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**Article:**
Higgins, D. and Toms, S. (2001) Capital Ownership, Capital Structure and Capital Markets: Financial Constraints and the Decline of the Lancashire Cotton Textile Industry 1880-1965. Journal of Industrial History. pp. 48-64. ISSN: 1463-6174

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**Published paper**
Higgins, David and Toms, Steven (2001) *Capital Ownership, Capital Structure and Capital Markets: Financial Constraints and the Decline of the Lancashire Cotton Textile Industry 1880-1965.* Journal of Industrial History, 4 (1). pp. 48-64.

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**Capital Ownership, Capital Structure, and Capital Markets: Financial Constraints and the Decline of the Lancashire Cotton Textile Industry, 1880-1965.**[1]

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**Capital Ownership, Capital Structure, and Capital Markets: Financial Constraints and the Decline of the Lancashire Cotton Textile Industry, c1880-c.1965.**


## Abstract

The objective of this analysis is to provide a reinterpretation of the decline of the Lancashire cotton textile industry during the twentieth century. Its principal concerns are with the governance structure of the industry, the resultant capital structures of firms and the constraints thereby imposed on the activities of entrepreneurs. Its central thesis is that ownership of the industry, and the redistribution of ownership claims during booms and slumps, imposed pressures and constraints on decision-makers. These financial constraints dominated the strategic questions of re-equipment and modernisation.



**Key words:** Lancashire Cotton Textiles, excess capacity, dividends, debt, capital markets.

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## Introduction

Two issues have dominated the historiography of the Lancashire textile industry in recent decades. These are whether entrepreneurs were rational or not in the light of the constraints they faced and, related to that issue, the causes of the industry's decline.[2] It is not the purpose of this article to review the intricacies of these debates. However, it does seek to comment upon them in the light of new evidence from recent research into the ownership of the industry and its financial performance.[3] Broadly, the argument that arises from these studies is that ownership and governance structures placed financial constraints on decision- makers. Also, the governance structure of the Lancashire cotton textile industry that developed during the nineteenth century had far-reaching consequences for its performance in the twentieth century.

This interpretation has some similarity with others that have contributed to the current state of the debates. For example it acknowledges the importance of major variations in demand and that in other respects the cotton industry of Lancashire evolved in a path-dependent, incremental, fashion. However there are several important differences. First, it is not the case that the type of firm structure which evolved in the nineteenth century was inimical to progress and competitiveness in the twentieth century.[4] Indeed, an earlier paper demonstrated that the choice of structure was rational in the light of the profitability of alternatives.[5] Second, the pattern of firm structure did not restrict the range of profitable or feasible technological options available to firms in the twentieth century.[6] Third, although Lazonick was correct to identify the managerial/ entrepreneurial split as being at the crux of debate,[7] he did not directly examine the changing impact of governance structures on the evolution of the industry and its consequences for capital structure and business strategy.[8] However as will be demonstrated in this analysis, governance structures and their associated financial constraints, were the crucial legacies of the nineteenth century.

Collapse in demand in export markets after 1920 and the emergence of excess capacity are well acknowledged aspects of the problems facing the industry. In addition, as shown below, the new owners of the industry placed demands on cash flow in the form of repayments of loan finance, and other capital, dividend and interest payments. After 1945, these problems were compounded by unhelpful taxation rules. When problems in export markets and over-capacity are combined with these governance-imposed constraints, the interpretation presented here provides new insight into the inability of entrepreneurs to formulate responses to external threats and industry decline. This interpretation is also a variant of the 'early-start' thesis that has been used to explain poor competitiveness for the British economy as a whole.[9] Unlike the standard 'early start' thesis, the explanation here is based on the use of capacity created in the nineteenth century and its associated system of finance. These then formed a basis for a series of re-orderings in financial claims as the industry staggered from one crisis to another in the twentieth.[10] Previous studies have recognised the extent of this financial crisis and as a result have concentrated on its most prominent aspect, the intervention of the Bank of England and the formation of the Lancashire Cotton Corporation (hereafter, LCC) during the period 1929-31.[11] The empirical aspect of the present study, which focuses on financing and dividend policies of typical firms (tables 1,2, and 3) concentrates on other major firms whose strategies have been neglected to a certain extent, especially in the interwar period. These firms were also selected for comparability through time, whose records were consistently available from comparable sources during the major sub-periods of the study.[12]

The remainder of the paper is organised as follows. Section two examines the changes in governance structures and ownership that emerged in the industry during the pre-1914 period and analyses how this led to an over-commitment of financial and physical resources in the industry. Section three evaluates the impact of pre-war governance structures on the ability of entrepreneurs to formulate recovery strategies after the onset of crisis in the 1920s and 1930s. Particular attention is paid to explaining how financial constraints limited the

opportunities for increasingly urgent re-equipment. Section four re-examines this relationship in the period from the end of World War II to the 1960s and shows that entrepreneurs remained subject to a similar set of financially induced constraints. Section five reassesses the current state of the debates on Lancashire textiles in light of the preceding discussion.

## II. Capital Markets and Governance Before 1914.

The boom-slump cycle and continued underlying growth of the industry before 1914 led to important and decisive changes in corporate governance. There were several important aspects to this. First, capital market inefficiency followed directly from the vicissitudes of the trade cycle. Second, market imperfections enabled promotional speculators to engage in systematic wealth transfers. Third, as a consequence of the first two aspects, capital was misallocated in promotional booms and as a result there was always latent excess capacity. Finally, the new owners of the industry shunned corporate saving and instead accumulated wealth privately. Each of these aspects is discussed in more detail below. The discussion relies on evidence from previous studies and also evidence on the financial policies of typical Lancashire companies. Table 1 summarises the dividend and borrowing policies for a sample of these firms.

Table 1 about here

For many modern economists, financial markets can only become more efficient as information flows faster and entry barriers break down.[13] Whether or not Britain had established efficient capital markets before 1914 has been the source of some debate although research into this question is underdeveloped empirically.[14] As far as the capital markets of Lancashire were concerned some clear evidence has recently emerged. This evidence suggests that market efficiency *declined* during the period.[15] Centred on Oldham, the Lancashire stock market began in the early 1870s on the back of a flotation boom of dozens

of companies underpinned by the mass participation of the local factory-based population.[16] In the first half of the 1890s, the system met with a crisis. Depressed demand was a function of the loss of the Indian and other Eastern markets, which followed from the depreciation of silver relative to gold on the world market.[17] Capital market efficiency declined following this slump. A survey of annual returns has shown that whilst the typical company of the 1880s had hundreds of transactions in its shares, by the early 1890s the number of transactions fell to only a handful.[18] As the market could not match buyers and sellers, prices could not reflect true values.[19] As we shall see, this had important consequences for the allocation of capital.

