ONLINE APPENDIX

THE PRICE AND WELFARE CONSEQUENCES   
OF THE BRITISH SUGAR ACT OF 1846

Christopher David Absell

Weights and measures

An important aspect of the construction of the new database is the homogenization of original weights and measures. The listings were given in a variety of different measures, several of which (e.g., frazils and serons) were unique to their origins. To convert these measures to metric tons, I rely principally on William Waterston’s (1840:147-48) *Manual of Commerce* published in 1840, which contains a listing of the hundredweight equivalent of the principal measures imported into England. Fortunately, these equivalencies cover the most-traded measures, largely standardized for the purposes of import taxation. In other cases, I was forced to rely on assumptions and anecdotal evidence.

Liverpool conversion measures, in hundredweights (0.05 metric tons):

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Bdl (bundle) | Bg (bag) | Bl (bale) | Brl (barrel) | Bsk (basket) | Bx (box) | Cases | Ck (cask) | frazil |
| Sugar | - | 1.25 | - | 7 | 1.25 | 4.4 | 14.5 | 8 | - |
|  | H (hogshead) | Keg | Mat | Pch (puncheon) | Pkt (packet) | Robin | Tc (tierce) | Seron |  |
| Sugar | 14.5 | 7 | 1.125 | 7 | 4.4 | 1.125 | 8 | - |

Representativeness of Liverpool import volume series

Liverpool received on average around 17 per cent of the United Kingdom’s imports of sugar over the period 1827-1853.[[1]](#footnote-1) While this is by no means a marginal share, it raises questions regarding the representativeness of the series. This can be ascertained by comparison of the new series for Liverpool with the official aggregate series for the United Kingdom. Figure 1A shows the annual total of imports in thousands of metric tons for both series. With a few minor exceptions, the aggregated Liverpool series follows the overall trend of the official series. Both show similar tendencies during the key periods of treatment: stagnation following *de jure* West Indies emancipation in 1834, decline following *de facto* emancipation (the end of apprenticeship) in 1838, and growth and fluctuation following the passage of the Sugar Act of 1846.

Fig 1A Total imports of sugar to the United Kingdom (left axis) and Liverpool (right axis) in thousands of metric tons, 1827 to 1853.

Sources: United Kingdom: *Tables*. Liverpool: *Liverpool Mercury*; *Gore’s Liverpool General Advertiser*.

Comparison of London and Liverpool price series

Fig 2A Prices (duty-free, shillings per hundredweight) of muscovado sugar by origin in A: London, B: Liverpool, 01/1840-12/1850.

Sources: prices from (London) *John Bull*, *Bell’s Weekly Messenger*, *The Shipping and Mercantile Gazette*, (Liverpool) *Liverpool Mercury*, *Manchester Times and Gazette* (1836), *North Wales Chronicle* (1836, 1838, 1843, 1844). Notes: West Indies is the average of Barbados, Jamaica, Demerara/Berbice, Antigua and St. Vincent varieties (London), unknown for Liverpool. East Indies is the average of Bengal and Mauritius varieties. Noncolonial is the average of Manilla, Cuba and Brazil varieties (London) and Cuba and Brazil (Liverpool).

Comparison of brown and white price series

Fig 3A Prices (duty-free, shillings per hundredweight) of sugar by origin, A: brown, B: white, 01/1840-12/1853.

Sources: prices from *John Bull*, *Bell’s Weekly Messenger*, *The Shipping and Mercantile Gazette*. Notes: West Indies is the average of Barbados, Jamaica, Demerara/Berbice, Antigua and St. Vincent varieties. East Indies is the average of Bengal and Mauritius varieties. Noncolonial is the average of Manilla, Cuba and Brazil varieties.

Comparison of brown and white tariff series

Fig 4A Specific duty (shillings per hundredweight) on muscovado sugar by origin, 01/1840-12/1853, A: brown, B: white sugar.

Source: United Kingdom, 1859, p. 3.

Fig. 5A. Prices (shillings per hundredweight) of muscovado sugar by origin in London, A: duty-free, B: duty-inclusive, 01/1840-12/1853.

Further descriptive statistics: event study

The short-term effect of the reduction of the duty on the prices and volumes of noncolonial sugar can be illustrated using an event study framework of the form:

(1)

where are country and time dummies. As outcome variable y, I include the duty-free price, duty-inclusive price, and the volume and value of imports.[[2]](#footnote-2) The leads and lags are binary variables that indicate the numbers of months before and after month zero, respectively. The baseline (omitted month) is lead one (j=1); one month before the Act came into effect. I include 12 leads and lags and bin leads and lags beyond this period.[[3]](#footnote-3) In this manner, the coefficients represent the relative trend of the targeted noncolonial group, controlling for unobserved cross-sectional and temporal heterogeneity.

Figure 6A displays the monthly coefficients of the leads and lags for the 12 months preceding and following the effective date of the Sugar Act (month zero), as well as a coefficient capturing the accumulated periods outside of this range (the final coefficient). Panel A shows the impact of the reduction of the noncolonial duty on the relative trends of the duty-paid price. The relative pre-trend is close to zero and not statistically significant. There is a clear and immediate effect following the reduction of the noncolonial duty, as the relative duty-paid price dropped 42 per cent. Noncolonial prices then fluctuated within a -30 to -40 per range for the following 12 months and beyond. Panel B displays the results for the duty-free price. Pre-trends deviate from zero and several of the coefficients are statistically significant. However, there is a strong and statistically significant increase relative to the colonial duty-free price beginning in month zero. Together these results indicate an immediate win for noncolonial producers, who saw the prices for their product increase relative to the British colonial competition following the Act. They also indicate gains for British consumers, as the reduction of the duty-inclusive price was larger than the increase of the duty-free price by around 10 per cent. Gauging the immediate effect on volumes is much more difficult, given that the supply response lagged price changes for several reasons. In this context, any observable increase in noncolonial imports would have come from diversion of pre-existing stocks from the carrying (re-export) trade.[[4]](#footnote-4) Panels C and D show the results for import volumes and values, respectively. While most of the lagged coefficients are higher than the leads, the level of the coefficients for both volumes and values is volatile and statistically insignificant.

