Rationalisation and Britain's Industrial Malaise: the Interwar Years Revisited

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1. In their efforts to delineate the causes of Britain's relative economic decline since the late XIXth century historians frequently focus their attention upon institutional sclerosis, lack of competition, the malign influence of the City, and cultural conservatism.[1] Industrial structure has also received considerable attention as a source of Britain's lagging competitiveness, particularly in the years down to 1939.[2] Chandler, for example, argues that, despite the growth of industrial concentration between the wars, British firms invested insufficiently in production, marketing and management and therefore failed to develop the fully-fledged corporate capitalism necessary for sustained economic success.[3] Industrial structure features

[1] S.N. Broadberry and N.F.R. Crafts, 'Britain's Productivity Gap in the 1930s: Some Neglected Factors', *Journal of Economic History*, 52, 3 (1992), pp.531-58; M. Dintenfass, *The Decline of Industrial Britain. 1870-1980* (London 1992); B. Elbaum and W. Lazonick, 'The Decline of the British Economy: An Institutional Perspective', *Journal of Economic History*, 44, 2 (1984), pp.567-83; M.W. Kirby, 'Institutional Rigidities and Economic Decline: Reflections on the British Experience', *Economic History Review*, 2nd series, XLV, 4 (1992), pp.637-60; S. Newton and D. Porter, *Modernisation Frustrated: The Politics of Industrial Decline Since 1900* (London 1988). See also B. Supple, 'Fear of Failing: Economic History and the Decline of Britain', *Economic History Review*, 2nd series, XLVII, 2 (1994), pp.441-58.

[2] E.g. M.W. Kirby and Mary B. Rose (eds.), *Business Enterprise in Modern Britain* (London 1994).

[3] See especially A.D. Chandler, *Scale and Scope: The Dynamics of Industrial Capitalism* (Cambridge Mass. 1990). Also A.D. Chandler, 'The Growth of the Transnational Industrial Firm in the United States and the United Kingdom: A Comparative Analysis', *Economic History Review*, XXXIII, 3 (1980), pp. 396-410.

prominently, too, in Elbaum and Lazonick's institutionalist perspective on British decline.[4]

This stress on the inadequate organisation of British industry is not entirely novel. Similar concerns were expressed in the late 1920s and early 1930s under the banner of 'rationalisation' which was hailed in various official reports, books, journals, newspapers and pamphlets as the key to reviving Britain's principal export trades both through mergers and more efficient management. These contemporary calls for change have not escaped historical attention but, except for Tolliday's examination of the steel industry, there has been little detailed scrutiny of what rationalisation actually involved or its relevance to the economic problems of the period.[5] Most observers at the time and historians subsequently have accepted that the progress made on rationalisation between the wars was inadequate.[6] The resulting literature sometimes states explicitly, though more often implies by default, that an important opportunity was missed to revitalise major sectors of British industry.[7]

[4] B. Elbaum and W. Lazonick (eds.), *The Decline of the British Economy* (Oxford 1986); W. Lazonick, *Business Organization and the Myth of the Market Economy* (Cambridge 1991).

[5] S.W. Tolliday, *Business, Banking and Politics: The Case of British Steel. 1918-1939* (Cambridge Mass. 1987).

[6] E.g. J.H. Bamberg, 'The Rationalisation of the British Cotton Industry in the Interwar Years', *Textile History*, 19, 1 (1988), pp.83-102; Committee on Industry and Trade (Balfour Committee), *Final Report*, Cmd.3282 (1929), pp.296-302; *Economist*, 12 Oct. 1929, pp.652-3; M.W. Kirby, *The British Coalmining Industry, 1870-1946: A Political and Economic History* (London 1977), pp. 108-68; M.W. Kirby, 'Industrial Policy', in S. Glynn and A.E. Booth (eds.), *The Road to Full Employment* (London 1987), pp. 129-35; R. Roberts, 'The Administrative Origins of Industrial Diplomacy: An Aspect of Government Industry Relations, 1929-35', in J. Turner (ed.), *Businessmen and Politics: Studies of Business Activity in British Politics, 1900-1945* (London 1984), pp.93-104; B. Supple, *The History of the British Coal Industry, Vol. 4. 1913-46: The Political Economy of Decline* (Oxford 1987); S. Tolliday, *op. cit*; P. Williamson, *National Crisis and National Government: British Politics, the Economy and Empire. 1926-1932* (Cambridge 1992), pp.96, 217, 524-5.

[7] This is an inference that could easily be drawn from many well-known textbook accounts. E.g. D.H. Aldcroft, *The British Economy. Volume I: The Years of Turmoil. 1920-51* (Brighton 1986), pp.16-17; S. Pollard, *The Development of the British Economy 1914-1990* (4th edn., London 1992), pp.49-57.

The purpose of this article is threefold. First, to review briefly what is known about rationalisation of industry between the wars and to assess how far existing interpretations are adequate. Second, to judge the extent to which the arguments for rationalisation offered possibilities for improved industrial efficiency, primarily in the staple trades. Third, to review critically the judgements of observers in the post-1939 period who stress how much the case for structural change between the wars should properly encompass considerations which go beyond those raised by the contemporary rationalisation debate. In addressing these issues we consider the strengths and weaknesses of the case for reform in broad terms rather than via a counterfactual analysis of possible outcomes. The latter would need to capture comprehensively the precise cost implications of technology, altered managerial and working practices, horizontal and vertical integration which the available data does not readily permit.

Our attention is focused on four major staple trades (coal, steel, shipbuilding and cotton), because they were the sectors where organisational reform was considered most necessary at the time. We argue that the rationalisation programmes put forward in the 1920s had limited potential and we suggest further that even when more subtle retrospective arguments in favour of thoroughgoing structural change between the wars are considered the case for rationalisation remains unproven.

2. Although the term 'rationalisation' was frequently used by interwar politicians, civil servants, bankers, journalists, academics and industrialists, it always lacked precise meaning. Its broad premise was that much of British industry could achieve greater competitive efficiency if it eliminated surplus capacity through collective action, organised itself via mergers to achieve scale economies, and adopted a more structured if not scientific approach to management.[8] Some progress was made along these

[8] For an overview see W.R. Garside, *British Unemployment, 1919-1939: A Study In*

lines between the wars. In particular, the merger boom of the 1920s did not bypass the staple trades.[9] Important fusions occurred in coal, cotton and steel.[10] And while shipbuilding saw few amalgamations, employers took co-operative action in other ways, notably by forming in 1930 National Shipbuilders' Security Ltd. (NSS), a holding company designed to buy up and sterilize surplus capacity using funds raised within the industry.[11] However, these activities were both limited in effect and fell short of what was widely considered necessary. Cotton and mining remained among the least concentrated of UK trades and despite the disappearance of many firms the organisation and structure of shipbuilding and steel also failed to change radically.[12] Technical and managerial reforms were also limited.

Historians have identified examples of individual and institutional behaviour which they allege constrained industrial reorganisation.[13] Within the business sector there were a few high profile and outspoken industrialists such as Alfred Mond of ICI who attached great importance to the subject of rationalisation,[14] but the less vociferous majority either had little faith in its benefits or saw organisational change as an essentially slow, evolutionary

Public Policy (Cambridge 1990), Ch.8; J.I. Greaves, 'Industrial Rationalisation and Government Policy in Interwar Britain' (unpublished Ph.D. thesis, Birmingham University, 1992). Also L. Hannah, *The Rise of the Corporate Economy* (2nd edn., London 1983), especially pp.27-40, 90-100, 123-42.

9 L. Hannah, *op. cit.*, p. 104.

10 T. Boynes, 'Rationalisation in the Inter-War Period: The Case of the South Wales Steam Coal Industry', *Business History*, 29, 3 (1987), pp.282-303; J.C. Carr and W. Taplin, *History of the British Steel Industry* (Oxford 1962), pp.529-48; R. Robson, *The Cotton Industry in Britain* (London 1957), pp. 157-9.

11 A. Slaven, 'Self-Liquidation: The National Shipbuilders' Security Ltd. and British Shipbuilding in the 1930s', in S. Palmer and O. Williams (eds.), *Charted and Uncharted Waters: Proceedings of a Conference on the Study of British Maritime History* (London 1981), pp.125-47.

12 H. Leak and A. Maizels, 'The Structure of British Industry', *Journal of the Royal Statistical Society*, CVIII, 1-2 (1945), pp. 142-99; E.H. Lorenz, *Economic Decline in Britain: The Shipbuilding Industry 1890-1970* (Oxford 1991), pp.31-2; S. Tolliday, *op. cit.*, pp.30-4.

