as free people. That also lowers the average.

I use this assumption to project how many people in any decade "census" are also present in subsequent decadal censuses. (These are the three "working columns" under footnote 2.) Then, for each decadal census, I subtract the number of people already counted in earlier censuses to yield, for each decade, the number of "new" people.

So, for example, I assume that the 1065 people in the 1610 census were all new. Column 2/ shows that of these 1065, $\frac{3}{4}$ or 799 were still present for the 1620 census, $\frac{5}{8}$ or 666 were still present for the 1630 census, and $\frac{1}{2}$ or 533 were still present for the 1640 census. These fractions imply the assumed average working life duration of 20 years.

Thus, in 1620, of the total of 1522 owned people, 799 were still present from the 1610 census, so subtracting those yields that there were 723 "new" people in 1620.

Then, to continue the example, of those 723 "new people" in 1620, 542 were still present for the 1630 census, 361 for the 1640 census, and 181 for the 1650 census. So to yield the total number of "new people" in 1630, I take the total census number for 1630 of 2,174, and I subtract 533 (who were counted in the 1610 census) and subtract 542 (the number of new people in 1620 still present in 1630) to yield the total number of new people implied by the 1630 Census, which gives 1,099.

The same iterative process is continued throughout the slavery period, with the column "new" indicating the total number of people in each decade who were not enumerated in earlier censuses. Totalling this yields the total number of working lives worked under slavery.

On the given assumptions, and available data, that answer is 8.65 million working lives under slavery.

As mentioned, that is "working lives", not "people". If the assumed working life is longer than the 20 years assumed here, then the total number of working lives is commensurately reduced, but the output per working life is proportionately higher also.

Note that the assumption of 20 years average working life does not change the total reparations due. As will be seen below, if the working lives are longer, so there are fewer of them, but they each yield more per working life, that will be reflected by adjusting upwards the assumption used in the calculation for the price of an "equivalent white middle class" house today. The working lives and current house price assumptions thus have to be made jointly in this exercise to calculate reparations owed.

Having calculated 8.6 million working lives on this basis, I next propose that each is owed compensation of two current white middle class houses. One is for seizure of property, and the second is for denial of "economic agency". The reason for valuing loss of agency in that way is noted in the main text. And the valuation of loss of agency using working lives rather than actual lives is justified by the assumption that the value of loss of agency depends on its total duration, rather than the number of persons enduring it.

I then assume that the appropriate white middle class house in the US associated with a working life of 20 years is \$ 275,000. Multiplying working lives by two and by 275,000 yields the total owed in reparations, US\$4,7 trillion, or 23 percent of GDP.

The total African American population is 43,8 million, which is 13.4 percent of the total population, of whom I assume 20 percent are children, yielding an adult population of 35 million. That yields a payout of US\$ 136,000 per African American adult in reparations.

This is a “first pass” calculation designed to yield an order of magnitude. Given the several “at least” assumptions, this number rounds to US\$150,000 per adult African American.

Further refinements are clearly possible. These would take into account additional sources on population numbers especially pre 1790, other indicators of the duration of working lives, the demographic structure of the population that was emancipated in 1863, and the fact that many people, though legally emancipated in 1863 were nevertheless forced to continue working as slaves for longer as news did not travel or until their areas were liberated by Union forces.

And critically, even if this sum was returned to African Americans, that would simply return property, not levy a “tax on externalities”. The amount for that would have to be calculated in addition.

Year	Assumed adult equivalent lifespan of 40 years				
	Owned People 1/	New	2/	2/	2/
1610	1,065	1,065			
1620	1,522	723	799		
1630	2,174	1,099	533	542	
1640	3,105	1,653	266	361	824
1650	4,436	2,466	1240	181	550
1660	6,338	3,387	827	1850	275
1670	9,054	4,867	413	1233	2540
1680	12,934	6,974	3651	617	1693
1690	18,477	9,967	2434	5230	847
1700	26,396	14,217	1217	3487	7475
1710	37,709	20,319	10663	1743	4983
1720	53,870	29,030	7109	15239	2492
1730	76,957	41,470	3554	10159	21773
1740	109,938	59,241	31103	5080	14515
1750	157,054	84,631	20735	44430	7258
1760	224,364	120,902	10568	29620	63473
1770	320,519	172,717	90677	14810	42316
1780	457,885	246,738	60451	129538	21158
1790	654,121	352,483	30226	86358	185054
1800	851,532	420,621	264363	43179	123369
1810	1,103,700	550,308	176242	315466	61685
1820	1,509,904	798,742	88121	210311	412731
1830	1,983,860	1,004,495	599056	105155	275154
1840	2,481,390	1,191,071	399371	753371	137577
1850	3,200,364	1,605,128	199685	502247	893303
1860	3,950,511	1,900,006	1203846	251124	595536
Total People Equivalents		8,644,321			

1/ Highlighted yellow cells are population pre-jections, assuming a fixed decadal growth rate of 30 percent, reflecting the pattern of the actual data 1790-1860.

2/ These are “calculation” columns. The first number 799 shows that of the 1085 new owned people in 1610, 799 (or 3/4 of the 1085) were present for the 1620 census, while 533 were present for the 1630 census. Such people already counted in earlier “censuses”, summed across the three working columns, are deducted from the total stock of owned people in each subsequent census to give the number of “new people” in each census. The total of these “new people” is the total number of adult equivalent working lives spent in slavery. This is described as “total people equivalents” because while the working lives of some may not have reached 40 years, the “census” number shows that “someone” was working for all that time, and the total working life equivalents is the basis for calculation of property seized.

The total people equivalent concept is also used to calculate the losses from “loss of agency”, assuming that the loss from agency is proportional to the time it is suffered, not the number of actual people who suffer it

Estimated people whose adult lives lived in enslavement	8,644,321
Houses in compensation each	2
2019 Value of each equivalent house	275,000
Total reparations to be paid in US\$	4,754,376,301,948
Adult population of African Americans in 2017	35,072,349
Payout per adult	135,559
US GDP	20,500,000,000,000
Reparations in percent of GDP	23

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