

Technical Appendix to THE RETRENCHMENT HYPOTHESIS AND THE EXTENSION OF THE FRANCHISE IN ENGLAND AND WALES

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Appendix SI: Construction of Data Set and Sources

The data set is available from the JOURNAL's webpage. The unit of analysis is a Municipal Corporation in a particular year. The data set covers up to 75 Corporations. The fiscal data refer to the fiscal years ending in 1868, 1871 and 1886 (and in some specifications to the fiscal years ending in 1875 and 1888). The data come from the annual reports (the so-called Local Taxation Returns) submitted by each Corporation, Local Board or Urban Sanitary Authority to Parliament detailing the expenditures and incomes of the past fiscal year. The first of these returns were made for the financial year 1867/8 but they did not record capital and current expenditures separately until after 1882. We aggregate the accounts of the Corporations with those of the Local Board for the years 1868 and 1871. For 1875, 1886 and 1888, the accounts for the Urban Sanitary Authority replace those of the Local Board. The Corporations are selected to maximise sample size *subject* to the constraint that the relevant Corporation acted as the Local Board in 1868 and to data availability. All data are in current prices and refer to a fiscal year of 12 months. Prices were generally falling during the period. Contemporaneous information on borough-specific prices is not available. Information on income tax revenues by county comes from special returns reported in British Parliamentary Papers.

Information on the franchise for the Corporations has been collected for 33 boroughs in 1852, 63 boroughs in 1865, 73 boroughs in 1871 and 75 boroughs in 1884. The data for 1865 are matched with fiscal data for 1868, the data for 1871 are matched with fiscal data for 1871 and the data for 1884 are matched with fiscal data from 1886.

The socioeconomic controls are only available from the Censuses by decade. We have interpolated linearly to match the information to the relevant year. Population data by age is only available from the Censuses at the municipal borough level for a subset of the cities in 1861 and 1871. For some boroughs, the age-specific data are recorded at the level of the relevant registrar's sub-district. In these cases, the data have been scaled to match the borough totals (as they appear in British Parliamentary Paper (1871), LIX vol. 3 and 4, pp. 701–7). A similar problem arises when the age-specific data refer to parliamentary boundaries. Data on employment structure are only available for 30 boroughs in the 1881 Census.

Most of the data are sourced from House of Commons British Parliamentary Papers (PP henceforth). The sources for the fiscal data are:

PP (1868–9). 'Abstract of the Statement of the Municipal Boroughs in England and Wales for the Year Ended 31 August 1868', vol. LII, pp. 149–67.

PP (1868–9). 'Return of the Rates Levied by Local Boards,' vol. LII, pp. 377–97.

PP (1872). 'Abstract of Municipal Borough Accounts: Monies Raised and Expended by the Municipal Boroughs of England and Wales, Year Ended 31 August 1871', vol. XLIX, pp. 149–67.

PP (1873). 'Sums Raised and Expended by Local Boards for the Year 1871–72', Local Board Rates, No. 3.

PP (1876). 'Abstract of the Municipal Borough Accounts, Year Ended 31 August 1875', Municipal Borough Rates (England).

PP (1872–3). ‘Sums Raised and Expended by Urban Sanitary Authorities for the Year 1872–73’, Urban Sanitary Authorities, No. 2.

PP (1868–9). ‘Abstract of the Statement of the Municipal Boroughs in England and Wales for the Year Ended 31 August 1868’, vol. LII, pp. 149–67.

PP (1886). ‘Sums Received and Expended by Town Councils Acting as Urban Sanitary Authorities, Year ended Lady-day 1886’, Borough Urban Sanitary Accounts, No. 5.

PP (1886). ‘Abstract of the Municipal Borough Accounts, Year Ended Lady-day 1886’, Municipal Borough Accounts, No. 4.

PP (1888). ‘Abstract of the Municipal Borough Accounts, Year Ended Lady-day 1888’, Municipal Borough Accounts, No. 4.

PP (1888). ‘Sums Received and Expended by Town Councils Acting as Urban Sanitary Authorities, Year Ended Lady-day 1888’, Borough Urban Sanitary Accounts, No. 5.

PP (1870). ‘Return of the Amounts of Property Asses to Income and Property Tax Under Schedules A, B and D in Each Country in England and Wales and Scotland, in Each of the Years from 1864–5 to 1869–70’.

PP (1885). ‘Return of the Income Tax Under Schedule A, B, D, of Gross Amount of Property and Profits Assessed in Each County of Great Britain in the Years 1883–54’.