13 See the references under note 6 above.

14 A. Mond, *Industry and Politics* (London 1927).

process offering no real relief from short-to-medium-term difficulties.[15] The deterioration in Britain's export performance was attributed largely to other factors, notably adverse conditions overseas (which were believed to be temporary), excessive domestic wage levels, restrictive trade union practices, bureaucratic industrial legislation, and high social services expenditure.[16]

The resultant inertia on the part of contemporary businessmen put pressure on the state to act. Official enthusiasm for rationalisation in the 1920s, however, was essentially pragmatic, a reflection of the unwillingness of governments to embrace other more controversial 'explanations' of industrial depression such as labour rigidities, free trade, budgetary stringency, and the gold standard.[17] Ministers and civil servants balked at the political, practical and social consequences of direct intervention in industry fearing the wrath of vested interests and of being held responsible for any labour displacement if plants closed under rationalisation schemes. In coal, the problems posed by the industry's secular decline forced some action. But crisis management was always the priority there and attempts by the state to impose amalgamations by legislation were half-hearted and achieved little.[18] In other depressed sectors down to 1931, most notably steel and cotton, governments commissioned enquiries but these gave way only to

[15] Public Record Office, London [hereafter PRO], CAB 27/317, RCC(26)4, Memorandum Submitted by the Mining Association of Great Britain, 17 March 1926; PRO, BT 56/33/CIA/1768/15, 'Observations by the Association of Cotton Mill Directors on the Report of the Cotton Enquiry Committee', July 1930; Federation of British Industries, *Industry and the Nation* (London 1931); W.J. Reader, *Architect of Air Power: The Life of the First Viscount Weir of Eastwood. 1877-1959* (London 1968), pp.140-7.

[16] Committee on Industry and Trade (Balfour Committee), *Minutes of Evidence*, Vol.I (HMSO 1930-31), pp.94-122, 358-9, 466-513, 642-76; T.W. Rodgers, 'Work and Welfare: The National Confederation of Employers' Organisations and the Unemployment Problem, 1919-1936' (unpublished Ph.D. thesis, Edinburgh University, 1982), pp.79-90.

[17] J. Greaves, 'Industrial Rationalisation', Ch. 2.

[18] M. Kirby, *op. cit.* (1977), Chs.6, 7, 9.

ineffectual exhortation.[19] Extensive state support for the staple trades came only in the wake of the world slump but by then the concepts associated with rationalisation had largely gone out of fashion. Government efforts were directed merely to propping up struggling industrial sectors via protection, cartelization and subsidisation rather than restructuring them in the interests of lower costs.[20]

In earlier years the state had hoped that rationalisation in industries other than coal would be encouraged by the financial sector, either through the clearing banks using their leverage over firms dependent for survival on overdraft finance or through the provision of fresh long-term funding by the City. However, the clearing banks feared public hostility if they acted in concert and argued that they lacked the managerial competence necessary to act as midwives to industrial reform.[21] The issue houses were also unwilling to take a leading role in industry. Some effort was made to fill the resultant gap by the Bank of England which, in 1929-30, established the Securities Management Trust and the Bankers' Industrial Development Company to promote rationalisation.[22] But the principal purpose of these institutions was to provide a bulwark against state intervention in industry and prevent unorthodox experiments in banking and financial policy. Hence, while the Bank's initiatives were of some assistance to mergers in cotton spinning and steel and to shipbuilding through the NSS capacity

[19] See especially, B. Supple, 'Official Economic Inquiry and Britain's Industrial Decline: The First Fifty Years', in M.O. Furner and B. Supple (eds.), *The State and Economic Knowledge: The American and British Experiences* (Cambridge 1990), pp.340-4. Also, Greaves, 'Industrial Rationalisation', Chs.3-4.

[20] W.R. Garside, *op. cit.*; A.F. Lucas, *Industrial Reconstruction and the Control of Competition* (London 1937).

[21] Bank of England Papers, London [hereafter BoE], SMT 2/72, Sir Arthur Steel Maitland (Minister of Labour), 21 Nov. 1928; M. Collins, *Banks and Industrial Finance in Britain.1800-1939* (London 1991), pp.69-77, 79-82; Committee on Finance and Industry (MacMillan Committee), *Minutes of Evidence*, Vols.I & II (HMSO 1931), especially QQ.1809-90, 1934-90.

[22] A.F. Lucas, 'The Bankers Industrial Development Company', *Harvard Business Review*, XI (1932-33), pp.270-9.

reduction scheme, Threadneedle Street generally left other parties to bear the burden of change financially and managerially, with the inevitable result that progress was limited. [23]

We do not deny therefore the existence of significant constraints on change identified in previous literature. What remains less clear, however, is whether the rationalisation programmes that were supposedly compromised as a result possessed intrinsic merit.

3. One of the prime purposes of rationalisation was to enable the staple trades to improve their faltering export performance.[24] Overseas sales in coal and steel roughly halved between the wars while in shipbuilding and cotton they fell by about two-thirds. Only in steel was home demand buoyant enough to prevent a drop in total output.[25] This decline, of course, owed more to an unfavourable domestic and international economic environment than to weaknesses within the industries themselves. Impoverished markets and increased import substitution abroad (exacerbated by the effects of war and later by trade restrictions) took a severe toll.[26] However market share was also being lost. Between 1913 and 1929 Britain's percentage of world exports fell from 23 to 18 in steel and

[23] W.R. Garside and J.I. Greaves, 'The Bank of England and Industrial Intervention in Interwar Britain', *Financial History Review*, 3, 1 (1996). See also M. Collins, *op. cit.*, pp.77-9; R.S. Sayers, *The Bank of England. 1891-1944*, Vol.I (Cambridge 1976), pp.314-30; S. Tolliday, *op. cit.*, pp.169-277.

[24] PRO, CAB 58/131, EAC (I&S)100, Evidence by Montagu Norman (Governor of the Bank of England) to the Economic Advisory Council Committee on the Iron and Steel Industry, 21 March 1930; MacMillan Committee, *Minutes of Evidence*, Vol.I, Q.3317; Ministry of Labour, *Memoranda on Certain Proposals Relating to Unemployment*, Cmd.3331 (1929), p.52.

[25] Mines Department, *Annual Reports of the Secretary for Mines* (HMSO 1923-40) [hereafter *ARSM*]; Committee on Industry and Trade (Balfour Committee), *Survey of Metal Industries* (HMSO 1928), pp. 122-3; *Lloyds Register of Shipping: Annual Summary of Mercantile Shipbuilding in the World*; B.R. Mitchell and P. Deane, *Abstract of British Historical Statistics* (Cambridge 1962), p. 148; R. Robson, *op. cit.*, p. 2. For an overview of the problems of the staple trades see G.C. Allen, *British Industries and Their Organisation* (2nd edn., London 1935).

[26] A.E. Kahn, *Great Britain and the World Economy* (New York 1946); A. Maizels, *Industrial Growth and World Trade* (Cambridge 1963).

from 55 to 44 in coal.[27] In cotton the fall was from 58 to 39 percent between 1910-13 and 1926-28, and in shipbuilding from 80 percent in 1913 to between 40 and 50 percent in the 1927-30 period. [28] There were factors other than internal efficiency which affected export market share, including changed political boundaries, the spread of protection to markets previously dominated by Britain, and (in steel) international cartelization.[29] Cotton also suffered severely from low-wage Japanese competition.[30] But beyond these problems there is, significantly, evidence of a relative deterioration in productivity performance.[31]

Could rationalisation have remedied the apparent signs of competitive weakness? One might begin to think so considering the amount of attention devoted to the subject. Although there was never anything that could be called a 'rationalisation movement' in 1920s Britain, the number of books, pamphlets, articles, official and semi-official enquiries and speeches by prominent public figures alluding to the concept was enormous. Furthermore, the scepticism many industrialists displayed towards rationalisation could be and was readily dismissed as self-serving - designed to focus public attention on issues other than entrepreneurial inadequacies.[32]

[27] *ARSM* (various years); United Nations Economic Commission for Europe, *Statistics of World Trade in Steel, 1913-1959* (Geneva 1959).

[28] J.R. Parkinson, 'Trends in the Output and Export of Merchant Ships', *Scottish Journal of Political Economy*, 3, 3 (1956), pp.242-3; R. Robson, *op. cit.*, p.2.

[29] A. Maizels, *op. cit.*, pp.228-31; Mines Department, *Report of the British Coal Delegation to Sweden, Norway and Denmark*, Cmd.3702 (1930); I. Svennilson, *Growth and Stagnation in the European Economy* (Geneva 1954), pp.123-40. State aid was the main distorting factor in shipbuilding. See L. Jones, *Shipbuilding in Britain: Mainly Between the Two World Wars* (Cardiff 1957).

[30] See below, p. 59.

[31] International Labour Office, *The World Coal-Mining Industry*, Vol.I (London 1938), pp.113-219; Mines Department, *ARSM* (various years); Ministry of Fuel and Power, *Coal Mining: Report of the Technical Advisory Committee*, Cmd.6610 (1945) [hereafter *Reid Report*], Appendix I. For evidence of similar (if less dramatic and easily measurable) trends in other staple trades see D.L. Burn, *The Economic History of Steelmaking. 1867-1939: A Study in Competition* (Cambridge 1940), pp.427, 434, 450-2; J.R. Parkinson, 'Shipbuilding', in N.K. Buxton and D.H. Aldcroft (eds.), *British Industry between the Wars* (London 1979), pp.86-90, 98-100.