Meanwhile, the 1890s slump in values also altered the social ownership of the industry. By the 1900s participation had narrowed and large, wealthy dealers dominated the market.[20] Promotional booms facilitated this process. Such booms, for example in the late 1870s and mid-1880s provided opportunities for promoters to float companies at inflated prices and sell their holdings for large personal profits.[21] This was a rational strategy from their point of view since rising efficient scale, particularly lengthening mule spinning carriages, meant that it paid to build new mills in times of boom rather than extend existing buildings.[22] Meanwhile accumulation of private fortunes meant that next-generation mills could be floated using a narrower range of shareholders.[23] Thus subsequent booms compounded market inefficiency further and created new opportunities for systematic wealth transfers.[24] This was especially the case in the pronounced and protracted boom after 1896 that continued with brief interruptions until 1914. Accounting profit rates grew steadily from 1896 onwards and peaked in the boom of 1907.[25] In turn, this prompted an unprecedented mill building boom in the period 1904-8, centred on the Oldham district.[26] By the 1900s, groupings of individually controlled mills became more clearly established.[27] The proprietors of these groups of mills possessed access to financial resources based on reputation and personal contact.[28] As a result they were individually involved in the flotation and directorships of up to a dozen mill companies.[29] These changes created a highly unusual

system of governance based on diversified directors and non-diversified shareholders (in the conventional model of Anglo Saxon economies it is the other way round). Hence the rise of powerful directors was not consistent with the rise of managerial capitalism, rather an unusual Lancashire variant of personal capitalism.[30] It was also persistent during the period of decline. The annual returns of these companies in the 1950s revealed similar interlocking directorships and a rump of residual small private shareholders.[31]

There were several important consequences of these changes in ownership. First, the activities of the mill promoters led to the centralisation of capital ownership and the industry increasingly fell under the control of speculative entrepreneurs.[32] As the post 1896 boom developed, their skills at company promotion came to the fore. Profits from existing mills were channelled via the estates of these proprietary capitalists into personally administered flotations or acquisitions of other concerns.[33] They used individual contacts, cross directorships and shareholdings to develop 'empires' of otherwise un-integrated businesses.[34] The late 1890s witnessed the rise of cliques of directors and also the emergence of new combines, such as the Fine Cotton Spinners & Doublers Association.[35] Strategy formulation became the exclusive preserve of these individuals whilst managers became nominee officials at plant level, trusted only with routine. In other words, imperfections in the capital market led to the rise of owner-managed firms that precluded the emergence of professional managerial hierarchies.[36]

A second consequence was that ownership interests were able to impose limits on free cash flow available to managers. As equity holders they demanded high dividends and also used extensive loan finance to fund new flotations. As shown in table 1, typical companies paid out 67% of their available profits as dividends and the typical debt to equity ratio was close to 1 during this period. Although there is little comparable evidence of calculated dividend pay-out ratios for other industries, it is reasonable to suppose that divestment was higher in Lancashire than elsewhere, since equity capital growth rates were below national averages.[37] Much of the debt to finance new mills came from cash balances in

existing mills, and were often used to underpin inter-firm control by cliques of directors.[38] Although these investments occurred without the consent of the residual shareholders,[39] they still reflected the dependence of the industry on local finance, a situation that changed after 1918. This system of finance depended on strong subsequent cash flow to repay loans and also on the willingness of entrepreneurs and promoters to recycle cash from dividends into new flotations.

A further consequence of ownership structure was that the new capacity created by these 'gangs of promoters' destroyed the profit margins of installed capacity and left the industry over-committed in subsequent slumps.[40] The activities of promotional speculators was important because as a result of the 1907 mill building boom, capacity in the industry reached levels that subsequently proved unsustainable. One contemporary estimate was that by 1935, there were still 13.5 million surplus spindles in the industry of which 9.5 were in the American section and 4 million in the Egyptian section.[41] For 1935, this represents plant utilisation of just 69% in the spinning industry.[42] An alternative way of interpreting this figure is as follows: installed capacity in 1935 was approximately 47 million spindles, but there was only enough demand to keep 33.5 million spindles (installed capacity minus excess capacity) fully employed. Even as early as the 1880s the industry already contained over 40 million spindles.[43] In other words, the capacity that was installed by the promoters in the boom period of 1896-1914 was all potentially surplus in the light of the performance of the industry after 1920. However, if Lancashire's entrepreneurs had *not* responded to the rapid growth of export demand pre-1914 they may have been accused of 'failure'. Any expenditure on plant must be governed by the expectation that the future (but uncertain) returns will outweigh the cost of these assets. Where expectations differ it may be possible to recover these costs by selling the asset to other businessmen. For the first time this drew in significant finance from outside Lancashire. As one authority has suggested,[44] with the development of capital markets capitalists shed their entrepreneurial role and entrepreneurs shed their financing function. The 1919-21 re-flotation boom provides a classic example of this

divergence of interests. The over-capacity problem was compounded because corporate growth rates were strongest where private or family control was exercised and weakest where there was dependency on regional stock markets.[45] Yet it was the latter case, best exemplified by Oldham, that led to the greatest expansion of capacity at industry level.

The final important consequence of the industry's ownership structure was for the technological development of the industry. Because the commercial and technical advantages of ring spinning and the automatic loom were not yet established,[46] entrepreneurs ploughed the resources from the pre-1914 booms into specialised establishments using traditional technologies. It was for this reason that whilst there were few advocates of integrated production before 1914, technical issues associated with disintegration came to the fore in the 1920s and 1930s. Thus the critique of specialisation from within the industry, as presented by Lazonick, came from technical experts and managers rather than entrepreneurs.[47] The governance structure inherited from the nineteenth century meant the opinions of mill managers were much constrained by the actions of the directors. During the pre-1914 period, industry ownership and its consequences dominated the issue of technical choice.

## III. Financial Paralysis, 1918-1939.

After a sharp and very important boom in 1919-21, Lancashire cotton lost ground in several important overseas markets. Particularly significant was the loss of the Indian market and Japanese competition in third markets.[48] These facts are well known. When considered in conjunction with the ownership structure described in the previous section, together with further evidence on financial strategies (table 2), new insights are offered.

Table 2 about here

There were several important consequences of this latest twist in the boom-slump cycle that prevented the industry from recovering, as it had been able to do before the war, for

example, after 1896. The first consequence was that, to varying degrees, all firms were subject to high fixed charges as a result of the refinancing strategies adopted during the 1919-20 boom. In 1919 entrepreneurs faced boom conditions even more dramatic than those of 1907. However, unlike previous booms, it was wider margins rather than increases in demand which was instrumental.[49] Also a shortage of equipment and building supplies prevented a new wave of mill construction. These features deterred further investment in physical mill capital that could have only made the subsequent over-capacity problem worse. Instead, firms were re-capitalised such that the capitalisation of the typical company increased by a factor of three. Much of the re-capitalisation was supported by new long-term debt finance.[50] Table 2 provides examples of the typical ratio of debt to equity in 1920. For these firms debt represented two thirds of the value of shareholders assets. Levels of borrowing were lower in 1920 than it had typically been prior to 1914 although they increased to a comparable level, as the crisis of the 1920s and 1930s became more severe (table 2). Evidence is presented in the discussion below, but it should be stressed at this stage that these valuations were based on dubious assumptions. Some companies, such as Crosses & Winkworth, borrowed to extreme levels in 1919-20 (table 2). Ignoring the dividend requirements of ordinary shareholders for the moment, these refinancing strategies had the effect of also increasing fixed charges threefold. The annual cost increase represented by fixed interest and depreciation charges was £43,233 for a typical 100,000-spindle mill. On the basis of its average output, that translated into a 2.8d increase in cost per pound on 30s yarns and a 12.2d increase for 100s yarns.[51] To put these figures into context, the average net profit per company even at the height of the 1919 boom was only £14,786. Margins for 32s yarns were 29.88d per pound in 1920, but then fell sharply at first and then steadily to 2.98d by 1931.[52]