The sources for the franchise data are:

PP (1867). ‘Return of the Number of Registered Voters on the List of All Municipal Boroughs in England and Wales and of the Numbers who Voted at the Municipal Elections in Those Boroughs for the Year 1852 and all Subsequent Years’, vol. LVI, pp. 355–433.

PP (1872). ‘Return Showing With Respect to Each Municipal City and Borough in England and Wales, the Total Number of Municipal Electors on the Register now in Force’, vol. XLVII.

PP (1884–84). ‘Return of Municipal Boroughs in England and Wales, Showing the Population, Number of Inhabited Houses, Number of Persons on the Burgess Rolls, Distinguishing Men From Women’, vol. LXVII, pp. 23–31.

The sources for the demographic and occupational data are the 1851, 1861, 1871, 1881 and 1891 Censuses and PP (1871), vol. LIX (3 and 4), pp. 701–707, ‘Houses and Populations in the Cities and Boroughs in England, Table VIII: Houses and Populations in the Cities and Boroughs Having Defined Municipal or Parliamentary Limits’.

Appendix SII

A fully extended franchise includes workers. Since the middle class, once they have got the vote, loses from further extensions of the franchise, voluntary enfranchisement of the working class can only take place through a direct extension from H to HML -franchise.

PROPOSITION 1. (Voluntary enfranchisement of the middle and working class) *HML-franchise is Pareto superior to H-franchise if and only if*

$$xk_M[A(g_L) - A(g_H)] > 2\tau_L. \quad (1)$$

Voluntary enfranchisement of the middle and working class is associated with an increase in spending on local public goods.

Proof. HML -franchise is Pareto superior to H -franchise if and only if

$$(PSD)^M v_M(g_L) > v_M(g_H) \quad (2)$$

$$(PSD)^H v_H(g_L) > v_H(g_H) \quad (3)$$

$$(PSD)^L w(g_L) > w(g_H). \quad (4)$$

Begin by noting that $g_L > g_H$ so that $(PSD)^L$ is satisfied. Write $(PSD)^M$ as

$$xk_M[A(g_L) - A(g_H)] > \frac{g_L}{n_H + n_M} \quad (5)$$

and $(PSD)^H$ as

$$xk_H[A(g_L) - A(g_H)] + \frac{g_H}{n_H} > \frac{g_L}{n_H + n_M}. \quad (6)$$

Since $k_H > k_M$ and $g_L > g_H$, it follows that $(PSD)^M \Rightarrow (PSD)^H$. \square

Enfranchisement of the middle and working class is voluntary if and only if the middle class is willing to accept the franchise, as this guarantees that the elite and workers also gain. This requires that the benefit associated with the extra spending on local public goods dominates the cost of having to pay the property tax, both on their own house and, through compounding, on the accommodation they let in the market. Assuming that $A(g) = (1/\gamma)g^\gamma$, we can rewrite (1) to note that voluntary enfranchisement of the middle and working class is only possible if $k_H/k_M < 1/\gamma$ and

$$\frac{n_M + n_H}{n_H} > \left(1 - \frac{k_H}{k_M}\gamma\right)^{\frac{\gamma-1}{\gamma}}. \quad (7)$$

Intuitively, enfranchisement of the middle and working class is a Pareto improvement if the middle class is relatively large such that the burden of higher spending can be shared among more taxpayers and wealth inequality is low. In fact, in cities with sufficiently high wealth inequality ($k_H/k_M > 1/\gamma$) enfranchisement of the middle and working class at the same time cannot be voluntary.

Appendix SIII: Tax Incidence

In the main text, we consider the case where workers live in rented accommodation and the incidence of the property tax, if applicable, falls on the landlord. This corresponds to the short run with a fixed supply of houses. In this Appendix, we show that the results are qualitatively the same if we make the opposite assumption, namely that the incidence of the tax on the property of workers falls entirely on them. This corresponds to the long run with a perfectly elastic supply of houses. To this end, we assume that workers own the house they live in (this is equivalent to assuming that the supply of housing is infinitely elastic). The rest of the model is the same.