[32] PRO, BT 56/34/CIA/1768/30, Minute by Sir Horace Wilson (the Government's Chief Industrial Advisor), 26 Nov. 1930; *Economist*, 8 Dec. 1928, pp. 1044-6.

However, there was little that was inherently new in the concept of rationalisation. The possibility of gaining increased competitive advantages via industrial combination and scientific management had been realised long before 1918.[33] Although the case put forward in the 1920s was more sophisticated than in earlier decades it still possessed serious limitations. Rationalisation, for example, urged improved management practices, given prevailing doubts as to the calibre and general professionalism of British business leaders. Even those preoccupied more with questions of technology and industrial structure recognised that, as firms grew larger and more complex, quality at the top was essential to reap commercial benefits.[34] But because management was so difficult to scrutinise in detail from the outside, those reports and enquiries advocating rationalisation generally made little attempt to define the criteria for judging performance and bringing about change. They merely offered platitudes such as the need to replace family influence in large firms with the best brains and abilities of the country thrown up from all classes of society.[35] This inadequate approach was particularly apparent in official enquiries into the staple industries. As the state lacked 'in house' management expertise it relied upon individual businessmen for advice which, when proffered, was often contradictory or too generalised to be of value.[36]

[33] On pre-1914 ideas see H. Levy, *Monopoly and Competition: A Study in English Industrial Organisation* (London 1911); D.H. MacGregor, *Industrial Combination* (London 1906); F.W. Taylor, *Principles of Scientific Management* (New York 1913). For the war period see particularly Committee on Commercial and Industrial Policy After the War, *Final Report*, Cd.9035 (1918); Federation of British Industries, *Report of Committee on Commercial Efficiency* (London 1918).

[34] B. Austin and W. F. Lloyd, *The Secret of High Wages* (London 1926); H.N. Casson, *Management: The Secret of Increased Net Profits* (London 1930), pp.52-3; Balfour Committee, *Final Report*, pp.245-6. On efforts to improve management practice between the wars see L. Hannah, 'Managerial Innovation and the Rise of the Large-Scale Company in Britain', *Economic History Review*, 2nd series, XXVII, 2 (1974), pp.252-70; S.P. Keeble, 'Management Research Groups', *Business Archives*, 47 (1981), pp.44-7.

[35] Liberal Industrial Inquiry, *Britain's Industrial Future* (London 1928), p.131.

[36] Some major interwar enquiries on which businessmen served scarcely considered management at all. E.g. Royal Commission on the Coal Industry (1925), Vol.I, *Report*, Cmd.2600 (1926) [hereafter *Samuel Report*]; Economic Advisory Council, *Report of the Committee on the Cotton Industry*, Cmd.3615 (1930) [hereafter *Clynes Report*].

There were government reports (notably those by the Balfour Committee) which paid more than mere lip service to management questions and individuals, like the consultant Lyndall Urwick, who argued that industrial administration was the key element in rationalisation. But the ideas for change that emerged were either highly abstract (such as a naive belief that the control of businesses could be reduced to a set of scientific principles) or were merely lists of 'best' practice embracing scientific management in the workplace, market research business forecasting, industrial psychology and cost accounting. Rarely was any indication given as to how such activities might apply to specific industrial situations.[37] Moreover, the onus for resolving alleged managerial weaknesses was invariably placed on the very business personnel whose failings were supposedly being exposed. [38]

Simplistic assumptions about managerial inadequacies often followed from the belief that many of the problems to be tackled in the staple trades were both readily identifiable and amenable to obvious, common sense, solutions. The issue of surplus capacity was a clear example. At the end of the 1920s, because of a combination of wartime plant extensions and declining demand, cotton, coal and steel were only working at about two-thirds to three-quarters of their productive potential and shipbuilding at little more than half.[39] Competition failed to restore equilibrium because of segmented markets, bank support of weak firms, managers and shareholders 'clinging on' in the hope that conditions would improve, and firm survival strategies based upon piecemeal diversification. The result was sub-optimum plant utilisation, increased overheads and below-cost selling, leading to unprofitable production and low investment.[40]

[38] *Statist*, 16 March 1929, p.448.

[39] Balfour Committee, *Survey of Metal Industries*, p. 18; *Economist*, 22 Feb. 1930, pp.397-8; League of Nations, Economic Committee, *The Problem of the Coal Industry* (Geneva 1929), p.9. The cotton figure is an estimate based on data for installed spindleage and raw cotton consumption in: R. Robson, *op. cit.*, pp.332-3, 339, 344.

[40] B. Bowker, *Lancashire Under the Hammer* (London 1928), pp.72-9; N.K. Buxton, 'Entrepreneurial Efficiency in the British Coal Industry Between the Wars', *Economic*

Rationalisation seemingly offered an escape from the resulting impasse on the presumption that the best way to concentrate production was to gain some control over the market through co-operative producer action (involving mergers or otherwise).[41] Advocates of rationalisation laid considerable stress on the benefits that would flow from the removal of excess plant, frequently portraying this as the key to reversing the whole cycle of decay in the staple trades and laying down a basis for future healthy development.[42] But how much difference would such action have made?

The most frequently cited competitive benefits related to the reduction of overheads through the restoration of full-time working. One recent examination of shipbuilding suggests that by closing a third of all berths in the 1930s firms lowered their costs by 3-5 percent.[43] Fragmentary estimates by contemporary employers indicate that savings of a similar magnitude might have been possible in other sectors. For example, one cotton firm estimated that its total costs fell by 4-6 percent on coarse and medium counts when a mill increased its running time from 75 to 100 percent.[44]

History Review, 2nd series, XXIII, 3 (1970), pp.491-2; H. Clay, *Report of the Position of the English Cotton Industry* (Securities Management Trust Ltd. 1931), pp.9, 20-2, 69-70; Political and Economic Planning (PEP), *Report on the British Cotton Industry* (London 1934), pp.28, 59-60, 70-1; F.C. Pyman, *Shipbuilding Rationalisation* (Liverpool 1933), pp.7-8; A. Slaven, 'A Shipyard in Depression: John Browns of Clydebank, 1919-1938', *Business History*, 19, 2 (1977), pp.192-217; S. Tolliday, *op. cit.*, pp.26-9, 34-7.

[41] J.A. Bowie, *Rationalisation* (London 1931), 9; Liberal Industrial Inquiry, *op. cit.*, pp. 128-9; D.H. MacGregor, 'Rationalisation of Industry', *Economic Journal*, XXXVII, 4 (1927), pp.521-50; A. Mond, *op. cit.*, pp.210-48.

[42] PRO, BT 56/36/CIA/1768/87, 'Finance for the Cotton Industry', Note by Sir Horace Wilson, 3 Dec. 1931; PRO, CAB 24/204, CP 176(29), 'Position of the Coal Mining Industry', Memorandum by the Secretary for Mines, 28 June 1929; PRO, CAB 58/176, EAC(PR)60, Committee on Problems of Rationalisation, Evidence of Sir Ernest Gowers, 2 Feb. 1932; Balfour Committee, *Final Report*, pp. 179, 182-7, 299-300; H. Clay, *The Post-War Unemployment Problem* (London 1929), pp.173-4.

[43] Slaven, *loc. cit* (1981), p. 136. See also PRO, MT 9/3003, The Shipbuilding Conference, 'Memorandum on Conditions Now Existing in the Shipbuilding Industry With Particular Reference to the Subject of Foreign Competition' [hereafter 'Shipbuilding Conference Memorandum'], Dec. 1938, pp. 18, 73-4.

[44] PRO, BT 56/34/CIA/1768/22, 'Costs of Spinning a Pound of Yarn', Memorandum,

Even taken at face value such figures suggest that capacity utilisation affected costs by only a few percentage points, certainly not enough to close the price gap with leading competitors abroad. In any event these estimates are probably on the high side. Because of low investment levels between the wars the staple trades contained much old, fully depreciated plant on which overheads were small.[45] For example, NSS was able to sterilise over 1.4 million gross tons of shipbuilding capacity in the 1930s at a net cost of £1.33 million which, as Slaven notes, was 'a remarkably small outlay to eliminate more than one-third of the capacity of the industry.'[46] Moreover, in all of the staple sectors the dominant cost items, accounting for 85 percent or more of the total, were labour and raw materials, which had considerable output elasticity.[47] Indeed, if fixed charges had been crushing it seems inconceivable that so many firms with under-utilised plants could have survived for as long as they did.