B

A



D

C

 

Fig. 6A. Results of event study, A: Duty-inclusive price, B: Duty-free price, C: Import volumes, D: Import values.

Source: prices from *John Bull*, *Bell’s Weekly Messenger*, *The Shipping and Mercantile Gazette*; volumes from *Liverpool Mercury*, *Gore´s Liverpool General Advertiser*; duties from United Kingdom, 1859, p. 3. Notes: This figure shows event time dummies for noncolonial (targeted) relative to colonial (non-targeted) varieties of muscovado sugar. The green coefficient represents the accumulated effect of the periods beyond the twelth lead and lag. Regressions include time and country fixed effects and robust standard errors. Sample size: 10 countries, 1,680 observations.

Anecdotal evidence of lower tariff pass-through absorption in the British West Indies

In Guiana, “…the Creole labouring population not merely refuse to acquiesce in a reduction of wages, which is rendered inevitable by the fall in the price of sugar, but have further, in some cases, driven from the field the Portuguese and Coolies, who were willing to accept the wages they have themselves refused; and also that some incendiary fires have already taken place, while more are threatened, in consequence of discontent arising from the inability of the planters to continue paying the former rate of wages ’(United Kingdom 1848, p. 96).

In Grenada, “The peasantry expect fortnightly or monthly payments of wages, and an irregularity in meeting this demand very shortly extinguishes the cultivation of an estate” (*Ibid*., p. 31).

In the Virgin Islands wage cuts were successfully implemented, but “…it has been occasionally represented that the quantity of work performed for sixpence per day is less than what was obtained for a shilling…” (*Ibid*., p. 90).

In Tobago, “Some little sensation was created a few months ago by an attempt being made upon several estates to reduce the daily rate of wages. The experiment was, however, relinquished on account of the opposition it met with” (*Ibid*., p. 60).

A

BFigure 7A: Value in pounds of deadweight loss, tariff revenue and net value of tariff cuts, 01/1840-12/1853, A: all countries, B: colonial and noncolonial (‘foreign’) countries.

Sources: prices from *John Bull*, *Bell’s Weekly Messenger*, *The Shipping and Mercantile Gazette*; duties from United Kingdom, 1859, p. 3; volumes from *Tables*, various years; *Annual Statement*, 1853. Notes: DWL is the deadweight loss, for calculation see text. TR is tariff revenue, calculated by multiplying the specific tariff by the volume. Net is the sum of DWL and TR.

Figure 8A: Trade elasticity (σ) for imports of unrefined sugar to the British market, by country of origin, 1834-52.

Sources: prices from *John Bull*, *Bell’s Weekly Messenger*, *The Shipping and Mercantile Gazette*; duties from United Kingdom, 1859, p. 3; volumes from *Tables*, various years. Note: trade elasticity estimated with ppmlhdfe, including country and year fixed effects, robust standard errors (in parenthesis) clustered at country level. Country spelling is as listed in original source.

Table 1A: Trade elasticity, 1834-52

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 |
| Tariff | -1.67  (.24)\*\*\* | -1.63  (.23)\*\*\* | - | - |
| Colonial | - | - | -1.65  (1.61) | - |
| Noncolonial | - | - | -1.64  (0.82)\*\* | - |
| Slaveholder | - | - | - | -1.52  (0.38)\*\*\* |
| Non-slaveholder | - | - | - | -1.34  (0.68)\*\* |
| Exports | - | 0.09  (0.05)\* | 0.09  (0.05)\* | 0.09  (0.05)\* |
| Countries | 57 | 48 | 48 | 48 |
| Obs. | 1,082 | 870 | 870 | 870 |

Sources: prices from *John Bull*, *Bell’s Weekly Messenger*, *The Shipping and Mercantile Gazette*; duties from United Kingdom, 1859, p. 3; volumes from *Tables*, various years; total exports from Federico and Tena-Junguito 2019. Notes: The dependent variable is the total value of sugar imports. Robust standard errors (in parenthesis) clustered at the country-level in parenthesis. Regressions include country and year fixed effects. Estimated with ppmlhdfe.

1. With the minimum being 13 per cent in 1830 and the maximum being 21 per cent in 1847. Calculated by dividing the total quantity of Liverpool imports by the annual quantity of national imports given in United Kingdom, *Tables* various years. [↑](#footnote-ref-1)
2. The value is calculated as the volume multiplied by the duty-free price. [↑](#footnote-ref-2)
3. The event study is estimated in Stata using the user-written eventdd program, see Clarke and Tapia-Schythe, 2021. The program generates a single coefficient for the binned leads and lags, which serves as an indication of the long-run effect outside of the immediate event study period. [↑](#footnote-ref-3)
4. That is, in the short-term noncolonial product that had been purchased for re-export was now retained for consumption. There is clear evidence of this in the annual data on the geographical distribution of imports retained for consumption, see Absell 2023. [↑](#footnote-ref-4)