A Report on “Accounting for Slavery: State-Level Gross Domestic Product in the United States, 1839–1899” by Francis (2025)

Reviewer 2

February 06, 2026

Disclaimer

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> I am wiser than this person; for it is likely that neither of us knows anything fine and good, but he thinks he knows something when he does not know it, whereas I, just as I do not know, do not think I know, either. I seem, then, to be wiser than him in this small way, at least: that what I do not know, I do not think I know, either.
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> Plato, *The Apology of Socrates*, 21d

> To err is human. All human knowledge is fallible and therefore uncertain. It follows that we must distinguish sharply between truth and certainty. That to err is human means not only that we must constantly struggle against error, but also that, even when we have taken the greatest care, we cannot be completely certain that we have not made a mistake.
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> Karl Popper, 'Knowledge and the Shaping of Reality'

Overview

Citation: Francis, J. (2025). Accounting for Slavery: State-Level Gross Domestic Product in the United States, 1839–1899. Unpublished paper.

URL: https://github.com/joefrancis505/Accounting_for_Slavery

Abstract Summary: This paper introduces new state-level GDP estimates for fifteen sectors in the US (1839–1899) to analyze slavery's role in economic history, suggesting that while slavery was microeconomically inefficient, it was macroeconomically crucial for the nineteenth-century cotton export boom.

Key Methodology: Estimation of state-level Gross Domestic Product (GDP) from the output side for fifteen sectors (1839–1899) using national estimates (Gallman) and distributing them via census data, labor force series, and wage proxies.

Research Question: What was the role of slavery and its legacies in the economic history of the United States, particularly concerning regional GDP and the North-South divergence?

Editor's Note

Reviewer 2's report raises several points that could be addressed to strengthen the paper for publication. The reviewer's primary concern—that the estimates are "fragile" because they rely on proxies—highlights a challenge inherent in historical national accounting, which often requires reasonable assumptions where direct data is missing. To address this, it may be helpful to demonstrate that the paper's conclusions are robust to these assumptions. Similarly, the critique of the "King Cotton" argument appears to confuse sectoral value-added accounting with total economic impact. The paper could clarify that the "linkages" the reviewer claims were ignored are, in fact, captured in the Service sector estimates. If the cotton economy had generated massive downstream wealth, it would likely appear in the transportation and finance sectors of the data. That it does not is a key finding of the paper, not an omission.

To address the "fragility" critique, the paper could be strengthened by adding a brief sensitivity analysis. It may not be necessary to reconstruct the entire dataset. Instead, a focused analysis could calculate how much the headline figures—Southern GDP per capita relative to the North—would change if the most contentious parameters were altered. For instance, if the "Shelter" weight for the enslaved were doubled or if a different rate of farm improvements were assumed, would the South still fall behind the North after the Civil War? If the trends remain similar, the paper could explicitly state that "even under conservative assumptions, the divergence persists." This would effectively neutralize the claim that the results depend on "Mickey Mouse numbers."

Regarding the "King Cotton" thesis, the argument could be sharpened to highlight that standard GDP accounting avoids double-counting. The reviewer argues that the analysis missed the backward and forward linkages of cotton. A possible response could note that the value added by financing, shipping, and insuring cotton is included in the "Services" sector estimates. The fact that the Southern service sector was relatively small, as shown in Table 1, supports the argument that cotton did not generate the transformative economic spillovers often claimed. Moving this logic from the footnotes to the main text could help to address the criticism directly.

On the issue of free labor migration and the counterfactual, the reviewer correctly notes that relying on a self-citation to an unpublished paper is not ideal. Expanding the discussion in the text to briefly summarize the *evidence* from that unpublished work, rather than just citing it, would make the argument more self-contained. This could involve explicitly mentioning the magnitude of the collapse in land values and explaining the economic logic: that the premium on Southern land was a capitalization of the coercion rent. This would make the argument more persuasive without requiring the reader to trust an external source. Finally, correcting the clerical errors in Table 5 will help restore confidence in the paper's quantitative rigor. The principal plan could involve adding a paragraph of sensitivity analysis, clarifying the location of "linkages" in the sectoral accounts, and mathematically correcting Table 5. These revisions would not require a retreat from the paper's central thesis and would directly address the reviewer's concerns.

Summary

Is It Credible?

