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Regulating the Payment of Wages in Kind: Theory and Evidence from Industrializing Britain

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The International Labour Organization recently reiterated its policy that workers' freedom to contract for in-kind wages should be curtailed, because of the potential for exploitation by firms, as was the case in industrializing Britain. This article considers the historical evidence and concludes that in-kind employment contracts were beneficial for both employer and worker, thus casting doubt on the ILO convention.

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ABSTRACT

The International Labour Organization has recently reiterated its stance that the individual worker's freedom to contract for in-kind wages should be curtailed, because of the potential for exploitation by the firm, as was the case in Britain during her industrialization. This article considers the historical evidence from primary sources, and concludes that contracts for in-kind wages were not exploitative, but were welfare-improving for both employer and worker. This finding casts doubt on the ILO position and indicates that individual contracts for wages in goods can be beneficial in developing countries today, under conditions of labor market competition and credit market imperfections.

Keywords: Wage payments, labor contracts, company stores, employer-worker credit

I. INTRODUCTION

"Historically, the payment of wages in kind has led to abuses. This method of wage payment, known as the *"truck system"*, or barter, as practised by employers [in Britain] who exploited the wretchedness and ignorance of their workers, kept those workers in a state of dependency bordering on slavery… Paying remuneration in the form of allowances in kind… tends to limit the financial income of workers and is therefore an objectionable practice."
– International Labour Conference 2003, p. 52, 56.

In its recent report examining the application today of the Protection of Wages Convention passed in 1949, the International Labour Organization (ILO) highlighted the continued practice of paying wages in kind in numerous countries, which had not implemented or fully understood the convention.[1] Article Four of the convention, which has been ratified by 95 countries but not the United States or Britain,[2] allows for the partial payment of wages in goods that have to be valued fairly. It states that wages paid partly in goods require the authorization of national laws or collective agreements under certain circumstances. "What the Convention does not permit, however, is that the parties be left free, by individual agreement, to provide for any form whatsoever of payment in kind."[3] The rationale behind this curtailment of the individual's freedom to contract in an employment relationship is the notion that whenever wage conditions, including payment in kind, are left to the contracting parties to determine freely, "there is a real risk of abuse, since the employee is generally in a weaker position".[4]

The main evidence provided for this premise with regards to wage payments in kind is historical, and relies in large part on the case study of the nineteenth-century British truck system, in which employees could decide individually whether, and to what extent, to take wage advances partly in goods and partly in cash. The 2003 ILO report identifies that system as a means of exploiting employees (see quote above). Exploitation was achieved through the establishment of company stores where goods were taken at prices that were "well above market level", and where workers were compelled to shop.[5] This state of affairs justified the major law passed in 1831 to abolish the system,[6] and the ILO report cites approvingly the introduction of similar regulations throughout Europe in the late nineteenth century and in the early years of the twentieth century.[7]

The opinion that paying wages in kind in industrializing Britain was exploitative is not new. Friedrich Engels singled out the truck system as a capitalist ploy in his survey of the working class in England in 1844; Fabian socialists Sidney and Beatrice Webb alleged in 1897 that truck kept miners as virtual serfs; and John and Barbara Hammond repeated the same charge in 1917.[8] At the heart of this hypothesis is the argument that employers could exploit workers by paying less than their marginal product because firms had monopoly power when purchasing labor and could use coercion to control the actions of their employees. Although the truck system in different countries and in other historical periods has been criticized for the same reason,[9] it is the British case which has remained archetypal, not least because Britain was the first nation to industrialize successfully and because, to a large extent, the exploitation hypothesis has remained unchallenged.[10]

This article examines whether prices at British company stores were significantly greater than at independent outlets, and studies the extent to which firms could compel their workers to shop there. It presents evidence explaining the price differentials between the two retail establishments, not as the result of exploitation, but as the cost of credit services extended by firms to employees who took wage advances in kind. The implicit interest rate in truck is found to be lower than the cost of alternative retail credit, because of the comparative advantage in lending that firms possessed over non-employer creditors. Free contracting in the payment of wages in kind under the truck system therefore permitted gains from exchange that lowered the price of credit for the working classes during Britain's industrialization. This has important implications for today's developing societies where laborers face the same credit scarcity as those in nineteenth-century Britain. Since prohibiting the extension of credit through truck may inadvertently raise interest rates for the poor, the ILO recommendation to outlaw individual contracts permitting the payment of wages in kind may not be welfare-improving in the presence of labor market competition and credit market imperfections.

This paper will proceed as follows. Section II discusses the economics of company stores and the limits to the firm's monopoly power in setting prices. Section III presents evidence on the differentials between the charges levied by the employer and the cash prices at independent shops, and rules out marginal transportation costs as the explanation for higher company store prices. Section IV examines truck as a credit facility and estimates price mark-ups for deferred payment at independent outlets. Section V concludes.

II. THE ECONOMICS OF COMPANY STORES

From the second quarter to the end of the nineteenth century, the truck system in Britain was found predominantly in the mining industry,[11] where its operations were straightforward and are similar to the practices in many countries today, in that workers could negotiate individually how much in-kind wages to receive.[12] In nineteenth-century Britain, miners who needed to draw on their wages before their weekly or biweekly payday were given "lines" redeemable at the company store, where they took a proportion of the advances in goods and the remainder in cash. Truck transactions were mostly for consumables, such as dairy goods (cheese and butter), staples (flour, oatmeal and bread), meat, sugar, tea and coffee, as well as soap and candles.[13] Wages in excess of the advances were paid in coin on payday, and in general, the value of the advances was limited to the amount of wages worked for but not yet disbursed,[14] with one employer specifying that the company store gave a credit limit of 14 days' wages.[15] The proportion of the advance the worker had to take in goods varied widely from 50 percent to close to 90 percent.[16] Hence the company store in Britain was a *de facto* credit facility,[17] and it was unsurprising that workers were not trucked to the same extent. Depending on their need for credit, some workmen took advances frequently, some occasionally, while others took all their wages in cash on payday.[18] There was in effect an implicit contracting process in which an individual worker decided how much in-kind wage to take during the pay interval.