The equilibrium analysis under H and HM -franchise is as before with spending determined by

$$A'(g_H)xk_H = \frac{1}{n_H} \quad (8)$$

and

$$A'(g_M)xk_M = \frac{1}{n_H + n_M}. \quad (9)$$

Under HML -franchise, workers are going to vote for the candidate with the platform closest to their ideal spending policy. They know that a H -candidate wants to spend more than a M -candidate. Since we assume that $z < xk_M$, workers want less spending, for a given tax base, than any of the capitalists. They, accordingly, support that middle class candidate. Knowing that, a middle class candidate runs and gets elected. He implements

$$A'(g_L)xk_M = \frac{1}{n_L + n_H + n_M}. \quad (10)$$

It is clear that the retrenchment hypothesis is true whenever

$$\frac{k_H}{k_M} > \frac{n_M + n_H}{n_H} \quad (11)$$

as in the short run. To see this note that $g_L > g_M$ because of the tax base effect associated with the extension of the franchise to workers. Thus, in the short run, spending goes up when the working class is enfranchised because of the cross class alliance between the elite and the working class. In the long run, spending goes up because the middle class gain access to a larger tax base.

The key difference between the short and long run is the fact that the move from *HM*-franchise to *HML*-franchise can be voluntary in the long run, i.e., supported by all three groups. When considering the extension from *H* to *HM*-franchise agents anticipate that further voluntary extension might happen. Moreover, we might observe that the middle class is always better off under *HML*-franchise than under *HM*-franchise: it keeps control over the council but has a larger tax base. This implies that *HML*-franchise cannot be Pareto inferior to *HM*-franchise.

We begin with the Proposition determining when voluntary enfranchisement of the middle class is possible.

PROPOSITION 2. (Voluntary enfranchisement of the middle class). *HM-franchise is Pareto superior to H-franchise if*

$$[A(g_M) - A(g_H)]xk_M > \frac{g_M}{n_M + n_H} \quad (12)$$

and

$$\frac{g_L}{n_M + n_H + n_L} > [A(g_L) - A(g_M)]z. \quad (13)$$

A voluntary extension of the franchise to the middle class is always associated with an increase in spending on local public goods. Moreover, once *HM*-franchise has been granted, enfranchisement of the working class cannot be voluntary.

Proof. Suppose that *HM*-franchise has been reached. Workers will not agree to further extensions when

$$A(g_M)z > A(g_L)z - \frac{g_L}{n_M + n_H + n_L}. \quad (14)$$

Given that, the analysis of the welfare implications of an extension from *H* to *HM*-franchise are as in the short run. ■

We note that condition (13) might not hold, i.e., workers might like to pay taxes despite the fact that they do not gain control of the council. This can obviously only happen if the level of spending under *HM*-franchise is below what they would have liked to spend had they gained control of the council under *HML*-franchise:

$$A'(g_L^W)z = \frac{1}{n_L + n_H + n_M}. \quad (15)$$

Clearly, $g_L^W < g_L$, so it is only in the interest of workers to accept paying taxes if g_L is sufficiently close to g_L^W and g_M is sufficiently below this. In this case, paying taxes will be more than compensated for by the fact that spending moves closer to workers' ideal spending level. With $A(g) = (1/\gamma)g^\gamma$, we can write condition (13) as

$$\frac{1 - \alpha}{\alpha} > \left[1 - \left(\frac{n_H + n_M}{n_H + n_M + n_L} \right)^{\frac{\gamma}{1-\gamma}} \right] \frac{n_M + n_H(k_H/k_M)}{\gamma n_L} = F(n_H, n_M, k_M, k_H).$$

The condition that $z < x$ implies that

$$\frac{1-\alpha}{\alpha} > \frac{n_M + n_H(k_H/k_M)}{n_L}. \quad (16)$$

So it is possible that condition (13) fails, even when $\frac{1-\alpha}{\alpha} > \frac{n_M + n_H \frac{k_H}{k_M}}{n_L}$.

With regard to forced enfranchisement of the middle class, we get the following long run result.

PROPOSITION 3. (Forced enfranchisement of the middle class) *HM-franchise is Pareto inferior to H-franchise if*

$$xk_H[A(g_H) - A(g_M)] > \frac{g_H}{n_H} - \frac{g_M}{n_H + n_M}. \quad (17)$$

and

$$\frac{g_L}{n_M + n_H + n_L} > [A(g_L) - A(g_M)]z. \quad (18)$$

A forced extension of the franchise to the middle class is always associated with a reduction in spending on local public goods and once it has been forced upon the middle class no further (voluntary) extension will take place.