This paper presents an ambitious revision of nineteenth-century American economic history, centered on the construction of a new, granular dataset of state-level Gross Domestic Product (GDP) from 1839 to 1899. The author uses these estimates to challenge the consensus view—associated largely with Wright—that slavery impoverished the South and that the region's apparent antebellum prosperity was an illusion driven by a temporary cotton boom. Instead, the paper argues that the South was relatively wealthy before the Civil War, with a GDP per capita that was 87 percent of the national average and roughly 80 percent of the North's (pp. 9, 12). The author posits a dual nature to slavery: it was "highly inefficient from a microeconomic perspective" due to labor misallocation, yet macroeconomically necessary because free labor allegedly would not have settled the Deep South's agricultural sector (p. 1). While the effort to produce state-level accounts for every census year is a significant contribution, the credibility of the paper's broader historical arguments is constrained by the fragility of the underlying data construction and the reliance on unsupported counterfactuals.

The foundation of the paper's argument is the new GDP series, which the author constructs by distributing national aggregates to states using various proxies. While the author candidly acknowledges that these figures are approximations—quoting Platt's reference to "Mickey Mouse Numbers"—the methodological choices used to build them introduce significant uncertainty (p. 7). For example, the "Shelter" component of GDP is estimated by weighting the housing services consumed by an enslaved person at an arbitrary 10 percent of a free person (p. 6). Similarly, "Farm improvements" are proxied by labor force growth, with the assumption that investment was zero in any state where the agricultural labor force shrank (p. 5). These are static, untested parameters applied across a dynamic sixty-year period. Since the paper provides no sensitivity analysis, it is unclear how much the headline findings—such as the precise level of Southern relative wealth or the magnitude of the postbellum decline—depend on these specific, arbitrary choices. The presence of clerical inconsistencies in Table 5, where the GDP per worker calculations do not mathematically align with the aggregate totals, further suggests a need for caution regarding the precision of the quantitative evidence (p. 15).

Beyond the data construction, the paper's interpretative claims vary in strength. The rebuttal to Wright regarding the wealth of the antebellum South appears credible; the author notes that Wright relied on preliminary 1860 census data, whereas the final version shows Southern wealth per capita was much closer to Northern levels (p. 11). However, the paper's attempt to minimize the economic importance of cotton is less convincing. By calculating that cotton accounted for only about 14 percent of Southern GDP, the author relies on a narrow value-added definition that excludes the sector's massive backward and forward linkages, such as finance and transportation (p. 12). Dismissing these linkages in a footnote as insufficient to change the result ignores the structural reality of an export-led economy (p. 13).

Finally, the paper's most provocative theoretical claim—that slavery was a macroeconomic necessity because free labor would not have migrated to the Deep South—rests on a weak evidentiary basis. The author asks rhetorically, "what exactly would have been the attraction of the Deep South for the free population?" and cites his own unpublished work to assert that land values collapsed without coercion (p. 16). This is a strong counterfactual assertion treated as a logical conclusion. Without comparative evidence from other frontier regions or a more robust analysis of migration incentives, the claim that American capitalism was "substantially indebted to slavery" remains a hypothesis rather than a proven fact (p. 1). The paper successfully complicates the narrative of Southern poverty, but its broader conclusions about the necessity of slavery and the specific drivers of decline are tethered to methodological assumptions that remain largely untested.

The Bottom Line

This paper provides a potentially valuable new dataset for economic historians, but its headline conclusions should be viewed with skepticism due to methodological fragility. While the author effectively challenges previous estimates of antebellum Southern wealth using superior census data, the broader arguments regarding the macroeconomic necessity of slavery and the limited role of cotton rely on arbitrary estimation parameters and unsupported counterfactuals. Readers can accept the finding that the South was wealthier than previously thought while remaining agnostic on the author's causal explanations for the region's subsequent decline.

Potential Issues

Foundational methodological choices in GDP construction: The paper's new state-level GDP estimates, which provide the empirical foundation for all of its major claims, are constructed using several proxies and parameters whose validity is debatable and whose robustness is not tested. For instance, the "Shelter" component of GDP is proxied using population multiplied by wages, with the housing services consumed by an enslaved person arbitrarily weighted at 10 percent of a free person (p. 6). This method is conceptually questionable, as housing services are a function of the housing stock, not local wage levels, and the 10 percent weight is an unsupported parameter that mechanically reduces the measured GDP of states with large enslaved populations. Similarly, "Farm improvements" are proxied by the growth in the agricultural labor force multiplied by farm wages, with the unsupported assumption that investment is zero in any state where the agricultural labor force shrinks (p. 5). This ignores the possibility of labor-saving capital investment. Furthermore, the agricultural estimates rely on static parameters applied across a 60-year period of significant technological change, including feed-to-corn ratios taken from a single 1848 source and a minimum milk yield figure the paper itself describes as an "arbitrary procedure" (pp. 4–5). While the paper acknowledges that its estimates are "approximate and subject to revision," it provides no sensitivity analysis to demonstrate how its conclusions might change if these arbitrary or conceptually weak parameters were altered (p. 7). The reliability of the paper's entire argumentative structure is therefore dependent on the validity of these untested methodological choices.