It was recognized early on that miners laboring under the system did exercise some choice. In 1844, Hugh Tremenheere, a government inspector of mines, reported that the arrangement was not mandatory and was limited to wage advances.[19] This was also observed by parliamentarians in 1872.[20] The worker's ability to choose meant that this form of nineteenth-century truck was not prohibited by the 1831 Truck Act which outlawed mandatory wages in goods.[21] This freedom to contract for truck and the possible benefits of company stores were not denied by the ILO report and other proponents of the exploitation hypothesis. Exploitation, they argue, was based on coercive circumstances which forced the worker to seek advances in kind and pay much higher prices at the company store than at other retailers. It is asserted that where firms held initial monopoly power due to the relative isolation of the mines, they retained their hold even after the entry of private shops through long intervals between pay periods and debt peonage.[22]

There were, however, important limits to the company store's monopoly power even if it were the sole source of victuals in the area. The interlocking labor and provisions markets under the truck system meant that the firm's price-setting behavior in the provisions market was determined to a large extent by the labor market conditions it faced. Competition for mining labor was fierce at this time and there were numerous examples of the high mobility of miners,[23] which meant that there was little possibility for hirers to gain excess profits. Firms which charged high prices at the company store would have had to raise nominal wage levels as compensation. As one colliery manager wrote to another in 1846: "Now that the men can get work when and where they please, the *truck* works *must* pay higher wages… if they get 10 per cent by truck into one hand they must pay it out from the other."[24] However, laborers with lower mobility, such as those with families, would have been less able to move to mines with higher wages, and could therefore find themselves paying higher prices, depending on the level of local retail competition. Still, alternative independent retail service, including markets and fairs, were well established by 1820,[25] and as we shall see, would have provided price competition to company stores even in relatively remote areas.

The competitive labor market also meant that firms could neither use truck to undercut nominal wages set by collective bargaining,[26] nor as a sumptuary device to control drunkenness.[27] Such labor control methods would have intensified the mining companies' problems in attracting and retaining labor. As a method to control drunkenness, truck was not successful: many workers used goods from the company store as currency to purchase alcohol in public houses.[28] Moreover, even if firms could exploit workers, they could do so simply by reducing cash wages for all, rather than through wage advances in kind for some through the company store.[29]

The isolation of new mines initially forced firms to open stores because independent ownership of outlets was not forthcoming.[30] This was the case for two possible reasons. Firstly, the presence of asymmetric information meant that private retailers, whose specific investment in infrastructure relied upon the operations and continued presence of the mines, faced great risks. Secondly, new mines tended to be small and few employed a large enough workforce to provide scale economies for retail activities.[31] Isolation also created recruitment problems for the collieries, which they solved by offering subsidized housing,[32] and some companies also subsidized the cost of food.[33] Charging excessive prices on provisions at the company stores would have exacerbated the recruitment problem.

After the collieries had been established for some time, the growth of mining populations provided an adequate customer base for the entry of a few independent outlets.[34] However, the incentive for the firm to continue owning a store and to control provision prices remained. Without a company store, the firm would face the problem of hold-up from opportunistic shopkeepers in the neighborhood, since higher nominal wages were needed to compensate for higher prices levied by the independent shops.[35] Furthermore, any contractual arrangement between the mine and the independent shop would be incomplete and would not take into account all contingencies, some of which might be unverifiable. Given these circumstances, one would expect mining firms to vertically integrate production and retail activities to prevent opportunism, and company store prices would act as signals to the independent outlets, such that real prices across the two establishments would be similar.

III. PRICE DIFFERENTIALS

Contemporary authors and historians have estimated that the prices charged by company stores exceeded those of independent shops by 15-20 percent between 1816 and 1843;[36] 25-30 percent in 1844,[37] and 10 percent in 1859.[38] In the long run, with the decline in transportation and information costs, and consequently the increase in labor mobility, price differentials between company and independent stores should have fallen as the estimates indicate to some extent. However, it is unclear if these estimates were representative and whether exploitation existed within the individual years. For instance, even though Engels alleged that employers charged 25-30 percent more for provisions than the prevailing market rates in 1844,[39] the price differential that same year for the Dundyvan Co. in Coatbridge was –4 percent, or a subsidy relative to market prices.[40] It is also unclear if the private shops were indeed within the locale of the company stores to offer effective competition. Another problem is that the method by which the authors arrived at these price differentials is not stated. Comparing overall price ranges between two retail organizational structures is fraught with difficulties, since such estimates can deviate widely depending on which goods were included, and the amount each item was consumed and at which part of the relevant price range. Moreover, it was, and often remains, a common retail practice to charge high prices on certain goods, while barely breaking even on others.[41]

I have instead estimated the company store premiums from shopping lists and prices submitted by witnesses to the parliamentary commissions of 1854 and 1871 to create a sample of 24 stores for the two years of 1853-4 and 1869-70 (Table 1). The two public inquiries involved a total of 606 witnesses, with the majority in the latter, and were scrupulous in soliciting a range of opinions from miners and their wives, colliery and company store owners, as well as independent retailers, anti-truck activists and disinterested observers. All the price and shopping lists came from workers or independent grocers, so the derived differentials would be biased upwards since these witnesses had the greatest incentive to portray the system in a bad light. The reported company store prices were charges levied when workers took goods in advance of payday, while prices at independent shops were those quoted for cash payments. The difference thus did not reflect the total rents for the company store, since there were costs associated with providing credit. The prices of specific items were first matched to weights from the typical consumption bundle of miners in the mid-nineteenth century to construct a basket of goods for which the premium was paid.[42]

A further adjustment is also made for the "allowance", or the proportion of the advance that workers were allowed to carry away in cash. This allowance meant that the entire advance was not subject to the higher company store prices. Where information on this allowance was not available, it is assumed to be zero and that the entire advance had to be taken in goods, which would again bias the estimates upwards. By limiting the sample to two specific years, the issue of company stores overcharging their employees can be better examined without the problem of comparing the two retail organizations at different stages of the business cycle. The years of 1853-4 and 1869-70 did not coincide with downturns or unusual expansion in the coal industry or in the British economy in general, so observations for those years were not atypical.

Table 1: Maximum Price Premiums at Company Stores

Year	Company Store(s)	Basket of Goods	Price Differential % (Allowance %)
1854	Company stores in Bilston[43]	Candles, Flour, Sugar and Tea	10.7 (0*)
1854	Ebbw Vale Co. Store[44]	Butter, Cheese, Ham, Sugar and Tea	9.5 (33)[45]
1854	Colebrook Vale co. store[46]	Bacon, Butter, Flour and Sugar	14.2 (0*)
1854	Blaina & Cwm Cellyn Co. at Blaina[47]	NA	17.8 (5)[48]
1854	Rhymney Co. at Merthyr Tydril[49]	NA	15 (0*)
1854	Co. stores at Nantyglo & Blaina[50]	NA	9.5 (5)[51]
1854	H. Seymour Tremenheere[52]	NA	12.5 (0*)
1854	Alexander Macgregor[53]	NA	10 (0*)