There are other reasons for remaining sceptical about the putative cost savings from industrial concentration. First, the competitive position of Britain's staple industries continued to deteriorate in the 1930s even though the quantity of spare plant at their disposal fell sharply as the decade progressed through a combination of works' closures and rising demand.[48] Second, those

Dec. 1930. On overhead costs in steel see PRO, CAB 58/1, Meeting of the Committee for Civil Research, 29 July 1925.

[45] E.g. Board of Trade, Working Party Reports, *Cotton* (HMSO 1946), pp.66, 69, 101; J. Ryan, 'Machinery Replacement in the Cotton Trade', *Economic Journal*, XL, 4 (1930), pp.568-80. For statistics on the generally low levels of staple trade investment between the wars and consequent capital stock deterioration see C.H. Feinstein, *Domestic Capital Formation in the United Kingdom. 1920-1938* (Cambridge 1965), Tables 6.10, 8.11, 8.21.

[46] Slaven, *loc. cit.* (1981), p. 132.

[47] Balfour Committee, *Further Factors in Industrial and Commercial Efficiency*, pp.76-7.

[48] PRO, MT 9/3003, 'Shipbuilding Conference Memorandum', pp.8-11, 72-4, 90; Coal Mines Act 1930, *Report by the Board of Trade Under Section 7 of the Act on the Working of Schemes Under Part I of the Act Since the December Quarter, 1936*, Cmd.5773 (1938); Cotton Spinning Industry Act 1936, *Annual Reports of the Spindles Board*, Cmd.5579, Cmd.5873, Cmd.6157 (1937-40); *Economist*, 24 July 1937, pp. 169-70. The rapid rise in demand from the mid-1930s tended to induce bottlenecks and raise costs for reasons other than a lack of physical capacity.

savings that did result from removing surplus plant were 'once and for all' in nature and could not in themselves improve trend productivity. Third, any *complete* restoration of full-time running in the staples was a purely hypothetical notion. No industry could actually expect to work thus for other than short periods, particularly between the wars when demand fluctuated so violently.

One further direct benefit of concentration, frequently cited in steel and coal, was that production would thereby come from the most efficient firms and plants. But the overwhelming majority of major steel companies had layouts and equipment which significantly inhibited their ability to outperform the rest of the industry.[49] Less is known about coal but it is clear that merely eliminating the weakest pits would not have brought British productivity anywhere near to overseas levels. Returns made during the Second World War showed that mines with an output-per-man-shift of 30 cwts or more accounted for only 7 percent of British coal production. By comparison *average* productivity levels in German mining had exceeded 30 cwts for most of the 1930s.[50]

Contemporary support for capacity-reduction schemes drew upon wider considerations. Cutting overheads and curbing weak selling, it was argued, would increase profits and investment which in turn would boost competitiveness over the longer term. This assumed, of course, that further productivity-enhancing structural reforms were to hand. Supporters of rationalisation argued that such advantages were available from merger-generated scale economies. Indeed, a principal reason why amalgamations were regarded so favourably was that they were seen not merely as market-control devices to restore full-time

[49] S. Tolliday, *op. cit.*, pp.37-41, 65-6; P.W.S. Andrews and E. Brunner, *Capital Development in Steel: A Study of the United Steel Companies Ltd.* (Oxford 1951).

[50] Ministry of Fuel and Power, *Statistical Digest 1944*, Cmd.6639 (1945), Tables 8 & 22; *Reid Report*, Appendix I. Cf. J. Jewkes, 'Is British Industry Inefficient?', *Manchester School*, 14 (1946), p. 13. It could be argued that wartime conditions were exceptional but the 1944 figure for UK productivity was not far below the levels achieved in the later 1930s and therefore seems a reasonable proxy for earlier performance.

running but the harbinger of a whole range of benefits from larger operation.[51] These included economies from bulk buying and selling, ease of raising capital, increased size of technical units, enhancement of standardisation and specialisation, pooling of research effort, and the employment of more specialised managerial personnel.[52] But the claims made for mergers were sweeping and generalised. Often the 'proof' offered that the staple trades were not benefiting fully from scale economies merely rested on superficial comparisons with industries abroad (particularly the heavy trades in the United States and Germany) or with other branches of UK manufacturing like chemicals and rayon that already had dominant firms. Such reasoning ignored the enormous variations in trading conditions that existed domestically and internationally and at its crudest merely equated size with efficiency.[53]

Do the contemporary arguments for rationalisation posed in terms of mergers and scale economies have more substance when applied to specific staple trades? After all, considerable attention was devoted to examining the structural problems of individual basic industries. The most considered of the rationalisation schemes put forward between the wars related to reform of the steel trade. Calls for change in steel focused both on the need for a shakeout of plant and financial capital by merger and on technical reconstruction. Steelmaking between the wars offered considerable

[51] Sir M. Webster-Jenkinson, *Some Dangers of Rationalisation* (London 1929), p.4.

[52] Balfour Committee, *Final Report*, p. 177; J. Bowie, *op. cit.*, p. 13; H. Clay, *op. cit.*, pp. 171-2.

[53] L.J. Barley, *The Riddle of Rationalisation* (London 1932); P. Dawson, *Germany's Industrial Revival* (London 1926); J.B.C. Kershaw, 'The Reorganisation of the Cotton and Chemical Industries', *Financial Review of Reviews* (Oct. 1929), pp.30-9; W. Meakin, *The New Industrial Revolution* (London 1928), pp.27-150, 161-76. Cf. R.A. Brady, *The Rationalisation Movement in German Industry* (California 1933); D.H. MacGregor and others, 'Problems of Rationalisation: A Discussion', *Economic Journal*, XL, 3 (1930), p. 355. More recent surveys of interwar industrial sectors suggest no correlation between efficiency and concentration levels. E.g. S.N. Broadberry, 'Unemployment in Interwar Britain: A Disequilibrium Approach', *Oxford Economic Papers*, XXXV, 3 (1983), pp.467-8.

scope for economising on fuel and labour by enlarging plant size and integrating technical processes and Britain seemed to be lagging in both these respects.[54] For example, although the diversity of British finished-steel demand created problems for mass production, as early as 1917 an official enquiry had suggested that steel plants needed an annual output of *at least* 300,000 tons for full efficiency .[55] Yet 12 years later only five UK steelworks reached this bench mark and none exceeded 500,000 tons, a figure bettered by many Continental plants. [56]

With little sign that the industry's piecemeal approach to rationalisation would generate the changes necessary to catch up with overseas competitors, the leaders of the steel trade and Bank of England industrial advisers, co-operating with outside engineering consultants, produced detailed plans in 1929-30 to consolidate the heavy steel trade into regional combines via mergers. This action was to be followed either by an upgrading of existing plants or a building of new ones to secure the available technical economies.[57] Tolliday argues that there was considerable substance in these blueprints for reform. They named which particular firms were in need of merger, the precise plant improvements required, and even estimated, at generally between 10 and 20 percent, the resulting fall in working costs.[58] This was not

[54] Balfour Committee, *Survey of Metal Industries*, pp.7-8, 21-9; Political and Economic Planning, *Report on the British Iron and Steel Industry* (London 1933), pp.39-48, 101-2.

[55] Board of Trade, *Report of the Departmental Committee Appointed to Consider the Position of the Iron and Steel Trades After the War*, Cd.9071 (1918), p.20. On the problems of diverse demand see K. Warren, 'Iron and Steel', in Buxton and Aldcroft (eds.), *op. cit.*, p.106.

[56] D. Burn, *op. cit.*, pp.432-3.

[57] BoE, SMT 2/154, 'Memorandum on Regionalisation of British Iron and Steel Industry by H. Brassert & Co. Ltd.', 10 Jan. 1930; BoE, SMT 2/251, 'Report on the Structure of the Iron and Steel Industry of Great Britain Incorporating Plans for Rationalisation, by C. Bruce-Gardner', 31 Dec. 1930. Bruce-Gardner was the Bank of England's senior industrial advisor.

[58] For details of cost savings see S. Tolliday, *Business, Banking and Politics*, Tables 5 and 6. Also BoE, SMT 2/55, 'Rationalisation - A Perspective', Memorandum by Skinner (Bank of England Official), 7 Oct. 1930.

enough to close the gap with foreign competitors or transform the industry's position in prevailing market circumstances but was significant nevertheless.

Despite their detail, these proposals had serious shortcomings. First, they ignored wage-bargaining systems which in Britain tended to favour labour-intensive plants .[59] Second, the savings calculated underestimated the scope for closing the gap between current and best practice through piecemeal improvements to existing works.[60] Third, the cost advantages expected of technical reform rested on problematic assumptions about market conditions. Engineering consultants accepted that large-scale integrated works, unlike the units they replaced, had to maintain very high rates of capacity utilisation (over 90 percent) otherwise overheads would be crippling. But the plants they envisaged were sizeable in relation to the available demand; near full-time running was therefore unlikely in cyclical downturns, especially while Britain remained a free-trade economy. Intermittent operation was more suited to smaller, older works which retained other advantageous features in prevailing conditions. In particular, they could substitute scrap metal (very cheap until the mid 1930s) for pig iron in the steel charge, thereby lessening the fuel economy disadvantages of non-integrated methods.[61]

The economic environment did become favourable to more

[59] F. Williamson, 'Collective Bargaining in the Steel Industry in the 1920s', in A. Briggs and J. Saville (eds.), *Essays in Labour History. vol.3. 1918-1939* (London 1977), pp. 102-32. Most of the interwar discussion of wages was confined merely to comparisons of average UK and foreign rates. E.g. Economic Advisory Council, *Report of Delegation on the Industrial Conditions in the Iron and Steel Industries in France, Belgium.,Luxembourg, Germany and Czechoslovakia*, Cmd.3601 (1930).

