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THE IMPACT OF THE 1932 GENERAL TARIFF: A DIFFERENCE-IN-DIFFERENCE APPROACH[*]

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Abstract

We evaluate the effect of the 1932 British General Tariff on the output, labour productivity and employment growth of British industries. We provide a new disaggregated data set that matches industry-level Census of Production data with industry-specific tariff rates to accurately isolate treatment and control groups and estimate the effect of the General Tariff using difference-in-difference regressions. We evaluate a two-group comparison, between newly and non-newly protected industries, and a three-group comparison, between non-newly protected industries and newly protected industries further divided into those given a baseline 10 percent tariff rate and those given additional tariffs. In the two-group comparison, we identify a tariff effect that is large and statistically significant on output and productivity. In the three-group comparison, we show that the positive output and productivity effects of the tariff arise from the additional tariff protection, over and above the 10 percent level. These effects are observed over the periods 1930-35 and 1930-48, suggesting both short-run and medium-term effects on output and productivity of UK industries protected by the 1932 General tariff.

JEL Codes: F13, N64.

Key Words: Trade Policy, General Tariff, Difference-in-Difference.

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1 Introduction

In February 1932 the UK imposed the General Tariff. This represented a 10 percent *ad valorem* tariff for British industries, although some industries received additional duties, on the recommendation of the Import Duties Advisory Committee (IDAC), while others were exempt or received protection during the 1920s. To evaluate the impacts of this measure we explore the following questions: were the 'newly protected' industries covered by the 1932 legislation stimulated by the tariff over the cyclical recovery of the 1930s, improving their standing relative to the non-newly protected and already protected industries; can we identify short and medium-term effects from the General Tariff?

One of the first quantitative studies to evaluate this effect is Richardson (1967) who concluded that "the tariff had little effect on the growth of newly protected industries between 1930 and 1935." This conclusion was based on Richardson's evaluation of the effects of protection on output, employment, labour productivity and trade in the newly protected industries of 1932 relative to non-newly protected industries, comparing the benchmark years 1930 and 1935 using the Censuses of Production data. Having observed that, between 1930 and 1935, the fall in imports in newly protected industries was less than the fall in imports of other industries, Richardson argues for a non-tariff explanation for the healthy performance of the newly protected industries – recovery in the newly protected sector was thus seen as reflecting general economic recovery in the 1930s.

A major weakness in Richardson's analysis is the implicit assumption that the newly protected and other industries shared similar initial conditions in 1930. There is no attempt to compare the economic performance of the newly protected and other industries over a longer period that would allow testing of this assumption. The initial conditions in the 1920s will be unimportant only if industries were comparable in economic performance and shared similar characteristics. We know this was not the case. We apply a difference-in-difference approach, using more information about the economic performance of the two groups of industries in the pre-protection period as well as additional control variables to account for differences in the characteristics of industries over and above their growth profiles.

The difference-in-difference approach builds on Kitson and Solomou (1990) who used the data contained in the 1924, 1930 and 1935 Censuses of Production to distinguish the inter-period performance of the newly protected industries of 1932 relative to other industries, comparing the 1924-30 and 1930-35 periods. Thus, the inter-period difference in performance between 1924-30 and 1930-35 is used to identify the effects of protection on different industries. In order to test whether industry growth was stimulated by tariffs, Kitson and Solomou (1990) considered the output and productivity growth performance of the newly protected industries relative to non-newly protected industries. Output growth in the newly protected group of 1932 was stagnant in 1924-30, whilst the non-newly protected sector saw a weighted mean growth of 2.7 percent per annum. However, during 1930-35 there was a substantial turnaround as the newly protected group grew at 3.8 percent per annum whilst the other industries grew at 2.3 percent per annum. Kitson and Solomou (1990, p. 111) reported a number of significance tests suggesting that the improved output and productivity performance of the newly-protected sector during the 1930s was statistically significant, whilst there was no effect on the non-newly-protected industries.

Broadberry and Crafts (2011) and Crafts (2012) were the first to estimate difference-in-difference regressions to evaluate the labour productivity effects of the General Tariff on British industries, introducing two innovations: first, the application of the difference-in-difference model adds a formal econometric panel data framework[1] to the tests undertaken by Kitson and Solomou (1990); second, as noted above, the IDAC implemented a system of additional duties, in excess of 10 percent *ad valorem*, allowing us to compare three groups of industries instead of two. Broadberry and Crafts chose to compare early protected industries with the newly-protected group further divided into two sub-groups, the baseline group of industries given 0-10 percent *ad valorem* tariff protection in the 1930s and those industries given additional duties on the recommendation of the IDAC.[2] The Broadberry and Crafts results suggest that, whilst the effect of the tariff on productivity growth is estimated to be positive, the coefficient is statistically insignificant, negating the results on labour productivity identified by Kitson and Solomou.

The current paper evaluates the Broadberry and Crafts results. Two avenues of research are pursued: first, we place the Kitson and Solomou results within a difference-in-difference framework using the two-group comparison between the *newly protected* industries and the *non-newly protected* industries; secondly, we make the Kitson and Solomou data set comparable to Broadberry and Crafts by distinguishing the additional duties from the baseline 10 percent protected industries. In constructing our data set we identified two substantive problems with the Broadberry and Crafts study. First, as noted above, there are problems with the implementation of the difference-in-difference method, which mean that the treatment and control groups have not been clearly distinguished. Second, a reading of the tariff regulations of the period, and the decisions on additional duties, has highlighted a significant number of classification differences with Broadberry and Crafts that affect evaluation of the General Tariff. We provide a detailed description of a new data set of the tariff protection received by each of the industries in our sample drawing upon contemporary tariff information from a variety of sources, including: IDAC (1932a, 1932b), CET (1935), NIESR (1943), Hutchinson (1965) and various HMRC reports. We present the detailed tariff classification and list of sources in Appendix A of the Supplementary material to this paper as a resource for future research.

Our paper provides valuable micro-level evidence on the effects of tariffs on UK manufacturing industries in the interwar period. We find that manufacturing industries who were protected by the General Tariff benefited in the 1930s relative to non-newly protected industries. Our results complement recent work by De Bromhead *et al*. (2017), who find that UK tariffs led to reduced multilateral trade in the 1930s, with a shift towards Imperial imports.

Although our micro-level evidence is focused on partial equilibrium tariff effects for UK manufacturing industries and does not provide direct evidence regarding the macroeconomic effects of the tariff, our work is related to the broader literature studying the relationship between tariffs and growth from

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[1] The difference-in-difference model is now part of the standard econometrics toolkit. We provide a brief outline of the model in the Supplementary material.
[2] The 0-10 percent group is a hybrid group of newly-protected (treated) and non-protected (control) industries. This grouping does not fit well in the difference-in-difference model – this is discussed further below and in the Supplementary material.

a macroeconomic perspective where diametrically opposing views on the effectiveness of trade policies are common—from both a theoretical and empirical standpoint.[3] Economic theory is ambiguous about the relationship between trade policy and growth. On the one hand, tariffs can harm growth by increasing import prices, curtailing competition and preventing the exploitation of comparative advantage. On the other hand, temporary tariff protection can potentially benefit infant industries (Williamson, 1990) and boost growth by aiding the discovery of dynamic comparative advantages (Rodríguez and Rodrik, 2000).

Similar divergence exists in the conclusions of empirical research. For example, O'Rourke (2000) finds a significantly positive correlation between tariffs and growth in the late-19th century for a panel of ten countries. Using data for 22 countries over the period 1920-40, Vamvakidis (2002) concludes that, controlling for other determinants of economic growth, tariffs provided a positive and statistically significant growth effect. Clemens and Williamson (2004) studied the interwar period within the context of the "tariff-growth paradox". They found that in the pre-1914 period, tariffs were positively related to economic growth, in contrast to the post-WWII period where much of the evidence points to a negative relationship. The interwar period is then viewed as a transition period between the two regimes. Using a panel study of 35 countries over the period 1919-38, they find there is no evidence of a statistically significant negative relationship. Focusing specifically on the 1930s, they find that the four core economies—Britain, France, Germany and the USA—benefited from significant positive tariff effects during the cyclical recovery period after 1932. In contrast, using a panel data set of 16 OECD countries, Madsen (2009) tests the relationship between trade openness (using tariff rates as a proxy variable) and economic growth, reporting a significant negative effect from tariffs on economic growth in the interwar period. The differing results suggest the presence of significant heterogeneity across countries and over time. We seek to add value to this debate by clarifying the evidence at the national level using micro-level data for UK manufacturing industries during the interwar period.

The remainder of the paper proceeds as follows. Section 2 describes our updated and extended industry-level classification of tariff rates in the 1930s. Section 3 presents the empirical strategy and results. Section 4 concludes.

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[3] See Lampe and Sharp (2014) for a survey of the literature on the relationship between trade and growth.

2   Industry Tariff Classification

The General Tariff imposed a 10 percent *ad valorem* tariff rate for British industries, although some industries were exempt (such as some food products and paper) and a number of industries were already protected in the 1920s. The legislation also established the Import Duties Advisory Committee (IDAC) with the powers of recommending *additional duties* for industries making a case in the national interest. This meant that the average tariff rate gradually moved towards the 20 percent level.[4]

The General Tariff set out to protect most industries that were not already protected by earlier legislation. These formed the bulk of UK industries, including most textiles, clothing, iron and steel, the engineering trades and non-ferrous metals. Appendix A shows that the early protected sectors were mainly covered by the McKenna Duties (1915) and the Safeguarding of Industries Act (1921). Most early protected industries were new industries, such as motor, cycle and chemicals, and formed a relatively small share of the industrial sector as a whole. However, the early protected industries were not all new industries. For example, the Silk Duties (1925) were imposed on silk and artificial silk for revenue purposes and a customs duty was imposed on Hydrocarbon oils (1928).

Leak (1937) shows that by 1934 only 28.1 percent of imports were subject to the 10 percent tariff rate; most industries were given additional duties, with the modal duty being 20 percent. Hence, the IDAC played a key role in determining UK trade policy in the 1930s. The Committee's terms of reference were to balance national interest with that of the interests of consumers and producers. The Committee saw its aim as implementing a "scientific tariff" to achieve this balance. In a study of the decision making process of the IDAC, Mitchell (2005) shows that in proposing additional tariffs the IDAC considered a range of factors, including the level of import penetration, the level of efficiency in the industry, infant industry aspects, anti-dumping responses, employment effects and regional location. Importantly for our identification, Mitchell (2005) concludes that business had a limited ability to influence the setting of additional tariffs via the IDAC. In part, this was because business lobbies were poorly organised and unable to put forward a coherent case before the Committee.[5] In addition, Mitchell (2005) notes that the IDAC worked to strict guidelines for the eligibility for additional tariffs. If the Committee were not convinced the criteria for additional tariffs were met, businesses could do little to convince them otherwise, and "the Committee rebuffed persistent claims" (Mitchell, 2005, p. 36). Reflecting this, there was no clear relationship between industry concentration and tariff protection (Capie, 1983). Industries with the most market power were not necessarily able to attain the highest rents associated with additional tariffs.

Here, we evaluate the broader statistical evidence on the outcomes of these policies on industry output, productivity and employment. To do this, we use industry-level data from the 1924, 1930 and 1935 Censuses of Production, considering growth rates across two time periods (1924-30 and 1930-

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[4] Although non-tariff barriers, such as quotas, were being used fairly extensively by some countries during the 1930s, this was not a major feature of UK trade policy. The evidence suggests that the use of quotas was most extensive in the gold bloc economies (Irwin, 2012). De Bromhead *et al.* (2017) show that many of the UK Quotas impacted on agricultural goods.

[5] Mitchell (2005) notes a handful of exceptions to this, such as the association representing the Iron and Steel industry.

35).[6] We also use the data from the 1948 Census of Production to build a picture of the medium-term effects of the General tariff by comparing the 1924-30 and 1930-48 periods. We classify the industries into three groups based on the tariff protection they received. The control group of *non-newly protected* industries is not exposed to the General Tariff in either time period. The second and third groups include *newly protected* industries, subject to the treatment – the 1932 General Tariff – in the second time period, but not the first. The newly protected industries are divided into: (i) industries protected at the 10 percent *ad valorem* rate; and (ii) industries with additional rates of protection in excess of 10 percent. To attain accurate estimates of the difference-in-difference coefficients, it is important that industries are correctly assigned to the 'true' treatment and control groups. Misspecification of these groups will create bias in the OLS estimates.

There are three key refinements to our classification relative to Broadberry and Crafts (2011). First, by using all the data from the Censuses of Production, we have increased the number of industries in our sample by 19, from 90 in Broadberry and Crafts to 109 in this study. Secondly, Broadberry and Crafts have misclassified the tariff rates on a number of industries (including, for example, jute, bottling, seed crushing, leather tanning, leather goods, paper, fancy goods and building materials). Finally, the 0-10 percent classification group used by Broadberry and Crafts needs to be corrected to separate out the unprotected industries, which faced zero tariff protection (control), from industries protected at the 10 percent rate (treatment). The 0-10 percent group in Broadberry and Crafts includes 33 industries (out of their 90 industries), one third of which should be classified as non-newly protected, potentially creating a significant bias in the identification of treatment and control groups.

3   Empirical Results

3.1   Two-Group Classification

We follow Broadberry and Crafts (2011) in using the difference-in-difference methodology to evaluate the effects of the General Tariff. We first estimate the impact of the 1932 General Tariff using a two-group classification of industries and data for two time periods (1924-30 and 1930-35). This represents an extension of the Kitson and Solomou (1990) methodology to a difference-in-difference regression framework. All regressions are estimated using OLS, and robust standard errors are reported. As explained above, the control group includes the *non-newly protected* industries, a group which includes both industries that were protected early in the 1920s and industries that did not receive protection in the interwar period.[7] There are no industries in our sample that received protection prior to the 1932 General Tariff, but not after. For the two-group classification, the treatment group includes *newly protected* industries, and does not distinguish between industries protected at the 10 percent rate

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[6] The two time periods (1924-30 and 1930-35) are used because of data availability. The Censuses of Production, our source of industry-level data, were carried out in 1924, 1930 and 1935 only. Kitson and Solomou (1990) and Broadberry and Crafts (2011) use data for the same two time periods.

[7] At this stage, it should be noted that heterogeneity in our control group (i.e. including unprotected and early protected industries) poses a potential problem for the application of the difference-in-difference methodology. In Appendix B.5, we explore the sensitivity of our results to this assumption and find that the results are robust in this dimension.

or those with additional duties. By controlling for differences between the control and treatment groups before the policy change, the difference-in-difference regressions directly address the problems with Richardson's (1967) analysis.

The two-group difference-in-difference model is given by the following equation:

$$\Delta y_{i,t} = \alpha_0 + \alpha_1 y35_t + \beta newpro_i + \delta(newpro_i \times y35_t) + \varepsilon_{i,t}$$

where $i = 1,2,\dots,N$ is an index denoting the N industries in our sample and $t = 1,2$ is an index denoting the two time periods, 1924-30 and 1930-35 respectively. The dependent variable $\Delta y_{i,t}$ represents the annualised growth rate of real net output, productivity – measured as real net output per worker – or employment for industry i during time period t. The time-invariant explanatory variable $newpro_i$ is a dummy variable set equal to unity if industry i was newly protected, and zero otherwise. The industry-invariant explanatory variable $y35_t$ is a time dummy variable set equal to unity for observations in the second time period, 1930-35, and zero otherwise.

Given these definitions, the parameters in the above equation have the following meaning. The intercept α_0 captures the average annual output, productivity or employment growth of non-newly protected industries in 1924-30. The time dummy coefficient α_1 captures the average additional annual output, productivity or employment growth for non-newly protected industries in 1930-35 in excess of their 1924-30 growth. Therefore, the sum of α_0 and α_1 equals the total average annual output, productivity or employment growth for non-newly protected industries between 1930 and 1935. Similarly, the sum of α_0 and β is equal to the average annual output, productivity or employment growth for newly protected industries in 1924-30, such that β captures the differential growth rates of newly and non-newly protected industries over the first time period.

The difference-in-difference coefficient δ is of principal interest, measuring the average increase in annual real output, productivity or employment growth from 1924-30 to 1930-35 for the newly protected industries conditional on the change in growth for the non-newly protected industries. The inclusion of the time dummy $y35_t$ controls for time fixed effects – factors that are constant across industries, but vary across time, such as the prevailing macroeconomic environment – and the inclusion of the industry dummy $newpro_i$ accounts for industry-group fixed effects – factors that are constant over time, but specific to each group of industries, such as pre-tariff initial conditions for industry groups. Therefore, the difference-in-difference estimator captures the treatment effect of the tariff on newly protected industries: the increase in annual output, productivity or employment growth for newly protected industries once the average growth increase of non-newly protected industries over the same period has been accounted for. This expression formalises this:

$$\delta_1 = \left(E\left[\Delta y_{i,t}|newpro_i = 1, y35_t = 1\right] - E\left[\Delta y_{i,t}|newpro_i = 1, y35_t = 0\right]\right)$$
$$- \left(E\left[\Delta y_{i,t}|newpro_i = 0, y35_t = 1\right] - E\left[\Delta y_{i,t}|newpro_i = 0, y35_t = 0\right]\right)$$

where E represents the (conditional) expectations operator.