1871	Monkland Co. at Calderbank and Chapelhall[54]	Bread, Butter, Cheese, Potatoes and Tea	17.4 (16)[55]
1871	Monkland Co. store at Chapelhall[56]	NA	17 (15)[57]
1871	Ebbw Vale Co. store at Abersychan	Meat, Oil, Soap, Sugar and Tea[26]	20.1 (20)[58]
1871	Ebbw Vale Co. store at Abersychan[59]	NA	12 (20)[60]
1871	Ebbw Vale Co. store at Abersychan[61]	NA	20 (20)[62]
1871	Ebbw Vale Co. store at Ebbw Vale	Candles, Flour, Sugar and Tobacco	7.5 (51.6)[63]
1871	Drumpellier Ironworks[64]	Oatmeal, Oil, Sugar and Tea[65]	9.5 (38)[66]
1871	Summerlee Co.[67]	Bread, Gunpowder, Oil and Sugar[25]	9.1 (50)[68]
1871	Summerlee Co.[69]	NA	5.6 (50)[70]
1871	Coltness Co. (New Mains)[71]	NA	5.6 (50)[72]
1871	J. Watson of Motherwell[73]	NA	16.1 (35.5)[74]
1871	J. Watson of Motherwell[75]	Bread, Brush, Candle, Sugar and Tea[76]	6 (35.5)[77]
1871	Allan of Motherwell[78]	Bread, Cheese, Sugar, Tea and Tobacco	4.8 (0*)
1871	Bell of Motherwell[79]	Brush, Candle, Sugar, Tea and Twist Tobacco[33]	2.4 (0*)
1871	Blaina Co.[80]	NA	17.5 (30)[81]
1871	Nant-y-glo Co.[82]	Flour, Sugar, Tea and Tobacco	3.5 (20)[83]

Sources: BPP 1854, XVI; BPP 1871, XXXVI
* Information not available; zero percent by assumption.

Table 1 lists 24 price differentials (over market rates) at 20 different firms, and include the "raw" premiums reported by witnesses for those years. Of the eight company stores in 1854, all but one had premiums of between 9 and 15 percent. (The remaining store, Blaina & Cwm Cellyn Co. in South Wales, charged prices at an estimated 17.8

percent higher than independent shops.) These observations were below the 15 percent estimated in 1850 by a journalist who compared a basket of items from a grocer's with that at the truck store.[84] In 1871, the variation was much greater: the 16 premiums covering 12 different firms ranged from 2.4 to 20.1 percent.

One explanation for higher prices at company stores was their relative isolation, compared to independent shops which were situated near major transportation routes.[85] Part of the price differential was indeed the result of higher transportation costs, but it was an insignificant proportion because the distance between independent shops and company stores was merely one-quarter to six miles for the sample of eight stores from Table 1 where the information was available (Table 2).

Table 2: Distance between Company Store and Independent Shop

Year	**Company Store**	**Weighted Price Differentials, %**	**Location of Independent Shop; Distance in miles**
1854	Company stores in Bilston	10.7	Wolverhampton, 2.75[86]
1854	Ebbw Vale Co. Store	9.5	Tallywhean, 0.25[87]
1854	Colebrook Vale co. store	14.2	Brynmawr, 2[88]
1854	Blaina & Cwm Cellyn Co. at Blaina	17.8	Brynmawr, 2.25[89]
1854	Rhymney Co. at Merthyr Tydril	15	Tredegar, 5.5[90]
1854	Co. stores at Nantyglo & Blaina	9.5	Not stated, 0.75[91]
1871	Monkland Co. at Calderbank and Chapelhall	17.4	Not stated, 0.5[92]
1871	Monkland Co. store at Chapelhall	17	Aidrie, 1.5[93]

Sources: BPP 1854, XVI; BPP 1871, XXXVI

The close proximity of independent shops meant that remoteness was not a significant barrier to entry and that there was effective competition limiting the price-setting ability of the company store during this time. Correspondingly, the additional transport cost borne by the company store was not significant. Short-distance land carriage during this period usually involved horse-carting, whose costs per ton-mile are estimated from the input costs of hiring a laborer and of buying and maintaining a horse and cart.[94] The distance served was reported to be 10 miles a trip, at two trips a day, with a load of one ton for each horse.[95] The estimated costs per ton-mile ranged from 2.6 to 3.4 pence between 1835 and 1884 (Table 3). This result is within the 1.7-4.2 pence/ton-mile range obtained for nineteenth-century Leicester country carriers.[96] It also fits well with the historical long-run trend of decline in road freight prices: cartage cost 12 pence per ton-mile in the eighteenth century, and 1.2 pence per ton-mile in the early decades of the twentieth century.[97]

Table 3: Marginal Costs of Carriage

Years	**Costs in levels (pence per ton-mile)**	**As Proportion of Basket (% per mile)**
1835-9	2.74	0.023
1840-4	2.72	0.024
1845-9	2.70	0.026
1850-4	2.63	0.026
1855-9	2.93	0.026
1860-4	3.06	0.027
1865-9	3.25	0.028
1870-4	3.40	0.028
1875-9	3.29	0.029
1880-4	3.19	0.029

Sources: See text.

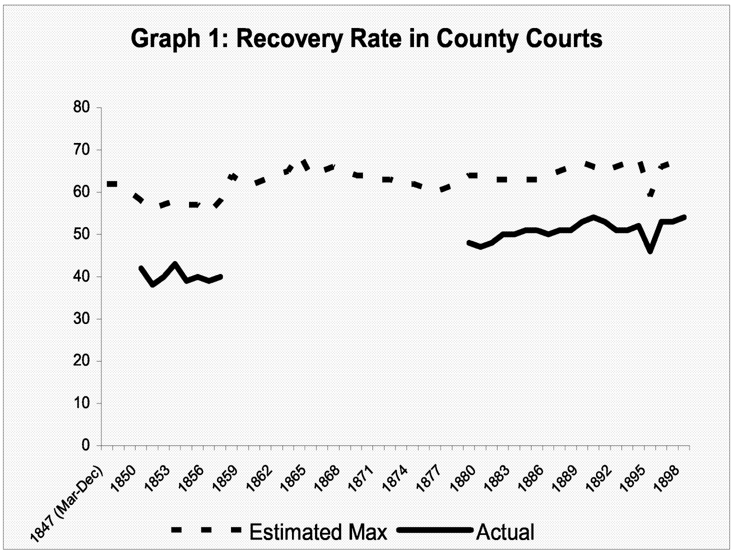
The cost of horse-carting in Table 3 is also expressed as a proportion of a weighted basket of goods found commonly at the company store.[98] The additional transportation cost borne by the company store was very small: each extra mile in distance between the independent outlet and company store accounted for just 0.023 to 0.029 percentage point of the price differentials. For the Rhymney Company store at Merthyr Tydril in Wales, which was the farthest of the eight stores from an independent outlet (Table 2), the marginal carrying costs would have been no more than 0.14 percent, a tiny proportion of the overall price differential of 15 percent. Indeed, the company stores in Table 1 had to be at least 80 miles, and up to 939 miles, from their nearest competitors for the price differentials to be attributed to their relative isolation.

