

January 2000

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Recommended Citation

Ville, Simon and Merrett, D.: The Development of Large Scale Enterprise in Australia, 1910-64 2000.
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Abstract

This study examines the evolution of large scale enterprise in Australia in the twentieth century. It applies a methodology common in the historical study of other nations, notably identifying and analysing the top firms by asset size for benchmarked years through the period. High concentration levels are identified among big businesses although they may have been slow to develop modern managerial systems

Keywords

big business, managerial capitalism, corporate capabilities, business history

Disciplines

Business | Social and Behavioral Sciences

Publication Details

This article was originally published as Ville, S and Merritt, DT, The Development of Large Scale Enterprise in Australia, 1910-64, *Business History*, 42(3), 2000, 13-46. Copyright Taylor & Francis. Original journal available [here](#).

The Development of Large Scale Enterprise in Australia, 1910-64¹

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Research about the rise of large scale enterprise has concentrated on the world's leading industrial economies particularly the United States, Britain, Germany, France, and Japan.² By way of contrast, this article studies the evolution of large business enterprises in an economy at the 'periphery' of the world's economic system rather than at the 'centre'. Australia has been an outlier from the major industrial economies in many respects. Its integration into the international economy was facilitated by the new technologies of transport and communications, notably the steamship, railway, and electric cable, that provided the preconditions for the rise of large scale industrial enterprises in the United States and later in Western Europe and Japan. Providing raw materials and foodstuffs to the industrial economies allowed Australia to enjoy one of the highest per capita incomes in the world at the end of the nineteenth century. The economy became industrialised in the first half of the twentieth century, a process of import substitution that owed much to rising trade barriers. Thus protected, Australian-dominated industrial firms faced lessened competition from the successful first movers of the capital intensive and science-based industries of the United States and Western Europe. Increasingly foreign firms sought access to the Australian market by means of foreign direct investment.

This study explores the rise of large scale enterprise in the context of a transformation from an extremely wealthy resource-based economy to a sluggishly performing industrialised economy by mid-century.³ The Australian case therefore provides a further but quite distinct testing ground for the Chandleresque-interpretation of the emergence of large scale

enterprise. The paper addresses a series of questions central to the existing literature. When and where did large business enterprises begin? Did big business already exist in the resource and service sector before the rise of large industrial firms? What factors facilitated the emergence and continued expansion of firms? Did the first movers remain industry leaders? Did firms grow through the pursuit of sequential strategies of accumulating resources, rationalisation of production or distribution processes, vertical integration and later by diversification into new markets and product lines? To what extent did Australia's corporate giants behave in a way that corresponded to competitive capitalism? How effective were Australian managers in building corporate capabilities that would provide competitive advantages in domestic and international markets?

The paper provides a foundation stone for a more comprehensive investigation of big business in twentieth-century Australia. It identifies the 100 largest non-financial firms operating in Australia at various dates from 1910 up to 1964. The methodology employed to construct the data is discussed in the next section. The data of firms classified by industry and country of origin is reviewed in section 3. The question of whether Australian large scale enterprise approximated the competitive capitalism of the United States or the family capitalism of Britain is discussed in section 4. The vigour with which Australian firms sought to create corporate capabilities is examined in section 5. A brief conclusion brings the paper to a close.

II

There are many criteria for measuring the relative size of firms including assets, output, sales, paid up and market value of capital, or labour force. None provide an unambiguous measure of size. For example, enumeration by workforce size can be misleading for cross-industry comparisons where different capital-labour requirements exist. Output or

sales figures are only helpful where they can distinguish value added. Capitalisation is often preferred although complications arise over whether to include loan capital.⁴ Equity capitalisation represents aggregate ownership claims on the company and is most accurate where it gives market rather than book values. However, exogenous factors driving equity markets can introduce an element of volatility that would not be reflected in other measures such as assets, sales or workforce numbers. Furthermore, this indicator is inappropriate for firms whose shares are not listed or are rarely traded. Asset measurement is not without its shortcomings. In particular, it relies upon consistent accounting and disclosure practices on balance sheets and in some sectors, notably finance, can produce an inflated picture of size through loan policies which have made the company asset rich.⁵ While capitalisation and assets are the preferred forms of measurement, the relationship between the two is not always uniform.⁶

Historical measurements of changes in firm size encounter significant data collection problems. Since the archives of only a small percentage of firms are extant, summary published data, usually annual financial reports, must be used. Before 1945 this rarely included information on company workforces or value added in production. Most scholars, therefore, have used capitalisation or assets data. The paucity of balance sheet evidence for British companies has encouraged writers to concentrate upon capitalisation. Payne calculated nominal equity values together with mortgages and debentures. Hannah and Wardley each used equity market values together with debentures. Schmitz also used equity market values in comparing nations but substituted assets where data was not extant. Chandler used assets for German and American companies while Fruin has provided a range of assets, capital values, and sales data for Japanese firms. The use of different methodologies means that figures on absolute firm size must be

analysed circumspectly although the broad parameters for comparison remain valid.