Figures 1 and 2 graphically illustrate the logic underlying the difference-in-difference methodology using the tariff classification details in section 2 and Appendix A.[8] The plots present industry-by-industry annual growth rates of (net) output and labour productivity respectively. In both figures, the horizontal axis plots the average annual growth rate of the variable of interest in 1924-30, while the vertical axis plots the average annual growth rate in 1930-35. The solid line depicts the 45-degree ray of constant industry growth rates in the two periods. Observations that lie above the 45-degree ray indicate that an industry grew faster in 1930-35 period than in the first, and *vice-versa* for observations that lie below. In Figure 1, plotting annual output growth, the proportion of newly protected industries (indicated by a red cross) lying above the 45-degree ray clearly exceeds the proportion lying below. That is, the number of newly protected industries that experienced faster annual output growth between 1930 and 1935 exceeds the number that grew faster between 1924 and 1930. In contrast, growth of non-newly protected industries (indicated by a blue circle) is more diverse, with many industries both above and below the 45-degree ray. That is, relative to the non-newly protected control group, a greater proportion of newly protected treated industries grew faster in the period in which they received the treatment. Figure 2 presents the comparable industry-by-industry productivity growth figures for the same two-group classification. Although the patterns are not as stark as in Figure 1, both figures provide illustrative evidence that the General Tariff may have had expansionary effects on treated industries during the 1930-35 period, a result that is confirmed by the difference-in-difference regression results.
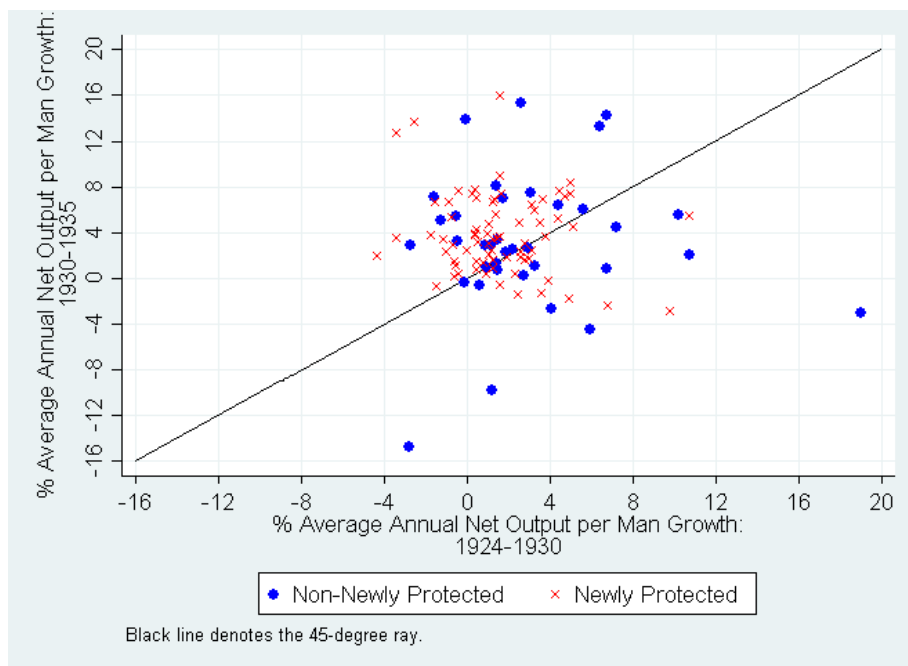
Figure 1: Output Growth across Industries, 1924-30 and 1930-35
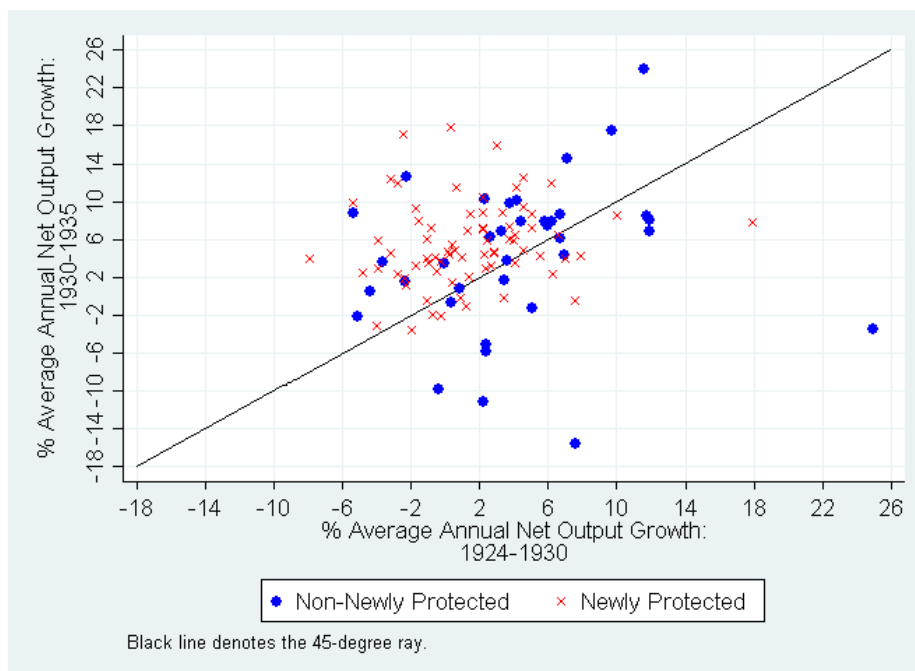
Note: Plot of industry-by-industry annual net output growth in the two periods – 1924-30 (horizontal axis) and 1930-35 (vertical axis). The groups are formed using the two-group classification detailed in appendix A.

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[8] Corresponding descriptive statistics are presented in Appendix B.1.

Figure 2: Productivity Growth across Industries, 1924-30 and 1930-35

Note: Plot of industry-by-industry annual net output per worker growth in the two periods – 1924-30 (horizontal axis) and 1930-35 (vertical axis). The groups are formed using the two-group classification detailed in appendix A.

Table 1 reports formal econometric results for average annual real output, productivity and employment growth using the two-group classification, confirming the visual inspection of Figures 1 and 2. In column (1), we estimate that the average annual output growth for non-newly protected industries in 1930-35 was not significantly different to 1924-30. The results highlight the importance of accounting for initial conditions; we find that between 1924 and 1930 the average annual output growth for newly protected industries was 2.82 percentage points lower than for the non-newly protected industries over the same period, significant at the 5 percent level. Notably, the difference-in-difference coefficient indicates that the tariff had an expansionary treatment effect of 4.07 percentage points per annum on treated industries, significant at the 5 percent level. The size of this treatment effect more than offset the output growth shortfall of newly protected industries in 1924-30.

In column (2), we estimate that the tariff also had an expansionary effect on the labour productivity growth of newly protected industries. In 1924-30, the productivity of non-newly protected industries grew a 3.01 percent per annum, a figure that did not significantly change in 1930-35. Productivity growth of the newly protected industries was 1.46 percentage points per annum less than their non-newly protected counterparts in 1924-30. The difference-in-difference coefficient indicates that, between 1930 and 1935, the tariff had an expansionary impact on productivity growth of 2.16 percentage points per annum, more than reversing the relative productivity growth shortfall in the earlier period, significant at the 10 percent significance level.

In column (3), we estimate the two-group classification with annual employment growth as the dependent variable. We do not find that the General Tariff had a significant treatment effect on the employment growth of newly protected industries in 1930-35.

Taken together, the differing significance of treatment effects for productivity and employment growth identified in columns (2) and (3), indicates that the net output of newly protected industries predominantly increased because of productivity improvements rather than shifts in employment demand/supply.

Table 1: Difference-in-Difference Results for the Two-Group Classification

	(1) Net Output Growth	(2) Net Output per worker Growth	(3) Employment Growth
D-in-D for Newly Protected Industries, $\hat{\delta}$	4.066** (1.783)	2.161* (1.131)	1.841 (1.124)
Dummy Variable for Newly Protected Industries, $\hat{\beta}$	-2.822** (1.087)	-1.459* (0.800)	-1.298* (0.698)
Dummy Variable for 1930-35, $\hat{\alpha}_1$	0.064 (1.641)	0.131 (0.925)	-0.056 (0.981)
Constant, $\hat{\alpha}_0$	4.221*** (0.982)	3.013*** (0.654)	1.158** (0.580)
Observations	218	218	218
R-squared	0.098	0.057	0.042

Note: Estimated regression results for the two-group classification. In column (1), the dependent variable is annualised average (real) net output growth (in annualised percentage points). The corresponding dependent variables in columns (2) and (3) are annualised average net output per worker growth and employment growth respectively. All regressions are estimated by OLS and robust standard errors are reported, where *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

3.2   Three-Group Classification

The three-group classification allows for a more detailed examination of the effects of differing tariff protection rates. As in the two-group analysis, our control group includes industries that were both early protected and zero-protected.[9] For our baseline three-group classification, we separate the newly protected industries into two treated sub-groups: (i) newly protected industries at the 10 percent *ad valorem* rate; and (ii) newly protected industries with tariffs at additional rates in excess of 10 percent *ad valorem*. The three-group model can be specified as:

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[9] We show that our results are robust when the control group is varied to contain only unprotected industries and only early protected industries in turn in Appendix B.5.

$$\Delta y_{i,t} = \alpha_0 + \alpha_1 y35_t + \beta_{ten} ten_i + \beta_{add} add_i + \delta_{ten}(ten_i \times y35_t) + \delta_{add}(add_i \times y35_t) + \varepsilon_{i,t}$$

the two time periods, and the dependent variable $\Delta y_{i,t}$ and the time dummy $y35_t$ are defined analogously to the two-group classification. The time-invariant explanatory variables ten_i and add_i are dummy variables set equal to unity if industry i was newly protected at the 10 percent rate or at an additional rate respectively (and zero otherwise). Thus, the coefficients δ_{ten} and δ_{add} are the difference-in-difference estimators for the 10 percent and additionally protected industries respectively, representing the average effect of the tariff on each sub-group of newly protected industries relative to all *non-newly* protected industries. The parameters are defined as:

$$\delta_{ten} = \left(E[\Delta y_{i,t}|ten_i = 1, add_i = 0, y35_t = 1] - E[\Delta y_{i,t}|ten_i = 1, add_i = 0, y35_t = 0]\right)$$
$$- \left(E[\Delta y_{i,t}|ten_i = 0, add_i = 0, y35_t = 1]\right.$$
$$\left. - E[\Delta y_{i,t}|ten_i = 0, add_i = 0, y35_t = 0]\right)$$
$$\delta_{add} = \left(E[\Delta y_{i,t}|ten_i = 0, add_i = 1, y35_t = 1] - E[\Delta y_{i,t}|ten_i = 0, add_i = 1, y35_t = 0]\right)$$
$$- \left(E[\Delta y_{i,t}|ten_i = 0, add_i = 0, y35_t = 1]\right.$$
$$\left. - E[\Delta y_{i,t}|ten_i = 0, add_i = 0, y35_t = 0]\right)$$

Like Figures 1 and 2 for the two-group classification, Figures 3 and 4 visually illustrate the logic of our three-group classification.[10] In Figure 3, plotting annual output growth, the proportion of newly protected industries, both at the 10 percent rate (indicated by a red cross) and additional rates (indicated by a green square), lying above the 45-degree ray clearly exceeds the proportion lying below. That is, the number of newly protected industries that experienced faster annual output growth between 1930 and 1935, the period in which they received the tariff treatment, exceeds the number that grew faster between 1924 and 1930. In contrast, the growth of non-newly protected industries (indicated by a blue circle) is more varied, with numerous observations above and below the 45-degree ray.

Figure 4 presents the comparable productivity growth figures for the three-group classification. Again, a large fraction of newly protected industries—especially those protected with additional rates— lie above the 45-degree ray, indicating that the General Tariff had expansionary effects on treated industries during the 1930-35 period.[11]

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[10] Corresponding descriptive statistics are presented in Appendix B.1.

[11] In Figures 3 and 4, we label "Sugar and Glucose" to emphasise that they may potentially act as outliers in our econometric setup. We present formal analysis in Appendix B.7 to reflect this. Importantly, our headline results are robust to the removal of Sugar & Glucose from our sample. Appendix B.8 also shows that our headline results are robust to the weighting of industries by their size.

Figure 3: Output Growth across Industries, 1924-30 and 1930-35
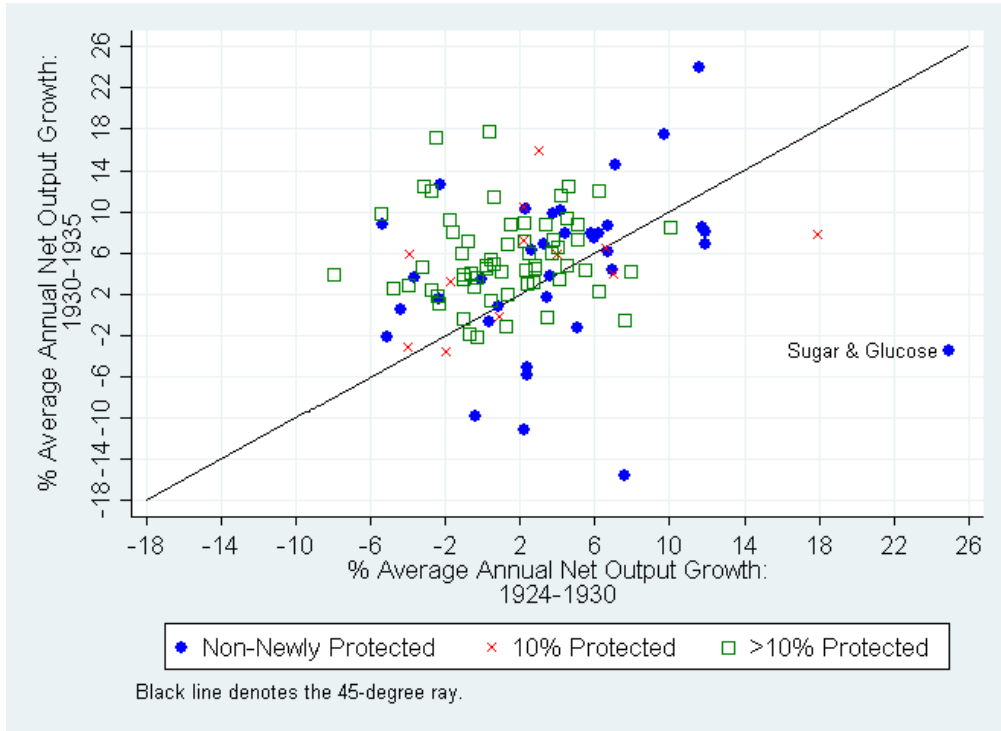
Note: Plot of industry-by-industry annual net output growth in the two periods – 1924-30 (horizontal axis) and 1930-35 (vertical axis). The groups – non-newly, ten percent and additionally protected – are formed using the three-group classification detailed in appendix A.

Figure 4: Productivity Growth across Industries, 1924-30 and 1930-35
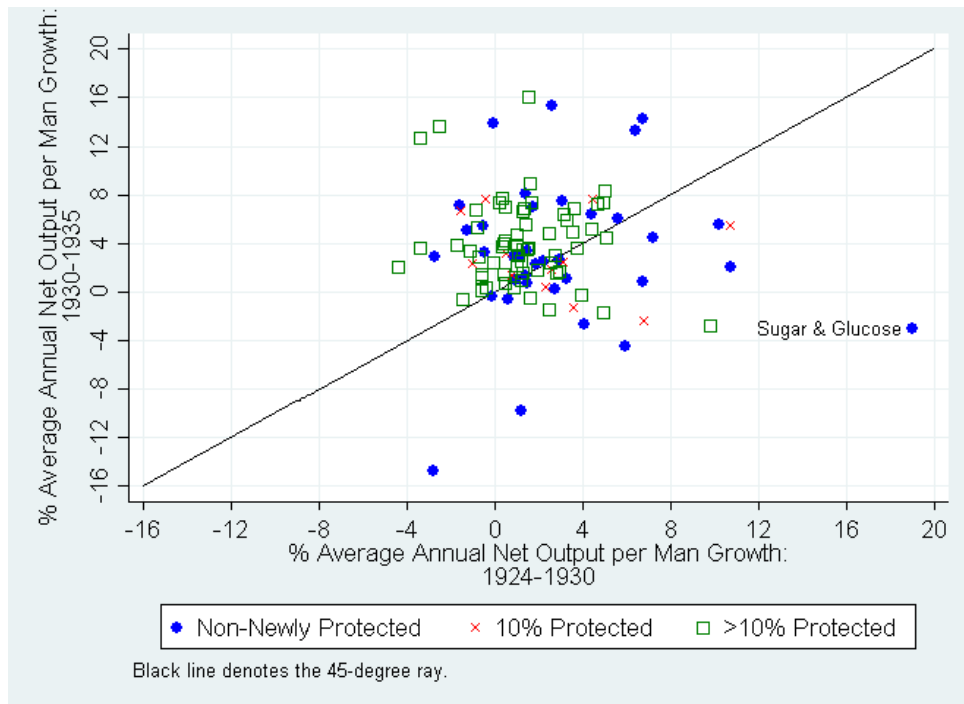
Note: Plot of industry-by-industry annual net output per worker growth in the two periods – 1924-30 (horizontal axis) and 1930-35 (vertical axis). The groups – non-newly, ten percent and additionally protected – are formed using the three-group classification detailed in appendix A of this paper.