[60] The best example of what could be achieved by patching was the redevelopment of the interwar Scottish steel industry. See P.L. Payne, *Colvilles and the Scottish Steel Industry* (Oxford 1979), pp.229-38.

[61] BoE, SMT 2/55, 'Rationalisation - A Perspective', Memorandum by Skinner, 7 Oct. 1930; Balfour Committee, *Minutes of Evidence*, Vol.I, Q.6205; Board of Trade, *An Industrial Survey of the South West of Scotland* (HMSO 1932), p. 155; S. Tolliday, *op. cit.*, pp.41-5, 101-9, 313; P. Payne, *op. cit.*, pp. 171-80; F. Scopes, *The Development of the Corby Works* (Stewarts and Lloyds Ltd. 1968), pp.68, 85, 202.

modern steel plants in the later 1930s as demand and raw material costs both soared. But few inside the industry foresaw the strength of the upturn and even when the boom gathered momentum they feared it would be short-lived.[62] After the setbacks steelmakers had suffered in the first postwar decade such caution was understandable. Had demand not recovered quickly after the world slump a major investment programme around 1930 would have been financially ruinous. Even the industry's sternest critics did not foresee that decades of strong growth for steel were at hand.[63] Furthermore, it is difficult to argue that by 1939 significant advantages had been forgone through the industry's continued piecemeal approach to change as boom conditions were still too recent. It is possible that some of the second-best solutions used at the time made subsequent change more difficult but this remains unproven.[64]

Even allowing for the problems just described, steel's experience showed nevertheless how the broad concepts embraced by rationalisation could be fleshed out into something of value at the industry level. But was steel typical or exceptional in this regard? The industry thought most likely to benefit in a similar fashion was the beleaguered coal trade where the perceived failure to undertake significant structural change generated the greatest contemporary controversy. British coal mining was certainly fragmented; as late as 1938 it contained over 1,000 firms and 1,900 mines and concentration levels had risen little since 1918.[65] This offered a strong *prima facie* case for mergers to tap scale economies, especially as average firm and

[62] Burn, *op.cit.*, pp.468-9, 506; *Report of the Import Duties Advisory Committee on the Present Position and Future Development of the Iron and Steel Industry*, Cmd.5507 (1937), pp. 35-6.

[63] As Tolliday notes: '...who could have reasonably forecast thirty years of continuous expansion in 1932?' S. Tolliday, *op. cit.*, p.348.

[64] On this see *ibid.*, pp.328-34; K. Warren, *loc. cit.*, pp.122-3.

[65] There was some tendency for the largest firms to increase their market share between the wars but it was not marked. See B. Supple, *op. cit.*, pp.201-13, 301-12, 361-77.

mine size in Continental coal industries experiencing more rapid productivity growth was far larger.[66]

The most comprehensive and influential case for amalgamations in mining was put forward by the Royal Commission on the Coal Industry, 1925 (the Samuel Commission) whose lengthy report was published in 1926. What needs stressing, however, is that the Samuel Report was compiled under the impending threat of a coal strike and, midst heavy political overtones, went to considerable lengths to suggest that the industry's ultimate health was not solely dependent upon wage cuts. Although the Report raised numerous issues relating to the structure of the industry it was not a product of technicians and contained little detailed analysis of mining methods.[67] Rather, the Samuel Report speculated as to where scale economies *might* be achieved by mergers. Some of the suggested savings such as store purchase, selling, management specialisation, and capital raising were very general in nature. Others like central pumping and coalfield planning related more specifically to the coal industry. But in no instance was it demonstrated how larger concerns would generate savings nor was any suggestion made about the size and structure of the merged units the industry was supposed to need.[68]

Admittedly there was statistical evidence in the Samuel Report which suggested that the coal trade was not benefiting

[66] R. Brady, *op. cit.*, p.73; W. Meakin, *op. cit.*, pp.27-85; *Samuel Report*, p.57; Mines Department, *Reports of the Departmental Committee on Cooperative Selling in the Coal Mining Industry*, Cmd.2770 (1926), pp.9-11, 30-9. See also *Reid Report*, pp.16-17, 19-20, 23-4.

[67] *Samuel Report*, especially pp.44-62, 259-65. The background to the Commission's appointment and deliberations are well known. See particularly, G.A. Phillips, *The General Strike: The Politics of Industrial Conflict* (London 1976); M. Morris, *The General Strike* (Pelican edition, 1976); B. Supple, *op. cit.*, ch.6.

[68] *Samuel Report*, pp.49-50. The Samuel Commission did point to the fact that many representatives of the mining industry had given evidence to the Sankey Commission in 1919 conceding there were advantages in combination. See ibid., pp.52-3. However, the views then expressed had been very tentative and qualified and their significance was further diluted by the extraordinary political circumstances surrounding the industry in 1919.

fully from scale economies. Tables were compiled for 1924-25 indicating a favourable correlation in British coal mining between the size of colliery undertakings and their level of profits, productivity and costs.[69] But the figures were not convincing. First, when disaggregated regionally they show that the link between size and efficiency applied only to certain areas where natural conditions favoured large-scale working. Second, the profit figures omitted capital charges, which bore relatively heavily on larger concerns.[70] Third, even taken at face value the Samuel Commission's statistics fail to demonstrate that the gains from size *per se* were very great. The largest British concerns producing over 2 million tons of coal per annum had an output-per-man-shift of 19.76 cwts - less than 8 percent higher than the industry average of 18.32 cwts.[71]

In cotton the evidence for scale economies was even more flimsy. Like coal this trade was exceptionally fragmented with hundreds of firms operating in all of the main branches except finishing. But while mergers found favour in numerous enquires and even among some employers, the suggested commercial benefits were vaguely stated and never substantiated statistically. The Economic Advisory Council's report on the industry in 1930 (the Clynes Report) was typical. Platitudes abounded on the need

[69] *Samuel Report*, Tables 5 & 6.

[70] Ibid., pp.260-1. See also Royal Commission on the Coal Industry (1925), Vol.III, *Appendices and Index* (HMSO 1926), pp.222-7; R.W. Dron, *The Economics of Coal Mining* (London 1928), pp. 109-18; P. Fitzgerald, *Industrial Combination in England* (London 1927), pp.30-2; B. Supple, *op. cit.*, p.397. More recent statistical attempts to link size and efficiency in coal between the wars also lack conviction. See B. Fine, *The Coal Question* (London 1990), pp.19-32, 83-94; B. Fine, 'Is Small Beautiful? Mine Size in the British Interwar Coal Industry', *Economic History Review*, 2nd series, XLVI, 1 (1993), pp. 160-2; D. Greasley, 'Economies of Scale in British Coalmining Between the Wars', *Economic History Review*, 2nd series, XLVI, 1 (1993), pp.155-9.

[71] Certain other issues, notably coal preparation and distribution, were raised in connection with coal-mining rationalisation between the wars. But they attracted little attention and anyway had only minor implications for the industry's productivity. See *Samuel Report*, pp.21-43, 85-107; Ministry of Transport and Mines Department, *Standing Committee on Mineral Transport. First Report*, Cmd.3420 (1929). See also M. Dintenfass, 'Entrepreneurial Failure Reconsidered: The Case of the Interwar British Coal Industry', *Business History Review*, 62, 1 (1988), pp.1-34.

for units 'large enough secure the maximum economies from bulk production.' [72] But when considering specific reforms the Report could 'offer no definite conclusions' on their merits 'or the extent to which they were practicable.' [73]

There was little technical justification for horizontal mergers in cotton. It is well known that Lancashire mills made minimal use of the most modern types of high speed machinery such as high-draft ring spindles and automatic looms .[74] But Lancashire spinning mills were in fact quite large by international standards and while some weaving sheds were too small for automatic looms this was not a prime reason for their slow adoption. Indeed many firms tried such looms experimentally but found that their higher capital costs offset any labour savings.[75]

Those amalgamations that were put through in cotton between 1919 and 1930 (predominantly in spinning) also raise doubts about the value of combination *per se* as their financial performance was almost universally poor. By far the largest combine formed was the Lancashire Cotton Corporation, which merged some 109 mills controlling 9.7 million spindles between 1929 and 1932. But it generated few obvious economies and initially ran into serious managerial problems.[76] The Corporation was a somewhat unusual creation, instigated largely to head off a local banking crisis, and arguably therefore not a fair test of rationalisation. The same might be said of other unsuccessful combines as most were formed for speculative reasons in the postwar boom.[77] But there is little evidence that superior alternative schemes were left dormant.