In analysing Australian firms asset size has been adopted as the unit of measurement. A monetary value of a firm's assets is the most readily available data across the time period under consideration. Incorporation of businesses became increasingly common from the late nineteenth century. Company law required the publication of balance sheet and a profit and loss account. The asset approach has enabled the inclusion where possible of those firms whose shares were unquoted or rarely traded. The accuracy of share capitalisation as a form of measurement of firm size, especially in the early years, is compromised by the belated development of Australian stock markets and firms' heavy reliance on bank debt. Studies for other nations using the capitalisation methodology have been forced to exclude those firms that were incorporated as private rather than public companies or whose shares were seldom traded because of the difficulties of measurement.⁷

Australia has always attracted a good deal of inward foreign investment. This has taken the form of both 'free standing' companies, those who earned revenues from business activities in Australia but had no operational counterpart in the country of ownership, principally in Britain, and, more recently, local subsidiaries of 'classic' foreign owned and operated multinationals.⁸ While frequently not quoted on the Australian stock exchange these firms were often amongst the largest in the country. Therefore, in contrast to studies of some of the larger and more self-contained economies, assets of 'free standing' companies and subsidiaries of multinationals will be included where they can be identified. However, measurement and data problems arise from their inclusion. The assets of 'free standing' firms could be taken to approximate their 'size' in Australia as that was the locus of their business activities. Greater problems arise in singling out the Australian assets of subsidiaries of multinational enterprises

particularly as such data usually resides in firm archives rather than the public domain. For instance, there is no record of the assets employed by either Lever Brothers Limited (Australia) or the Shell Company of Australia in the range of sources used to generate our lists before 1964. However, the capital employed by Lever Brothers and Shell would have placed them at number 26 and 40 respectively in the list of the 100 largest companies in 1930.⁹

Consistent with previous studies, government enterprise and non-profit-making and voluntary organisations are excluded from the main data sets because of insufficient information. Nonetheless, the state was a major force in the economy and its multivarious activities have been described by the term 'colonial socialism'.¹⁰ Australian governments behaved as developmental agencies from the 1860s until the 1930s. Australian governments had accessed the London capital market since the mid-nineteenth century to finance the building of the transport and communications infrastructure necessary to open up the continent and to link Australia to the rest of the world. The government continued to operate the railways, mail, and telegraph systems. Their activities in the twentieth century extended to taking over the production and distribution of gas and electricity from private sector operators. The state ran its own banks and insurance businesses in competition with private enterprise. Declining commodity prices in the inter war period led to the establishment of a range of statutory marketing bodies with monopoly powers in commodities such as dairy products, raisins, meat and wheat. Some government run businesses, particularly the railways and post office, had workforces far larger than those of any private sector firm up until the 1970s.¹¹

Most previous studies of the growth of big business have concentrated upon firms in manufacturing and extraction sectors.¹² Given the nature of economic development in Australia the current investigation includes firms

from all sectors of the economy other than finance. The credit creation function of banks, and other financial institutions, significantly inflates their asset figures.¹³ Using capitalisation figures reduces somewhat the apparent dominance of finance although the problems associated with this form of measurement have been discussed above.¹⁴ Manufacturing in Australia has been less significant than in many other advanced nations, particularly before WWII, and therefore the picture would be particularly distorted if pastoralism, mining and the service industries were excluded from an analysis of large scale enterprise.

The sources of information about firms' assets used in the study varied between different years. *The Australasian Insurance and Banking Record*, published annually from 1877, was used for pre-WWI years and provides summary balance sheet data of firms listed on Australian or the London stock exchange. By the interwar period data was taken from the *Jobson's Investment Digest of Australia and New Zealand*, ('Jobson's') an annual publication compiled by Alex Jobson from 1920 and including, 'a summary of all Australian company reports published...up to the latest moment'.¹⁵ In the post-WWII period Jobson's became less comprehensive and was replaced by the more complete coverage of the *Official Melbourne Stock Exchange Record*. This source was supplemented by reference to an occasional publication known as the *Delfin Digest of the Top Companies in Australia, New Zealand and South East Asia*, which ranked companies according to various criteria including shareholder funds, paid up capital, assets, profits, and employees. These sources have been compared with each other where overlap exists and additional information about the nature of individual firms has been obtained from a miscellany of supplementary references.¹⁶ The sources capture firms complying with the disclosure requirements of Australian company laws and stock exchanges. Foreign firms operating in Australia are included in these

lists, although none of the sources indicates clearly the basis on which these firms have been selected.¹⁷