The regression results, reported in Table 2, confirm the insights from visual inspection of Figures 3 and 4 for the three-group classification. Panels A, B and C present the results for the regressions with real output growth, productivity growth and employment growth as the dependent variables respectively. The baseline results for the three-group classification are in column (1) of each panel. Columns (2)-(5) report regression results with additional control variables included to account for potential differences in industry characteristics over and above their interwar growth profile (these controls are explained further below and in Appendix B.2).[12]

In column (1) we find that average real output growth for non-newly protected industries was 4.22 percent in 1924-30. This figure did not change significantly in 1930-35. In 1924-30, industries that received a 10 percent tariff rate in 1932 grew more slowly than non-newly protected industries, by 1.56 percentage points per annum. The tariff did have a positive effect on these industries (2.27 percentage points per annum) but both these effects are statistically insignificant. In contrast, the output effect of the tariff on additionally protected industries is statistically significant, and positive. In particular, the additionally protected industries grew at 3.07 percentage points per annum less than non-newly protected industries in 1924-30. This growth loss is more than reversed in 1930-35, as the relevant difference-in-difference coefficient indicated that the treatment effects of the tariff on these industries was 4.42 percentage points per annum, significant at the 5 percent level.

We also find that the tariff had a positive treatment effect on the productivity of additionally protected industries in 1930-35, significant at the 10 percent level. The productivity of additionally protected industries grew at 1.67 percentage points per annum less than non-newly protected industries in 1924-30, a growth loss that is more than reversed in 1930-35. The treatment effect for 1930-35 is estimated to be 2.55 percentage points per annum for additionally protected industries, relative to non-newly protected industries. For comparison, using their classification, Broadberry and Crafts (2011) estimate that additionally protected industries growth was 2.3 percentage points per annum higher than the growth of early protected industries, although their estimate is statistically insignificant. The tariff effect on the productivity of 10 percent protected industries is positive, but not statistically significant.

As with the two-group classification, we find that the tariff did not have a significant effect on the employment growth rates of either the ten percent or additional rate industries. As in the two-group classification, this indicates that the tariff predominantly boosted the output of UK manufacturing industries through productivity improvements, rather than through labour market mechanisms.

In columns (2)-(5) of Table 2, we report the results with additional controls included in the regression. These controls are intended to capture otherwise unobserved features of industries that may simultaneously be correlated with the tariff treatment and their output, productivity or employment growth. That is, they are intended to capture industry features that may have caused differential changes in growth rates across industry groups absent the General Tariff, which, if unaccounted for, might bias estimates of the difference-in-difference coefficients.

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[12] We present similar robustness exercises for the two-group classification in appendix B.3.

Table 2: Difference-in-Difference Results for the Three-Group Classification

	Panel A: Net Output Growth				
	(1)	(2)	(3)	(4)	(5)
D-in-D for >10% Protected Industries, $\widehat{\delta}_{add}$	4.419**	4.437**	5.474**	4.390**	4.436**
	(1.792)	(2.135)	(2.585)	(1.871)	(1.782)
D-in-D for 10% Protected Industries, $\widehat{\delta}_{ten}$	2.272	2.373	5.362	1.851	2.197
	(2.825)	(3.180)	(3.808)	(2.915)	(2.836)
Dummy Variable for >10% Protected Industries, $\widehat{\beta}_{add}$	-3.070***	-2.657**	-4.058***	-2.693**	-2.995***
	(1.082)	(1.159)	(1.335)	(1.018)	(1.044)
Dummy Variable for 10% Protected Industries, $\widehat{\beta}_{ten}$	-1.562	-1.329	-6.163***	-1.116	-1.477
	(1.960)	(2.193)	(2.322)	(2.123)	(1.942)
Dummy Variable for 1930-35, $\widehat{\alpha}_1$	0.064	2.725	-3.307	0.922	0.151
	(1.649)	(2.514)	(3.734)	(2.431)	(1.697)
Constant, $\widehat{\alpha}_0$	4.221***	1.699	6.588***	4.481***	3.904***
	(0.986)	(1.523)	(2.250)	(1.905)	(0.932)
Control Variables Included	None	Census of Production Sectors	Disagg. (Barna) Sectors	KS Dummies	Elect. Dummies
Observations	218	218	218	218	218
R-squared	0.103	0.149	0.361	0.124	0.108

	Panel B: Net Output per worker Growth				
	(1)	(2)	(3)	(4)	(5)
D-in-D for >10% Protected Industries, $\widehat{\delta}_{add}$	2.554*	2.694*	3.762*	2.497*	2.585**
	(1.348)	(1.599)	(2.037)	(1.398)	(1.302)
D-in-D for 10% Protected Industries, $\widehat{\delta}_{ten}$	0.161	-0.115	2.497	-0.475	0.126
	(1.832)	(1.905)	(2.616)	(1.891)	(1.754)
Dummy Variable for >10% Protected Industries, $\widehat{\beta}_{add}$	-1.674**	-1.743**	-2.538**	-1.512**	-1.504**
	(0.770)	(0.798)	(1.142)	(0.694)	(0.743)
Dummy Variable for 10% Protected Industries, $\widehat{\beta}_{ten}$	-0.367	-0.349	-2.335	-0.015	-0.192
	(1.210)	(1.243)	(1.848)	(1.275)	(1.153)
Dummy Variable for 1930-35, $\widehat{\alpha}_1$	0.131	2.454	-2.517	1.036	0.119
	(1.230)	(1.745)	(2.848)	(1.858)	(1.154)
Constant, $\widehat{\alpha}_0$	3.013***	2.195***	4.423**	2.995**	2.329***
	(0.706)	(0.803)	(1.945)	(1.387)	(0.687)
Control Variables Included	None	Census of Production Sectors	Disagg. (Barna) Sectors	KS Dummies	Elect. Dummies
Observations	218	218	218	218	218
R-squared	0.065	0.130	0.248	0.098	0.111

	Panel C: Employment Growth				
	(1)	(2)	(3)	(4)	(5)
D-in-D for >10% Protected Industries, $\widehat{\delta}_{add}$	1.797	1.658	1.611	1.813	1.788
	(1.132)	(1.345)	(1.639)	(1.256)	(1.147)

	(1)	(2)	(3)	(4)	(5)
D-in-D for 10% Protected Industries, $\widehat{\delta}_{ten}$	2.064	2.431	2.701	2.265	2.021
	(2.056)	(2.316)	(2.438)	(2.178)	(2.029)
Dummy Variable for >10% Protected Industries, $\widehat{\beta}_{add}$	-1.327*	-0.849	-1.424	-1.122	-1.420**
	(0.705)	(0.877)	(1.040)	(0.786)	(0.697)
Dummy Variable for 10% Protected Industries, $\widehat{\beta}_{ten}$	-1.154	-0.940	-3.656**	-1.063	-1.237
	(1.392)	(1.582)	(1.577)	(1.527)	(1.339)
Dummy Variable for 1930-35, $\widehat{\alpha}_1$	-0.056	0.312	-0.694	-0.120	0.037
	(0.985)	(1.772)	(2.983)	(1.286)	(1.150)
Constant, $\widehat{\alpha}_0$	1.158**	-0.523	2.091	1.410	1.512**
	(0.582)	(1.439)	(1.700)	(0.892)	(0.590)
Control Variables Included	None	Census of Production Sectors	Disagg. (Barna) Sectors	KS Dummies	Elect. Dummies
Observations	218	218	218	218	218
R-squared	0.043	0.104	0.367	0.067	0.058

Notes: Estimated regression results for the three-group classification. In panel A, the dependent variable is annualised average (real) net output growth. The corresponding dependent variables in panels B and C are annualised average net output per worker growth and employment growth, respectively. All regressions are estimated by OLS and robust standard errors are reported, where *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Details of the control variables are presented in Appendix B.2.

Because data constraints limit the possible control variables, all controls are time invariant and are included in the regression alongside an interaction with the time dummy $y35_t$. When augmented with additional industry-specific control variables X_i, the regression framework has the following form:

$$\Delta y_{i,t} = \alpha_0 + \alpha_1 y35_t + \beta_{ten} ten_i + \beta_{add} add_i + \delta_{ten}(ten_i \times y35_t) + \delta_{add}(add_i \times y35_t)$$
$$+ \gamma_1 X_i + \gamma_2(X_i \times y35_t) + \varepsilon_{i,t}$$

These controls are intended to capture otherwise unobserved features of industries that may simultaneously be correlated with the tariff treatment and their output, productivity or employment growth. That is, they are intended to capture industry features that may have caused differential changes in growth rates across industry groups absent the General Tariff.

The regression results with control variables included serve to reinforce our main conclusion: industries that received additional protection under the 1932 General Tariff received a significant output and productivity benefit relative to the control group.

In column (2), we report the regression results with a set of control variables for the 13 different sectors as defined by the Census of Production. That is, we have a dummy variable for each sector of the economy that is set to unity if that industry is classed within that sector according to the Census of Production, and zero otherwise. To the extent that industries within the same sector may co-move, but differ from other sectors, or be subject to similar tariff protection within sectors, this control variable can capture time-varying, industry-specific influences, as well as potential non-random tariff assignment. Column (2) illustrates that the tariff effects for additionally protected industries for net output growth and net output per worker growth are robust to the inclusion of controls for industry-sector groups. The Census of Production sector dummies capture limited sectoral heterogeneity. There

may still be heterogeneity of industries within each sector which could better be accounted for. In column (3), we report the results using a more disaggregated classification from Barna (1952) with 29 sectors. The results in column (3) indicate that the tariff effects for additionally protected industries are robust to these time-varying controls.

In addition to sector dummies, columns (4) and (5) present regression results with additional control variables to account for specific features of industries, which may simultaneously be correlated with the growth of an industry as well as the tariff protection they received. In column (4) we use control variables from Kitson and Solomou (1990), which classify industries as resource intensive, labour intensive, scale intensive, an industry with differentiated products, or a food, drink and tobacco industry. Similarly, in column (5), we define control variables for industries that were more or less intensively using electricity as an input to production. Importantly, the headline results are robust to the inclusion of these control variables. Again, these control variables are intended to capture industry features that may have led to differences in their evolution absent the General Tariff.

Additionally, Appendix B.7 presents a robustness exercise which accounts for industries whose output and employment growth over the 1924-35 period could be considered as potential outliers. These robustness regressions can be interpreted as difference-in-difference regressions with a larger 'region of common support' between treatment and control variables (Ravallion, 2008). Importantly, our headline results are robust to the omission of outliers.

3.3   Medium-Term Effects of the General Tariff

The previous results suggest a positive short-term output and productivity effect arising from the General Tariff during the period 1930-35. Extending the Census of Production data to include the 1948 Census allows us to investigate whether the expansionary effects of the tariff persisted over time. To investigate the medium-term time profile of the effect we combine industry-level output and employment data from the 1948 Census of Production, with our existing data from the 1924, 1930 and 1935 censuses. Of the 109 industries in our baseline sample for the 1924-35 period, 103 remain in the 1948 sample.[13] We estimate the effect of the tariff using the three-group classification, redefining the second period in the sample as the 1930-48 period (instead of 1930-35). The dependent variables remain the average annual growth of real output, productivity and employment over each period.

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[13] The descriptive statistics for the period 1930-48 are provided in Appendix B.1, where the distribution of industries across tariff groups is also provided.

Table 3: Difference-in-Difference Results for the Three-Group Classification for 1924-30 and 1930-48

	(1) Net Output Growth	(2) Net Output per worker Growth	(3) Employment Growth
D-in-D for >10% Protected Industries, $\hat{\delta}_{add}$	3.118** (1.317)	1.838** (0.879)	1.190 (0.946)
D-in-D for 10% Protected Industries, $\hat{\delta}_{ten}$	1.887 (2.496)	0.950 (1.437)	0.882 (1.977)
Dummy Variable for >10% Protected Industries, $\hat{\beta}_{add}$	-3.083*** (1.140)	-1.744*** (0.792)	-1.264* (0.732)
Dummy Variable for 10% Protected Industries, $\hat{\beta}_{ten}$	-1.902 (2.089)	-0.501 (1.294)	-1.345 (1.472)
Dummy Variable for 1930-48, $\hat{\alpha}_1$	-1.598 (1.174)	-1.785*** (0.797)	0.240 (0.791)
Constant, $\hat{\alpha}_0$	4.206*** (1.041)	3.107*** (0.723)	1.043* (0.605)
Observations	206	206	206
R-squared	0.060	0.065	0.044

Note: Estimated regression results for the three-group classification. In column (1), the dependent variable is annualised average (real) net output growth. The corresponding dependent variables in columns (2) and (3) are annualised average net output per worker growth and employment growth respectively. All regressions are estimated by OLS and robust standard errors are reported, where *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 3 indicates that the 1932 General Tariff had medium-term expansionary effects for additionally protected industries.[14] Column (1) illustrates that the tariff treatment effect for the output growth of additionally protected industries was 3.12 percent per annum, a result that is significant at the 5 percent significance level. The corresponding treatment effect of productivity of 1.84 percent per annum, in column (2), is also significant at the 5 percent level. As expected, the magnitude of these effects are slightly smaller than the short-term effects reported in Table 2, but they remain large and significant.

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[14] We report robustness exercises for this regression in appendix B.4 showing that this result is robust to the inclusion of controls.

4   Conclusions

The application of the difference-in-difference model to the analysis of the policy impact of the General Tariff on British industry has provided new insights. Refining the tariff classification into three groups adds value to the analysis of UK tariffs during the 1930s, allowing us to distinguish between the 10 percent tariff rate and additional tariff rates. This three-group comparison clearly suggests that the treatment effect of the General Tariff was large and statistically significant only for the additionally protected industries. This effect is identified over the short-run when we consider the inter-period comparisons between 1924-30 and 1930-35, but a similar effect is also identified over the medium-term when we consider the inter-period comparisons between 1924-30 and 1930-48. The Import Duties Advisory Committee (IDAC) viewed additional tariff rates as a mechanism for helping industries to restructure to help them compete during the 1930s. The positive output and productivity effects that we identify suggest that they were effective in achieving some of their aims.

The results reported in this study show that tariffs can have positive effects under specific circumstances. This UK-interwar case study should be viewed against the backdrop of a global depression, a unique British position of unilateral free trade and a tariff policy that targeted particular industries via the role of the IDAC. Using industry-level data, we identify that some benefits for the relative output and productivity growth of newly protected industries did arise under these specific circumstances. Given that the newly protected sector formed a very large proportion of the UK industrial output this is likely to result in positive effects on the UK industrial sector.

This study has used disaggregated level data to analyse the effects of tariffs on British industries during the 1930s. Although there have been attempts to relate industry-level tariffs and economic growth at the aggregate level, such results cannot be mechanically applied to the inter-war period. For example, Lehmann and O'Rourke (2011) used a panel data set for 10 countries over the period 1870-1914 and found a positive relationship between industry tariffs and economic growth; however, they also argue that this relationship is likely to change over time.

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Supplementary Material[*]

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Appendix A – Tariff Classification

Table A1 presents the updated classification of industry-specific tariff rates. In the table, we provide a detailed description of the new data set, and document the differences between our classification and that of Broadberry and Crafts (2011). We construct the classification by drawing upon contemporary tariff information from a variety of sources, including: IDAC (1932a, 1932b), CET (1935), NIESR (1943), Hutchinson (1965) and various HMRC reports.

Table A1: Tariff Protection Received by the Industries in the Census of Production during the Interwar Period

Industry Number	Industry	Broadberry & Crafts (BC) Classification	Newly Protected in 1932 (=1)	1932 Duty/Additional Duty	Sources
Sector: Textiles					
101	Cotton Spinning	>10%	1	20%	IDAC (1932b, p. 8), CET (1935, p. 56). Hutchinson (1965, p. 180) refers to these industries in Group VIII (1), "Manufactures wholly or partly of cotton, wool".
102	Cotton Weaving	>10%	1	20%	
103	Woollen & Worsted	>10%	1	20%	
104	Silk & Artificial Silk	Early Protected	0	25%	IDAC (1932a, p. 3): "The Silk Duties, both customs and excise, were imposed for revenue purposes in 1925, being selected on grounds of luxury. They are levied at various rates, specific and *ad valorem*, on artificial and natural silk, and their products, running up to 33.3% or more." Cmd. 5296 (1936), Table 134, summarises the history of silk duties from 1925.
105	Linen & Hemp	>10%	1	20%	IDAC (1932b, p. 8). Hutchinson (1965, p. 180) refers to these industries in Group VIII (1) "Manufactures wholly or partly of […] linen".
106	Jute	0-10%	1	20%	IDAC (1932b, p. 8), CET (1935, p. 57). Hutchinson (1965, p. 180) refers to these industries in Group VIII (1) "Manufactures wholly or partly of […] jute".[15]
107	Hosiery	>10%	1	20%	IDAC (1932b, p. 9), CET (1935, p. 59). Hutchinson (1965, p. 181) refers to these industries in Group IX (1), "Articles of apparel of all kinds". NIESR (1945, p. 46), Group XIII: "This group consists of all articles of apparel and footwear, and a duty of 20% is charged on all articles not separately listed."
108	Textile Finishing	>10%	1	20%	
109	Lace	Not in BC Sample	0	20%	Cmd. 5296 (1936), Table 134, summarises the history of lace duties from 1925. A 33.3% *ad valorem* on lace was imposed on 1 July 1925 which lapsed on 30 June 1930. IDAC (1932a, p, 4) points out that "Under the White Paper procedure, duties were imposed for a period of five years at the rate of 33.3% *ad valorem* on lace".