IV. TRUCK AS CREDIT FACILITY

Like workers of poor nations today, consumption credit was crucial to the British working-class household living from hand to mouth during this period.[99] In providing advances on wages, the truck system was in effect a credit instrument, which permitted workers to borrow from the firm. The price differential was therefore an interest rate payment for the credit service rendered. This section estimates the cost of alternative sources of credit to the working class in Britain during this period, and shows that firms had a comparative advantage over other retail creditors and were thus able to charge a lower interest rate.

As a creditor, the mining companies had advantages that other private lenders often did not possess: it had better access to capital, and more crucially, it had information about an individual miner's productivity, and could protect itself from bad debts by adjusting credit lines according to projected wages or by limiting credit to wages already earned but not yet disbursed. Indeed, company stores seldom had the problem of bad debts.[100] It would be far costlier for independent shopkeepers to accumulate similar levels of information, and unsurprisingly, many chose to ration credit in response.[101]

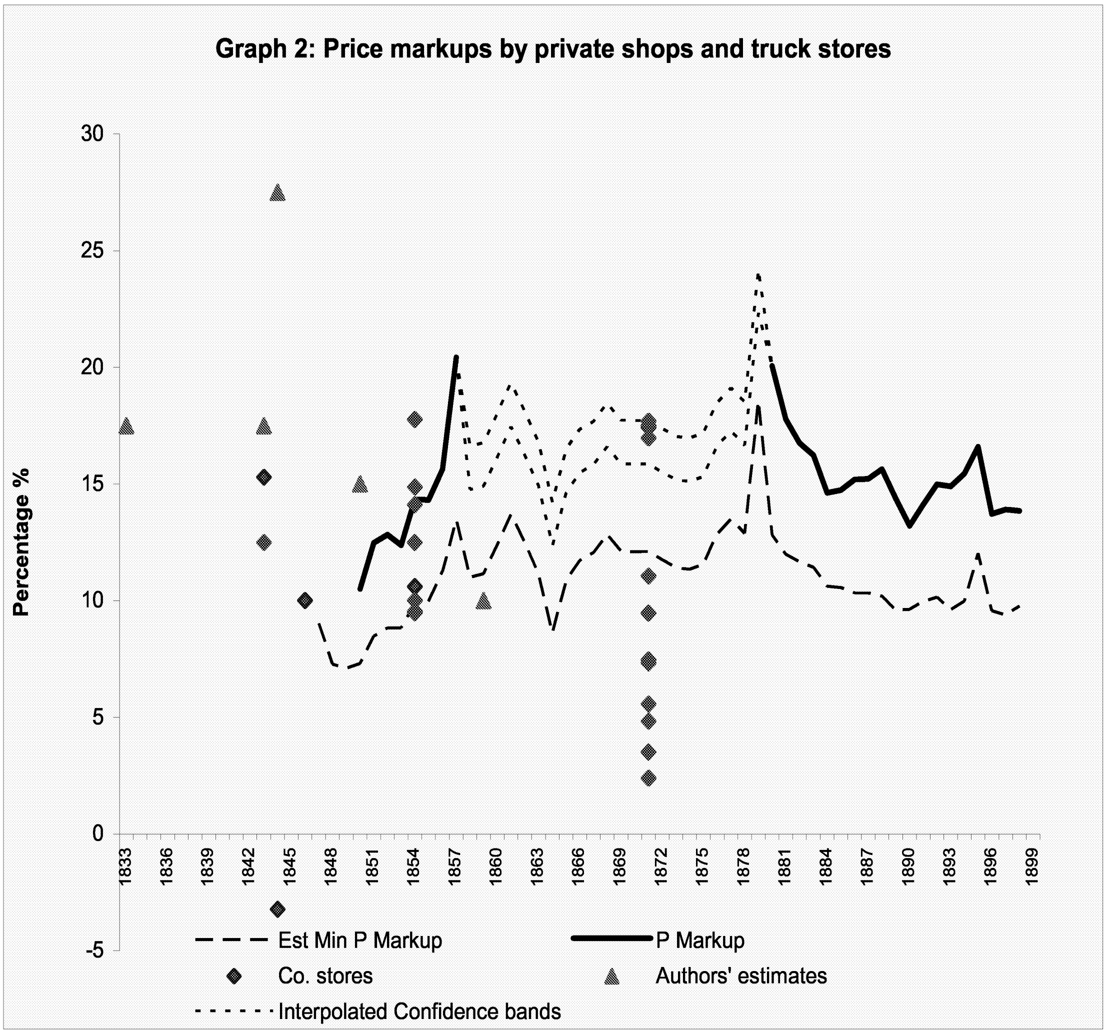
Another advantage the truck master had was the lower costs of enforcing interest payments. The employer could, and did, threaten to withhold privileges, future lending, or even employment if workers took away their entire cash advances without leaving a proportion at the company store.[102] In comparison, the private lender, such as an independent shopkeeper, using the courts to recover debt had much higher costs during this time. Prior to 1846, when county courts for debt recovery were instituted, small debt claims were processed through the Courts of Requests. On average, the litigation costs were about 16 percent of the value of debts claimed between 1835 and 1837, and although defendants may be made to bear part of the costs in the judgments, plaintiffs only recovered about 61 percent of the loan values in all.[103] Matters became more disadvantageous for the creditor after the establishment of county courts. For the two periods 1850-57 and 1879-98 when actual data on amount repaid (including private settlements) were available, recovery rate was 38-54 percent of loan value.[104] Independent shopkeepers whose loans were small would have recovered debts at an even lower rate at the county court because judges tended not to allow costs in small debts and larger loans were more likely to proceed to judgment.[105] For the period 1858-78, when the actual sums repaid were not recorded, I have estimated an upper-bound recovery rate of between 60 and 69 percent for all loans for which suits were filed (Graph 1),[106] which is then used to derive a maximum recovery rate for the whole period. These estimates were the maximum because not all bad loans were pursued in court and not all suits were compensated in their entirety.