Linked to these increases in fixed charges was the second important feature of the boom: a further redistribution of ownership rights.[53] Money capital was invested through the re-capitalisation of existing mills with bonus issues and new loan finance. Like the 1907 boom, these re-flotations were speculative and depended heavily on the reputations and

contacts of the entrepreneur.[54] As in all previous booms, new capital was used to finance high dividends to equity shareholders, in particular those promotional capitalists who used stock market quotations as fast exit routes for their own investments.[55] Unlike previous booms, however, money was attracted from syndicates from outside the local area, [56] into what turned out to be a more fundamental mis-allocation of capital. When the boom turned to bust after 1921, as in 1892-5, calls were made on shareholders and exhortations made to lenders.[57] Whilst individuals were bankrupted, businesses survived under new owners. Specifically, the banks became the new owners of the industry in place of speculative capitalists.[58] Their priorities did not follow from any expertise in cotton, and were dictated by the recovery of capital rather than the strategic restructuring of the industry.[59] Even when original entrepreneurs remained, the financial claims of this new group effectively ended local control of a large section of the industry.[60] Again, as with the pre-war business cycle, market efficiency was reduced and the social ownership of capital was redistributed.

The consequences of the revised 1920 ownership structure of the industry were serious and made immediate recovery impossible. The first and most important aspect was that firms could not retrench due to their financial structures and were thus also prevented from pursuing re-equipment based recovery strategies. Retrenchment meant stabilising cash flows through cost cutting or asset disposals.[61] However, neither of these strategies was feasible in post 1920 conditions. Costs had been driven up by higher interest and depreciation charges and they were unalterable without a further re-ordering of the financial claims of equity and loan investors. Asset sales were the least attractive option to loan creditors. The main reason was that realisable values were low. These low values were due to a combination of factors. The collapse in export markets had created over-capacity and hence there was no second hand market. The assets involved were highly specific, especially machinery, and in many cases had reached an old vintage by 1930.[62] New but more expensive technology was available. Book values were therefore well below replacement cost. Thus the only alternative valuation available to financial claim holders was the

economic value of the assets in use. As a correspondent wrote, 'the real security for many outstanding loans in our depressed industries is little else but the earning power of the assets pledged' (*Economist*, 1930, p.394). Such valuations require forecasts of the future earning capacity of the assets. Where realisable values are low, forecasts of the risk adjusted present value of future cash flows do not have to be especially high for a rational decision-maker to support continued investment. Moreover, these forecasts were imbued with a degree of optimism as a result of prior experience of the trade cycle. For example some recalled the depression of the 1890s and argued that the causes of that depression (high world gold prices) were also part of the present difficulties. As one industry authority, writing in the 1930s, put it, 'though the circumstances and events of that depression (the 1890s) were different in a few respects, the essential causes were practically the same as the causes of the present depression'.[63] These commentators noted that when gold prices fell in the period 1897-1914, the cotton industry had experienced the greatest boom in its history.[64]

A second consequence of the 1920 ownership structure was that the re-distribution of ownership rights during the boom of 1919-20, reduced the competitiveness of those firms that might otherwise have been able to best compete in the revised world economic conditions. The newer the assets, the higher the revaluation and the higher the increase in fixed costs. Hence the best-equipped mills of 1920 became the most financially embarrassed by 1930 (*Economist*, 1930, p. 667). As shown in table 2, Amalgamated Cotton Mills Trust and Crosses & Winkworth became heavily over-borrowed as losses reduced the equity base of these companies still further. In 1919, these were both companies with relatively new assets and in markets not especially vulnerable to overseas competition. By 1930, their share values and market capitalisations had fallen to extreme levels.[65]

A further consequence was that industry leaders resorted to collusive behaviour. This behaviour followed from the restrictions on exit imposed by the revised governance structure. Price fixing schemes were in operation between 1923-4, 1926-7, 1930, and then in every year from 1933.[66] Initially attempts were made to secure industry wide schemes. However,

because these failed to take into account the widely differing experiences of the industry's two major sections, American and Egyptian, they were only short lived.[67]

In addition, financial paralysis prevented Lancashire entrepreneurs from taking advantage of major opportunities offered by technical developments to restore competitiveness through re-equipment. Newer technologies were based on faster throughput and in particular the invention of high speed drafting in 1914. The technical dominance of these new methods was not established until after 1914, and in British conditions investment in new technology only became a potential commercial option in the 1920s and 1930s. Prior to this breakthrough before the First World War productivity in ring and mule spinning increased at approximately equal rates.[68] Only in the spinning of very fine yarns did mule spinning retain its advantages, including the period after 1945.[69] From 1920, high drafting and other improvements in intermediate processes such as doffing and winding provided opportunities to speed up production[70] and offered savings in areas of traditional labour intensity.[71] A survey in 1932 noted three cases of ring spinning mills replacing low draft with high draft spinning, resulting in average improvements in labour productivity of 49.3 %.[72] By now industry commentators recognised that 're-equipment was needed on a vast scale'.[73] From 1931, Japanese producers adopted these techniques. This, together with competitive de-valuations of the Yen, explained the loss of Lancashire's traditional Far Eastern markets.[74] Without adequate finance, technological advances were always threats and never opportunities for Lancashire firms.

Finally, because profit streams were unable to cover fixed charges, the financial distress of many large firms had reached extreme levels by 1930, effectively ruling out new strategic investment. However, the tradition of independence of many cotton companies from bank finance[75] meant the financial institutions lacked the managerial expertise required to effect restructuring. In any case, as noted above, individualistic control of mills had long prevented the emergence of professional managerial hierarchies, and remaining businessmen instinctively favoured industry co-operation to closure and rationalisation. As demonstrated

earlier, the new financing structure of the industry placed restrictions on free cash flow through high fixed charges. When the dividend requirement was added, managers were left with no available cash to fund re-organisation and re-equipment. Despite the collapse in profits and heavy indebtedness of the 1920s, dividends were slow to adjust to lower levels of average profits.[76] As table 2 shows, the average dividend payout ratio was 84% of available profits. Some companies in the sample, for example, Brierfield and Rylands, paid dividends greater than the available profits whilst another, Crosses & Winkworth, paid dividends notwithstanding aggregate losses.[77] It was these restrictions on cash flow imposed by financial policies and governance structures that informed the response of the industry to its problems, especially the problem of over-capacity. A survey of the industry conducted by John Ryan, managing director of the LCC, estimated the average value of debt per company to be £108,350.[78] At these levels, assuming all the profits earned subsequently were applied to retire debt, the earliest year at which firms would be free of debt would have been 1947.[79] Meanwhile the level of debt remained a significant exit barrier at a time when restructuring became increasingly urgent.[80]

## IV. The Impact of Equity and Fiscal Financial Constraints, 1945-60.

Lancashire firms did succeed in repaying the excess debt that had dominated their balance sheets in the aftermath of the 1920 re-constructions, notwithstanding the continuing demand for dividends after 1945. Table 3 shows the borrowing levels and dividend policies for a sample of Lancashire firms between 1945-60.