Unsupported counterfactual claim regarding free labor migration: A central argument of the paper is that slavery was a macroeconomic necessity for the development of the Deep South because free labor would not have migrated to the region's low-productivity agricultural sector. The paper asks, "Without a captive labor force to exploit, what exactly would have been the attraction of the Deep South for the free population?" (p. 16). This strong counterfactual claim about migration patterns is presented as a logical conclusion but is not substantiated with evidence from the literature on westward expansion or agricultural settlement. The only evidence offered is a citation to the author's own unpublished manuscript for the related claim that farm values collapsed after abolition (p. 16). Relying on a non-peer-reviewed self-citation for a crucial premise weakens the independent standing of the paper's argument.

Narrow definition of cotton's economic importance: The paper argues against the "King Cotton" thesis by showing that cotton cultivation accounted for only about 14 percent of Southern GDP in 1859, implying that "world demand for cotton could not have had the overwhelming importance that Wright ascribes to it" (p. 12). This conclusion, however, is a direct result of a value-added accounting method that, by design, measures only the direct output of the farming sector and excludes backward and forward linkages (e.g., transportation, finance, insurance, processing) that were central to the broader thesis of an economy organized around the cotton commodity chain. The paper addresses this limitation in a footnote, arguing that the price margins between the farm and the port of export were "too small for cotton's impact on GDP to be greatly increased" (p. 13, fn 8). This brief analysis of a single linkage may not be sufficient to dismiss the broader argument about the multiplier effects of the export economy, and thus the paper's conclusion may be an artifact of its methodological scope.

Potentially tenuous proxy for home manufacturing: The paper's method for estimating the output of home manufacturing in the post-Civil War period may be unreliable. The estimates are extrapolated forward from 1869 to 1889 "using the agricultural labor force" as a proxy for output (p. 6). The paper provides no economic rationale for this choice. While home manufacturing was a predominantly rural activity, using the agricultural labor force as a proxy assumes that output per farm worker remained constant or followed the trend in the labor force. This is a questionable assumption for a sector that was in rapid structural decline due to competition from factory manufacturing and increasing market integration.

Clerical inconsistencies in key data table: Table 5, which presents the core data for the paper's argument about slavery's microeconomic inefficiency, contains several internal inconsistencies (p. 15). The listed GDP values for the "Slave states" rows do not align with the per-worker productivity figures. For example, the 2.6 million free workers with a GDP per worker of $410 would produce $1.066 billion in output, not $1.0 billion as listed. The total for slave states, calculated from the per-worker figure (5.1 million workers * $306/worker), would be $1.56 billion, not $1.5 billion. Furthermore, the calculation for the "Free states" appears incorrect: $3.2 billion in GDP divided by 5.9 million workers equals $542 per worker, not $510 as reported in the table. While these are likely rounding or clerical errors, they affect the precision of the quantitative comparisons that are central to the paper's conclusions.

Future Research

Sensitivity analysis of GDP parameters: Future work should test the robustness of the state-level GDP estimates by varying the arbitrary parameters used in their construction. Specifically, researchers could recalculate the series using a range of weights for enslaved housing services (e.g., 0 percent to 50 percent) and alternative proxies for farm improvements that allow for capital deepening even when the labor force contracts. This would establish error bounds for the estimates and determine whether the trends in regional inequality are artifacts of specific methodological choices.

Quantification of cotton linkages: To rigorously test the "King Cotton" thesis, future research should move beyond direct value-added calculations and estimate the magnitude of the cotton sector's forward and backward linkages. This could involve input-output analysis using data on the transportation, insurance, and financial services sectors in the South and North to determine the total share of national GDP dependent on the cotton commodity chain, rather than dismissing these effects based on price margins alone.