Given the high transaction costs of lending, and the great risks involved as was indicated by the significant number of shopkeepers who declared bankrupt or were themselves imprisoned for debt throughout this period,[107] one would expect a high interest rate to be charged for goods taken on credit at private shops. Unfortunately, nominal interest rates at these outlets were not calculated and recorded formally because they were usually capitalized in the selling price. Independent outlets usually charged two sets of prices: prices may be higher if goods were taken on credit, or discounts for cash payments may be offered. The price differentials reported by witnesses appearing before the 1854 and 1871 commissioners referred only to cash prices at independent shops (Table 1). Shopkeepers were likely to have marked up credit prices to include an interest rate that covered their expected losses from bad debts.

It is not possible to derive the default rate for nineteenth-century working-class loans, since the total value of debts each year is unknown. It is however possible to use the estimated upper-bound debt recovery rates from the county court data (Graph 1) to derive the minimum price mark-ups that independent shopkeepers would have had to charge in order to be indifferent between extending credit and taking cash payments (Graph 2). The minimum price mark-up would be a function of the proportion of unpaid loans or plaints brought to court (expressed as a percentage of working-class adults over 20 years of age) and the recovery rate.[108] For the years 1850-7 and 1879-98, the actual recovery rate in Graph 1 was used, but the price mark-ups would still be a minimum since they assume that all bad debts would be brought to the county courts. For the intervening years of 1858-78, when actual recovery rates were not available, the data are interpolated using two confidence bands marking one standard deviation above and below the average difference between the actual and estimated minimum observations. Graph 2 also indicates the price premiums charged by company stores in 1854 and 1871 (from Table 1), as well as scattered observations from the years of 1843, 1844 and 1846.[109] It also includes the differentials reported by authors who suggest that truck was exploitative.

From Graph 2, the observations for actual mark-ups indicate that the independent shopkeeper, when granting credit, would have had to raise prices by between 10 and 20 percent above cash prices throughout this period. This is confirmed by scattered instances of actual cash and credit prices. For example, Henry Sefton, a debt collector in Stockport, estimated the difference between cash and credit prices to be two to four shillings per sterling pound, or 10-20 percent.[110] Tradesmen in Glasgow gave discounts of 10-12.5 percent for cash payments,[111] which work out to a mark-up of 11.1-14.3 percent for credit. Grocers charged ½ pence (or 11.1 percent) more for a pound of sugar bought on credit,[112] while tea cost 33 percent more,[113] and groceries were advanced at 20 percent per week.[114] Two observers in Lancashire reported a difference of 10-15 percent between cash and credit prices in 1841.[115]



For the period prior to 1854, there is inadequate data for any conclusive findings beyond noting that the four available price differentials were on average below the four observations reported by proponents of the exploitation hypothesis.[116] In 1854, the minimum independent store mark-up would be 14.3 percent, which exceeds the price differentials in six out of eight company stores in Table 1. This benchmark is less than 1 percent below the rate charged by Rhymney Co. store at Merthyr Tydril, but is about 3.5 percent below the price differential at the Blaina & Cwm Cellyn Co. store, which was the only company store whose prices significantly exceeded the market rate. In 1871, of the 12 different firms with stores in Table 1, eight had price differentials below the estimated minimum price mark-up of 12.1 percent.[117] In effect, the 14 out of 20 mining companies in the two years charged less than the credit prices of independent outlets and were subsidizing the credit services provided by truck, possibly as a means of attracting and retaining labor. Their stores were therefore not exploitative and were in effect levying lower interest rates. The finding for the remaining four firms in 1871 (Monkland Co. at Calderbank and Chapelhall, Ebbw Vale Co. at Abersychan, and the Blaina Co.) is less strong. All four had price premiums within the confidence bands (15.9-17.7 percent) for the estimated mark-ups of independent stores, which meant that they had charged similar prices as independent outlets for goods taken on credit. While they were not subsidizing credit services, they were charging market rates and were also not exploitative. Moreover, since the company store premiums were maxima and the estimated independent shop mark-ups were minima, the real historical picture would confirm more strongly the absence of exploitation and that company stores were not charging prices that exceeded market rates significantly. In fact, prohibiting the individual worker's freedom to contract for some wage payment in kind would have forced workers to obtain credit at higher costs from independent outlets and would have been welfare-reducing in at least 14 out of 20 cases.

The firms' comparative advantage in lending through the company stores was evident in their net profit rates, which were close to those of independent shops. It is difficult to derive profit figures for independent outlets of similar size, since most shopkeepers' records have not survived. However, a historian has put their net profit rates at between 5.5 and 10 percent in the nineteenth century,[118] which were not unlike the 4.3-10.8 percent obtained at company stores.[119] The cost structures at both organizations also appear similar. The largest expenditure was on stock purchases, which were usually bought from the same suppliers as the wholesale and retail trades were becoming more specialized during this time.[120] Cartage costs made up 1-2 percent of turnover, labor costs varied from 2-7 percent, and expenses for rent, taxes and rates were about 1-3 percent.[121]

Other working-class credit instruments were as costly as independent retail credit, and were sometimes more so. Pawnshops charged one penny per shilling per week,[122] or 8.3-16.7 percent for one to two weeks, which was the usual pay interval or loan period under truck. Those who pledged property also incurred transaction costs, such as ticket, valuation and other legal fees,[123] which added a few percentage points to the interest rate. Furthermore, the extent to which workers could get credit from pawning was limited by their property holdings and few had much personal property of worth.[124] Interest rates on unsecured loans from professional moneylenders were even higher than pawning, and weekly rates of three pennies a shilling was not unheard of.[125] The club-ticket system, which allowed subscribers the opportunity to take sizeable amounts of goods while paying small instalments over a period of time, had implicit interest rates of between 25 and 40 percent.[126]

There was also an absence of coercion by company stores. The pay interval in mines was between one and two weeks, which was the usual for industries of that period. Many also had the practice of permitting cash "draws" at the middle of the pay period, which laborers were not obliged to leave at the company store.[127] Debt bondage by the employer was also absent in general, as was reflected by the small proportion of total wage advances which were tied to the company stores.[128] Table 4 records the proportion of the wage bill that had to be spent at company stores between 1843 and 1870.

Table 4: Proportion of Total Wages Tied to Company Stores

Time period, Firm(s)	%
Six months to Christmas 1843, 9 firms in Lanarkshire	20
1853, Ebbw Vale Co.	29.8
1868-70, Monkland Co., all branches	27.6
1868-70, Mossend Co.	30.9
1869, Ebbw Vale Co.	29.7
1869, Summerlee Co.	28.8
1869, Calder Co.	28
1869, J. Watson of Motherwell	20.8
1869, Cwmbran Co.	30.7
1869, Darlaston Co.	9.8
1869, Pantyffynon Co.	15.7
1869, Rhymney Co.	31.3
1869, Bankfield (Messrs. Groucott)	9.3
1869, New British Iron Co.	11.8
Jan-Jun 1870, Blaina & Cwm Cellyn Co.	38.2
Jan-Jun 1870, Albert Works	3.5

Sources: Report 1844, 23-5; Report 1854, XVI, QQ. 6384-5; Report 1871, 103-7, 228-9, 241, QQ. 4012, 5613, 13444, 27288, 27436, 35903.