[72] *Clynes Report*, p.21.

[73] *Ibid.*, p.16.

[74] On the nature of this new machinery see Board of Trade, *An Industrial Survey of the Lancashire Area* (HMSO 1932), pp.131-47, 318-32.

[75] Balfour Committee, *Minutes of Evidence*, Vol.I, Q.7824-9; H. Clay, *op. cit. (1931)*, pp.8, 22, 71-3; PEP, *Report on the British Cotton Industry*, pp. 94-6; 3. J. Wisselink, The *Concentration in the English Cotton Industry* (Rotterdam 1930), pp. 14-18.

[76] See J.H. Bamberg, 'The Govemment, the Banks and the Lancashire Cotton Industry, 1918-39', (unpublished Ph. D. thesis, Cambridge University, 1984), pp.91-164. See also J. Ryan (a director of the LCC) in MacGregor et al., loc. cit;, p.363.

[77] Committee on Industry and Trade (Balfour Committee), *Survey of Textile*

There were various, ultimately abortive amalgamation plans circulating in Lancashire at the end of the 1920s but most focused on rearranging financial claims and lessening competition. Their promoters laid stress upon debt restructuring, the terms of possible asset transfers, and the better prices that might follow from reducing the number of units in cotton. The merger plans, however, were very vague as to how productivity would increase via commercial or technical change.[78]

The debate about commercial reorganisation in cotton was not confined to mergers. There were also calls for greater vertical co-ordination between processes, particularly production and selling, an issue that some regarded as more important than horizontal amalgamations. Prewar cotton had developed on vertically fragmented lines with the four main operations, spinning, weaving, finishing and merchanting usually carried on in separate firms. This system, which had functioned well when demand was growing before 1914, was subjected to increasing criticism between the wars.[79] Disintegrated working exacerbated the effects of surplus capacity as the excess of firms chasing business at each stage of production encouraged hand-to-mouth buying, the sub-division of orders, and uneconomic product diversification. But while some form of vertical integration was deemed necessary to overcome these problems, contemporary investigations reveal considerable confusion over the required structural changes (in particular whether they should be based upon formal mergers or informal co-ordination). Furthermore, the main benefits it was claimed would result from vertical linkage were similar to those associated with capacity reduction; namely the restoration of full-time working on long standard production

Industries (HMSO 1928), p.25; R. Robson, *op. cit.*, pp. 157-9.

[78] Examples of such schemes can be found in the following PRO files: BT 56/31/CIA/1768/4; BT 56/31/CIA/1 768/6; BT 56/32/CIA/1768/7; BT 56/33/CIA/1768/14; BT 56/33/CIA/1768/16; BT 56/33/CIA/1768/19; BT 56/35/CIA/1768/70.

[79] For a detailed discussion of trade organisation see Board of Trade, Working Party Reports, *Cotton*, pp.36-45; H. Clay, *op. cit.* (1931), pp. 1-40; Balfour Committee, *Survey of Textile Industries*, Ch. 1.

runs. As we have indicated earlier, this in itself promised only modest returns.[80]

Could vertical integration have generated *additional* economies? It seems unlikely. One experimental syndicate named *The Eastern Textiles Association* was launched in 1928 to engage producers from all sections of the trade in a co-operative arrangement to sell standard cloth in the Chinese market. It was hoped that something closer to mass production might thereby result, thus lowering costs. The venture was not a success and folded in a matter of months.[81] In reality there was little to be gained from rapid throughput while using labour-intensive, disintegrated production methods based on nineteenth-century technologies. But schemes linking vertical integration to an alternative high-productivity, capital-intensive method of working were conspicuous by their absence. Many contemporary critics of Lancashire's organisation drew misleading conclusions from developments in other industries and other countries. They exaggerated, for example, the benefits that certain British businesses (notably ICI in chemicals) had derived in Far Eastern markets from having producer-controlled selling agencies.[82] More misguided still was a tendency to attribute the success of

[80] BoE, SMT 2/261, 'Report on the Position of the English Cotton Industry: Supplement - Nov. 1932', by H. Clay; PRO, CAB 58/134, CR(CI)37, Evidence Submitted by Representatives of the Lancashire Cotton Corporation to the Government Cotton Inquiry, 21 Nov. 1929; Board of Trade, Working Party Reports, *Cotton*, pp.99-101; PEP, *Report on the British Cotton Industry*, pp.28, 71-2, 106-14; *Clynes Report*, especially pp.13-14, 19, 21, 27-8; J. Wisselink, *op. cit.*, pp.19-21, 23.

[81] The syndicate did make a promising start but this was due mainly to a temporary boycott of Japanese goods in China. PRO, CAB 58/133, CR(CI)28, 'Precis of Evidence by the Shipping Merchants' Committee of the Manchester Chamber of Commerce', 4 Nov. 1929; G.W. Daniels and H. Campion, 'The Cotton Industry and Trade', in British Association, *Britain in Depression* (London 1935), p.342; R. Streat, 'The Cotton Industry in Contraction: Problems and Policies of the InterWar Years', *District Bank Review* (Sept. 1958), pp.12-14.

[82] PRO, BT 56/32/CIA/1768/10, 'Proposal for a Syndicate to Produce and Market Standard Cotton Piece Goods', Memorandum by the Joint Committee of Cotton Trade Organisations, 14 July 1930; British Economic Mission to the Far East, 1930-31, *Report of the Cotton Mission* (HMSO 1931), pp.87-9; H. Clay, *op. cit.* (1931), p. 89. On the problems ICI experienced with its agencies see W.J. Reader, *Imperial Chemical Industries: A History*, 2 Vols. (Oxford 1970, 1975), Vol.I, pp.335-47, Vol.II, pp.199-202.

Japan, Britain's major overseas competitor in cotton, largely to vertical integration.[83] This involved a misreading of the Japanese industry. Although parts of it were vertically linked an important segment, which became increasingly export orientated, operated on horizontal fragmented lines not unlike Lancashire.[84] More significantly, the emphasis upon industrial structure underplayed the role of low wages in explaining Japanese success. According to one estimate, Japanese labour costs in 1930 were only about half of those in Britain, even after allowing for productivity variations.[85] This left a price gap which no organisational improvement could close because labour accounted for about 30 percent of production costs even on fairly standard unfinished cloths.[86] Furthermore, the low wages paid by Japanese spinning mills enabled them to run machinery faster and to use cheaper raw materials than Lancashire because they could afford to hire more workers to mend the resultant breakages.[87]

Much of the enthusiasm for mergers and vertical co-ordination

[83] E.g. B. Ellinger and H. Ellinger, 'Japanese Competition in the Cotton Trade', *Journal of the Royal Statistical Society*, XCIII, 2 (1930), pp.185-232; J. Ryan, 'Combinations in the Cotton Trade', *Journal of the National Federation of Textile Works Managers Associations*, 9 (1928-29), pp.20-9. See also G.E. Hubbard, *Eastern Industrialisation and its Effects on the West* (2nd edn., Oxford 1938), pp.66-7, 71-82.

[84] G.C. Allen, *British Industries and Their Organisation* (3rd edn., London 1951), pp.216-17. This point is missed in a recent survey extolling the virtues of Japanese vertical integration between the wars. W. Lazonick and W. Mass, 'The British Cotton Industry and International Competitive Advantage: The State of the Debates', *Business History*, 32, 4 (1990), pp.45-9.

[85] F. Utley, *Lancashire and the Far East* (London 1931), pp. 189-229. See also Board of Trade, Working Party Reports, *Cotton*, pp. 119-20; Intenational Labour Office (ILO), *The World Textile Industry*, Vol.I (London 1937), especially pp.108-15, 131-4, 178-81, 299; L.G. Sandberg, *Lancashire in Decline: A Study in Entrepreneurship, Technology and International Trade* (Ohio 1974), Ch. 10.

[86] Derived from figures for spinning and weaving costs in: Balfour Committee, *Further Factors in Industrial and Commercial Efficiency*, pp.76-7, 145-6; J. Jewkes and E.M. Gray, *Wages and Labour in the Lancashire Cotton Spinning Industry* (Manchester 1935), p. 39. The labour content was higher still for better quality products.