Comparative analysis of free labor migration: Future research could empirically test the claim that free labor would not have settled the Deep South by analyzing migration patterns to ecologically similar regions or during periods of different institutional arrangements. By comparing land prices, wage premiums, and settlement rates in the postbellum South against other frontier regions available to free farmers, researchers could provide evidence for or against the counterfactual that coercion was a prerequisite for the region's agricultural development.

Copyediting

The manuscript presents a significant undertaking in constructing state-level GDP estimates to revise the economic history of the antebellum South. However, the credibility of the argument is currently undermined by arithmetic inconsistencies in key data tables and a reliance on unexplained methodological proxies. The most critical issue is found in Table 5, where the reported GDP per worker figures do not mathematically align with the aggregate GDP and labor force totals provided. Additionally, several arguments regarding the "Shelter" sector and the post-abolition collapse of land values rely on assumptions or external citations that are not fully substantiated within the text itself. Addressing these calculation errors and explicitly incorporating the evidence for the counterfactual claims will significantly strengthen the paper's empirical foundation.

- **p. 4** "Briefly put, they are calculated from national GDP estimates that are mainly taken from Robert E. Gallman's (1956; 1960; 1966) pioneering work on gross national product (GNP)." This phrasing blurs the distinction between the two metrics. To ensure the conversion logic is transparent, consider clarifying that Gallman's GNP figures were adjusted to GDP (likely by netting out net factor income from abroad) before being distributed to the states, or specify if the terms are being used interchangeably in this specific context.

- **p. 6** "Shelter is estimated using the total population from census data, with the enslaved weighted at 10 percent of the free..." The rationale for the specific "10 percent" weighting is not provided. As this is a parameter that significantly affects the calculation of Southern wealth, consider inserting a brief justification or a citation for this figure. If it is an assumption based on the relative quality of housing stock, explicitly stating this would preempt concerns about the figure being arbitrary.

- **p. 6** “Home manufacturing is from census data, extrapolated forward from 1869 to 1889 using the agricultural labor force...” The economic logic for using the agricultural labor force as a proxy for home manufacturing is not immediately obvious to the reader. Consider adding a brief clause explaining that home manufacturing was predominantly a rural, off-season activity undertaken by farm households, which justifies linking its output to the size of the agricultural workforce.

- **p. 7** “Yet the new estimates are still approximate and subject to revision.” While this acknowledgment is honest, the paper would benefit from a brief sentence or two of sensitivity analysis here or in the discussion. Consider noting whether the central finding—that the South was relatively wealthy—holds true even if the more contentious parameters (such as the shelter weight or farm improvement proxy) are adjusted conservatively. This would demonstrate robustness against the “Mickey Mouse numbers” critique.

- **p. 13** “The margins between these values are too small for cotton’s impact on GDP to be greatly increased by including the value added to the crop after it left the farm.” (Footnote 8). This argument is crucial for dismissing the “linkages” critique but could be clearer. Consider revising to explicitly state that the difference between the farm-gate price and the export price represents the maximum possible value added by the transportation, insurance, and finance sectors, thereby placing a hard ceiling on the magnitude of these “missing” linkages.

- **p. 13** “Table 4 indicates that cotton accounted for about 14 percent of Southern GDP in 1859...” To further strengthen the argument against the “King Cotton” thesis, consider explicitly connecting this finding to the Service sector estimates in Table 1. You might clarify that if cotton had generated massive downstream wealth, it would appear in the transportation and finance components of the

Service sector, which the data show were relatively small in the South. This clarifies that the "linkages" were not ignored but were measured and found to be modest.

- **p. 15** Table 5. There are significant arithmetic discrepancies in this table that need to be resolved. For example, the "Free states" row lists a Labor force of 5.9 million and GDP of $3.2 billion; however, $3.2 billion divided by 5.9 million equals approximately $542 per worker, not the $510 reported. Similarly, the "Slave states" row ($1.5 billion / 5.1 million) suggests a per-worker GDP of roughly $294, not $306. Please recalculate all values in this table to ensure the "GDP per worker" multiplied by the "Labor force" equals the "GDP" column (allowing for minor rounding), as these errors cast doubt on the quantitative rigor of the analysis.

- **p. 16** "...which explains why farm values per acre collapsed in the Deep South after abolition (Francis 2025)." Relying on a citation to an unpublished paper for such a central counterfactual claim weakens the argument. Consider revising this sentence to explicitly include the key data point from that work—for example, "which explains why farm values per acre collapsed by [X] percent in the Deep South..."—so that the evidence supporting the necessity of coercion is self-contained within this article.

Proofreading

No issues found.