At most of the firms, just 10-30 percent of the total wage bill was tied to company stores. Two companies required less than 10 percent, while four had higher than 30 percent. Notably, the Blaina & Cwm Cellyn Co. store which had charged workers above the credit prices of independent outlets had the most severe requirement. But in general, the level of wages committed to the company store was low: the mean for nine firms in Lanarkshire in 1843 was 20 percent, while the mean for the 10 firms in 1869 was 21.6 percent. This small level of debt was due to the majority of laborers either taking small advances or none at all; for instance, at the works at Coltness which employed 278 workmen in 1843, only 101 (36.3 percent) took advances, of which 65 (23.4 percent) took more than five shillings, or two weeks' wages.[129] For employees who did take advances, the extent of individual indebtedness was too small to bind them effectively to the mining firms because credit lines during normal times were often limited to wages earned during the pay interval, with debts repaid by pay day. For example, only three colliers out of a workforce of hundreds at Evans and Bevan Ltd. had net debt from 1874 to 1880, which were all cleared by pay day.[130] On the other hand, there were many cases of debt bondage used by private shopkeepers to hold on to their custom.[131] Indeed, the general practice was for workers to purchase exclusively from a retailer to whom they were in debt.[132]

V. CONCLUSION

The example of the truck system in Britain does not support the ILO's contention that the historical institution was exploitative and that consequently, countries today should outlaw workers' ability to negotiate individually with their employers the extent of in-kind wage payments. The higher prices at the nineteenth-century British company stores were not due to exploitation, but to the credit services provided by firms. Both parties gained from this exchange: workers received loans at lower cost, while firms used their comparative advantage in lending and smaller default risks to profit from extending credit to their employees. Company stores also prevented both firms and workers from being held up by independent shopkeepers. The employer played an important role as a creditor during the era of industrialization when credit for the working class was scarce, like in many developing countries today. The curtailment of workers' freedom to contract with firms may force them to borrow at higher rates from other parties, such as moneylenders, pawnbrokers and private shopkeepers, with whom they have less bargaining power. Cases of usurious rates charged by these creditors in the developing world have been well documented.[133] Hence, prohibiting the firm from acting as a lender to employees through the truck system, as the ILO convention does, may have the unintended consequence of welfare losses for both employers and workers, if conditions of competitive labor markets and incomplete financial markets hold as they did in nineteenth-century Britain. The recommendation to restrict free contracting within the employment relationship cannot be established upon an erroneous interpretation of a historical institution. Indeed, bad history often leads to bad policy.

NOTES

[1] ILO 2003, 89.

[2] Britain ratified it in 1951, but renounced it under the Thatcher government in 1983. See Hansard's 1983, July 21, XLVI, 214.

[3] ILO 2003, 57.

[4] ILO 2003, 81.

[5] ILO 2003, 52, 105. As for the case of the United States, the ILO takes issue with US courts for striking down anti-truck legislation, which it calls "legitimate regulations aimed at protecting the income of wage earners" (p. 53). On the legal history of the truck system in the US, see Paterson 1917. Fishback 1986 has persuasively debunked the "exploitation hypothesis" with regards to the US truck system.

[6] This legislation was amended in 1887 and 1896. There were anti-truck laws in Britain before 1831, but these statutes were limited both in their writ and duration. See Hilton 1960, 63-155.

[7] Truck was prohibited in Switzerland (1877), Belgium (1887), Germany (1891), Austria (1897) and France (1909).

[8] Engels 1844 [1985], 195; Webb & Webb 1920, 181; Hammond & Hammond 1917 [1995], 70-1.

[9] Examples include Newfoundland [The Newfoundland Royal Commission 1933], Egypt [Brailsford 1918], Russia (Lenin 1899 [1961], 204).

[10] Hilton 1960, while expressing some skepticism about the exploitative nature of the institution, has not rejected it.

[11] Hilton 1960, 10. It was also found in the putting-out sectors of the handmade nail and hosiery industries.

[12] Examples include Barbados, Belarus, Czech Republic, Guyana, Slovakia, Takijistan and Swaziland (ILO 2003, 57-8, 81).

[13] Ginswick 1983, 106-110; BPP 1842, IX; BPP 1854, XVI; BPP 1871, XXXVI.

[14] BPP 1843, XIII, lxxxviii; BPP 1854, XVI, QQ. 47-55, 3598-9, 5178-88; BPP 1871, QQ. 1846, 4468, 854, 4778, 5273, 6561, 8854, 9979, 11790, 16679, 17894, 20149, 21773, 24160, 26946, 27812, 38845.

[15] BPP 1854, XVI, QQ. 3540-1.

[16] BPP 1843, XIII, 116-7, xcii, lxxxix-xc; BPP 1852, XXI, 10; BPP 1854, XVI, QQ. 1993-2002; BPP 1871, XXXVI, QQ. 551, 3574, 4012, 7765, 9941, 9979, 17894. Angus Reach, a journalist who surveyed three families in South Staffordshire in 1850, found that two had half their advances in goods, while the other had three-quarters (Ginswick 1983, 108-9).

[17] This service was not acknowledged by Friedrich Engels, or Sidney and Beatrice Webb. The ILO, while recognizing the credit service embodied in truck, states that advances subjected workers to debt bondage (ILO 2003, 52).

[18] BPP 1842, XVI, QQ. 1119, 1212-5; BPP 1871, XXXVI, QQ. 18554, 23207.

[19] BPP 1844, XVI, 23-4.

[20] Hansard's 1872, March 19, CCX, 217-220.

[21] Incidentally, the individual's right to contract freely was the main reason US courts declared early anti-truck legislation to be unconstitutional (Paterson 1917, 96-103).

[22] ILO 2003, 52, 105. Article 7 of the Convention mandates that company stores be not run for profit and that prices had to fair and reasonable, although it gives national governments much discretion in judging what amounts to excess profits (ILO 2003, 106). Contemporary sources include: BPP 1843, XIII, lxxxviii; BPP 1844, XVI, 23; BPP 1871, XXXVI, QQ. 3266-76, 4099-4102, 4182, 27538, 35478.

