A Report on "The Periphery's Terms of Trade in the Nineteenth Century: A Methodological Problem Revisited" by Francis (2015)

Reviewer 2

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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.

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.

Karl Popper, 'Knowledge and the Shaping of Reality'

Overview

Citation: Francis, J. A. (2015). The Periphery's Terms of Trade in the Nineteenth Century: A Methodological Problem Revisited. *Historical Methods*, Vol. 48, No. 1, pp. 52–65.

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Abstract Summary: This article argues that existing estimates of the periphery's nineteenth-century terms of trade suffer from a major downward bias because they use core country prices as proxies, ignoring dramatic price convergence. Correctly measured, the periphery's terms-of-trade boom was likely longer, greater, and more widespread than previously estimated, reinforcing Williamson's grand narrative but requiring revision of its details.

Key Methodology: Historical data analysis, comparison of "own-price" and "proxy" terms-of-trade estimates for six peripheral countries (including a detailed two-good test using Indonesian and British price data), and statistical correlation analysis (Pearson coefficients).

Research Question: Does the use of core country prices as proxies for peripheral country prices introduce a downward bias in estimates of the periphery's nineteenth-century terms of trade?

Summary

Is It Credible?

This article by Francis is a methodological critique of historical economics, specifically targeting the influential datasets constructed by Williamson regarding the "terms of trade" (the ratio of export prices to import prices) for peripheral countries in the nineteenth century. Francis argues that Williamson's narrative—that the periphery experienced a boom in terms of trade due to globalization—is correct in principle but flawed in measurement. The central claim is that Williamson and others relied on "proxy" prices from core markets (like London or New York) to estimate prices in the periphery. Francis contends that this approach ignores the massive "price convergence" caused by falling transport costs, thereby introducing a "major downward bias" that obscures the true magnitude and duration of the boom (p. 52).

The methodological core of the article is highly credible. The logic that falling transport costs would narrow the gap between core and peripheral prices is economically sound. By comparing "proxy" estimates with "own-price" estimates (derived from local data) for countries like Indonesia, Francis convincingly demonstrates that proxy estimates tend to understate the rise in export prices and the fall in import prices. This bias is sufficient to reverse the sign of the trend, making an improvement look like a deterioration. However, the credibility of the article wavers when it moves from identifying this bias to asserting specific historical revisions. The claim to have resolved the "Indian paradox"—the puzzle of why India deindustrialized without a terms-of-trade boom—is presented as a major finding, yet it rests largely on inference rather than direct evidence. The article admits that "Definitive proof of India's nineteenth-century terms-of-trade boom awaits a more complete reconstruction of the country's price history" (p. 60). The argument relies on an analogy

with Indonesia and the assumption that similar market forces applied, rather than on the empirical data required to definitively "resolve" the paradox for the critical 1800–1860 period.

Similarly, the article's revisionist timeline for the global terms-of-trade boom is speculative. Francis suggests the boom likely "continued for considerably longer, possibly up to the First World War" (p. 61), contradicting Williamson's finding of a peak around 1860. While this is a logical deduction from the identified bias, the article does not actually construct a new, bias-corrected aggregate index to prove it. The analysis is also weakened by some technical inconsistencies. The statistical validation of the author's preferred "adjusted proxy" method relies on a Hodrick-Prescott filter with a smoothing parameter of 300, an unconventional choice for annual data that is not justified in the text and may artificially inflate the reported correlations (p. 60). Furthermore, the classification of existing datasets appears somewhat loose; for instance, the Ottoman Turkey series is labeled as an "adjusted proxy" in the summary, despite the Appendix noting that its import prices were an "unadjusted index" for the first half of the century, making it a hybrid series rather than a fully adjusted one (pp. 56, 64).

Despite these limitations, the article's primary contribution remains intact. It successfully casts doubt on the reliability of standard "proxy" measures used in global economic history. While the specific alternative narratives proposed for India and the global periphery are hypotheses rather than proven facts, the demonstration that the existing data is structurally biased forces a re-evaluation of the "Great Divergence." The article is credible as a critique that dismantles old certainties, even if it does not fully succeed in building the new structure to replace them.

The Bottom Line

Francis convincingly demonstrates that existing estimates of the nineteenth-century terms of trade for poor countries are flawed due to their reliance on European prices, which fail to account for falling transport costs. However, the article's specific counter-claims—that the boom lasted until 1913 and that India definitely experienced a boom similar to Indonesia's—are plausible extrapolations rather than empirically proven findings. The work is a vital methodological corrective, but the revised historical narrative remains incomplete without further data reconstruction.

Potential Issues

Resolution of the "Indian paradox" is an inference rather than an empirical finding for the critical early period: The article's claim to have resolved the "Indian paradox"—the puzzle of India's deindustrialization occurring without a terms-of-trade boom—is presented as a key finding, but the evidence for the crucial pre-1860 period is indirect. The article argues the paradox is an "illusion" caused by biased proxy data (p. 59). While it presents an "own-price" estimate for India from 1861 onward that shows an improving trend, the paradox as defined by Williamson concerns the period "between 1800 and 1890" (pp. 55, 59). For the first six decades of the nineteenth century, the article's resolution rests on an argument from analogy with Indonesia and the theoretical expectation that similar globalization dynamics should have produced a similar outcome. The text acknowledges that "Definitive proof of India's nineteenth-century terms-of-trade boom awaits a more complete reconstruction of the country's price history" (p. 60). Therefore, while the methodological critique is strong, the claim in the abstract that the case of India "illustrated" the article's thesis is based more on a plausible hypothesis for the early period than on direct empirical demonstration.