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[15] Although NIESR (1945, pp. 50-52) references jute as an exemption from the Import Duties Act, 1932, the Census of Production refers to manufactures made "wholly or partly of […] jute", for which the tariff rate was 20%.

					IDAC (1932b, p. 8), CET (1935, p. 58) report a 20% duty from 1932. Hutchinson (1965, p. 180) refers to industries in Group VIII (1), "Tissue and like materials of any width, shape, or length (including lace)".
110	Rope, Twine & Net	0-10%	1	15%	IDAC (1932b, p. 9), CET (1935, p. 58) report duties on Rope and Twine (15%) and Net (20%). Hutchinson (1965, p. 181) refers to these industries in Group VIII(4) and (5): "(4) Cordage, cables, ropes and twine other than coir yarn (including hard fibre singles, polished, starched or glazed singles, and all multiples) wholly or partly of vegetable fibre other than cotton, linen, ramie or seagrass. "(5) Nets and netting made wholly or partly of material dutiable under the heading (4) above."
111	Elastic Webbing	Not in BC Sample	1	20%	IDAC (1932b, p. 8), CET (1935, p. 56). Hutchinson (1965, p. 180) list this in Group VIII(1)(i) "Tissue and like materials of any width, shape, or length (including […] webbing)".
112	Coir Fibre, Horse Hair & Feather	>10%	1	20%	IDAC (1932b, p. 9), CET (1935, p. 58, p. 60). Hutchinson (1965, p. 180) lists this in Group VIII(3) "Coir mats and matting" "Feathers and all manufactured articles complete or incomplete, containing feathers or down".
113	Flock & Rag	0-10%	1	10%	IDAC (1932b, p. 8), CET (1935, p. 56) report that this industry is expressly excluded from additional duty. Hutchinson (1965, p. 180): notes, "Tissue and like materials of any width, shape, or length ([…], but not including rags)".
114	Packing	Not in BC Sample	0	20%	Cmd. 5296 (1936), Table 134, describes a 16.66% duty on Packing from 1925 which lapsed on 30 April 1930. IDAC (1932a, p. 4) notes that "Under the White Paper procedure, duties were imposed for a period of five years […] at the rate of 16.66% on packing and wrapping paper".
115	Canvas Good Sack	>10%	1	20%	IDAC (1932b, p. 9), CET (1935, p. 58). Hutchinson (1965, p. 180) lists this in Group VIII (2), "Sacks, and bags of a shape similar to sacks, wholly or partly of vegetable fibre."
116	Engine Boiler Packing	Not in BC Sample	1	10%	This industry is not included in Cmd. 5296 (1936), Table 134, which summarises the history early- protected industries. IDAC (1932b) and CET (1935) do not report an additional tariff. Hence, by deduction, the industry is assumed to have the 10% rate imposed in 1932.

117	Roofing Felt	0-10%	1	10%	Cmd. 5296 (1936), Table 91, shows a revenue tariff from Asphalt and Bitumen of 10% under the General tariff.
201	Grain Milling	0-10%	1	10%	This was Liable to duty under the 1932 Ottawa Agreements. CET (1932, p. 99): Wheat in grain receives specific duty; Maize a 10 per cent ad valorem duty.
202	Bread & Cakes	0-10%	0	0%	CET (1935, p. 30) lists this as an exemption: "Confectionary containing sugar or cocoa, being composite goods some (but not all) of the components of which are chargeable with Customs duty by or under an enactment other than the Import Duties Act, 1932, except the following articles when imported as:- Cakes and biscuits."
203	Biscuit	0-10%	0	0%	CET (1935, p. 30) lists this as an exemption: "Confectionary containing sugar or cocoa, being composite goods some (but not all) of the components of which are chargeable with Customs duty by or under an enactment other than the Import Duties Act, 1932, except the following articles when imported as:- Cakes and biscuits."
204	Cocoa, Sugar & Confectionary	0-10%	0	Specific duties	Cmd. 5296 (1936), Table 134: Cocoa and Sugar faced pre-war revenue tariffs that continued with amendments into the 1920s and 1930s. CET (1935, p. 30) notes that Confectionary was "liable to duty at the rate of 10 per cent ad valorem in addition to any other duties (e.g., Sugar duty) payable on the goods."
205	Bacon, Wring & Sausage	0-10%	1	30%	CET (1935, p. 7) notes "Bacon […] may not be imported except under Board of Trade licence." CET (1935, p. 29): Sausages liable to additional duty from 1932.
206	Preserved Foods	Not in BC Sample	1	25%	IDAC (1932b, p. 4), CET (1935, p. 24; p. 28). Hutchison (1965, p. 175) lists additional tariffs for this category as Class I(4)-(5): "(4) Fruit preserved by chemicals or artificial heat, other than fruit preserved in sugar. [25%] "(5) Vegetables (other than tomatoes) preserved in air-tight containers, but not including pickles and vegetables preserved in vinegar. [20%]" CET (1935, p. 28): Fruit preserved in sugar or syrup "chargeable with Sugar duty plus a duty of 25 per cent ad valorem."

207	Butter & Cheese	Not in BC Sample	1	15%	Butter and cheese were subject to a duty on foreign goods and imperial preference (with free entry) under the Ottawa Agreements Act, 1932 (CET, 1935, p. 99; NIESR, 1945, p.47): "On butter there is a specific duty of 15*s*. per cwt. and on cheese an *ad valorem* rate of 15%." The tariff revenue data reported in Cmd. 5296 (1936) suggest that import tariff revenues from foreign countries collapsed following Ottawa.
208	Fish Curing	0-10%	1	10%	Cmd. 5296 (1936), Table 83 reports disaggregated revenue tariffs from cured or salted fish at 10-12% in the period 1932-5 suggesting that the 10% rate was dominant for this category.
209	Cattle, Dog & Poultry	0-10%	1	10%	There are some restrictions on the import of live animals (CET, 1935, p. 7). Cmd. 5296 (1936), Table 83 reports disaggregated revenue tariffs from poultry and live animals at 10% for the period 1932-5.
210	Ice	0-10%	1	10%	No reference to Ice in any additional rate list or in any exemption list. Hence, by deduction, the industry is assumed to have the 10% rate imposed in 1932.
211	Sugar & Glucose	0-10%	0	Specific duties	Cmd. 5296 (1936), Table 134: Sugar faced pre-war revenue tariffs that continued with amendments into the 1920s and 1930s.
212	Brewing & Malting	0-10%	0	Specific duties	Cmd. 5296 (1936), Table 134 lists the pre-war specific duties affecting this industry together with the amendments during the 1920s and 1930s.
213	Spirit Rectifying etc.	0-10%	0	Specific duties	Cmd. 5296 (1936), Table 134 lists the pre-war specific duties affecting this industry together with the amendments during the 1920s and 1930s. NIESR (1945, p. 49): "There are specific duties […] on the following spirits when imported in cask after having been warehoused for three years or more: brandy and rum, sweetened and unsweetened liquors, cordials and mixtures, imitation rum, Geneva, naptha, and methyl alcohol."
214	Wholesale Bottling	0-10%	1	20%	IDAC (1932b, p. 5) and CET (1935, p. 33). Hutchison (1965, pp. 176-177) reports an additional tariff for: "Glass bottles and glass jars, including glass stoppers, but not including scientific glassware."
215	Aeriated Water etc.	0-10%	0	Specific duties	(CET, 1935, p. 222) mentions table water as being subject to a specific duty. Cmd. 5296 (1936), Table 134 notes a specific duty of 8d per gallon introduced on 1st May 1916 and continued into the 1920s and 1930s.
216	Spirit Distilling	0-10%	0	Specific duties	Cmd. 5296 (1936), Table 134 lists the pre-war specific duties affecting this industry together with the amendments during the 1920s and 1930s. This is

					confirmed by NIESR (1945, p. 49): "There are specific duties [...] on the following spirits when imported in cask after having been warehoused for three years or more: brandy and rum, sweetened and unsweetened liqueurs, cordials and mixtures, imitation rum, Geneva, naptha, and methyl alcohol."
217	Tobacco	0-10%	0	Specific duties	Cmd. 5296 (1936), Table 134 lists the pre-war specific duties affecting this industry together with the amendments during the 1920s and 1930s. This is confirmed by NIESR (1945, p. 50): "On unmanufactured tobacco the duties are 9*s*. 6*d*. or 10*s*. 6*d*. when unstripped, and an extra 1/2*d*. when stripped. The higher duties are charged when the tobacco contains less than 10% of moisture."
Sector: Clothing					
301	Tailoring & Dressmaking	>10%	1	20%	IDAC (1932b, p. 9), CET (1935, p. 59). Hutchinson (1965, p. 181) Group IX(1) reports an additional duty for "Articles of apparel of all kinds".
302	Boot & Shoe	>10%	1	20%	IDAC (1932b, p. 9), CET (1935, p. 59). Hutchinson (1965, p. 181): Group IX(2) reports an additional duty for "Boots, bootees, shoes, over-shoes, slippers and sandals of all descriptions and of whatever material, finished or unfinished, and shaped parts and laces therefor."
303	Hat & Cap	>10%	1	30%	IDAC (1932b, p. 9), CET (1935, p. 59 and p. 61). Hutchinson (1965, p. 181): Group IX(1) reports an additional duty for "Articles of apparel of all kinds".
304	Gloves	Early Protected	0	33.3%/ 30%	Cmd. 5296 (1936), Table 134 lists Gloves as Key Industry Duty. This was renewed at 33.3% *ad valorem* on 22 December 1925 and lapsed in 21 December 1930. During the 1930s this came under the remit of the General Tariff. CET (1935, p. 61) lists this in Group IX (4) and (5) as an Additional Duty from 1932.
305	Umbrellas & Walking Sticks	>10%	1	20%	IDAC (1932b, p. 14), CET (1935, p. 79). Hutchison (1965, p. 186), Group XVI(20-21) reports an additional duty for: "(20) Umbrella and sunshades and covers, and parts are fittings therefor. "(21) Walking sticks (including canes) and parts and fittings therefor."
306	Fur	Not in BC Sample	1	30%	IDAC (1932b, p. 13), CET (1935, p. 74). Hutchison (1965, p. 185), Group XVI(6-7) reports an additional duty for: "(6) Fur and other skins, including pieces (dressed), except leather. [15%] "(7) Goods manufactured wholly or partly of fur skin, including any skin with fur, hair or wool attached. [30%]"
Sector: Iron					

401	Blast Furnace[16]	Not in BC Sample	1	33.3%	NIESR (1945, p. 44): "Duties of 33.3% *ad valorem* are charges on spiegeleisen and most types of pig iron."[17,18] CET (1935, p. 86): Schedule II.
402	Smelting & Rolling[19]	>10%	1	33.3%	IDAC (1932b, p. 14), CET (1935, pp. 81-84). Hutchison (1965, p. 186), Schedule II(2) reports an additional duty for: "Iron and Steel (other than pig iron, but including alloy steel) of the following descriptions: "(i) Ingots […] "(iii) Sheet and tinplate bars. "(iv) Bars, rods, angles, shapes and sections of all kinds, whether fabricated or not."
403	Foundries[20]	>10%	1	33.3%	IDAC (1932b, p. 14), CET (1935, p. 85). Hutchison (1965, p. 186), Schedule II(2) reports an additional duty for: "Iron and Steel (other than pig iron, but including alloy steel) of the following descriptions: […] "(vi) Casting, in the rough or machined".
404	Tinplate	>10%	1	33.3%	IDAC (1932b, p. 14), CET (1935, p. 83). and Hutchison (1965, p. 186): Schedule II(2) reports an additional duty for: "Iron and Steel (other than pig iron, but including alloy steel) of the following descriptions: […] "(iii) Sheet and tinplate bars."
405	Wrought Iron & Steel	>10%	1	20%	IDAC (1932b, p. 6), CET (1935, p. 37). Hutchison (1965, p. 177), Group II(6) reports an additional duty for: "Iron and Steel products" regularly constructed with wrought iron and steel.
406	Wire	>10%	1	20%	IDAC (1932b, p. 6), CET (1935, p. 37) Hutchison (1965, p. 177), Group II (6) (iv) reports an additional duty for: "Iron and Steel products of the following descriptions: […] "(iv) Wire, wire netting, wire nails, and cable and rope".
407	Chain, Nail & Screw	>10%	1	20%	IDAC (1932b, p. 6), CET (1935, pp. 37-38). Hutchison (1965, p. 178), Group II(6)(v) reports an additional duty for: "Iron and Steel products of the following descriptions: […]

[16] The main product for this industry is pig iron. (Source: Kitson and Solomou, 1990)

[17] "There are two different rates of duty applied to nearly all iron and steel products according to whether the goods are or are not imported from a Cartel country and covered by a quota certificate. All products from Cartel countries eligible for the preferential rate are subject to an ad valorem duty of 10%. Products imported from other countries are subject to duties as follows:" higher ad valorem rates. (Source: NIESR, 1945, p. 44)

[18] Pig iron smelted with charcoal was exempt from the Import Duties Act, 1932 (CET, p. 15), but smelting with charcoal was largely replaced with coke smelting in the 19th century.

[19] The main products for this industry are steel ingots and castings, steel bars, rods and angles. (Source: Kitson and Solomou, 1990)

[20] The main products for this industry are iron and steel castings. (Source: Kitson and Solomou, 1990)

					"(v) Screws, nails, tacks, studs and spikes."
408	Hardware & Hollowware	Early Protected	0	20%	IDAC (1932a, p.4) notes that this was protected "Under Part II of the Safeguarding Industries Act, duties of 33.3% *ad valorem* were imposed for a period of five years in […] domestic hollow-ware (aluminium and enamelled)". Cmd. 5296 (1936), Table 134 notes that this was changed to 25% *ad valorem* rate in 1928 (this lapsed on 12 June 1933). In the 1930s these industries were given additional tariffs: IDAC (1932b, p. 6), CET (1935, p. 36) and Hutchison (1965, p. 177): Group II(2): "Hollow-ware (other than baths) of iron or steel (including tinned plate)."
409	Cutlery	Early Protected	0	20%	Cmd. 5296 (1936), Table 134, notes that this industry was protected with a 33.3% Duty from 1925 (lapsed 21 December, 1930). IDAC (1932b, p. 7), CET (1935, p. 44) and Hutchison (1965, p. 178), Group IV (1) report an additional duty for Cutlery.
410	Tool & Implement	>10%	1	20%	IDAC (1932b, p. 7), CET (1935, p. 46). Hutchison (1965, p. 178), Group IV (4) reports an additional duty for: "(i) Forks, shovels, spades, scythes, sickles and agricultural implements, and parts thereof. (ii) Other tools are parts thereof."
411	Needle Pin Smallware	>10%	1	20%	IDAC (1932b, p. 7), CET (1935, p. 46). Hutchison (1965, p. 178), Group IV (4) (ii) reports an additional duty for: "(ii) Other tools are parts thereof."
412	Small Arms	Not in BC Sample	1	25%	Arms and Ammunition could only be imported under a Board of Trade licence (CET, 1935, p. 7; NIESR, 1945, p. 265). Of those imported, additional rates were levied (IDAC, 1932b, p. 12; CET, 1935, p. 72; Hutchison, 1965, p. 184): Group XVI(1): "Arms and ammunition" including sporting guns, military rifles, miniature rifles, air guns, revolvers and loaded cartridges.
Sector: Engineering Trades					
501	Mechanical Engineering	>10%	1	20%	NIESR (1945, p. 45): Group X "There is a general rate of 20% *ad valorem* on machinery, but there are many exemptions to it. For example a duty of only 15% is imposed on machines for domestic and household purposes, cash registers, dry cleaning and laundering machines, office machinery, petrol pumps, electric refrigerators, agricultural machinery, milking machines and other dairy machinery." CET (1935, p. 48): Group VI(1) Machinery
502	Electrical Engineering	>10%	1	20%	NIESR (1945, p.45): Group IX "The duty on accumulators and heating and cooking apparatus is 15% *ad valorem*, but on all other electrical goods it is 20%." CET (1935, pp. 47-48): Group V(1) Electrical Goods

503	Shipbuilding	0-10%	0	0%	NIESR (1945, pp. 50-51): "Certain classes of goods are exempted from all duties and others are exempted from duty under particular Acts, but remain liable to duty under other Acts. […] Under the *Import Duties Act* the following classes of goods are exempted from duty under Part 3 of the tariff: […] "(1) Goods consigned direct to a shipbuilding yard and which will be used for the building, repairing or refitting of ships in that yard. "(2) Goods of certain classes when imported for the use in the construction or repair of the boilers or propelling machinery of ships, or their accessories. […] "(6) Goods which form part of a ship or other vessel which is being imported for the purpose of being broken up, or any equipment or machinery of such a ship." CET (1935, p. 11)
504	Motor & Cycle	Early Protected	0	33.3%	The McKenna Duties from 1915 covered Motor Vehicles (33.3% *ad valorem*). IDAC (1932a, p. 3) notes: "The McKenna Duties were imposed in 1915 for a variety of reasons mostly connected with the War. They cover motor vehicles, accessories and parts […] – the duties in all these cases being 33.3% *ad valorem*".
505	Aircraft	0-10%	1	10%	Cmd. 5296 (1936), Table 91 p. 144 groups Aircraft tariff revenue with Other Vehicles under the General Tariff legislation. The industry does not figure in any of the additional Tariff information provided by IDAC (1932b) and Hutchison (1965) or in the pre-1932 duties as outlined in CET (1935). This leads us to deduce that the baseline 10% rate was applied to Aircraft.[21]
506	Railway Carriage & Wagon	>10%	1	33.3%	NIESR (1945, p. 46): Group XVII: "A duty of 33.3% *ad valorem* is imposed on railway wagons". CET (1935, p. 40): Group II (6) (x): "Wagons for use on railways".
507	Carriage Cart & Wagon	0-10%	1	10%	No reference to Carriage Cart & Wagon in any additional rate lists or in any exemption list. Hence the 10% rate of the General tariff is assumed.
Sector: Non-Ferrous Metals					
601	Copper & Brass	Not in BC Sample	1	20%	IDAC (1932b, p. 6), CET (1935, p. 42) and Hutchison (1965, p. 178), Group III (2): "Articles manufactures wholly or partly of the metals aluminium, copper, lead, nickel, tin, zinc and alloys including any of these metals".
602	Aluminium, Lead & Tin	Not in BC Sample	1	20%	

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[21] In personal correspondence Professor David Edgerton has pointed out that most of the output of the British Aircraft industry went to the RAF. Imperial Airways, the chosen instrument, bought British. The firms that joined together to form British Airways did buy Dutch, German and US aircraft on a very small scale.