[23] BPP 1842, IX, QQ. 550-564, 1352, 3362-4, 3388-91; BPP 1871, XXXVI, QQ. 10954, 11437, 11790, 29527-8. See also Church 1986, 224-234. For the US, Boal (1995) finds that coal companies had little, if any, monopsony power in the labor market at the turn of the 20th century.

[24] Elsas 1960, 78. Italics in original.

[25] Alexander 1970, 173.

[26] Marshall 1890, 581; Webb & Webb 1902, 317-8; Hilton 1960, 5.

[27] BPP 1871, XXXVI, xxiii, QQ. 24400, 43666; Becker 1962.

[28] BPP 1871, XXXVI, QQ. 18286, 18431, 27436; Letter of constituent to M.P. Donald Crawford, Hansard's 1887, May 6, CCCXIV, 1241.

[29] Hilton 1960, 44.

[30] BPP 1871, XXXVI, 242-5; Hilton 1960, 19.

[31] Fishback 1986 gives similar reasons for the US case.

[32] A study of nineteenth-century household budgets indicates that miners consistently spent a much smaller proportion of their income on housing than other workers in agriculture, factory, outwork and trading (Horrell 1996).

[33] BPP 1843, XIII, xcvi, 80; BPP 1844, XVI, 26.

[34] BPP 1844, XVI, 26-7.

[35] The same hold-up problem exists between firms and landlords; see Williamson 1985, 35-7.

[36] The Times of London 1843, 8 November, p. 7, col. a; Benson 1989, 75; Hammond & Hammond 1917 [1995], 71.

[37] Engels 1844 [1987], 195.

[38] Bailey 1859, 24.

[39] Engels 1844 [1987], 195.

[40] Price list submitted to the parliamentary commissioners comparing company store to three shops in Glasgow (BPP 1844, XVI, Appendix I). This is calculated using a weighted basket of goods consisting of bacon, butter, cheese, eggs, oatmeal and potatoes, with weights from Horrell 1996.

[41] Mayhew 1849 [1981], 322-4.

[42] These weights are taken from the study of household budgets by Horrell 1996.

[43] John Fellows and Robert Sergeant (BPP 1854, XVI, QQ. 374, 395, 397, 507, 512, 1412).

[44] Testimony of private grocer Thomas Lewis as cited to Robert Brown, manager of the Ebbw Vale store who denied the prices quoted (BPP 1854, XVI, p. 376, QQ. 6220-1).

[45] BPP 1854, XVI, QQ. 6384-5.

[46] John Lewis (BPP 1854, XVI, QQ. 5036-9, 5064-71, 5242).

[47] William Everett (BPP 1854, XVI, QQ. 5282-94).

[48] William Everett (BPP 1854, XVI, QQ. 5282-94), but denied by acting partner of the works, Frederick Levick (QQ. 6313-22).

[49] David Marsden (BPP 1854, XVI, Q. 4568).

[50] Benjamin Lewis, a private grocer serving both regions (BPP 1854, XVI, QQ. 5646-7). This is also denied by acting partner of the Blaina works, Frederick Levick (QQ. 6324-5).

[51] Based on testimony of William Everett for Blaina store (BPP 1854, XVI, QQ. 5282-94), but denied by acting partner of the works, Frederick Levick (QQ. 6313-22).

[52] Tremenheere estimated price differentials at 10-15 percent (BPP 1854, XVI, Q.107-9; Q.673-683).

[53] BPP 1854, XVI, Q.5783-86.

[54] Testimonies of various witnesses (BPP 1871, XXXVI, QQ. 1060, 8772, 9258).

[55] BPP 1871, XXXVI, 229.

[56] Mrs. Gainor, comparing with shops in Aidrie (BPP 1871, XXXVI, Q. 1060).

[57] BPP 1871, XXXVI, 229.

[58] F. Kelly (BPP 1871, Q. 17894).

[59] W. Brown (BPP 1871, XXXVI, Q. 18206).

[60] F. Kelly (BPP 1871, XXXVI, Q. 17894).

[61] M. Hayship (BPP 1871, XXXVI, Q. 22270).

[62] F. Kelly (BPP 1871, XXXVI, Q. 17894).

[63] W. Dayson, accountant (BPP 1871, XXXVI, Q. 27,288) and J. Atkins, shop manager (BPP 1871, XXXVI, Q. 27436).

[64] R. Henderson (BPP 1871, XXXVI, 111) and M. Garvin (BPP 1871, XXXVI, Q. 466).

[65] Weight for oil taken to be the same for soap and candles, and gunpowder for fuel.

[66] R. Henderson (BPP 1871, XXXVI, 111)

[67] Mrs. Armstrong (BPP 1871, XXXVI, Q. 657), Mrs. Cleland (BPP 1871, XXXVI, Q. 3541), Miss Miller (BPP 1871, XXXVI, Q. 10129) and Mrs. Hay (BPP 1871, XXXVI, Q. 11328).

[68] J. Muir, store cashier (BPP 1871, XXXVI, Q. 4012).

[69] J. McCleerie (BPP 1871, XXXVI, Q. 3465).

[70] J. Muir, store cashier (BPP 1871, XXXVI, Q. 4012).

[71] A. Whiteside (BPP 1871, XXXVI, Q. 10171).

[72] J. Orr (BPP 1871, XXXVI, Q. 10108).

[73] J. Orr (BPP 1871, XXXVI, Q. 10108).

[74] J. McClure, cashier (BPP. 1871, XXXVI, Q. 13444).

[75] W. McCulloch, private grocer who examined samples from Watson's company store (BPP 1871, XXXVI, 126).

[76] Weight for brush taken as that for candles.

[77] J. McClure, cashier (BPP 1871, XXXVI, Q. 13444).

[78] W. McCulloch, private grocer who examined samples from Allan's company store (BPP 1871, XXXVI, Q. 15516).

[79] W. McCulloch, private grocer, on samples from Bell's company store (BPP 1871, XXXVI, Q. 15540).

[80] Mrs. Jones (BPP 1871, XXXVI, Q. 24160).

[81] F. Kelly (BPP 1871, XXXVI, Q. 18124).

[82] Mrs. Jones (BPP 1871, XXXVI, Q. 28017).

[83] J. Isaacs, assistant cashier (BPP 1871, XXXVI, Q. 28152).

[84] Ginswick 1983, 107-8.

[85] Fishback 1986 attributed up to half the price differential to transportation costs in his study of West Virginia coal districts.

[86] BPP 1854, XVI, QQ. 374, 395, 397, 507, 512, 1412.

[87] BPP 1854, XVI, Q. 6213.

[88] BPP 1854, XVI, Q. 5225.

[89] BPP 1854, XVI, QQ. 5282-94.

[90] BPP 1854, XVI, Q. 4568.