Proof. Suppose that HM-franchise has been reached. Workers will not agree to further extensions when

$$A(g_M)z > A(g_L)z - \frac{g_L}{n_M + n_H + n_L}. \quad (19)$$

Given that, the analysis of the welfare implications of an extension from H to HM-franchise are as in the short run

As mentioned above, in the long run a 2-step voluntary enfranchisement process is a possibility.

PROPOSITION 4. (2-step voluntary enfranchisement of the working class). *HM-franchise is Pareto superior to H-franchise and HML-franchise is Pareto superior to HM-franchise if*

$$[A(g_L) - A(g_M)]z > \frac{g_L}{n_H + n_M + n_L} \quad (20)$$

and

$$[A(g_L) - A(g_H)]z > \frac{g_L}{n_H + n_M + n_L}. \quad (21)$$

Proof. Suppose HM-franchise has been reached. It will be extended to HML-franchise if all three parties agree. Notice that the middle class always agrees and that if the working class agrees, then the elite agrees as well, i.e.,

$$A(g_L)z - \frac{g_L}{n_H + n_M + n_L} > A(g_M)z \quad (22)$$

implies

$$A(g_L)xk_H - \frac{g_L}{n_H + n_M + n_L} > A(g_M)xk_H - \frac{g_M}{n_H + n_M}. \quad (23)$$

Thus, suppose that condition (22) holds, then HML-franchise Pareto dominates HM-franchise. Anticipating this, a voluntary extension from H to HM requires that all three groups prefer HML-franchise to H-franchise or

$$[A(g_L) - A(g_H)]z > \frac{g_L}{n_H + n_M + n_L} \quad (24)$$

$$[A(g_L) - A(g_H)]xk_M > \frac{g_L}{n_H + n_M + n_L} \quad (25)$$

$$[A(g_L) - A(g_H)]xk_H + \frac{g_H}{n_H} > \frac{g_L}{n_H + n_M + n_L} \quad (26)$$

where it is clear that condition (24) implies conditions (25) and (26). \square

Appendix SIV Robustness Checks

Tables S1 and S2 report results from an extensive robustness analysis. With a few exceptions, we report the results from specifications with borough and time fixed effects. Similar, and often stronger, results emerge from the specification with shire-specific trends. We comment on the results below.

Table S1
Robustness Checks I

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Dependent variable [†]	S	B	S	B	S	B	S	B	S	B	S	B
Estimation Method [‡]	Tobit	Tobit	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE
Robustness check	Corner solution	Corner solution	New variable	New variable	Borough specific trend	Borough specific trend	Fiscal lags	Fiscal lags	Balanced panel	Balanced panel	G to S	G to S
Franchise	-27.5*** (2.78)	-58.2*** (3.35)	-27.3* (1.67)	-41.8* (1.65)	-42.0* (1.88)	-88.1*** (3.50)	-50.8* (1.65)	-37.1 (1.54)	-54.9*** (2.85)	-98.0*** (2.59)	-60.0*** (2.39)	-80.5*** (2.15)
Franchise squared	0.37*** (3.72)	0.75*** (4.26)	0.37* (1.92)	0.51* (1.77)	0.59*** (2.45)	1.09*** (3.55)	0.76*** (2.24)	0.57*** (2.25)	0.72*** (3.49)	1.17*** (2.77)	0.74*** (2.70)	1.03*** (2.31)
Population	-0.002 (0.58)	0.004 (0.59)	-0.003 (0.57)	0.003 (0.55)	-0.003 (0.74)	0.07 (1.12)	0.046 (1.60)	0.043 (1.52)	-0.002 (0.35)	0.011 (1.25)		
Industrial employment	-7.99 (0.51)	32.9 (1.13)	-6.5 (0.31)	16.2 (0.61)	-157.8 (1.22)	-217.1** (2.03)	-43.5 (1.20)	-45.5 (1.20)	-13.9 (0.76)	19.5 (0.72)	-59.8*** (2.22)	
Rateable value	-0.03 (0.19)	0.33 (1.14)	0.02 (0.07)	0.13 (0.31)	0.79 (0.60)	1.76 (0.99)	0.89* (1.65)	0.87 (1.64)	0.09 (0.34)	0.89 (1.42)	0.57*** (1.99)	
Population density	-4.01 (1.21)	-6.74 (1.14)	-3.9 (0.95)	-7.6 (1.52)	16.6 (0.86)	10.6 (0.47)	-12.9* (1.69)	-7.9 (1.11)	-7.79 (1.52)	-11.792 (1.52)		
Accumulated debt	0.25*** (3.88)	0.27** (2.27)	0.25*** (3.97)	0.28*** (2.88)	2.35*** (3.40)	3.74*** (3.07)	-0.20 (0.82)	-0.39 (1.58)	0.14 (3.78)	0.14 (0.40)	0.27*** (6.20)	0.33*** (3.49)
Budget share of rents and profits			2.05 (0.38)	-10.6 (1.42)								
Turning point ($-\hat{\alpha}_1/2\hat{\alpha}_2$)	37.2	38.8	36.9	41	35.6	40.4	33.4	32.5	38.1	41.9	40.5	39.1
Time fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no
χ^2 test (p-value) [§]	0.76	0.19	0.86	0.78	0.001	0.001	0.11	0.13	0.01	0.07	0.08	0.12
Shire-specific trends	no	no	no	no	no	no	no	no	no	no	yes	yes
Borough-specific trends	no	no	no	no	yes	yes	no	no	no	no	no	no
Observations	127	127	127	127	127	127	127	127	48	48	127	127
Boroughs	55	55	55	55	55	55	55	55	16	16	55	55