[87] F. Utley, *op. cit.*, p. 196. See also G.R. Saxonhouse and G. Wright, 'Rings and Mules Around the World: A Comparative Study in Technological Choice', *Research in Economic History*, Supplement 3 (1984), p.290.

in cotton was merely a reaction to the industry's extremely fragmented structure, leading to the simplistic notion that firms must in some way be 'missing out' on scale economies. This also appears to have been the situation in the shipbuilding industry. Although outside calls for amalgamations were more muted in shipbuilding than in coal, steel or cotton, [88] they were not entirely absent.[89] However there was little substantive evidence to suggest that the industry had untapped scope for scale economies. British yards were certainly large enough from a technical standpoint to cope with all existing ship types (size only became a problem after 1945).[90] The scope for greater standardisation and specialisation in individual yards was limited, moreover, because of the sheer variety of vessels to be catered for.[91] No other form of rationalisation activity was suggested as being especially applicable to shipbuilding.

4. We have indicated thus far that apart from steel there were few well thought-out proposals for industrial rationalisation awaiting positive action,[92] suggesting that the interwar years did not

[88] Employers rather undercut outside criticism of their organisation by launching some modest self-help initiatives (e. g. on capacity reduction) and undertaking investigations of their own. E.g. Shipbuilding Employers' Federation and Shipyard Trade Unions, *Report of Joint Inquiry into Foreign Competition and Conditions in the Shipbuilding Industry* (London 1926). Governments tended merely to praise the builders for what they achieved themselves. PRO, MT 9/2012/M. 11779/1930, Deputation to the Chancellor of the Exchequer, 24 July 1930.

[89] The subject of mergers was raised by the Bank of England and in the commercial press but no action was taken. E.g., BoE, SMT 2/280, 'Memorandum', of meeting, 24 April 1929; *Economist*, 13 Sept. 1930, pp.478-9.

[90] E.H. Lorenz and F. Wilkinson, 'The Shipbuilding Industry, 1880-1965', in Elbaum and Lazonick (eds.), *op. cit.*, pp. 119-20, and Table 6.

[91] Board of Trade, *Report of the Departmental Committee Appointed to Consider the Position of the Shipping and Shipbuilding Industries After the War*, Cd.9092 (1918), p. 18. Insofar as economies could be secured from repeat orders this depended on using construction methods very different from those generally found in UK yards - a subject discussed below.

[92] Our conclusions would not be modified if we examined how rationalisation arguments were applied to non-staple sectors. See J. Greaves, 'Industrial Rationalisation', pp .9-34, 117-18, 130-8.

witness a 'missed opportunity' to revitalise Britain's staple industries. However there is another plausible explanation for the failure of worthwhile schemes to emerge. Far from being misguided, those who called for rationalisation might have been correct in believing that competitive benefits were within reach between the wars but failed nevertheless to make out a convincing case as to how they might be achieved.

One way of evaluating this possibility is to consider those reflections on the failings of interwar industry made since 1939 which imply that there were some intrinsic merits in rationalisation that were not fully appreciated at the time. Chandler's influential work on industrial structure provides a useful starting point. His argument that large firms needed a strong internal organisation to achieve economies of scale, to increase throughput and to diversify and expand successfully overseas, reflects concerns familiar to interwar observers. However while Chandler is willing to generalise, he also specifies the dynamics of industrial change in a way that previous accounts do not. He suggests on the basis of case-study evidence of large American firms that sustained competitive advantage required a three-pronged investment strategy embracing technically-advanced plants, specialised selling and purchasing facilities, and a centralised hierarchy of salaried managers.[93] Chandler argues that firms with these qualities emerged only slowly in Britain and that even when they did appear their capabilities were less than those of their American, and to some degree German, counterparts. He blames this largely on a style of personal management in British firms usually associated with control by founding families and their associates and a preference for co-operation over competition.[94]

Chandler plays down the potential of the banks and state as modernising agencies,[95] putting instead the development of the

[93] A. Chandler, *op. cit.*, pp. 1-46, 593-604.
[94] *Ibid.*, pp.235-392.
[95] *Ibid.*, pp.335, 391-2.

firm at the centre of the analysis. But his contention that the organisational capabilities of US-style managerial firms in capital intensive industries have proved to be the most dynamic factor in economic development has itself been vigorously challenged,[96] not least as it relates to Britain.[97] Other research on R&D and foreign direct investment casts doubt on taking a too pessimistic view of the performance of British firms in areas where Chandler's approach would suggest them to be particularly weak.[98]

Although Chandler feels his model has most relevance to the newer capital-intensive sectors such as chemicals, electricals, metals, and transport equipment where sophisticated technologies, distribution networks and management control systems seemed to offer most potential for cost savings,[99] he is in no doubt that the British staple trades lacked the capacity for modern industrial

[96] C. Schmitz, *The Growth of Big Business in the United States and Western Europe* (London 1993); B.E. Supple, 'Scale and Scope: Alfred Chandler and the Dynamics of Industrial Capitalism', *Economic History Review*, 2nd series, XLIV, 3 (1991), pp.500-14. On possible alternative models of industrial development see M.J. Piore and C.F. Sabel, *The Second Industrial Divide: Possibilities for Prosperity* (New York 1984); C. Sabel and J. Zeitlin, 'Historical Alternatives to Mass Production: Politics, Markets and Technology in Nineteenth Century Industrialisation', *Past and Present*, 108 (1985), pp. 133-76.

[97] We cannot enter here into the many issues raised by Chandler's work. For further details see: A. Chandler, 'Response to the Contributors to the Review Colloquium on "Scale and Scope" ', *Business History Review*, 64, 4 (1990), pp.745-7, 754. R. Church, 'The Limitations of the Personal Capitalism Paradigm', *Business History Review*, 64, 4 (1990), pp. 703-10; R. Church, 'The Family Firm in Industrial Capitalism: International Perspectives on Hypotheses and History', *Business History*, Vol.35 No.4 (1993), pp.17-43; G. Jones and M.B. Rose, 'Family Capitalism', *Business History*, 35, 4 (1993), pp.1-16; L. Hannah, 'Scale and Scope: Towards a European Visible Hand?', *Business History*, 33, 2 (1991), pp. 297-309; M.W. Kirby, 'The Corporate Economy in Britain: Its Rise and Achievements Since 1900', in M.W. Kirby and M.B. Rose (eds.), *Business Enterprise in Modern Britain* (London 1994), pp. 141-55, 165-7.

[98] D.E.H Edgerton, and S.M. Horrocks, 'British Industrial Research and Development Before 1945' *Economic History Review*, XLVII, 2 (1994), pp.213-38; G. Jones, 'The Performance of British Multinational Enterprise, 1890-1945', in P. Hertner and G. Jones (eds.), *Multinationals: Theory and History* (Aldershot, 1986); G. Jones, 'British Multinationals and British Business Since 1850', in M. Kirby and M. Rose (eds.), *op. cit.*, pp. 172-89, 201-2; S. Nicholas, 'Locational Choice, Performance and the Growth of British Multinational Firms', *Business History*, 31, 3 (1989), pp.116-20.

[99] See generally A. Chandler, *op. cit.*.

development: «The success of enterprises in soap, chemicals, and metal containers, and the failure of the co-operative efforts of individual companies, banks, and the government in steel and shipbuilding, suggest that the only type of organisation capable of carrying out such reorganisation was the modern industrial enterprise. In Britain its formation was held back by the federations, entrenched in many industries, that were based on a continuing commitment to the ways of personal management.[100]» However, Chandler has little new to say about what beneficial changes in the staple trades could have resulted from 'modern' firm structures. He does not discuss coal, has little to say on shipbuilding and follows closely Tolliday's analysis of developments in steel.[101] In textiles Chandler is slightly more forthcoming, suggesting that re-equipment and vertical integration could have raised throughput and lowered costs and that this was what the leading firms achieved. He admits, however, that the possible savings from these activities were limited, which was why large firms were unable to dominate.[102]

If Chandler adds relatively little to the case put forward in the 1920s for reorganising the major staple industries, other retrospective investigations are potentially more suggestive. The Ministry of Fuel and Power's *Coal Mining: Report of Technical Advisory Committee* (the Reid Report) of 1945, for example, acknowledged that there were untapped scale economies in the interwar coal industry but inferred that they were more subtle and complex than earlier enquiries had suggested. A rapid growth of face mechanisation in the European coal industry had occurred between the wars through the use of mechanical cutters and conveyors.[103] While these machines could be installed in very small pits they worked best when production was concentrated into larger, more intensively worked mines. But substantial productivity gains only resulted if there was an appropriate mine layout and an

[100] *Ibid.*, p.389.
[101] *Ibid.*, pp. 321-32, 334-5, 341.
[102] *Ibid.*, 22, 45-6, 332-4, 604-5.

efficient haulage system to move coal from the face to the shaft bottom. The expert mining engineers who dominated the Reid Committee suggested that underground transport presented the most serious bottleneck to efficiency in Britain. Coal was generally moved through the seams via ropes, a method adequate for old-style un-mechanised mining but one that could cope with larger loads only if considerable extra manpower was used. By comparison, Continental mines moved coal by locomotive along level roadways driven through the strata. This system could easily absorb higher tonnages.[104] Remarkably, given the Reid Committee's findings, the haulage issue had barely been mentioned in interwar discussion of the coal industry's problems.[105]