603	Finished Brass	Not in BC Sample	1	20%	
604	Gold & Silver	Not in BC Sample	0	0%	NIESR (1945, pp. 50-52): "Certain classes of goods are exempted from all duties and others are exempted from duty under particular Acts, but remain liable to duty under other Acts. […] Under the *Import Duties Act* the following classes of goods are exempted from duty under Part 3 of the tariff: […] "(7) Goods specifically exempted under the Act. The list of these goods covers ten pages of the Customs and Excise Tariff, and includes: […] gold and silver bullion and coin".
605	Plate & Jewellery	>10%	1	30%	NIESR (1945, p. 47): "Most jewellery is liable to a duty of 30%." IDAC (1932b, p. 13) and Hutchison (1965, p. 185): Group XVI(8) "Jewellery and imitation jewellery, whether gemset or not." CET (1935, p. 74): Group XVI(8): "Jewellery and imitation jewellery, whether or not mounted or set" There are some jewellery exemptions (CET, 1935, p. 15), though none involve metallic jewellery.
606	Watch & Clock	Early Protected	0	33.3%	IDAC (1932a, p. 3): "The McKenna Duties were imposed in 1915 for a variety of reasons mostly connected with the War. They cover […] clocks and watches […] – the duties in all these cases being 33.3% *ad valorem*". Cmd. 5296 (1936), Table 134, notes that this duty lapsed in 1924 but was reintroduced at 33.3% *ad valorem* on 1 July 1925 (lapsed 21 December, 1930).
Sector: Chemical & Allied Trades					
701	Chemical Dyes & Drugs	Early Protected	0	33.3%	IDAC (1932a, p. 3): "[T]he Key Industry Duties […] cover a wide range of commodities such as […] organic chemicals". CET (1935, pp. 13-14).
702	Seed Crushing	0-10%	1	15%	CET (1935, p. 35): Class II (1): Seed oil is subject to a duty of 15 per cent *ad valorem* chargeable under the Ottawa Agreements. CET (1935, p. 101) lists Castor, Coconut, Ground-nut, Linseed, Rape, Sesamum and Cod Liver Oils among those with duty in excess of 10% under the Ottawa Agreements.
703	Oil & Tallow	0-10%	0	0%	CET (1935, pp. 12-16): "Goods specifically exempted by the Import Duties Act, 1932, and Treasury Orders made thereunder, viz.:- "Natural but not Terpeneless Essential Oils"
704	Fertiliser Disinfectant Glue	>10%	1	20%	NIESR (1945, p. 46): Group XIV

					"This group includes a short list of chemicals many of which are used for domestic or agricultural purposes. Most of them are dutiable at a rate of 20% *ad valorem*, but in a few cases duties as low as 15% and as high as 33.3% are imposed. Fertilisers are mainly subject to specific duties, the most common rate being £4 per ton. […] There are alternative duties on glue etc. of 10*s*. 6*d*. per cwt. Or 25% *ad valorem*." Kitson and Solomou (1990) note that 17% of traded output was covered by Key Industry Duties but most were newly-protected in 1932. CET (1932, p. 80), Group XVI (28): "Glue" shall receive a duty of "10*s*. 6*d*. a cwt. or to 25 per cent of the value of the goods, whichever is the greater".
705	Soap, Candle, Perfume	>10%	1	20%	NIESR (1945, p. 46), Group XIV: "This group includes a short list of chemicals many of which are used for domestic or agricultural purposes. Most of them are dutiable at a rate of 20% *ad valorem*, but in a few cases duties as low as 15% and as high as 33.3% are imposed. On most types of soap the duty is 15%, but on toilet soap it is 30%." IDAC (1932b, p. 10), CET (1935, p. 66) and Hutchison (1965, p. 182): Group XI(1-2) "(1) Candles […] [20%] "Soap, including abrasive soap, soap powder and soap flakes, but not including toilet soap." [20%] IDAC (1932b, p. 12) and Hutchison (1965, p. 184): Group XVI(2) "Toilet Soap" [30%] Cmd. 5296 (1936), Table 83, shows a revenue tariff rate with additional duties for perfumery.
706	Starch Polishes	0-10%	1	10%	No explicit reference to Starch Polishes in either (i) early protected, or (ii) additionally protected lists of the Import Duties Act, 1932. Thus, by deduction the industry is assumed to have a 10% *ad valorem* tariff rate imposed in 1932.
707	Paint Colour Varnishes	>10%	1	20%	NIESR (1945, p. 46): Group XIV: "This group includes a short list of chemicals many of which are used for domestic or agricultural purposes. Most of them are dutiable at a rate of 20% *ad valorem*, but in a few cases duties as low as 15% and as high as 33.3% are imposed. […] The duties on paint vary from 15 to 20% *ad valorem*." IDAC (1932b, p. 10), CET (1935, p. 66) and Hutchison (1965, p. 182): Group X (29): "Paints and Colours".

708	Explosives & Fireworks	Early Protected	0	Early Protected	Fireworks were exempt from duty. NIESR (1945, p. 52) notes: "Under the *Safeguarding of Industries Act* 1921, and the *Finance Acts* of 1922, 1926 and 1936, the following classes of goods are exempt from duty under Part 5: […] fireworks. Fireworks are approximately 20% of output for this industry (Kitson and Solomou, 1990) Explosives Regulated by Licence. CET (1935, p. 8): "Explosives may not be imported except under Home Office licence"
709	Match	Early Protected	0	Specific duties	NIESR (1945, pp. 48-49): "This Part consists of various duties which have been imposed at different times under special enactments. Many of them were originally for revenue purposes under the Finance Acts. […] "There is a specific duty [… on] matches". Cmd. 5296 (1936), Table 134, notes specific duties in 1916, 1918 and 1927.
710	Ink, Gum, Wax	Not in BC Sample	1	20%	IDAC (1932b, p. 14), CET (1935, pp. 78-79). Hutchison (1965, p. 186), Group XVI (19) notes additional duties: "Stationary (other than paper), including writing ink and ink powder, […], sealing wax".
711	Petroleum	Early Protected	0	Specific duties	IDAC (1932a, p. 3): "The customs duty on Hydrocarbon Oils was imposed […] in 1928."
Sector: Leather					
801	Fellmongery	>10%	1	15%	IDAC (1932b, p. 13), CET (1935, p. 74) and Hutchison (1965, p. 185): Group XVI (6-7): "(6) Fur and other skins, including pieces (dressed), except leather."
802	Leather Tanning	0-10%	1	20%	IDAC (1932b, p. 11), CET (1935, p. 67) and Hutchison (1965, p. 182): Group XII
803	Leather Goods	0-10%	1	20%	"(1) Leather, dressed (other than patent, varnished, japanned and enamelled and glace kid). [15%] "(2) Saddlery and harness (including horse boots) wholly or partly of leather. [20%] "(3) Trunks, bags, wallets, pouches and other receptacles made wholly or partly of leather or material resembling leather whether fitted or not. [25%]"
Sector: Paper					
901	Paper	>10%	0	20%	Cmd. 5296 (1936), Table 134, describes a 16.66% duty on Paper from 1925 which lapsed on 30 April 1930.
902	Wallpaper	>10%	0	20%	IDAC (1932a, p. 4) notes that "Under the White Paper procedure, duties were imposed for a period of five years […] at the rate of 16.66% on packing and wrapping paper"

					IDAC (1932b, p. 11), CET (1935, p. 67) and Hutchison (1965, p. 183), Group XIII (1-2) note additional tariffs for paper in the early 1930s, such that total protection was 20% *ad valorem*.
903	Printing & Books	Not in BC Sample	0	0%	NIESR (1945, pp. 50-52): "Certain classes of goods are exempted from all duties and others are exempted from duty under particular Acts, but remain liable to duty under other Acts. […] Under the *Import Duties Act* the following classes of goods are exempted from duty under Part 3 of the tariff: […] "(7) Goods specifically exempted under the Act. The list of these goods covers ten pages of the Customs and Excise Tariff, and includes: […], printed trade catalogues and lists, manuscripts and typescripts […] maps". CET (1935, pp. 12-17): "Goods specifically exempted by the Import Duties Act, 1932, and Treasury Orders thereunder, viz.:- "Maps […] Newspapers, periodicals, printed books "Printed parts of newspapers, of periodicals and of printed books […]. "Printed publications".
904	Print & Publish Newspaper	Not in BC Sample	0	0%	NIESR (1945, pp. 50-52): "Certain classes of goods are exempted from all duties and others are exempted from duty under particular Acts, but remain liable to duty under other Acts. […] Under the *Import Duties Act* the following classes of goods are exempted from duty under Part 3 of the tariff: […] "(7) Goods specifically exempted under the Act. The list of these goods covers ten pages of the Customs and Excise Tariff, and includes: […], newsprint". CET (1935, pp. 12-17): "Goods specifically exempted by the Import Duties Act, 1932, and Treasury Orders thereunder, viz.:- "Newspapers, periodicals, printed books. "Printed parts of newspapers, of periodicals"
905	Manufactured Stationary	>10%	1	20%	IDAC (1932b, p. 14), CET (1935, pp. 78-79) and Hutchison (1965, p. 186): Group XVI (19): "Stationary (other than paper)".
906	Cardboard Box	>10%	0	20%	Cmd. 5296 (1936), Table 134, describes a 16.66% duty on Packing from 1925 which lapsed on 30 April 1930. IDAC (1932a, p. 4) notes that "Under the White Paper procedure, duties were imposed for a period of five years […] at the rate of 16.66% on packing and wrapping paper".

					IDAC (1932b, p. 11), CET (1935, p. 67) and Hutchison (1965, p. 183): Group XIII (1-2) show that additional duties were given to "[B]oard made from paper or pulp" such that total protection was 20% *ad valorem*.
907	Pens & Pencils	>10%	1	20%	IDAC (1932b, p. 14), CET (1935, pp. 78-79) and Hutchison (1965, p. 186): Group XVI(19): "Stationary (other than paper), including […], pencils, pencil leads and crayons, pen nibs, fountain pens, stylographic and other pens".
Sector: Miscellaneous					
1001	Rubber	Early Protected	0	33.3%	Kitson and Solomou (1991): tyres, which comprise 70% of industry output, were covered by the McKenna duty. IDAC (1932a, p. 3): "The McKenna Duties were imposed in 1915 for a variety of reasons mostly connected with the War. They cover motor vehicles, accessories and parts […] – the duties in all these cases being 33.3% *ad valorem*".
1002	Linoleum & Oilcloth	>10%	1	20%	IDAC (1932b, p. 13), CET (1935, p. 75). Hutchison (1965, p. 185), Group XVI (13) notes additional tariffs for "Felt base floor covering, linoleum and oilcloth."
1003	Musical Instruments	Early Protected	0	33.3%	IDAC (1932a, p. 3): "The McKenna Duties were imposed in 1915 for a variety of reasons mostly connected with the War. They cover […] musical instruments […] – the duties in all these cases being 33.3% *ad valorem*".
1004	Games & Toys	>10%	1	25%	IDAC (1932b, p. 14), CET (1935, p. 77) and Hutchison (1965, pp. 185-186): Group XVI(17-18): "(17) Appliances, apparatus, accessories and requisites for sports, games, gymnastics and athletics and parts thereof. "(18) Toys of all kinds and parts thereof".
1005	Sports Requisites	>10%	1	25%	IDAC (1932b, p. 14), CET (1935, p. 77) and Hutchison (1965, pp. 185-186): Group XVI(17): "Appliances, apparatus, accessories and requisites for sports, games, gymnastics and athletics and parts thereof."
1006	Scientific Instruments	Early Protected	0	33.3%	IDAC (1932a, p. 3): "[T]he Key Industry Duties […] cover a wide range of commodities such as optical and scientific instruments […]. The duty is in most cases 33.3% *ad valorem*.
1007	Cinematographic Film Printing	Early Protected	0	Specific duties	IDAC (1932a, p. 3): "The McKenna Duties were imposed in 1915 for a variety of reasons mostly connected with the War. They cover […] cinematograph films at specific rates."

1008	Incandescent Mantles	Early Protected	0	33.3%	IDAC (1932a, p. 4): "Under Part II of the Safeguarding Industries Act, duties of 33.3% *ad valorem* were imposed for a period of five years in each case on […] gas mantles."
1009	Fancy Goods	0-10%	1	20%	Cmd. 5296 (1936), displays the revenue tariff for fancy goods which shows an additional rate.
1010	Coke & By-Products	0-10%	0	0%	NIESR (1945, pp. 50-52): "Certain classes of goods are exempted from all duties and others are exempted from duty under particular Acts, but remain liable to duty under other Acts. […] Under the *Import Duties Act* the following classes of goods are exempted from duty under Part 3 of the tariff: […] "(7) Goods specifically exempted under the Act. The list of these goods covers ten pages of the Customs and Excise Tariff, and includes: […], coal and coke". CET (1935, p. 12): "Goods specifically exempted by the Import Duties Act, 1932, and Treasury Orders thereunder, viz.:- "Coal, coke".
1011	Manufactured Fuel	0-10%	0	Specific duties	IDAC (1932a, p. 3): "The customs duty on Hydrocarbon Oils was imposed […] in 1928."
1012	Brush	>10%	1	20%	IDAC (1932b, p. 13), CET (1935, p. 75) and Hutchison (1965, p. 185): Group XVI(11): "Brooms and brushes of all descriptions."
1013	Manufactured Abrasives	>10%	1	20%/ 15%	Aluminium Oxide, a common manufactured abrasive, is listed with an additional duty in CET (1935, p. 65) of "£3 per ton, or to 20 per cent of the value of the goods, whichever is the greater". Cmd. 5296 (1936), displays the revenue tariff for Manufactured Abrasives as a group which shows an additional rate of 15% *ad valorem*.
Sector: Timber					
1101	Timber	>10%	1	20%	IDAC (1932, p. 8), CET (1935, pp. 52-54) and Hutchison (1965, pp. 179-180): Group VII "Articles manufactures wholly or partly of wood and timber (not including planed or dressed wood and timber, staves, sleepers, plywood and veneers imported as such): "(i) Builders' woodwork, including window frames, doors, gates etc., and parts thereof. [15%] "(ii) All other manufactures of wood and timber [20%]".
1102	Furniture & Upholstery	>10%	1	20%	
1103	Wooden Cases	Not in BC Sample	1	20%	
1104	Coopering	Not in BC Sample	1	20%	
1105	Basket & Wicker-Work	Not in BC Sample	1	20%	
Sector: Clay & Building Materials					

1201	Brick & Fireclay	0-10%	1	10%	Brick and clay are expressly excluded from the additional duties in IDAC (1932b, p. 4, Group I(1)), CET (1935, p. 31) and Hutchison (1965, p. 176, Group I(1)): "except bricks of brick earth or clay and refractory goods".
1202	China & Earthenware	>10%	1	20%	IDAC (1932b, p. 4) and Hutchison (1965, p. 176): Group I(1)(i) "All other pottery and clay products". CET (1935, p. 31): Group I
1203	Cement	0-10%	1	10%	IDAC (1932b) and CET (1935) do not report an additional tariff. Hence, by deduction, the industry is assumed to have the 10% rate imposed in 1932.
1204	Glass	>10%	1	20%	IDAC (1932b, p. 5), CET (1935, p. 32) and Hutchison (1965, pp. 176-177): Group I(2): "Glass and Glassware".
1205	Building Materials	0-10%	1	20%	Capie, Table 8.1 lists a nominal protection rate of 20% for Building Materials. Roofing Tiles: 15% (CET, p. 31; Class III, Group I(1)(i)). CET (1935) lists a range of building materials with additional rates. Cmd. 5296 (1936), displays the revenue tariff for a variety of building materials which shows a prevalence of additional rates.