Notes. Z statistics in brackets; * significant at 10%; ** significant at 5%; *** significant at 1%; [†]S = spending on urban amenities per (1000) capita, B = borrowed funds per (1000) capita; [‡]FE = fixed effects estimator with robust standard errors; Tobit = Tobit estimator. All estimations include borough fixed effects; [§] χ^2 test: The null is that all fixed time effects are 0; ^{||}general-to-specific.

Table S2
Robustness Checks II

	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
Dependent variable [†]	S	S	B	B	S	S	B	B	S	B
Estimation method [‡]	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE
Robustness check	Cluster	Cluster	Cluster	Cluster	AR	AR	AR	AR	AR	AR
Franchise	town	town	town	town	robust	robust	robust	robust	robust	robust
	-28.0*	-26.8	-40.0*	-44.5*	-28.0*	-26.8*	-40.0*	-44.5*	-15.1	-17.9
	(1.88)	(1.57)	(1.77)	(1.68)	(1.95)	(1.65)	(1.78)	(1.71)	(0.78)	(0.74)
Franchise squared	0.35**	0.36*	0.50*	0.56*	0.35**	0.36*	0.50*	0.56*	0.21	0.21
	(2.00)	(1.80)	(1.83)	(1.80)	(2.08)	(1.89)	(1.86)	(1.87)	(1.18)	(0.97)
Population	-0.004	-0.003	-0.004	0.001	-0.004	-0.003	-0.004	0.001	0.0002	0.003***
	(1.21)	(0.65)	(0.61)	(0.22)	(0.90)	(0.49)	(0.63)	(0.22)	(0.32)	(3.08)
Industrial employment	-2.6	-7.7	43.9**	22.3	-2.6	-7.7	43.9**	22.3	16.2***	9.9*
	(0.20)	(0.37)	(2.41)	(0.81)	(0.17)	(0.37)	(2.33)	(0.85)	(3.79)	(1.88)
Rateable value	-0.0001	-0.02	0.30	0.33	-0.0001	-0.02	0.30	0.33	0.20**	0.09
	(0.00)	(0.13)	(0.76)	(0.77)	(0.00)	(0.08)	(0.60)	(0.65)	(2.39)	(0.89)
Population density	-3.3	-3.9	-4.7	-7.7	-3.2	-3.9	-4.7	-7.7	-0.20	-0.37
	(0.72)	(0.95)	(0.95)	(1.47)	(0.75)	(0.95)	(0.98)	(1.51)	(0.37)	(0.57)
Accumulated debt	0.26***	0.25***	0.27***	0.28***	0.26***	0.25***	0.27***	0.28***	0.17***	-0.07
	(4.30)	(3.97)	(2.87)	(2.67)	(4.04)	(3.84)	(2.70)	(2.60)	(3.22)	(1.01)
Turning point ($-\hat{\alpha}_1/2\hat{\alpha}_2$)	40	n.a.	40	39.7	40	40	40	39.7	n.a.	n.a.
Time fixed effects	no	yes	no	yes	no	yes	no	yes	no	no
χ^2 test (p-value) [§]	127	127	127	127	127	127	127	127	141	141
Observations	55	55	55	55	55	55	55	55	69	69
Boroughs										

Notes. z statistics in brackets; * significant at 10%; ** significant at 5%; *** significant at 1%; [†]S = spending on urban amenities per (1000) capita, B = borrowed funds per (1000) capita; [‡]FE = fixed effects estimator with robust standard errors; BE = between estimator; [§] χ^2 test: The null is that all fixed time effects are 0.