[91] Assuming independent grocer was located mid-way between Nantyglo and Blaina.

[92] Assuming independent shop was mid-way between Calderbank and Chapelhall.

[93] BPP 1871, XXXVI, Q. 1060.

[94] Annual operating costs consisted of labor, feed and miscellaneous costs. Labor cost is the agricultural wage (Williamson 1982), while feed costs for the horse include 1.4 tons of hay and 2.4 tons of oats per year (Thompson 1976; Collins 2000, 2044-5, 2098-9). Miscellaneous costs, such as for shoes, harness, insurance etc., made up an additional 20 percent (Van Vleck 1997). Horses were not put to work before five years of age and the cost of an unbroken five-year-old horse is estimated from the sum of the feed cost for five years previously. Cost of a wagon was £30 in 1806 (Turnbull 1979, 17) and this is calculated for each year using the Rousseaux price index for principal industrial products (Mitchell 1988, 722).

[95] Van Vleck 1997.

[96] The villages surrounding nineteenth-century Leicester, with a total population of 160,000, were served by about 200 carriers operating 461 services and making 1,100 stops each week at 2 tons per trip. Each household paid 1-2 pence for the service which averaged 15-20 miles (Everitt 1973). This works out to about 4.6 tons per week for 145 families, assuming five heads per household, and 1.56-4.17 pence per ton-mile.

[97] Dyos & Aldcroft 1969, 40; Van Vleck 1997.

[98] Items are flour, potatoes, bacon, butter, sugar, tea, meat (average of beef, mutton and pork) and cheese. Weights from Horrell 1996 and cheese prices from Mingay 1989, 1003 and Collins 2000, 2092-3. All other

prices from 1846 are from Sauerbeck 1886; prices 1835-45 are extrapolated using Rousseaux price indices for vegetable and meat products (Mitchell 1988, 721).

[99] Johnson 1983, 144-92.

[100] For instance, the Ayr Colliery store reported bad debts of just 0.08 percent of receipts in the 18 months to end-June 1870 (BPP 1871, XXXVI, 221).

[101] Roberts 1971 [1990], 81; Tebbutt 1983, 14. The same approach was also adopted by retailers in New York in the 1960s (Caplovitz 1963).

[102] BPP 1854, QQ. 1407-9, 1426-41, 1564-7, 1628-9; BPP 1871, Q. 8937.

[103] For debts under £5 in 31 Courts of Requests in England and Wales (calculated from BPP 1839, XLIII).

[104] Calculated from BPP 1899, LXXIX, 168-9.

[105] County Courts Chronicle, June 1847; County Courts Chronicle, August 1849.

[106] This is done under the assumption that the entire judgment each year was recovered, together with an average of 13.75 percent (1847-57) of all loan value recovered through private settlements. This method overestimates the actual recovery rate because not all monies granted in judgment were repaid and because of the reasons already mentioned.

[107] Blackman 1967; Rubin 1984.

[108] To break even, the independent shopkeeper would have to raise credit prices by $\left[x(1-y)\big/100-x(1-y)\right]\%$, where x is the ratio of legal plaints per working class male above 20 years of age, and y is the recovery rate derived earlier. Population data on working-class men taken from various census reports and intercensal growth rates from Mitchell 1988, 9. Although the county courts covered just England and Wales, the level of indebtedness and the number of plaints per capita was at least as high in Scotland. In Glasgow, some 6000 out of 15,000-20,000 workmen had decrees for wage arrestment brought against them each year. In Lanarkshire, where the majority of small debt cases in Scotland were filed, there was one case for every five persons (BPP 1854, LXIX, 37).

[109] Respective sources of these are BPP 1843, XIII, xcix; BPP 1844, XVI, Appendix I; Elsas 1960, 78 and Mitchell 1984, 237.

[110] BPP 1833, VI, QQ. 10566-8.

[111] BPP 1854, LXIX, 4.

[112] BPP 1871, XXXVI, QQ. 19271, 19314.

[113] Ginswick 1983, 79.

[114] Mayhew 1849 [1981], 5.

[115] BPP 1842, XVII, 212, 239.

[116] In 1843, company stores in Bilston were estimated to charge 15.3 percent more than the market rates (BPP 1843, XIII, xcix) and the price differential at Govan collieries was 12.5 percent (Mitchell 1984, 237). The Dundyvan Co. subsidized prices by 4 percent in 1844 (BPP 1844, XVI, Appendix I). In 1846, company stores charged a 10 percent premium (Elsas 1960, 78).

[117] Averages were taken for the two stores with more than one observation each – J. Watson's of Motherwell and Ebbw Vale Co. at Abersychan.

[118] Alexander 1970, 166-72. These rates were for grocers, and although gross margins were reported, Alexander argues that they were more likely to have been net profit rates.

[119] The range in 1854 was 5-10 percent (BPP 1854, XVI, QQ. 3285-7, 3389-96, 4646-55, 5593). In 1871, the 13 company stores had a range of 0.5 to 11.5 percent, with a median of 8.3 percent. Dropping the outliers on both ends yields a range of 4.3-10.8 percent for the 11 stores (BPP 1871, XXXVI, 221-49).

[120] Alexander 1970, 164.

[121] There is much uncertainty about the labor costs of independent retailers because of the use of family labor and the provision of food and lodging for non-family workers; in such cases the figures for total, non-itemized household expenses are used, but these could go up to 18 percent of turnover (Alexander 1970, 166-205; BPP 1871, XXXVI, 221-49).

[122] Johnson 1985, 188.

[123] Tebbutt 1983, 8.

[124] Ninety percent of Britons who died between 1899 and 1904 left so little property that no affidavit was sworn (Johnson 1985, 8, 13). Personal property holdings would have been much smaller in the mid-nineteenth century.

[125] Roberts 1971 [1990], 27.

[126] BPP 1854, LXIX, 6.

[127] BPP 1844, XVI, 23; BPP 1854, XVI, Q. 501-4; BPP 1871, XXXVI, Appendix II.

[128] Pollard (1965, 204) notes that "indebtedness worked both ways: while it tied the worker to his master, it also, in effect, forced the firm to continue to employ the worker". Indeed, a worker told of attempts to use truck to bind the firm to himself (BPP 1842, IX, QQ. 575-6).

[129] BPP 1844, XVI, 24-5.

[130] Hilton 1960, 51.

[131] BPP 1854, XVI, QQ. 961-971, 1169-70, 2125-8, 2131, 2136-9, 3539, 3743-5, 6036-7; BPP 1871, XXXVI, Q. 43585.

[132] Blackman 1967.

[133] See, for instance, Bhaduri 1977 and Bottomley 1963.

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