Appendix B – Robustness Analysis

B.1   Descriptive Statistics

Table B1 presents the salient descriptive statistics for the two-group classification of non-newly and newly protected industries. It documents the average of compounded annual (net) output and (net) output per worker growth rates for the two groups in turn.[22] The average annual net output and net output per worker growth of the non-newly protected industries is similar in both the 1924-30 and 1930-35 periods. In contrast, the output and output per worker growth of the newly protected industries show marked time variation. The average annual output growth for the non-newly and newly protected groups in 1924-30 was 4.22 and 1.40 percent respectively. In 1930-35 the figure for the non-newly protected group remains stable at 4.29 percent, while the output growth of newly protected industries jumps to 5.53 percent. Over the 1930-48 period, the average annual net output and net output per worker growth of all industries is lower than in 1930-35, reflecting the fact that much of growth over the period up to 1935 was cyclical growth. The output and productivity growth of non-newly protected industries is comparable to that of newly protected industries over this period. Given the differences in the initial period (1924-30), this is indicative that the tariff might have had medium-term effects on treated industries.

Table B1: Difference in Output and Productivity Growth across Two Groups, 1924-30, 1930-35 and 1930-48, Mean (and Standard Deviation) of Net Output and Net Output per worker Growth (in Constant Prices)

	Net Output Growth		Net Output per worker Growth	
	Non-Newly Protected	*Newly Protected*	*Non-Newly Protected*	*Newly Protected*
1924-1930	4.22% (0.99)	1.40% (0.47)	3.01% (0.71)	1.55% (0.31)
1930-1935	4.29% (1.32)	5.53% (0.52)	3.14% (1.01)	3.85% (0.41)
1930-1948	2.61% (0.54)	2.64% (0.37)	1.32% (0.34)	1.47% (0.17)

Note: Average annual growth rate for all industries in the given classification. Non-newly protected industries include both industries that were protected prior to 1932 and those that were unprotected for the whole period. In the 1924-30 and 1930-35 period, there are 36 non-newly protected and 73 newly protected industries in our sample. In 1930-48, the corresponding numbers of firms in our sample are 34 and 69 respectively.

Table B2 presents the analogous descriptive statistics for the three-group classification, which includes industries that were: non-newly protected (control), newly protected at 10 percent, and newly protected with additional duties. The table refines the intuition described using the two-group classification and highlights that the greatest output and productivity benefits from the tariff were received by industries with additional duties. On average, industries protected at the 10 percent rate did not see increases in growth from 1924-30 to 1930-35 that matched those of additionally protected industries. This pattern is particularly striking for productivity (see panel B of table B2).

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[22] The annual growth rates for each group in table A1 are not weighted by industry size. The figures reported here differ from Kitson and Solomou (1990) who report weighted growth rates.

Table B2: Differences in Output and Productivity Growth across Three Groups, 1924-30, 1930-35 and 1930-48, Mean (and Standard Deviation) of Net Output and Net Output per worker Growth (in Constant Prices)

	Panel A: Net Output Growth		
	Non-Newly Protected	*Ten Percent Duty*	*Additional Duties*
1924-30	4.22% (0.99)	2.66% (1.74)	1.15% (0.44)
1930-35	4.29% (1.32)	4.99% (1.59)	5.63% (0.54)
1930-48	2.61% (0.54)	2.59% (1.29)	2.64% (0.37)
	Panel B: Net Output per worker Growth		
	Non-Newly Protected	*Ten Percent Duty*	*Additional Duties*
1924-30	3.01% (0.71)	2.65% (1.01)	1.34% (0.31)
1930-35	3.14% (1.01)	2.94% (0.96)	4.02% (0.46)
1930-48	1.32% (0.34)	1.77% (0.55)	1.42% (0.18)

Note: Average annual growth rate for all industries in the given classification. Non-newly protected industries include both industries that were protected prior to 1932 and those that were unprotected for the whole period. In the 1924-30 and 1930-35 period, there are 36 non-newly protected industries, 12 industries protected at the 10 percent rate and 61 industries with additional tariff protection. In 1930-48, the corresponding numbers of firms in our sample are 34, 11 and 58 respectively.

B.2 Control Variables

The regressions reported in columns (2)-(5) of Table 2 include control variables that are intended to capture otherwise unobserved features of industries that may simultaneously be correlated with the tariff treatment and their output, productivity or employment growth. That is, they are intended to capture industry features that may have caused differential changes in growth rates across industry groups absent the General Tariff. Because data constraints limit the possible control variables, all controls are time-invariant and are included in the regression alongside an interaction with the time dummy $y35_t$ to account for potential time-varying effects. In this appendix, we describe the sets of control variables reported in Table 2. Four classification schemes were considered, each providing different levels of aggregation:

Census of Production Sectoral Classification   The first set of control variables we use, in column (2) of Table 2, groups industries into the sectors defined by the Census of Production. That is, we have a dummy variable for each sector of the economy that is set to unity if that industry is classed within that sector in the Census of Production, and zero otherwise. In our dataset there are 109 industries, which are split up into 13 sectors.[23] Table B3 presents a list of the sectors, and the industries that comprise them. To the extent that industries within the same sector may co-move, but differ from other sectors, or be subject to similar tariff protection within sectors, this control variable can capture time-varying, industry-specific influences, as well as potential non-random tariff assignment.

Table B3: Sectoral Breakdown of Industries in the Census of Production

Sector	Industries in the Sector
Textiles	Cotton Spinning; Cotton Weaving; Woollen & Worsted; Silk & Artificial Silk; Linen & Hemp; Jute; Hosiery; Textile Finishing; Lace; Rope, Twine & Net; Elastic Webbing; Coir Fibre, Horse Hair & Feather; Flock & Rag; Packing; Canvas Good Sack; Engine Boiler Packing; Roofing Felt.

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[23] There are 12 dummy variables to avoid the problem of perfect multicollinearity.

Food, Drink and Tobacco	Grain Milling; Bread & Cakes; Biscuit; Cocoa, Sugar & Confectionary; Bacon, Wring & Sausage; Preserved Foods; Butter & Cheese; Fish Curing; Cattle, Dog & Poultry; Ice; Sugar & Glucose; Brewing & Malting; Spirit Rectifying etc.; Wholesale Bottling; Aeriated Water etc.; Spirit Distilling; Tobacco.
Clothing	Tailoring & Dressmaking; Boot & Shoe; Hat & Cap; Glove; Umbrellas & Walking Sticks; Fur.
Iron	Blast Furnace; Smelting & Rolling; Foundries; Tinplate; Wrought Iron & Steel; Wire; Chain, Nail & Screw; Hardware & Hollowware; Cutlery; Tool & Implement; Needle Pin Smallware; Small Arms.
Engineering Trades	Mechanical Engineering; Electrical Engineering; Shipbuilding; Motor & Cycle; Aircraft; Railway Carriage & Wagon; Carriage Cart & Wagon.
Non-Ferrous Metals	Copper & Brass; Aluminium, Lead & Tin; Finished Brass; Gold & Silver; Plate & Jewellery; Watch & Clock.
Chemical & Allied Trades	Chemical Dyes & Drugs; Seed Crushing; Oil & Tallow; Fertiliser Disinfectant Glue; Soap, Candle, Perfume; Starch Polishes; Paint Colour Varnishes; Explosives & Fireworks; Match; Ink, Gum, Wax; Petroleum.
Leather	Fellmongery; Leather Tanning; Leather Goods.
Paper	Paper; Wallpaper; Printing & Books; Print & Publish Newspaper; Manufactured Stationary; Cardboard Box; Pens & Pencils.
Miscellaneous	(Baseline Group) Rubber; Linoleum & Oilcloth; Musical Instruments; Games & Toys; Sports Requisites; Scientific Instruments; Cinematographic Film Printing; Incandescent Mantles; Fancy Goods; Coke & By-Products; Manufactured Fuel; Brush; Manufactured Abrasives.
Timber	Timber; Furniture & Upholstery; Wooden Cases; Coopering; Basket & Wicker-Work.
Clay & Building Materials	Brick & Fireclay; China & Earthenware; Cement; Glass; Building Material.

Barna Input-Output Sectoral Classification   To develop a more disaggregated set of control variables to account for time-varying, industry-specific influences and potential non-random tariff assignment, we draw on the sectoral classification of industries from Barna (1952). Barna surveyed the structure of the British economy in the interwar period and classified industries into 29 different sectors – the classification is presented in table B4 and is from Appendix A of Barna (1952). Barna's 29 industry classification accounts for a large degree of heterogeneity across industries, whilst retaining sufficient degrees of freedom in the estimation.

Table B4: Sectoral Breakdown of Industries in the Disaggregated Classification of Barna (1952)

Sector	Industries in the Sector
Building Material	Roofing Felt; Manufactured Abrasives; Brick & Fireclay; Cement; Building Material.
China, Glass etc.	China & Earthenware; Glass.
Coke	Coke & By-Products; Manufactured Fuel
Chemicals etc.	Chemical Dyes & Drugs; Fertiliser, Disinfectant, Glue; Explosives & Fireworks; Fancy Goods.
Soap, Polishes etc.	Soap, Candle, Perfume; Starch Polishes; Match.
Oil & Paint	Seed Crushing; Oil & Tallow; Paint Colour Varnishes; Petroleum; Ink Gum Wax.
Iron & Steel	Blast Furnace; Smelting & Rolling; Foundries; Tinplate; Wrought Iron & Steel.
Non-Ferrous Metals	Copper & Brass; Aluminium, Lead & Tin.
Shipbuilding	Shipbuilding.
Mechanical Engineering	Mechanical Engineering; Small Arms.
Electrical Engineering	Electrical Engineering.
Motor & Cycle	Motor & Cycle.
Aircraft	Aircraft.
Railway Rolling Stock	Railway Carriage & Wagon.
Metal Goods	Wire; Chain, Nail & Screw; Hardware & Hollowware; Cutlery; Tool & Implement; Needle Pin Smallware; Carriage Cart & Wagon; Finished Brass; Gold & Silver; Plate & Jewellery; Watch & Clock; Scientific Instruments; Musical Instruments.

Cotton & Silk	Cotton Spinning; Cotton Weaving; Silk & Artificial Silk.
Woollen & Worsted	Woollen & Worsted.
Hosiery & Lace	Hosiery; Lace.
Other Textiles	Linen & Hemp; Jute; Rope, Twine & Net; Elastic Webbing; Coir Fibre, Horse Hair & Feather; Flock & Rag; Canvas Good Sack ; Engine Boiler Packing.
Textile Finishing & Packing	Textile Finishing; Packing.
Leather & Fur	Fellmongery; Leather Tanning; Leather Goods; Fur.
Clothing	Tailoring & Dressmaking; Boot & Shoe; Hat & Cap; Glove; Umbrellas & Walking Sticks.
Food Processing	Grain Milling; Bread & Cakes; Biscuit; Cocoa, Sugar & Confectionary; Bacon, Wring & Sausage; Preserved Foods; Butter & Cheese; Fish Curing; Cattle, Dog & Poultry; Ice; Sugar & Glucose.
Drink & Tobacco	Brewing & Malting; Spirit Rectifying etc.; Wholesale Bottling; Aeriated Water etc.; Spirit Distilling; Tobacco.
Manufactures of Wood	Timber; Furniture & Upholstery; Wooden Cases; Coopering; Basket & Wicker-Work.
Paper	Paper; Wallpaper; Manufactured Stationary; Cardboard Box.
Printing & Publishing	Printing & Books; Print & Publish Newspaper.
Rubber	Rubber
Miscellaneous Manufacturing	(Baseline Group) Pens & Pencils; Linoleum & Oilcloth; Games & Toys; Sports Requisites; Cinematographic Film Printing; Incandescent Mantles; Brush.

Kitson-Solomou Industry Classification In addition to the sectoral control variables described above, which classify industries within sectors based on the output produced, we also use control variables that explicitly account for certain features of industries in columns (4) and (5) of Table 2. These variables are intended to account for the possibility that the resource intensiveness of an industry may have influenced its evolution in the 1930s, independently of the General Tariff. The third set of control variables is from Kitson and Solomou (1990), who used the classification scheme of the OECD (1987), which groups industries according to the primary factors that affect competitiveness. The 109 industries are grouped into one of the following categories: resource intensive; labour intensive; scale intensive; an industry with differentiated products; the food, drink and tobacco industry is identified separately. The allocation of industries to each classification is listed in table B5.

Table B5: Sectoral Classification of Industries from Kitson and Solomou (1990)

Class	Industry
Resource Intensive	Fur; Copper & Brass; Aluminium, Lead, Tin; Finished Brass; Gold & Silver; Petroleum; Fellmongery; Leather Tanning; Leather Goods; Paper; Coke By-Products; Manufactured Fuel; Manufactured Abrasives; Timber; Wooden Cases; Basket & Wicker-work; Brik & Fireclay; Cement; Building Materials.
Labour Intensive	Cotton Spinning; Cotton Weaving; Woollen & Worsted; Silk & Artificial Silk; Linen & Hemp; Jute; Hosiery; Textile Finishing; Lace; Rope, Twine, Nets; Elastic Webbing; Coir Fibre, Horse Hair & Feather; Flock & Rage; Packing; Canvas Good Sack; Engine Boiler Packing; Roofing Felts; Tailoring & Dressmaking; Boot & Shoe; Hat & Cap; Glove; Umbrellas & Walking Sticks; Furniture & Upholstery; Coopering.
Scale Intensive	Blast Furnaces; Smelting & Rolling; Foundries; Tinplate; Wrought Iron & Steel; Wire; Chain, Nail & Screw; Hardware & Holloware; Shipbuilding; Motor & Cycle; Aircraft; Railway Carriage & Wagon; Carriage Cart & Wagon; Chemical Dyes & Drugs; Seed Crushing Oil & Tallow; Fertiliser Disinfectant Glue; Soap Candle Perfume; Starch Polishes; Paint Colour Varnishes; Explosives & Fireworks; Match; Ink Gum Wax; Wallpaper; Print & Publish Newspapers; Manufactured Stationary; Cardboard Box; Pens & Pencils; Rubber; Linoleum & Oilcloth; China & Earthenware; Glass.

Differentiated Products	Cutler; Tool & Implement; Needle Pin Smallware; Small Arms; Mechanical Engineering; Electrical Engineering; Plate & Jewellery; Watch & Clock; Musical Instruments; Games & Tors; Sports Requisites; Scientific Instruments; Cinematographic Film Printing; Incandescent Mantles; Plastic Materials; Brush.
Food, Drink and Tobacco	(Baseline Group) Grain Milling; Bread & Cakes; Biscuit; Cocoa, Sugar & Confectionary; Bacon, Wring & Sausage; Preserved Foods; Butter & Cheese; Fish Curing; Cattle, Dog & Poultry; Ice; Sugar & Glucose; Brewing & Malting; Spirit Rectifying etc.; Wholesale Bottling; Aeriated Water etc.; Spirit Distilling; Tobacco.

Electricity Usage in Industry The fourth and final set of control variables, used in column (5) of Table 2, accounts for the intensiveness of electricity use by each industry (measured as electricity usage per worker). Given the diffusion of electricity in the production process of interwar economies such a measure is a good proxy of the capital intensity of production across different industries. This control variable is likely to account for time-varying, industry-specific features, to the extent that industries with similar intensity of electricity usage intensities might be expect to grow in a similar manner during the interwar period. The electricity usage of an industry may have influenced its evolution in the 1930s, independently of the General Tariff. For instance, an industry that more readily adopted electricity in this period may have been expected to grow faster, even without the General Tariff. We define dummy variables for the upper and lower quantiles of Electricity per Worker Usage in 1930. The resulting classification is provided in Table B6.