Table 3 about here

There were two main reasons for their success in repaying debt. One was that there was a minor world recovery in the late 1930s, together with the military demands of the Second World War that guaranteed demand and profitable contracts.[81] The other reason was that

many companies took advantage of this breathing space to re-structure their balance sheets again, this time by converting debt to equity as well as cancelling capital that was unrepresented by assets.[82] By 1950, following the sharp post war boom, the industry had become predominantly equity financed (table 3). As suggested earlier, the pattern of equity ownership that emerged at the turn of the century was still in place in the 1950s. It now became a new constraint on the recovery of the industry. Also, government taxation policy discriminated against Lancashire companies, further restricting the supply of capital for reinvestment. These two issues are now explored in turn.

The typical investor in the equity of 1950s cotton companies was loyal and not well diversified. Shareholders tended to be old. Alternatively, shares were held in trust where the original investors had died. Either way they did not monitor the activities of the board, whose directors typically controlled significant blocks of shares.[83] The narrow shareholder base was partly a consequence of past patterns of promotional activities, as discussed earlier. At the same time the continued loyalty of some shareholders created a tendency towards thin trading, and thereby prevented others from exiting their investments.[84] The consequence of this ownership structure was that management teams were not motivated to improve the performance of the firm through the normal processes of accountability to shareholders. Another effect was that shareholders were hungry for dividends.[85] In a thinly traded market they were unable to manufacture cash flow from their investments through selling a portion of their holding. Hence the payment of regular dividends was important even though the fiscal rules in successive budgets in the 1950s penalised such distributions through effective double taxation.[86]

There was a long tradition in the industry of paying out the majority of profit available to shareholders as dividend. As we have seen, this trend was prominent in the pre-1914 period (table 1), with the result that firms had little free cash flow and managerial hierarchies did not develop at plant level. In the 1920s and 1930s, this haemorrhaging of money capital contrasted with the industry's reluctance, discussed earlier, to reduce its

physical capital. As noted above, where profits were made during this period, they were quickly applied in dividends.

Although lower than pre-war levels high dividend payments continued despite the tax disincentives and the increasing urgency of re-equipment. At the industry level, the profit distributions of Lancashire companies was significantly higher than the average for the economy as a whole during the 1950s. In line with government tax incentives, firms in other industries ploughed back profit and invested in new equipment.[87] Only a small number of Lancashire companies, for example, John Bright, Shiloh Spinners and Smith & Nephew pursued growth strategies in the 1950s. These companies retained more profit, raised additional funds from City investment institutions and increased their asset values. They had larger boards with committed, proactive directors rather than the paralysing governance structures of typical Lancashire companies.[88]

In addition to the governance constraint, there were issues associated with the taxation system that prevented restructuring and re-equipment strategies being followed by Lancashire entrepreneurs. The Chairman of Highams Ltd, provided a useful summary of the problems caused by the taxation system in his 1950 Statement: '...the incidence of the present rate of Income and Profits Tax and their crippling effect on capital development, combined with Purchase Tax are factors which cannot be ignored.[89] Of course, high rates of tax *per se* will always discourage investment. However, in Lancashire the effect was more perverse than usual due to the asymmetry between tax incentives for investment and the available profit streams against which investment incentive could be offset. Because investment allowances were given as deductions against taxable profits, investment decision-makers would have to be confident of sufficient profits to take advantage of them. For example, a company with profits of £1m per year subject to corporate taxation at 50%, could make investments in new fixed assets of £2m per year and avoid tax altogether. However, marginal expenditure over £2m would not be subject to any tax based incentives.[90] For a company like the LCC, with uncertain pre-tax profits averaging £3.2m between 1949-64 and required capital expenditure

in excess of £62m, there was no benefit in this scheme.[91] If the LCC was typical, profit levels for the industry, especially after 1952, were too low relative to the required investment. Unlike companies in other sectors of the economy where re-structuring was not a pre-requisite for growth, Lancashire firms had to bear high rates of tax, but without the compensatory relief of deductions from investment allowances. When combined with the dividend demands of shareholders discussed earlier, it is clear that there were financial constraints on investment behaviour in addition to those documented elsewhere in the previous literature.

## V. Discussion and Conclusions.

By examining three neglected aspects in the current debate, capital ownership, capital structure, and capital markets, the previous discussion has aimed to offer a new perspective on the decline of the Lancashire textile industry. It is intended that these aspects will be seen as incremental to other causes of decline highlighted elsewhere. Monetary conditions and changes in world demand were of obvious importance but beyond the control of the typical entrepreneur. It is therefore appropriate to concentrate the discussion on entrepreneurial responses to externally driven crises.

Much prior debate has revolved around the definition of the entrepreneur, the scope of and constraints on entrepreneurial activities. Whilst it is possible to agree that constraints existed, the question is which were the most important? Sandberg argued that entrepreneurs operated rationally within the constraints imposed upon them, for example by the structure of the industry. Taking a Schumpeterian view, Lazonick argued that it was up to entrepreneurs to remove these constraints but that they had a problem in Lancashire because *ex ante* horizontal specialisation prevented co-ordinated decision making.[92] There are two problems with this view. First, although not dealt with in the discussion above, there is a presupposition about the desirability of vertical integration.[93] Secondly, if for the moment the desirability of vertical integration is accepted, it is not clear how the *ex ante* horizontal structure of the

industry prevented this happening.[94] As the evidence discussed earlier shows, during their careers, some promoters floated over a dozen mills in the booms before 1920. Through their contacts they were able to raise large amounts of equity finance and additional debt finance through further borrowing. In most cases they built brand new mills rather than extending existing factories. It is difficult to understand why, if the advantages of vertical integration were overwhelming, they did not build integrated plants from scratch. They could have gone further and invested in ring spinning and automatic looms and deployed them in these new factories. Instead, they stuck to mules and power looms in specialised mills. Yet they still demonstrated rational, profit maximising tendencies, as their demand for dividends suggests. Up to 1920, these dividends made them richer, and even more capable of overcoming the constraint of industry structure had this constraint been problematic.