Lazonick's and Lorenz's more recent research into cotton and shipbuilding respectively also suggest that opportunities may have existed between the wars for greater structural reform in ways not fully appreciated by contemporaries. Lazonick stresses hitherto neglected links between commercial change, technical modernisation and working practices. Had there been a closer vertical co-ordination of processes for rapid throughput, more standardised methods of raw cotton purchase, and more flexible shift patterns than those practised in Lancashire, he argues, far greater purchase could have been obtained from rings and automatic looms.[106] Lorenz focuses on the importance to shipbuilding's competitiveness of working practices and yard layout rather than firm structures. The pre-1914 success of British shipbuilders had owed much to their extensive use of craft-based skilled labour requiring little in the way of managerial co-ordination or lavish shipyard equipment. These methods scarcely changed between the wars. However, as Lorenz demonstrates, after 1918 changes in ship design and the development of new techniques like prefabrication and welding gradually shifted competitive advantage in favour of a system of construction already

[104] See generally *Reid Report*.
[105] For a rare execption see I. Lubin and H. Everett, *The British Coal Dilemma* (London 1927), pp.153-9.

used by foreign builders based on extensive management supervision, flexible labour practices and well laid-out yards.[107]

Although these detailed retrospective examinations of potential structural change represent a considerable improvement on the simplistic ideas of the 1920s they are not altogether convincing. They fail to demonstrate whether the implied benefits would have been sufficient to outweigh the expense involved or to acknowledge fully the difficulty of encouraging fundamental change in trades with well-entrenched management systems, working practices and physical layouts. This was particularly relevant in coal mining. The British coal trade's mature stage of development meant that any substantial reforms would have involved remodelling the layout of existing mines, many dating back to the nineteenth century. Yet past underground workings could not be swept away so readily as a factory or a shipyard. The geology of many British coalfields, diverse when compared to major continental ones like the Ruhr, presented a formidable additional barrier to intensive mining. These problems were underlined in the 1950s when the National Coal Board attempted to remedy failings outlined in the Reid Report. The process proved

[106] See especially W. Lazonick, 'Industrial Organisation and Technological Change: The Decline of the British Cotton Industry', *Business History Review*, 57, 2 (1983), pp.195-236; W. Lazonick, 'The Cotton Industry', in B. Elbaum and W. Lazonick (eds.), *op. cit.* (Oxford 1986), pp. 18-50. Although Lazonick offers the most sophisticated analysis some issues he raises were hinted at in official enquiries in the 1940s. E.g. Board of Trade, Working Party Reports, *Cotton*, pp.65-75, 251-64; Ministry of Production, *Report of the Cotton Textile Mission to the United States of America. March-April 1944* (HMSO 1944).

[107] E.H. Lorenz, 'Two Patterns of Development: The Labour Process in the British and French Shipbuilding Industries, 1880-1930', *Journal of European Economic History*, 13, 3 (1984), pp.599-634; E.H. Lorenz, 'An Evolutionary Explanation for Competitive Decline: The British Shipbuilding Industry, 1890-1970', *Journal of Economic History*, 51, 4 (1991), pp.911-35; E. H. Lorenz and F. Wilkinson, *loc.cit.*. See also, J. McGoldrick, 'Crisis and the Division of Labour: Clydeside Shipbuilding in the Inter-War Period', in A. Dickson (ed.), *Capital and Class in Scotland* (Edinburgh 1982), pp.168-82; J.R. Parkinson, *The Economics of Shipbuilding in the United Kingdom* (Cambridge 1960), pp.118-19; J. Parkinson, *loc. cit.*, pp.86-7, 92-3; S. Pollard and P. Robertson, *The British Shipbuilding Industry. 1870-1914* (Cambridge Mass. 1979), pp.6-7, 28-9, 108-29, 230-1.

protracted, costly and yielded only meagre improvements in productivity.[108]

The legacy of the past may have been less of a constraint in shipbuilding and cotton. But it does not follow that the interwar years, with all their vicissitudes and uncertainties, were the most precipitous period to reorganise. In shipbuilding, the UK lost its competitive edge only gradually (still accounting for 53 percent of world launchings as late as 1927-30). Indeed, it has recently been argued that the 1950s were probably the best time for fundamental reform.[109] In cotton there is little evidence that integration based on high draft-ring spinning and automatic looms was crucial to international competitive success before 1939. The automatic loom only predominated in the USA which was a minor textile exporter (in 1934 88 percent of looms in Japan were still non-automatic).[110] In Lancashire labour-intensive and non-integrated production were also favoured because, in exchange for safeguarding their existing working practices and the likelihood of continued employment, operatives were prepared to accept wages which were low by British standards.[111] Thus, as in shipbuilding, the incentives for changing established practice were limited. They only gained strength after 1945 when Lancashire began to lose trade in higher grade goods to Western rather than Japanese competition.[112]

5. What conclusions can be drawn from this examination of the staple trades? The prime determinant of their performance between the wars was market conditions over which they had little or no control. Nevertheless, the clear signs of a weakening competitive

[108] W. Ashworth, *The History of the British Coal Industry, Vol. 5, 1946-1982: The Nationalised Industry* (Oxford 1986), Coal Board, *Plan for Coal* (NCB, 1950), pp.60-1.
[109] See generally E. H. Lorenz, *op. cit.* It is true the industry's international competitive position did deteriorate sharply in the mid-to-late 1930s but temporary factors were at work as a domestic boom and rearmament raised the cost of key components more in Britain than elsewhere. PRO, MT 9/2996 (attached file M. 13996/38), 'The British Shipbuilding Industry and the Adequacy of the British Mercantile Marine', Memorandum by the Mercantile Marine Department of the Board of Trade, 19 Oct. 1938; MT 9/3003, 'Shipbuilding Conference Memorandum', pp. 81-2; L. Jones, *op. cit.*, pp. 112-14.

performance gave rise to the presumption that structural change offered a partial remedy for their plight. But it is our contention that the claims made for rationalisation as defined in the late 1920s and early 1930s were excessive and lacked substance. Problems of surplus capacity and weak selling, while serious, were more symptoms than causes of decline and though advocates of rationalisation claimed that concentration would lay a basis for further economies via higher investment and a larger scale of operation, only the programme of technical reform in steel offered a coherent basis for such an advantage.

Even in steel, while unrealised gains from best practice investment did exist they are far easier to see with the benefit of hindsight. Furthermore, it is difficult to argue in steel that a failure to reform had serious consequences before 1939 especially as market conditions gave a new lease of life to older methods of working and inhibited the realisation of scale economies for much of the interwar period.

More recent examinations of coal, cotton and shipbuilding suggest that they had scope for more capital-intensive methods, but ones which required more complex changes to management, workplace organisation, technology and working practices than was ever discussed in the 1920s. However, the failure of contemporaries to recognise fully the range of relevant issues was not a clear case of a 'missed opportunity' since the evidence that major structural

[110] R. Robson, *op. cit.*, p.356; ILO, *World Textile Industry*, Vol.I, pp.54-5. At the start of 1934 over 70% of the world's automatic looms were in the USA, compared to 3.5% in Japan, and 2.3% in the UK. See also G.R. Saxonhouse and G. Wright, 'Stubborn Mules and Vertical Integration: The Disappearing Constraint?', *Economic History Review*, 2nd series, XL, 1 (1987), pp.92-3.

[111] J. Greaves, 'Industrial Rationalisation', pp.475-6. By the mid 1930s the pay of many weavers in Lancashire was little above unemployment benefit levels. Manchester University, *Re-Adjustment in Lancashire* (Manchester 1936), pp.74-5.

[112] Even in the post-1945 period not all historians are convinced that a greater willingness to reform would have helped the industry very much. J. Singleton, *Lancashire on the Scrapheap: The Cotton Industry 1945-1970* (Oxford 1991). See also J. Tomlinson, 'Planning for Cotton, 1945-51', *Economic History Review*, 2nd series, XLIV, 3 (1991), pp.523-6; J. Singleton, 'The Crisis in Postwar Lancashire: A Rejoinder', *Economic History Review*, 2nd series, XLIV, 1 (1991), pp.527-30.

reforms offered the possibility of cost reductions was and remains elusive. Furthermore, a considerable range of supply and demand factors favoured existing practices. Circumstances in cotton and shipbuilding between the wars do not suggest that the period was opportune for extensive reform, while in coal much of the industry's existing productive capacity had probably passed the point where it could be changed in any cost-effective sense given the special nature of the working environment.

The apparent failure of rationalisation thus needs to be put into perspective. We are not suggesting that the industrialists, bankers and politicians who kept organisational reform at arms length were far-sighted in their views or that the alternative courses they followed were always the most optimum. Certainly their disinclination to explore fully the possibilities offered by structural change indicates an inherent conservatism. But they were not in general spurning a well-defined programme of economically beneficial action.