Table B6: Classification of Industries into Quartiles of Electricity per Worker Usage in 1930

Quartile	Industry
Upper	Silk & Artificial Silk; Grain Milling; Butter & Cheese; Ice; Sugar & Glucose; Spirit Distilling; Blast Furnace; Smelting & Rolling; Tinplate; Wrought Iron & Steel; Wire; Railway Carriage & Wagon; Copper & Brass; Aluminium, Lead & Tin; Gold & Silver; Chemical Dyes & Drugs; Seed Crushing; Oil & Tallow; Fertiliser Disinfectant Glue; Petroleum; Paper; Rubber; Linoleum & Oilcloth; Coke & By-Products; Manufactured Fuel; Cement; Glass;
Lower	Cotton Weaving; Hosiery; Lace; Elastic Webbing; Packing; Canvas Good Sack; Fish Curing; Aeriated Water etc.; Tobacco; Tailoring & Dressmaking; Boot & Shoe; Hat & Cap; Glove; Umbrellas & Walking Sticks; Fur; Watch & Clock; Leather Goods; Printing & Books; Manufactured Stationary; Cardboard Box; Games & Toys; Sports Requisites; Incandescent Mantles; Brush; Furniture & Upholstery; Basket & Wickerwork; China & Earthenware.

B.3 Two-Group Classification with Controls

In this appendix, and in appendix B.4, we report robustness regressions for the two-group classification (in Table 1) or the 1930-48 regression (in Table 3). Importantly, our headline results are robust to the inclusion of control variables.

Table B7 presents the results from the two-group classification, discussed in section 3.1 of the main paper, with additional controls added to the regression to illustrate the robustness of the results. The results in columns (2)-(5) of table B7 serve to reinforce the primary conclusion reported in section 3.1: newly protected industries received a significant output and productivity benefit from the 1932 General Tariff.

Panel A of table B7 illustrates that the estimated treatment effect of the tariff on output growth lies between 3.92 and 5.46 percentage points per annum. In all but one of the five regressions, the result

is significant at the 5 percent level. The estimated treatment effect is significant at the 10 percent level when the Census of Production sectoral classification is used in the set of controls.

In panel B of table B7 the estimated treatment effect on the productivity growth of newly protected industries is between 1.94 and 2.19 percentage points per annum. This figure is significant at the 10 percent level in three of the five regressions, but is insignificant in the regressions where the Census of Production sectoral classification and the Kitson and Solomou classification are used as controls.

Table B7: Difference-in-Difference Results for the Two-Group Classification with Controls for 1924-30 and 1930-35

	(1)	(2)	(3)	(4)	(5)
Panel A: Net Output Growth					
D-in-D for Newly Protected Industries, $\hat{\delta}$	4.066**	4.045*	5.456**	3.915**	4.074**
	(1.783)	(2.119)	(2.603)	(1.850)	(1.769)
Dummy Variable for Newly Protected Industries, $\hat{\beta}$	-2.822**	-2.405**	-4.393***	-2.398**	-2.749***
	(1.087)	(1.182)	(1.401)	(1.045)	(1.046)
Dummy Variable for 1930-35, $\hat{\alpha}_1$	0.064	2.684	-3.294	-0.668	0.090
	(1.641)	(2.505)	(3.727)	(3.111)	(1.692)
Constant, $\hat{\alpha}_0$	4.221***	1.726	6.828***	4.714***	3.946***
	(0.982)	(1.529)	(2.252)	(1.798)	(0.934)
Control Variables Included	None	Census of Production Sectors	Disagg. (Barna) Sectors	KS Dummies	Elect. Dummies
Observations	218	218	218	218	218
R-squared	0.098	0.146	0.352	0.119	0.104
Panel B: Net Output per worker Growth					
	(1)	(2)	(3)	(4)	(5)
D-in-D for Newly Protected Industries, $\hat{\delta}$	2.161*	2.161	3.560*	1.941	2.188*
	(1.131)	(1.534)	(2.007)	(1.358)	(1.285)
Dummy Variable for Newly Protected Industries, $\hat{\beta}$	-1.456*	-1.478*	-2.506**	-1.232*	-1.292*
	(0.800)	(0.781)	(1.170)	(0.696)	(0.745)
Dummy Variable for 1930-35, $\hat{\alpha}_1$	0.131	2.397	-2.373	-1.814	0.052
	(0.925)	(1.746)	(2.833)	(1.909)	(1.150)
Constant, $\hat{\alpha}_0$	3.013***	2.223***	4.400**	3.216**	2.365***
	(0.654)	(0.794)	(1.944)	(1.323)	(0.684)
Control Variables Included	None	Census of Production Sectors	Disagg. (Barna) Sectors	KS Dummies	Elect. Dummies
Observations	218	218	218	218	218
R-squared	0.057	0.121	0.246	0.086	0.102
Panel C: Employment Growth					
	(1)	(2)	(3)	(4)	(5)
D-in-D for Newly Protected Industries, $\hat{\delta}$	1.841	1.805	1.785	1.898	1.825
	(1.124)	(1.334)	(1.624)	(1.238)	(1.135)
Dummy Variable for Newly Protected Industries, $\hat{\beta}$	-1.298*	-0.866	-1.779*	-1.111	-1.390**
	(0.698)	(0.869)	(1.026)	(0.782)	(0.683)
Dummy Variable for 1930-35, $\hat{\alpha}_1$	-0.056	0.328	-0.818	1.087	0.044
	(0.981)	(1.766)	(2.993)	(2.076)	(1.145)
Constant, $\hat{\alpha}_0$	1.158**	-0.525	2.345	1.419*	1.517**
	(0.580)	(1.429)	(1.737)	(0.837)	(0.591)
Control Variables Included	None	Census of Production Sectors	Disagg. (Barna) Sectors	KS Dummies	Elect. Dummies
Observations	218	218	218	218	218
R-squared	0.042	0.102	0.353	0.066	0.057

Notes: Estimated regression results for the two-group classification. In panel A, the dependent variable is annualised average (real) net output growth. The corresponding dependent variables in panels B and C are annualised average net output per worker growth and employment growth, respectively. All regressions are estimated by OLS and robust standard errors are reported, where *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Details of the control variables are presented in Appendix B.2.

B.4 Medium-Term Effects of the General Tariff with Controls

Table B8 presents estimates of regressions using data from 1924-30 and 1930-48, with control variables, to study the medium-term effects of the General Tariff. Importantly, the results support the primary conclusion put forward in section 3.3: that the 1932 General Tariff had medium-run expansionary effects on the output and productivity growth of additionally protected industries. The relevant difference-in-difference coefficients for the additionally protected industries in panels A and B of Table B8 are significant at the 5 percent level.

Table B8: Difference-in-Difference Results for the Three-Group Classification for 1924-30 and 1930-48 with Controls

	(1)	(2)	(3)	(4)	(5)
Panel A: Net Output Growth					
D-in-D for >10% Protected Industries, $\widehat{\delta}_{add}$	3.118** (1.317)	2.937** (1.437)	3.920** (1.639)	2.922** (1.271)	3.158** (1.279)
D-in-D for 10% Protected Industries, $\widehat{\delta}_{ten}$	1.887 (2.496)	2.060 (2.770)	5.623** (2.789)	1.957 (2.689)	1.603 (2.478)
Dummy Variable for >10% Protected Industries, $\widehat{\beta}_{add}$	-3.083*** (1.140)	-2.658** (1.209)	-4.047*** (1.344)	-2.702** (1.070)	-3.014*** (1.108)
Dummy Variable for 10% Protected Industries, $\widehat{\beta}_{ten}$	-1.902 (2.089)	-1.904 (2.315)	-7.280*** (2.169)	-1.511 (2.278)	-1.851 (2.076)
Dummy Variable for 1930-48, $\widehat{\alpha}_1$	-1.598 (1.174)	-0.019 (1.889)	-3.359 (2.805)	-2.453 (2.191)	-1.113 (1.152)
Constant, $\widehat{\alpha}_0$	4.206*** (1.041)	1.214 (1.572)	6.581*** (2.276)	5.503*** (1.284)	3.850*** (0.966)
Control Variables Included	None	Cens. of Prod. Sectors	Disagg. (Barna) Sectors	KS Dummies	Elect. Dummies
Observations	206	206	206	206	206
R-squared	0.060	0.162	0.519	0.124	0.093
Panel B: Net Output per worker Growth					
D-in-D for >10% Protected Industries, $\widehat{\delta}_{add}$	1.838** (0.879)	1.938** (0.937)	2.662** (1.245)	1.735** (0.829)	1.777** (0.849)
D-in-D for 10% Protected Industries, $\widehat{\delta}_{ten}$	0.950 (1.437)	0.779 (1.521)	2.735 (2.133)	0.592 (1.504)	0.833 (1.343)
Dummy Variable for >10% Protected Industries, $\widehat{\beta}_{add}$	-1.744*** (0.792)	-1.882** (0.800)	-2.795** (1.111)	-1.631** (0.715)	-1.599** (0.762)
Dummy Variable for 10% Protected Industries, $\widehat{\beta}_{ten}$	-0.501 (1.294)	-0.565 (1.359)	-2.780 (1.948)	-0.139 (1.365)	-0.404 (1.205)
Dummy Variable for 1930-48, $\widehat{\alpha}_1$	-1.785*** (0.797)	-0.309 (1.053)	-3.311 (2.098)	-1.517 (1.576)	-1.314 (0.797)
Constant, $\widehat{\alpha}_0$	3.107*** (0.723)	2.235*** (0.828)	4.607** (1.916)	4.422*** (0.834)	2.384*** (0.697)
Control Variables Included	None	Cens. of Prod. Sectors	Disagg. (Barna) Sectors	KS Dummies	Elect. Dummies
Observations	206	206	206	206	206
R-squared	0.065	0.164	0.355	0.100	0.145
Panel C: Employment Growth					
D-in-D for >10% Protected Industries, $\widehat{\delta}_{add}$	1.190 (0.946)	0.908 (1.093)	1.128 (1.371)	1.104 (1.001)	1.289 (0.943)
D-in-D for 10% Protected Industries, $\widehat{\delta}_{ten}$	0.882 (1.977)	1.218 (2.135)	2.690 (2.052)	1.306 (2.103)	0.710 (1.934)
Dummy Variable for >10% Protected Industries, $\widehat{\beta}_{add}$	-1.264* (0.732)	-0.704 (0.897)	-1.147 (1.070)	-1.105 (0.801)	-1.339* (0.729)
Dummy Variable for 10% Protected Industries, $\widehat{\beta}_{ten}$	-1.345 (1.472)	-1.282 (1.635)	-4.298*** (1.461)	-1.318 (1.600)	-1.386 (1.423)
Dummy Variable for 1930-48, $\widehat{\alpha}_1$	0.240 (0.791)	0.336 (1.687)	0.053 (2.546)	-0.848 (1.165)	0.265 (0.873)
Constant, $\widehat{\alpha}_0$	1.043*	-1.043	1.893	0.897	1.400**

	(0.605)	(1.522)	(1.687)	(0.933)	(0.602)
Control Variables Included	None	Cens. of Prod. Sectors	Disagg. (Barna) Sectors	KS Dummies	Elect. Dummies
Observations	206	206	206	206	206
R-squared	0.044	0.182	0.459	0.116	0.073

Notes: Estimated regression results for the three-group classification. In panel A, the dependent variable is annualised average (real) net output growth. The corresponding dependent variables in panels B and C are annualised average net output per worker growth and employment growth, respectively. All regressions are estimated by OLS and robust standard errors are reported, where *** p<0.01, ** p<0.05, * p<0.1. Details of the control variables are presented in Appendix B.2.

B.5   Heterogeneity in the Control Group

As a sensitivity test and a further refinement of the difference-in-difference model, we account for possible heterogeneity in our control group. As noted in the main body of the paper, our control group contains both early protected industries and industries that did not receive tariff protection in the interwar period. If these two sub-groups are significantly different, this heterogeneity may create biases in our headline results.[24] To analyse the robustness of our results to this heterogeneity, we decompose our control group into two groups – unprotected and early protected industries – and investigate the treatment effect of the General Tariff. We show that our results and general conclusion – that the tariff had a large and significant treatment effect on additionally protected industries – are robust to this generalisation. To do this, we estimate the following regression:

$$\Delta y_{i,t} = \alpha_0 + \alpha_1 y35_t + \beta_{ear} ear_i + \beta_{ten} ten_i + \beta_{add} add_i + \delta_{ear}(ear_i \times y35_t)$$
$$+ \delta_{ten}(ten_i \times y35_t) + \delta_{add}(add_i \times y35_t) + \varepsilon_{i,t}$$

where, in addition to the definitions given in the main body of the paper, ear_i is a dummy variable set equal to unity if an industry received protection early, in the 1920s, and remained unprotected during both the 1924-30 and 1930-35 periods. In this regression, the control group includes only those industries that were unprotected during both periods. Consequently, the difference-in-difference coefficients now capture the treatment effect of the General Tariff relative to the unprotected industries only.

Formally, the coefficients have the following meaning. The intercept α_0 captures the average annual output, productivity or employment growth of industries that were unprotected during the interwar period. The coefficient α_1 captures the average additional annual growth of the unprotected industries in 1930-35 in excess of their 1924-30 growth. Therefore, the sum of α_0 and α_1 equals the total average annual output, productivity or employment growth for unprotected industries between 1930 and 1935. The sum of α_0 and β_{ear} is equal to the average annual output, productivity or employment growth for early protected industries in 1924-30, such that β_{ear} captures the differential growth rates of early protected and unprotected industries over the 1924-30 period. Similarly, the sum of α_0 and β_{ten} (β_{add}) denoted the average annual output, productivity or employment growth, between 1924 and 1930, for industries that received a 10 percent (an additional) tariff under the 1932 legislation.

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[24] Early protected and unprotected industries may have evolved differently for a number of reasons. For example, as appendix A shows, some of the early protected industries received specific, not *ad valorem*, tariff protection in the 1920s. In the context of declining commodity and industrial prices in the early 1930s, this could have effects on the *ad valorem* equivalent tariffs that these early protected industries received, implying that they might not have been expected to evolve in a similar manner to unprotected industries.

Thus, the coefficients δ_{ear}, δ_{ten} and δ_{add} are the difference-in-difference estimators for the early protected, 10 percent protected and additionally protected industries respectively, representing the average effect of the General Tariff on each sub-group relative to unprotected industries only – i.e. those that did not receive tariff protection at all between 1924 and 1935.

Table B9 presents the results from this regression. Primarily, the results serve to reinforce our main conclusion: industries that received additional protection under the 1932 General Tariff received a significant output and productivity benefit relative to the unprotected control group.

The results in Table B9 also ratify a maintained assumption in our baseline three-group classification: that the growth paths of early protected and unprotected industries were sufficiently similar in the 1924-30 and 1930-35 periods for them to be combined into a single control group, as is done in the main body of the paper. Indeed our estimates of β_{ear} and δ_{ear} – coefficients that quantify the differential growth paths of unprotected and early protected industries in 1924-30 and 1930-35 respectively – are insignificantly different from zero in all three regressions. That is, there is no significant difference between the early protected and unprotected industries, implying that heterogeneity in the control group in the three-group model does not bias the results.

Table B9: Difference-in-Difference Results with only Unprotected Industries in the Control Group

	(1) Net Output Growth	(2) Net Output per worker Growth	(3) Employment Growth
D-in-D for >10% Protected Industries, $\hat{\delta}_{add}$	5.773** (2.816)	3.410* (1.896)	2.246 (1.943)
D-in-D for 10% Protected Industries, $\hat{\delta}_{ten}$	3.625 (3.569)	1.018 (2.268)	2.513 (2.598)
D-in-D for Early Protected Industries, $\hat{\delta}_{ear}$	1.740 (3.356)	1.101 (2.331)	0.577 (2.190)
Dummy Variable for >10% Protected Industries, $\hat{\beta}_{add}$	-1.938 (1.615)	-0.154 (0.870)	-1.712* (1.015)
Dummy Variable for 10% Protected Industries, $\hat{\beta}_{ten}$	-0.430 (2.304)	1.153 (1.280)	-1.539 (1.576)
Dummy Variable for Early Protected Industries, $\hat{\beta}_{ear}$	1.456 (1.954)	1.954 (1.186)	-0.495 (1.168)
Dummy Variable for 1930-35, $\hat{\alpha}_1$	-1.289 (2.726)	-0.725 (1.812)	-0.505 (1.861)
Constant, $\hat{\alpha}_0$	3.089** (1.552)	1.493* (0.813)	1.543* (0.933)
Observations	218	218	218
R-squared	0.114	0.089	0.043

Note: Estimated regression results for with unprotected industries only in the control group, and three 'treatment' groups: additional tariff protected, 10 percent tariff protected, and early protected industries. In column (1), the dependent variable is annualised average (real) net output growth. The corresponding dependent variables in columns (2) and (3) are annualised average net output per worker growth and employment growth respectively. All regressions are estimated by OLS and robust standard errors are reported, where *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

To complete this comparison, we also estimate a similar relationship with the early protected industries acting as the control group. The results from this regression are presented in Table B10. This amounts to viewing the same data from a different angle: estimating the effect of the tariff relative to the group of early protected industries. The two regressions in Tables B9 and B10 are equivalent – one can be attained by a linear transformation of the other. This is clear in that the R-squared values in the two models are identical. The output effect of the General Tariff on the additionally protected industries, relative to the early protected industries, is clearly large and well-identified in the 1920s (in terms of relative decline) and the 1930s (in terms of relative improvement). The productivity effect of the tariff on additionally protected industries, relative to the early protected group, is identified as a significant loss during the 1920s. Although the difference is not statistically different in the 1930s, the results suggest that, relative to the early protected industries, the productivity position of additionally protected industries underwent a relative improvement during the 1930s, as the relative decline of this group – seen in the 1920s – abates. These two angles also offer an insight on the three-group results in that the three-group classification captures the average of the effects presented in Tables B9 and B10.