The evidence presented here suggests an alternative view. Ring spinning and automatic weaving established their commercial advantages in the 1920s. Meanwhile a new constraint on investment was dramatically imposed by the financial paralysis of the 1920s and 1930s. This placed constraints on retrenchment and hence reinvestment. In the Lancashire case and in the general case it is sensible to consider the corporate governance structure as the ultimate constraint on the entrepreneur. Financial stakeholders have considerable power to restrict the options available to the entrepreneur.[95] Although 'creative destruction' may be required, for example through the scrapping of surplus capacity, it is within the remit of lenders and equity holders to deny the required freedom of action to corporate decision-makers. It is significant that large-scale vertical integration in the industry occurred only from the mid-1960s, *after* the elimination of so many firms and their capacity as a result of the Cotton Industry (Re-equipment) Act (1959).[96]

From the 1890s especially, managerial power was limited by the governance structures imposed by the mill promoters, notwithstanding the continuing expansion of the industry. The promoters performed an entrepreneurial role that was of its nature unconstrained. After 1920, when ownership was transferred to outside financial stakeholders,

genuine restrictions were imposed on action at the corporate level. In this sense the pattern of the industry's development in the nineteenth century adversely affected its development in the twentieth century. It could also be said, paraphrasing an earlier debate[97] that the governance constraint was non-problematic in the nineteenth century but problematic in the twentieth when Lancashire hit the problems of changed world trading conditions. It would be more accurate to argue that the constraint did not exist at all before 1920. As in the general case, in the life cycle of an industry, entrepreneurial power peaks when forecast returns facilitate raising venture finance but before the sale of claims dilutes control. Beyond a certain point the dilution process brings the requirement to satisfy outside stakeholders to the fore and may coincide with the onset of maturity. The same happened in Lancashire. The important difference here, though, was that the effects of transferring financial claims coincided with extraordinary vicissitudes in world trading conditions to produce a crisis and decline of spectacular proportions. Like the industry, the reputation of Lancashire entrepreneurs never recovered.

**Table 1: Financial Policies of Lancashire Firms, 1884-1914**

| Company | Period | Debt/Equity Ratio* | DPR** |
|---|---|---|---|
| | | Average for period | Average for period |
| Ashton Brothers | 1899-1913 | 0.86 | 0.72 |
| Barlow & Jones | 1900-1913 | 1.77 | 0.73 |
| Elkanah Armitage | 1891-1913 | 0.13 | 0.70 |
| FCSDA*** | 1899-1913 | 1.66 | 0.58 |
| Horrockses**** | 1887-1914 | 0.85 | 0.57 |
| Rylands | 1884-1913 | 0.21 | 0.87 |
| Tootal | 1888-1914 | 1.48 | 0.49 |
| Sample average | | 0.99 | 0.67 |

*Notes*
*Debt divided by equity where:
Debt is defined as all borrowing falling due in >12 months.
Equity is defined as called up share capital plus reserves.
** Divided Pay-out Ratio, calculated as dividends payable divided by profits available for distribution to ordinary shareholders.
*** Fine Cotton Spinners & Doublers Association
**** Main constituent firm of the Amalgamated Cotton Mills Trust (ACMT) from 1920.

*Sources*:
Ashton Bros, Barlow and Jones, Elkanah Armitage, Fine Cotton Spinners & Doublers, Rylands, London Guildhall Library, Commercial Reports, Half Yearly Balance Sheets, 1899-1913. Horrockses, Coats Viyella Records (held by the company), Detailed Accounts, Half Yearly Balance Sheets and Profit and Loss Accounts, November 1887 - October 1905 and Lancashire County Record Office, DDHs/53, Balance Sheets, Half Yearly Balance Sheets and Profit and Loss Accounts, October 1905 - April 1914. Tootal, Manchester Central Reference Library, M.461, Board Minutes, Yearly Balance Sheets and Profit and Loss Accounts, July 1888 -July 1914.

**Table 2: Financial Policies of Lancashire Firms, 1920-1945**

| Company | Debt/Equity Ratio | | | | DPR |
|---|---|---|---|---|---|
| | 1920 | 1930 | 1938 | 1945 | Average, 1920-45 |
| ACMT | 0.65 | 0.70 | 0.46 | 2.12 | 0.36 |
| Ashton | 0.41 | 0.94 | 0.91 | 0.30 | 0.41 |
| Barlow & Jones | 0.85 | 0.65 | 0.15 | 0.19 | 0.75 |
| Brierfield Mills | 0.51 | 0.39 | Nil | Nil | 2.54 |
| Crosses & Winkworth | 1.35 | 1.62 | 4.64 | 1.22 | -0.17 |
| Elkanah Armitage | Nil | Nil | Nil | Nil | 2.03 |
| FCSDA | 0.92 | 1.24 | 1.21 | 0.88 | 0.71 |
| Hollins Mill | 1.12 | 1.24 | 2.47 | 2.31 | 1.00 |
| Jackson and Steeple | Nil | Nil | Nil | Nil | 1.37 |
| Joshua Hoyle | 1.11 | 2.05 | 1.98 | Nil | 0.91 |
| Rylands | 0.51 | 0.57 | 1.17 | 0.35 | 1.27 |
| Tootal Broadhurst | 0.44 | 0.38 | 0.29 | 0.31 | 0.88 |
| Sample Average | 0.66 | 0.82 | 1.11 | 0.64 | 1.00 |

*Notes*:
Calculations as described in table 1. Debt equity ratios calculated at each point in time instead of an average for the period.

*Sources*:
*Stock Exchange Official Intelligence*.

**Table 3: Financial Policies of Lancashire Firms, 1948-1960**

| Company | Debt/Equity Ratio | DPR |
|---|---|---|
| | Average for period | Average for period |
| ACMT | 0.37 | 0.36 |
| Ashton | 0.25 | 0.29 |
| Barlow & Jones | 0.07 | 0.27 |
| Crosses & Winkworth | 0.84 | 1.07 |
| FCSDA | 0.33 | 0.71 |
| Jackson and Steeple | 0.07 | 0.46 |
| Joshua Hoyle | 0.05 | 0.53 |
| Tootal Broadhurst | 0.12 | 0.36 |

*Notes*:
Calculations as described in table 1. For all companies, calculations are based on the period 1948-1960 for average debt to equity ratio and 1949-1960 for DPR.

*Sources*:
Cambridge University Companies Database.

## Notes

[1] An earlier version of this paper was presented at the Economic History Conference held at Leeds University, 1998. We would like to thank those who commented on the paper, in particular, S. Bowden, S. Broadberry, D. Farnie, F. Geary, J. Foreman-Peck, and A. Marrison. We are also grateful for the constructive comments on an anonymous referee. Any remaining errors are entirely our own.

[2] For summaries of these debates see W. Mass, and W. Lazonick, `The British Cotton Industry and International Competitive Advantage: the state of the debates,' *Business History*, XXXII, (1990) pp. 9-65 and A.V. Marrison, `Indian Summer', in M.B. Rose (ed), *The Lancashire Cotton Industry: A History Since 1700* (Preston, 1996). One authority on the industry has gone so far as to argue that the progress of the product cycle meant it should have become obvious to government and industry leaders in the 1930s that the industry simply was not worth saving. J. Singleton, *Lancashire on the Scrapheap*, (Oxford: Oxford University Press), 1991, p.232.