The conclusion on the duration of the periphery's boom is a speculative extrapolation: The article suggests that the terms-of-trade boom for the "poor periphery" did not peak around 1860, as Williamson's data suggests, but "continued for considerably longer, possibly up to the First World War" (p. 61). This is a significant revisionist claim. However, it appears to be an inference based on the logic of the article's critique rather than a conclusion supported by new aggregate evidence. The article successfully demonstrates a downward bias in proxy estimates for several countries and shows a long-run boom for Indonesia (p. 56). It does not, however, construct a new, bias-adjusted aggregate index for the "poor periphery" that would be required to empirically establish a new timeline for the boom as a whole. The

conclusion is presented with appropriate hedging ("More likely," "it seems probable"), but it remains a hypothesis generated by the analysis, not a finding proven by it.

Statistical analysis relies on an unconventional and unjustified parameter choice: A key piece of evidence supporting the author's preferred estimation methods is a statistical analysis in Table 2, which reports correlations between different estimates (p. 60). To separate the data into trend and cyclical components, the author uses a Hodrick-Prescott (HP) filter. The footnote states that the smoothing parameter (lambda) was set to 300. For annual data, as used here, the conventional lambda value is 100, with some literature advocating for much lower values. A value of 300 is unusually high and will produce a very smooth, rigid trend. The article provides no justification for this non-standard choice, nor does it conduct any sensitivity analysis to show whether the reported correlations are robust to using a more conventional parameter. This lack of transparency raises the possibility that the quantitative results supporting the article's methodological claims could be an artifact of this specific parameter choice.

The reclassification of existing data is applied somewhat inconsistently: The article's critique of Williamson's dataset hinges on a detailed re-evaluation of the 21 underlying country series, which are sorted into new categories such as "Proxy," "Part proxy," and "Adjusted proxy." The article provides a clear definition for "adjusted proxy" estimates, which requires adjusting both foreign export prices and foreign import prices for trade costs (p. 54). However, the application of this label to Ottoman Turkey is complicated by the fact that it is a hybrid series. The Appendix reveals that for the period 1800–1854, the import price index was "an unadjusted index of British export prices," while adjustments were only applied for the subsequent period (1854–1913) (p. 64). Labeling the entire series as an "adjusted proxy" in the summary table without qualification results in an inconsistent classification, failing to reflect this significant period of unadjusted data.

The analysis and proposed solutions are subject to acknowledged data limitations: The article is transparent about several limitations in the historical data that affect its analysis. First, when demonstrating its preferred method of adjusting proxy prices, the author uses a freight-rate index as a proxy for all trade costs, which should ideally also include tariffs, insurance, spoilage, and commercial markups (p. 58). The author notes this simplification was made because "the freight-rate index was used as a proxy for all trade costs by giving it a bigger weight than freights alone would justify" (p. 62, footnote 9). Second, the article acknowledges that measuring prices over long periods is complicated by unmeasured changes in the quality of goods. It suggests this is less of a problem for a standardized commodity like raw sugar but is a greater concern for manufactured goods like cotton shirtings (p. 62, footnote 8). While these issues are acknowledged, they indicate that even the improved estimation methods proposed by the article are subject to their own potential sources of measurement error.

Minor presentation and transparency issues are present: The article contains some minor issues related to the presentation of data. Table 1, which summarizes the author's core re-classification of Williamson's dataset, contains a potentially confusing footnote (p. 56). The table lists 12 countries in the "Proxy" category, including Cuba and Malaya, but an appended footnote states, "*Excludes Cuba and Malaya due to insufficient data." This note explains why Williamson's aggregate index (discussed on p. 53) utilizes only 19 countries despite the table listing 21, but its placement in the table could be misread as implying these countries are not in the list itself. Additionally, the analysis of import price convergence relies on a composite price series for British cotton goods that splices a series for "grey cloth" (an unfinished good) to a series for finished "shirtings" (p. 57, caption to Figure 4). While splicing series is a common practice in economic history, the potential for bias from joining an intermediate good to a finished good is not discussed in the text.

Future Research

Reconstruction of the aggregate index: Future work should apply the "adjusted part-proxy" methodology proposed by the author to the full sample of peripheral countries. By systematically adjusting core-country prices with available freight rate indices for all 21 countries in the dataset, researchers could construct a new aggregate index to empirically test whether the terms-of-trade boom indeed continued to the First World War, rather than relying on extrapolation.

Sensitivity analysis of statistical methods: Researchers should re-evaluate the statistical support for the "adjusted proxy" method by conducting sensitivity analyses on the filtering techniques. Specifically, the correlation analysis between estimation methods should be repeated using standard smoothing parameters for annual data (such as a lambda of 100 or 6.25 for the HP filter) to ensure the reported superiority of the adjusted method is robust and not an artifact of parameter selection.

Empirical testing of the Indian case: To move the resolution of the "Indian Paradox" from hypothesis to fact, future research must focus on the archival reconstruction of domestic Indian price series for the 1800–1860 period. This would involve locating local wholesale price data for major exports and imports to create a genuine "own-price" index, allowing for a direct comparison with the proxy estimates and definitively establishing whether the hypothesized boom occurred.

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