Tobit Estimates. Some boroughs did not spend anything on urban amenities or borrowed any funds for investments in urban amenities in some years. This creates a potential corner solution problem, which may call for the adoption of a censored Tobit model. In regressions (1) and (2), we report the results from such a model. The evidence continues to support the retrenchment hypothesis, although the turning point is somewhat lower (36–38%).¹

Additional Controls. The Corporations did have other sources of income than the rate revenues. In particular, in some boroughs trading profits and income from markets and harbours were substantial. To test if availability of other sources of income than the rates affects investments in urban amenities, we include in regressions (3) and (4) a measure of the fraction of the budget derived from profits and rents (*budget share of rents and profits*). The measure itself is insignificant and has minimal impact on the parameters of interest. Moreover, in the main analysis, we control for shire-specific trends, not for borough-specific trends. The reason is that we would have very few degrees of freedom left if we included 55 borough-specific trends. However, as regressions (5) and (6) show, the results with borough-specific trends are consistent with the retrenchment hypothesis and not all that different from the results with shire-specific trends.²

Fiscal Lags. It is possible that an extension of the voting franchise does not have an immediate impact on fiscal outcomes. New councillors needed to be elected and although a third of the elected members were up for election each year, it could take up to two years after an extension of the franchise before a majority of councilors were elected under the new franchise. As it happens, the regressions reported in the main body of the article partially take such fiscal lags into account because of the imperfect overlap between the timing of the cross sections of data on the number of voters (1865, 1871, 1884) and the cross sections of fiscal data (1868, 1871 and 1886). However, we can allow for even longer fiscal lags by using fiscal data from 1875 and 1888 instead of data from 1871 and 1886. Regressions (7) and (8) show that longer fiscal lags reduces the turning point to around 32% and makes it harder, in particular in the specification with borrowed funds, to estimate α_1 precisely.

Balanced Panel. Our panel is unbalanced with 55 boroughs and 2.3 observations on average per borough. By balancing the panel, we reduce the number of observations to 48 with only 16 boroughs. It is, therefore, somewhat surprising that the retrenchment effect comes through even stronger for this sub-sample and that the turning point continues to be around 40% (see regressions (9) and (10) in Table S1).

General-to-Specific. The regressions reported in the main body of the text include many insignificant control variables. This reduces the degrees of freedom and may cause problems of multicollinearity. It is, therefore, of interest to ask what happens if we exclude insignificant control variables from the analysis. To this end, we adopt a general-to-specific approach and eliminate iteratively the most ‘insignificant’ variable, keeping shire-specific trends and time fixed effects if those are significant. The results are shown in Table S1, regressions (11) and (12). In the specification with *spending on urban amenities*, we see that *industrial employment*, *rateable value* and *accumulated debt* are significant. In the specification with *borrowed funds*, only *accumulated debt* and shire-specific trends are significant if we keep the sample constant as we test the model down. In all cases, the evidence continues to support the retrenchment hypothesis, with a turning point around 40%.

¹ The reported marginal effects should be corrected for the probability that the latent variable is above 0 evaluated at the mean of the explanatory variables. As this correction is very small and it does not affect the calculation of the turning point, we do not report it.

² In our sample, 33 shires are represented and at most 10 boroughs are located in the same shire.

Clustered Standard Errors and Serial Correlation. In all the regressions reported in the main body of the text, the standard errors are robust to arbitrary heteroscedasticity. In addition to this, we can allow the standard errors to be robust to correlations between the error terms within clusters (boroughs) and to arbitrary serial correlation. The results are shown in Table S2, regressions (13) to (20). We see that our basic results are robust to these corrections. The only case in which the significance of α_1 drops below the 10% level is in regression (14) with clustered error terms. Significance is, however, regained when insignificant fixed time effects are excluded (regression (13)).

Between Estimates. We have focused on the fixed effects estimator which uses within borough variation to identify the retrenchment effect. Regressions (22) and (23) show what happens when the three cross sections are time averaged (the ‘between’ estimator). Although the signs are correct, the retrenchment effect cannot be identified from the cross sectional variation alone.³ It is the fact that we observe boroughs over time that identifies the retrenchment effect.

³ A similar message comes from separate cross sectional regressions (not reported).