[3] For detailed analysis of this evidence, see D.M. Higgins, 'Rings, mules, and structural constraints in the Lancashire textile industry, c.1945-c.1965', *Economic History Review* XLVI (1993), pp.342-62; (1993). Higgins, D.M., 'Re-equipment as a Strategy for Survival in the Lancashire Spinning Industry, c.1945-c.1960,' *Textile History*, 24, (1993), pp. 211-34. J.S. Toms `Financial Constraints on Economic Growth: Profits, Capital Accumulation, and the Development of the Lancashire Cotton Spinning Industry, 1885-1914,' *Accounting Business and Financial History*, Vol. 4 (3), (1994) pp. 364-383. J.S. Toms, The Finance and Growth of the Lancashire Textile Industry, 1870-1914, Unpublished PhD thesis, University of Nottingham (1996). D.M. Higgins and J.S. Toms, 'Firm Structure and Financial Performance, The Lancashire Textile Industry,' *Accounting Business and Financial History*, Vol 7, (1997); pp. 195-232. J.S. Toms, `Windows of Opportunity in the Textile Industry: The Business Strategies of Lancashire Entrepreneurs 1880-1914,' *Business History*, Vol. 40 (1998), pp.1-25. J.S. Toms, `Growth, Profits and Technological Choice: The Case of the Lancashire Cotton Textile Industry', *Journal of Industrial History*, Vol.1 (1), (1998); pp.35-55. J.S. Toms, 'The Demand for and the Supply of Accounting Information in an Unregulated Market: Examples from the Lancashire Cotton Mills, 1885-1914,' *Accounting, Organizations and Society*, Vol. 23, (1998): 217-238. S. Bowden, and D. Higgins, 'Short time working and price maintenance: collusive tendencies in the cotton-spinning industry, 1919-1939'. *Economic History Review*, 51, (1998) pp.319-343; S.Bowden and D.M. Higgins, `Quiet successes and loud failures: the UK textile industries in the interwar years', *Journal of Industrial History* (forthcoming, 2000); S.J. Procter and J.S. Toms (2000), 'Industrial Relations and Technical Change: Profits, Wages and Costs in the Lancashire Cotton Industry, 1880-1914, *Journal of Industrial History,* Vol. 3(1), pp. 54-72. (D.M. Higgins) and J.S. Toms (2000), 'Public Subsidy and Private Divestment: The Lancashire Cotton Textile Industry,' *Business History*, Vol. 42(1), pp.59-84. J.S. Toms 'The Rise of Modern Accounting and the Fall of the Public Company', *Accounting Organizations and Society* (2000, forthcoming). For preliminary results of further surveys in this area, see D.M Higgins and J.S.Toms, 'Corporate Borrowing, Financial Distress and Industrial Decline: The Lancashire Cotton Textile Industry, 1918-1931', *University of Nottingham Discussion Papers* (2000). I. Filatotchev and J.S. Toms, 'Corporate Governance, Strategy and Survival in a Declining Industry: A Study of Lancashire Textile Companies', *Birkbeck College Discussion Paper* (2000). J.S.Toms, 'Information Content of Earnings in an Unregulated Market: The Co-operative Cotton Mills of Lancashire, 1880-1900' (unpublished working paper). In view of the preliminary nature of the later citations, where appropriate, relevant evidence from them is also presented in the current paper.

[4] The view that the pattern of development in the nineteenth century adversely affected performance in the twentieth is advocated most strongly by Lazonick. See, especially, W.

Lazonick, 'Competition, specialisation, and industrial decline,' *Journal of Economic History*, Vol. 41, (1981) pp.31-38. W. Lazonick, 'Industrial Organization and Technological Change: The Decline of the British Cotton Industry,' *Business History Review,* Vol. 57, (1983) pp.195-236.

[5] Higgins and Toms, 'Firm Structure and Financial Performance'.

[6] Higgins, 'Rings, Mules and Structural Constraints'; G. Saxonhouse, and G. Wright, 'New Evidence on the Stubborn English mule and the Cotton Industry, 1878-1920,' *Economic History Review*, Vol.37, (1984) pp.507-19.

[7] Lazonick, 'Competition, Specialisation, and Industrial Decline'; Lazonick, 'Industrial Organization and Technological Change, W. Lazonick, 'The Cotton Industry,' in B. Elbaum and W.A. Lazonick, (eds.), *The Decline of the British Economy*, Oxford: Oxford University Press, pp.39-45.

[8] In the ensuing discussion it is accepted that there is a distinction between managers and entrepreneurs. Managers are concerned with the day to day running of the business, whereas entrepreneurs are concerned with strategic issues.

[9] For example, S.Pollard, *Britain's Prime and Britain's Decline*, London: Edward Arnold, 1990.

[10] The central importance of capacity acquired during the nineteenth century and the problems of maladjustment it posed in the twentieth century when demand collapsed, has recently been emphasised for another staple industry, shipbuilding, during the inter-war years. F. Geary, 'The Emergence of Mass Unemployment: Wages and Employment in Shipbuilding between the Wars,' *Cambridge Journal of Economics*, Vol. 21, (1997) pp.303-21.

[11] For example J. Bamberg, The Government, the Banks, and the Lancashire Cotton Industry, 1918-1939, Unpublished PhD thesis, University of Cambridge, 1984. J. Bamberg, 'The Rationalization of the British Cotton Industry in the Interwar Years,' *Textile History*, 19(1), (1988) pp.83-102. R.S. Sayers, *The Bank of England, 1891-1944*, Cambridge, Cambridge University Press (1976). H. Sjogren, 'Financial Recontruction and Industrial Reorganisation in Differenct Systems: A Comparative View of British and Swedish Institutions during the Inter-War Period', *Business History*, Vol. 40(1) (1998); pp.84-105.

[12] The principal sources were the Companies Archive at the London Guildhall Library, the *Stock Exchange Official Year- Book* and the Cambridge University Companies Database. To a certain extent, therefore, the evidence and argument presented here only relate to large publicly quoted companies.

[13] I. Walter and R. Smith, *Global Capital Markets and Banking*, London, McGraw Hill (1999) pp.198-200.

[14] D. McCloskey, *Knowledge and Persuasion in Economics*, Cambridge: Cambridge University Press, 1994, p.154.

[15] Toms, 'The Rise of Modern Accounting and the Fall of the Public Company' and Toms, 'Information Content of Earnings in an Unregulated Market.

[16] W. Thomas, The Provincial Stock Exchanges, London: Frank Cass, p.147.

[17] For a discussion of the political economy of silver depreciation, A. Howe, 'Bimetallism, c. 1880-1898: A Controversy Re-opened?' *English Historical Review*, Vol. CV, July, (1990) pp. 377-91. E. Green, `Rentiers versus Producers? The Political Economy of the Bimetallic controversy, c.1880-98', *English Historical Review*, CIII, July, (1988) pp. 588-612. E. Green, `The Bimetallic Controversy: Empiricism Belimed or the Case for the Issues', *English Historical Review*, CV, July (1990) pp. 674-83. An econometric analysis of gold prices and cotton profits shows a strong association, see Toms, The Finance and Growth of the Lancashire Cotton Textile Industry, Ch.11.

[18] Toms, 'The Rise of Modern Accounting and the Fall of the Public Company'.

[19] In 1891 the *Oldham Standard* reported that, 'the published list of market prices is not a very reliable guide just now, as they are either nominal or too wide in price to be of practical use' (*Oldham Standard*, 1st August, 1891).

[20] As illustrated by an analysis of the share registers of Lancashire companies. For details, see Toms, 'The Rise of Modern Accounting and the Fall of the Public Company'.

[21] D. Farnie, (1979) *The English Cotton Industry and the World Market,* Oxford: Clarendon Press.

[22] G. Wood (1910), 'The Statistics of wages in the Nineteenth Century Cotton Industry', *Journal of the Royal Statistical Society*, Vol. LXXIII, 585-626; R. Tyson, (1968) The Cotton Industry, in Aldcroft D.H. (ed.) *The Development of British Industry and Foreign Competition, 1875-1914,* London, p.123.