Table B10: Difference-in-Difference Results with only Early Industries in the Control Group

	(1) Net Output Growth	(2) Net Output per worker Growth	(3) Employment Growth
D-in-D for >10% Protected Industries, $\hat{\delta}_{add}$	4.033* (2.080)	2.310 (1.567)	1.669 (1.284)
D-in-D for 10% Protected Industries, $\hat{\delta}_{ten}$	1.885 (3.023)	-0.083 (2.002)	1.936 (2.150)
D-in-D for Unprotected Industries, $\hat{\delta}_{unp}$	-1.740 (3.356)	-1.101 (2.331)	-0.577 (2.190)
Dummy Variable for >10% Protected Industries, $\hat{\beta}_{add}$	-3.394*** (1.269)	-2.108** (0.917)	-1.217 (0.807)
Dummy Variable for 10% Protected Industries, $\hat{\beta}_{ten}$	-1.886 (2.075)	-0.801 (1.312)	-1.044 (1.451)
Dummy Variable for Unprotected Industries, $\hat{\beta}_{unp}$	-1.456 (1.954)	-1.954 (1.186)	0.495 (1.168)
Dummy Variable for 1930-35, $\hat{\alpha}_1$	0.451 (1.957)	0.376 (1.465)	0.072 (1.156)
Constant, $\hat{\alpha}_0$	4.545*** (1.187)	3.447*** (0.864)	1.048 (0.702)
Observations	218	218	218
R-squared	0.114	0.089	0.043

Note: Estimated regression results for with unprotected industries only in the control group, and three 'treatment' groups: additional tariff protected, 10 percent tariff protected, and early protected industries. In column (1), the dependent variable is annualised average (real) net output growth. The corresponding dependent variables in columns (2) and (3) are annualised average net output per worker growth and employment growth respectively. All regressions are estimated by OLS and robust standard errors are reported, where *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

B.6   Three-Group Regression with Adjusted Group Definitions

In the main body of the paper, we investigate the differences between industries in receipt of the 10 percent tariff and those with additional protection. However, additional duties varied in size. As

appendix A shows, industries received *ad valorem* tariff protection ranging from 10 percent to 33 percent. In this appendix, we estimate the robustness of our results to changes in the groupings of industries. This provides some insights about the extent to which the benefits of tariff protection were related to the tariff rate provided to each industry.

First, we consider whether industries with tariff rates equal to or in excess of 20 percent (henceforth the '$t \geq 20$' group) behaved differently to those with tariff rates greater than or equal to 10 percent, but less than 20 percent (henceforth the '$10 \leq t < 20$' group). Within our sample, 59 newly protected industries lie in the $t \geq 20$ group, while 16 industries are in the $10 \leq t < 20$ group. The results are presented in columns (1)-(3) of Table B11, and illustrate that the treatment effect on output and productivity remains significant, at the 10 percent level, for industries in the $t \geq 20$ group. Moreover, in comparison to industries in receipt of the 10 percent tariff only (see table 2), the difference-in-difference coefficients for the $10 \leq t < 20$ group are quantitatively larger. Thus, the results in columns (1)-(3) indicate that the higher rates of additional protection were associated with stronger output and productivity benefits.

Table B11: Difference-in-Difference Results with Altered Classifications

	(1) Net Output Growth	(2) Net Output per worker Growth	(3) Employment Growth	(4) Net Output Growth	(5) Net Output per worker Growth	(6) Employment Growth
D-in-D for ≥20% Protected Industries, $\hat{\delta}_{add}$	3.709* (1.900)	2.673* (1.390)	0.987 (1.204)	-	-	-
D-in-D for 10≤t<20% Protected Industries, $\hat{\delta}_{ten}$	3.674 (2.654)	2.181 (1.864)	1.443 (1.772)	3.674 (2.666)	2.181 (1.873)	1.443 (1.781)
D-in-D for =20% Protected Industries, $\hat{\delta}_{add}$	-	-	-	3.729* (1.922)	2.896** (1.430)	0.774 (1.218)
D-in-D for >20% Protected Industries, $\hat{\delta}_{ten}$	-	-	-	3.635 (2.468)	1.881 (1.648)	1.741 (1.843)
Dummy Variable for ≥20% Protected Industries, $\hat{\beta}_{add}$	-2.809** (1.143)	-2.009** (0.792)	-0.728 (0.733)	-	-	-
Dummy Variable for 10≤t<20% Protected Industries, $\hat{\beta}_{ten}$	-1.818 (1.709)	-0.822 (1.073)	-0.950 (1.153)	-1.818 (1.717)	-0.822 (1.078)	-0.950 (1.159)
Dummy Variable for =20% Protected Industries, $\hat{\beta}_{add}$	-	-	-	-2.740** (1.156)	-2.158*** (0.820)	-0.505 (0.757)
Dummy Variable for >20% Protected Industries, $\hat{\beta}_{ten}$	-	-	-	-3.054* (1.608)	-1.484 (0.907)	-1.515 (1.168)
Dummy Variable for 1930-35, $\hat{\alpha}_1$	0.241 (1.783)	-0.188 (1.287)	0.431 (1.067)	0.241 (1.791)	-0.188 (1.293)	0.431 (1.072)
Constant, $\hat{\alpha}_0$	4.118*** (1.049)	3.244*** (0.728)	0.821 (0.599)	4.118*** (1.054)	3.244*** (0.731)	0.821 (0.602)
Observations	218	218	218	218	218	218
R-squared	0.096	0.071	0.032	0.096	0.072	0.035

Note: Estimated regression results for the three-group classification. In column (1), the dependent variable is annualised average (real) net output growth. The corresponding dependent variables in columns (2) and (3) are annualised average net output per worker growth and employment growth respectively. All regressions are estimated by OLS and robust standard errors are reported, where *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Of the 59 industries that comprise the $t\geq20$ group, 46 received tariff protection at the 20 percent *ad valorem* rate. In columns (4)-(6) we extend the results from columns (1)-(3) and estimate the regression with three treatment groups: (i) the $10\leq t<20$ group; (ii) a group including newly protected industries that were protected at the 20 percent rate; and (iii) a group including industries that received tariffs in excess of 20 percent (henceforth the '$t>20$' group). The results in columns (4) and (5) indicate that the tariff did have a significant positive impact on the growth of industries protected at the 20 percent rate. The difference-in-difference coefficient for these industries is 3.73 percentage points for output growth and 2.90 percentage points for labour productivity growth; these coefficients are significant at the 10 and 5 percent levels respectively. Although the corresponding coefficients for the $t>20$ group are statistically insignificant, they remain positive and the coefficient for output growth – in column (4) – is quantitatively similar to the difference-in-difference coefficient for the 20 percent protect industries. All in all, the results in columns (4)-(6) indicate that although the $t>20$ industries may not have benefited from tariff protection as much as industries protected at the 20 percent level, they did derive some economic benefit from the policy for output and productivity growth.

B.7 Three-Group Classification and Outliers

Figures 3 and 4 indicate that there may be outliers in our dataset that could have implications for the robustness of our results. In this section we account for this, by running regressions with outlying observations removed from the sample. Because we run regressions with three different dependent variables of interest, we are careful to ensure that we remove the same industries from the sample for each regression. That is, to qualify as an outlier, the industry must be an outlier in terms of output, productivity *and* employment growth. Consequently, this means we do not adopt a formal statistical procedure to select outliers. Instead, we rely on scatterplots for all three dependent variables to inform our choice. Based on visual inspection of all scatterplots, only one industry appears to qualify as an outlier for output, productivity and employment growth: sugar and glucose. For this reason, we estimate our baseline three-group regression with this industry removed. The results are presented in table B12 for the 1924-30 and 1930-35 periods.

The results presented in Table B12 indicate that our headline results are robust to the removal of the sugar and glucose industry – a potential outlier – from our sample. In particular, the difference-in-difference coefficient on additionally protected industries for output growth remains significant at the 5 percent level, and the corresponding coefficient for productivity growth is significant at the 10 percent level. Nevertheless, the quantitative values of the difference-in-difference coefficients are smaller than those presented in table 2 (for the full sample).

The disaggregated sectoral classification, informed by Barna (1952), is primarily included in the regression to capture time-varying, industry-specific influences, as well as potential non-random tariff assignment. However, because these control variables allow for a high level of disaggregation amongst sectors, they may additionally account for worries about outlying industries. Table B4 indicates that, in effect, a number of industries receive an industry-specific control variable. As Tables 2, B7 and B8

indicate, our headline results remain robust to the inclusion of these disaggregated sectoral control variables.

Table B12: Difference-in-Difference Results for Three-Group Regression (1924-30 and 1930-35) with the Sugar and Glucose Industry Removed from the Sample

	(1) Net Output Growth	(2) Net Output per worker Growth	(3) Employment Growth
D-in-D for >10% Protected Industries, $\hat{\delta}_{add}$	3.604** (1.717)	1.920* (1.127)	1.642 (1.150)
D-in-D for 10% Protected Industries, $\hat{\delta}_{ten}$	1.457 (2.778)	-0.472 (1.778)	1.910 (2.066)
Dummy Variable for >10% Protected Industries, $\hat{\beta}_{add}$	-2.478*** (0.926)	-1.217 (0.797)	-1.217* (0.710)
Dummy Variable for 10% Protected Industries, $\hat{\beta}_{ten}$	-0.970 (1.879)	0.090 (1.257)	-1.044 (1.394)
Dummy Variable for 1930-35, $\hat{\alpha}_1$	0.879 (1.567)	0.765 (0.899)	0.099 (1.006)
Constant, $\hat{\alpha}_0$	3.629*** (0.812)	2.556*** (0.635)	1.048* (0.588)
Observations	216	216	216
R-squared	0.111	0.073	0.043

Note: Estimated regression results for the three-group classification with Sugar and Glucose industry removed from sample. In column (1), the dependent variable is annualised average (real) net output growth. The corresponding dependent variables in columns (2) and (3) are annualised average net output per worker growth and employment growth respectively. All regressions are estimated by OLS and robust standard errors are reported, where *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

B.8 Three-Group Classification and Weighted Regression

In this appendix, we document the robustness of our headline results to the weighting of industry growth rates by the size of each industry's output. To implement this, we construct weights for industry growth rates using the ratio of net output (in constant prices) for each industry in 1924 relative to the mean level of net output (in constant prices) across industries in the same year[25]. This scheme therefore places a larger weight on industries that were large in size – measured in terms of their net output – and a smaller weight on industries that produced with smaller scale.

The regression results with weighted growth rates are presented in table B13. As in table 2, columns (2)-(5) report estimated regression coefficients with the additional control variables included in the regression. Panel A of table B13 illustrates that the estimated treatment effect of the tariff on weighted output growth lies between 3.84 and 5.02 percentage points per annum for the additionally protected industries. In all but one of the five regressions, the result is significant at the 5 percent level. The estimated treatment effect is significant at the 10 percent level when the Census of Production sectoral classification is used in the set of controls.

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[25] We also investigated the sensitivity of our results to weighting the growth rates using industry weights in 1930. The results, for 1930-35 and 1930-48 using the three-group classification, are robust to the weighting of growth rates with the net output (in constant prices) of industries in 1930.

Table B13: Three-Group Difference-in-Difference Results with Weighted Growth Rates

	Panel A: Net Output Growth				
	(1)	(2)	(3)	(4)	(5)
D-in-D for >10% Protected Industries, $\hat{\delta}_{add}$	4.922**	4.707*	3.844**	4.436**	5.023**
	(2.184)	(2.486)	(1.772)	(2.191)	(2.223)
D-in-D for 10% Protected Industries, $\hat{\delta}_{ten}$	2.048	0.899	3.073	1.565	1.830
	(2.235)	(3.593)	(2.225)	(2.372)	(2.418)
Dummy Variable for >10% Protected Industries, $\hat{\beta}_{add}$	-2.330**	-1.942**	-2.378**	-1.817**	-2.373**
	(0.929)	(0.911)	(0.912)	(0.856)	(0.931)
Dummy Variable for 10% Protected Industries, $\hat{\beta}_{ten}$	-2.157**	-2.592**	-3.388***	-1.796*	-2.196**
	(0.897)	(1.310)	(0.961)	(1.009)	(0.940)
Dummy Variable for 1930-35, $\hat{\alpha}_1$	-0.589	4.222	-1.909	-1.429	-0.458
	(1.882)	(2.982)	(1.513)	(2.737)	(2.493)
Constant, $\hat{\alpha}_0$	3.215***	-0.303	1.810**	3.816***	3.380***
	(0.718)	(1.279)	(0.870)	(1.123)	(0.902)
Control Variables Included	None	Census of Production Sectors	Disagg. (Barna) Sectors	KS Dummies	Elect. Dummies
Observations	218	218	218	218	218
R-squared	0.064	0.154	0.682	0.083	0.071

	Panel B: Net Output per worker Growth				
	(1)	(2)	(3)	(4)	(5)
D-in-D for >10% Protected Industries, $\hat{\delta}_{add}$	2.419*	2.438	2.537*	2.214	2.425*
	(1.449)	(1.486)	(1.501)	(1.463)	(1.430)
D-in-D for 10% Protected Industries, $\hat{\delta}_{ten}$	-0.250	-1.990	1.490	-0.430	-0.564
	(1.330)	(2.051)	(1.587)	(1.518)	(1.393)
Dummy Variable for >10% Protected Industries, $\hat{\beta}_{add}$	-0.833	-0.830	-1.124	-0.674	-0.785
	(0.575)	(0.626)	(0.873)	(0.558)	(0.574)
Dummy Variable for 10% Protected Industries, $\hat{\beta}_{ten}$	-0.876	-1.401*	-1.244	-0.861	-0.792
	(0.612)	(0.720)	(0.884)	(0.681)	(0.618)
Dummy Variable for 1930-35, $\hat{\alpha}_1$	0.627	3.678*	-0.864	0.278	1.137
	(1.098)	(2.223)	(1.284)	(2.080)	(1.359)
Constant, $\hat{\alpha}_0$	1.922***	1.555	0.716	2.328**	1.671***
	(0.433)	(0.974)	(0.673)	(0.898)	(0.531)
Control Variables Included	None	Census of Production Sectors	Disagg. (Barna) Sectors	KS Dummies	Elect. Dummies
Observations	218	218	218	218	218
R-squared	0.064	0.215	0.554	0.092	0.076

	Panel C: Employment Growth				
	(1)	(2)	(3)	(4)	(5)
D-in-D for >10% Protected Industries, $\hat{\delta}_{add}$	2.477*	2.236	1.253	2.191	2.573*
	(1.484)	(1.647)	(1.295)	(1.466)	(1.543)
D-in-D for 10% Protected Industries, $\hat{\delta}_{ten}$	2.285	2.905	1.515	1.981	2.385
	(1.472)	(2.383)	(1.503)	(1.546)	(1.649)
Dummy Variable for >10% Protected Industries, $\hat{\beta}_{add}$	-1.452*	-1.065	-1.198	-1.102	-1.542*
	(0.811)	(0.798)	(1.013)	(0.757)	(0.819)
Dummy Variable for 10% Protected Industries, $\hat{\beta}_{ten}$	-1.254*	-1.168	-2.072**	-0.915	-1.373*
	(0.719)	(1.119)	(1.018)	(0.848)	(0.768)
Dummy Variable for 1930-35, $\hat{\alpha}_1$	-1.239	0.516	-1.001	-1.719	-1.627
	(1.280)	(2.014)	(1.007)	(1.808)	(1.835)
Constant, $\hat{\alpha}_0$	1.271**	-1.842	1.054	1.466	1.678**
	(0.571)	(1.474)	(0.814)	(0.947)	(0.828)
Control Variables Included	None	Census of Production Sectors	Disagg. (Barna) Sectors	KS Dummies	Elect. Dummies
Observations	218	218	218	218	218
R-squared	0.019	0.113	0.651	0.039	0.024

Notes: Estimated regression results for the three-group classification with growth rates weighted by the 1924 net output (in constant prices) relative to the mean across industries in the same year. In panel A, the dependent variable is annualised average (real) net output weighted growth. The corresponding dependent variables in panels B and C are annualised average net output per worker weighted growth and employment weighted growth, respectively. All regressions are estimated by OLS and robust standard errors are reported, where *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

In panel B of table B12, the estimated treatment effect on the weighted productivity growth of additionally protected industries is between 2.21 and 2.54 percentage points per annum. This figure is significant at the 10 percent level in three of the five regressions, including the baseline regression, as well as the regression with the disaggregated Barna (1952) sectoral classification used in the set of control variables.