[23] Toms, 'The Rise of Modern Accounting and the Fall of the Public Company'.

[24] Toms, 'The Rise of Modern Accounting and the Fall of the Public Company'.

[25] Toms, 'Growth, Profits and Technological Choice', pp.39 and 44.

[26] During the period 1897-1913 installed spindleage increased by 2 per cent per annum in Lancashire but by 2.7 per cent in Oldham (calculated from Robson, R., *The Cotton Industry in Britain*, London: Macmillan, 1957*,* tables 2 and 5, pp. 334 and 340 and Farnie, *The English Cotton Industry,* p.42.) The higher rate in Oldham was a function of the extraordinary boom of the middle years of the 1900s. For details of the mills constructed, see F. Jones, The Cotton Spinning Industry in the Oldham District from 1896-1914. Unpublished MA thesis, University of Manchester, 1959, pp. 221-3.

[27] Toms, 'The Supply of and the Demand for Accounting Information' p.228.

[28] R.E. Tyson, Sun Mill: A Study in Democratic Investment, Unpublished MA thesis, University of Manchester, 1962. W. Thomas, *The Provincial Stock Exchanges*, London: Frank Cass, 1973. Toms, 'The Supply of and the Demand for Accounting Information,' p.228.

[29] For examples of individual entrepreneurs see Toms, 'The Supply of and the Demand for Accounting Information', p.228, Toms 'The Rise of Modern Accounting'. D. Gurr and J. Hunt, *The Cotton Mills of Oldham*, Oldham, Oldham Leisure Services (1985), pp.9-10. In the 1873-5 boom alone William Nuttall was involved in the flotation of 12 mills, Thomas, *The Provincial Stock Exchanges*, p.146. During the period 1899-1914, one firm of accountants floated 12 mills, Jones, The Cotton Spinning Industry, p.13.

[30] Managerial capitalism refers to a managerial hierarchy facing a diversified group of equity investors; personal capitalism refers to owners treating their businesses as personal estates. A. Chandler, *Scale and Scope: The Dynamics of Industrial Capitalism*, Cambridge Mass.: Belknap Press (1990).

[31] Filatotchev and Toms, 'Corporate Governance, Strategy and Survival in a Declining Industry'. This conclusion is based on a survey of the Annual Returns (Form E) of a sample of 29 companies from the period 1950-1965 from the BT31 file at the Public Record Office.

[32] Toms, The Finance and Growth of the Lancashire Cotton Textile Industry, pp.226-31.

[33] Toms, 'Financial Constraints on Economic Growth,' p.380. Toms, 'The Finance and Growth of the Lancashire Cotton Textile Industry,' pp. 328-9. Toms, 'Windows of Opportunity in the Textile Industry', p.16.

[34] Typically, there were no stock market based acquisitions and mergers in the Oldham district. Instead entrepreneurs preferred to float and build new mills. Toms, The Finance and Growth of the Lancashire Textile Industry, p.231. Toms, 'The Supply of and Demand for Accounting Information' p.230.

[35] Toms, 'The Demand For and Supply of Accounting Information', pp.226-231. H. Macrosty, *The Trust Movement in British Industry*, London: Longmans, 1907. pp. 124-5.

[36] Toms 'Financial Constraints on Economic Growth', p.380. Toms, The Finance and Growth of the Lancashire Textile Industry, pp. 217-238. Toms, 'Windows of Opportunity in the Textile Industry' p.10.

[37] For further evidence on debt and dividend policies, see Toms, 'Windows of Opportunity in the Textile Industry,'pp.3-9. See table 1, p.4 for a comparison between sections of the Lancashire textile industry with national average rates of capital accumulation.

[38] Jones, 'The Cotton Spinning Industry', pp. 38 and 88.

[39] Tyson, 'Sun Mill', p. 295.

[40] Jones, The Cotton Spinning Industry in the Oldham District, p. 3.

[41] T. Barlow, 'Surplus capacity in the Lancashire Cotton Industry,' *Manchester School*, Vol. 6, (1935) p.35

[42] Robson, *The Cotton Industry*, Table 8, p.344.

[43] Calculated from Robson, *The Cotton Industry,* Table 5, p.340.

[44] S. Wu, *Production, Entrepreneurship and Profits*, Oxford: Blackwell.

[45] Toms, 'Windows of Opportunity in the Textile Industry', p.3.

[46] See, for example, Saxonhouse and Wright, 'New Evidence on the Stubborn English Mule', p.519. A more recent discussion of the commercial and technological factors which affected the adoption of ring spinning during the inter-war years is contained in Higgins and Toms, 'Firm structure and Financial Performance', pp.212-214.

[47] Developments in intermediate processing, principally high drafting, doffing and winding that were developed and available commercially after 1914 gave a decisive advantage to the ring and automatic loom combination by the 1930s. Toms, 'Growth, Profits and Technological Choice'. For examples of technicians' criticisms of industry structure, see Lazonick, 'Industrial Organization and Technological Change', B. Robinson, 'Business Methods in the Cotton Trade' *Journal of the British Association of Managers of Textile Works,* Vol. IX (1918-9) and F. Holt, 'High Speed Winding and Warping' *Journal of the National Federation of Textile Managers' Associations*, Vol. IX (1929-30), pp.104-5.

[48] A. Burnett-Hurst, 'Lancashire and the Indian market,' *Journal of the Royal Statistical Society*, 95, (1932): 395-454. B. Ellinger and H. Ellinger, 'Japanese competition in the Cotton Trade, *Journal of the Royal Statistical Society*, Vol. 93 (1930); pp.185-218.

[49] *Ibid*. p.170.

[50] Thomas, *The Provincial Stock Exchanges*, pp.159-60.

[51] For example see the calculations in T. Thornley, *Modern Cotton Economics*, London, Scott Greenwood and Son (1923), pp.187-9.

[52] Robson, *The Cotton Industry*, pp.336 and 338.

[53] Thomas, *The Provincial Stock Exchanges*, p.156.

[54] Samuel Firth Mellor and Frank Platt were typical of the entrepreneurs involved (Thomas, *The Provincial Stock Exchanges,* p.157; Bamberg, The Government, the Banks, and the Lancashire Cotton Industry*,* p.6).

[55] For example the premature retirement of Frank Platt. Bamberg, 'Sir Frank Platt', in D. Jeremy (ed.) *Dictionary of Business Biography*, London: Butterworths, (1984-6); Thomas, *The Provincial Stock Exchanges,* p. 158.

[56] Thomas, *The Provincial Stock Exchanges*, p.157.

[57] As in the 1890s, when calls were made on share capital, equity investors responded by withdrawing loan money from other companies. G. Daniels, and J. Jewkes, 'The post-war depression in the Lancashire cotton industry,' *Journal of the Royal Statistical Society*, Vol. 91, (1928), pp. 179-80.

[58] By 1926 it was claimed, a large section of the industry was 'practically in the hands of the banks'. *Ibid*. p. 161.

[59] Keynes recognised that the need of the banks to secure their original advances with fresh advances reduced the exit of inefficient firms and increased the need for short-time working. J.M. Keynes, 'Industrial reorganisation: cotton,' in Moggeridge, D.M. (ed.), *The Collected Writings of John Maynard Keynes*, Vol.19, (1926), p.584.

[60] *Ibid*. p.162.

[61] Strategic management theory suggests that firms responding to crisis should follow these strategies as precursors to further action. See for example, J.A. Pearce, and K.D. Robbins, 'Towards Improved Theory and Research on Business Turnaround', *Journal of Management*,

Vol. 19 (1993); pp.613-636. F. Zimmerman, *The Turnaround Experience,* New York: McGraw-Hill (1991).

[62] J. Ryan, 'Machinery Replacement in the Cotton Trade', *Economic Journal*, Vol.40 (December); pp.568-80.

[63] Federation of Master Cotton Spinners' Associations (FMCSA), *Measures for the Revival of the Lancashire Cotton Industry*, Manchester, F.M.C.S.A. (1936), p.7.

[64] *Economist*, 1930, p. 520, FMCSA, *Measures for the Revival*.

[65] *Stock Exchange Official Year Books*, 1930 and 1931.

[66] Collusive policies were recognised by Keynes: '(they) are founded on the belief that, if only industries hang on, 'normal' times will return when they may again hope to employ plant and capital on profitable terms'. J.M. Keynes, *Collected Writings* Vol. XIX, *Activities 1922-1929: The Return to Gold and Industrial Policy* II, 'Industrial Reorganisation: Cotton' p.579.

[67] Bowden and Higgins, 'Short Time Working and Price Maintenance', pp.330-31.

[68] Higgins and Toms, 'Firm Structure and Financial Performance', p.213.

[69] Higgins, 'Rings, mules, and Structural Constraints'. Higgins, 'Re-equipment as a Strategy for Survival'.

[70] H. Catling, *The Spinning Mule*, Newton Abbot: David and Charles (1970), p.189; Noguera, S. *Theory and practice of high drafting*, privately published (1936). pp.20-3, L Tippett, *A Portrait of the Lancashire Cotton Industry*, Oxford, Oxford University Press (1969).

[71] Procter and Toms, 'Industrial Relations and Technical Change'.

[72] Board of Trade, *An Industrial Survey of the Lancashire Area (Excluding Merseyside)*, London, H.M.S.O. (1932), p. 135.

[73] *Economist*, 1930, p.394.

[74] D. Farnie, and T. Abe, 'Japan, Lancashire and the Asian Market for Cotton Manufactures, 1890-1990' in Farnie, D, Nakaoka, T, Jeremy, D., Wilson, J and Abe, T. (eds.), *Region and Strategy in Britain and Japan*, (2000) London: Routledge.

[75] Toms, 'Windows of Opportunity in the Textile Industry,'p.8.

[76] Most companies avoided liquidation and indeed some continued to pay dividends; see the example of the large dividends paid by Lilac Mill in 1925 and 1926, in Thomas, *The Provincial Stock Exchanges*, p.160.

[77] In both cases this amounted to funding dividends by running down reserves, a strategy likely to damage the interests of loan creditors.

[78] Bamberg, The Government, the Banks, and the Lancashire Cotton Industry, Appendix 4.1, p.122. Unfortunately, this data does not give the exact amount of debt owned by each company entering the LCC. It does, however, give a range of the amounts owed to creditors. By taking the mid-point of each range, it is possible to calculate the average indebtedness of

the 321 companies surveyed by Ryan and the average indebtedness of companies entering the LCC.

[79] Robson, *The Cotton Industry*, Table 4, p.338. Summing all the profits from 1935 to 1947 yields £109,339. This calculation makes no allowance for trading losses accumulated throughout the 1920s.

[80] In this context our interpretation of the industry's twentieth performance does have some similarities with those recently advanced by Lorenz. However, while we agree that there was 'excess inertia', we view this as a rational strategy by the industry's businessmen to preserve their physical assets in order to be able to divest money capital as fully as possible, rather than simply as conservatism. E. Lorenz, 'Organisational Inertia and Competitive Decline: The British Cotton, Shipbuilding and Car Industries, 1945-1975." *Industrial and Corporate Change*, Vol.3, (1994), pp.387-88.

[81] J. Singleton, 'The Decline of the Cotton Industry since 1940' in M.B. Rose (ed), *The Lancashire Cotton Industry: A History Since 1700*, Preston (1996), pp.300-1.

[82] For example, Barlow and Jones, Crosses and Winkworth, FCDSA and Jackson and Steeple carried out schemes in 1936, 1944, 1942 and 1943 respectively, *Stock Exchange Official Year-Book*.

[83] Filatotchev and Toms, 'Corporate Governance, Strategy and Survival in a Declining Industry'. This conclusion is based on a survey of the Annual Returns (Form E) of a sample of 29 companies from the period 1950-1965 from the BT31 file at the Public Record Office.

[84] For evidence of capital market inefficiency in this period, see Higgins and Toms, 'Public Subsidy and Private Divestment' p.72, especially n.74.

[85] *Ibid*, Figure 1, p.64.

[86] Political and Economic Planning, *Growth in the British Economy*, London (1960), p.123.

[87] Higgins and Toms, 'Public Subsidy and Private Divestment,' pp.66-7.

[88] Filatotchev and Toms, 'Corporate Governance, Strategy and Survival in a Declining Industry'. The evidence refers to a sample of 29 firms taken from PRO BT31, 1950-65.

[89] Annual Report and Accounts, 1950, Companies House.

[90] Higgins and Toms, 'Public Subsidy and Private Divestment', p.68.

[91] Average profits calculated from Cambridge University Companies Database. See also GMRO/LCC, Annual Reports, 1953/4 for details of capital expenditure requirement.

[92] L. Sandberg, Lancashire in Decline, Columbus, Ohio (1974). Lazonick, 'Competition, Specialisation, and Industrial Decline'. Lazonick, 'Industrial Organization and Technological Change, Lazonick, 'The Cotton Industry'.

[93] A comparative empirical study has shown that profit signals did not suggest the superiority of vertical integration. Higgins and Toms, 'Firm Structure and Financial Performance'.

[94] For an additional perspective on this point, see G. Saxonhouse, and G. Wright, 'Stubborn Mules and Vertical Integration: the disappearing constraint', *Economic History Review*, 2nd Ser. Vol. XL(i), (1987) pp. 87-94.

[95] V.Barker, and I. Duhaime, 'Strategic change in the turnaround process: Theory and empirical evidence,' *Strategic Management Journal*, Vol.18 (1997); pp.13-38.

[96] A number of contemporaries, especially during the inter-war years, were well aware of the vital importance of *first* removing excess capacity. G.C. Allen, *British Industries and their Organisation*, London: Longmans, Green, 1959., pp.239-40; Clay, H., *Report on the Position of the English Cotton Industry*, Confidential Report for Securities Management Trust, (1931) p.83. For Keynes, policies of short-time working and price maintenance merely delayed the introduction of much needed measures to reduce capacity. Keynes, 'Industrial Reorganisation,' pp.590-98.

[97] Mass and Lazonick, 'The British Cotton Industry and International Competitive Advantage'.