In order to benchmark the changes in the population of the largest firms occurring through the twentieth century four years have been investigated each about a generation apart, notably 1910, 1930, 1952, and 1964. The years 1930 and 1952 had previously been analysed in an unpublished thesis. That data provided an initial comparator against which to work: where discrepancies emerged it was possible to re-check the sources.¹⁸ The inclusion of 1910 has extended the study of big business back close to its earliest years while carrying the investigation forward to 1964 permits an observation of the impact of the rapid growth in the relative importance of manufacturing in the economy.

These dates not only track the profound changes in the structure of the Australian economy as it industrialised but they allow comparisons with similar studies done for other countries. The chosen years for Australia are proximate to those used for other countries including the global comparisons of Schmitz for 1912 and 1937, and the country studies of Chandler for United States, Britain and Germany, Taylor and Baskerville for Canada, Levy-Leboyer for France, Fruin for Japan and Hannah and Wardley for Britain.

Data on the principal activities of firms included in the lists has been drawn from a variety of sources. In some cases the name implies function. Often firms self described the nature of their business in prospectuses or annual reports to shareholders. Additional material can be gleaned from stockbrokers' advice to their clients and commissioned company histories. Such information has been used to allocate firms into 'industries' at the two-digit level in accordance with the Australian Standard Industrial Classification first adopted in 1969. The industry classification involved a number of somewhat arbitrary decisions, especially for the earlier years, for firms that were already diversified or vertically integrated.

The quality of the data in the 1910 and 1930 lists is the most problematic. The key issue in 1910 is the limited amount of information that is extant. Many large firms were still trading as partnerships or had registered as private companies. Others were in the process of converting to public company status. In order to counter this truncation problem the time frame for data collection of asset values has been extended to 1915 as long as the company existed in the same form at 1910. There remain one or two unresolved individual cases that are mostly small outliers, although David Jones, the Sydney retailer, for whom no financial records can be found would probably have been in the top fifty. These individual cases will be pursued as the research proceeds in greater detail. The crux of the problem regarding the 1930 list, as indicated above, is that our records do not capture all of the many foreign firms that entered Australia in the 1920s.¹⁹ Closer to the present, information on companies both local and foreign becomes more extensive but its interpretation is more difficult because of the increasing numbers of complex business organisations involving holding companies, subsidiaries, and joint venture arrangements. Consolidated accounts were rare before the 1950s. Rudimentary adjustments have been made to asset values of the parent in those circumstances where consolidation seemed appropriate to avoid double counting. As our research progresses further it may be possible to calculate a fuller financial reconstruction.²⁰

III

The lists ranking the 100 largest non-financial firms in terms of asset values for the years 1910, 1930, 1952 and 1964 can be found in the appendix to this paper. A number of salient features are evident that will be discussed in more detail below. First, large scale enterprise existed before the industrialisation of the Australian economy from the 1920s onwards. The

1930, 1952 and 1964 lists confirm the subsequent ascendancy of manufacturing as the centre of large scale non-financial firms. Second, large scale firms within manufacturing increasingly clustered in the capital intensive and science based industries. Third, foreign owned firms are amongst the largest of the large scale firms throughout the whole period under consideration despite the data deficiencies discussed above. The nationality of those firms shifts from Britain in 1910 and 1930 increasingly towards the United States of America.

In 1910 nine of the top ten firms were located in the resource and related service industries including seven pastoral agencies. Only one manufacturer, the sugar refiner Colonial Sugar Refinery, was included. The importance of firms serving the pastoral and mining industries reflected the structure of the economy and its connectedness with the international commodity markets. By the end of the nineteenth century the Australian economy was dominated, directly and indirectly, by its resource using industries and a range of service industries that provided intermediate inputs into the production and distribution of those commodities which included merchanting, storing, insuring, marketing, financing, and transporting. The pastoral, agricultural, dairying and mining industries generated 30 per cent of GDP in 1901.²¹ Mining, both gold and base metals, became more capital intensive as ore bodies were exploited at greater depths. This industry also became more reliant on expert geologists, surveyors, chemists, assayers, engineers and financiers. Merchants and financiers handled a flow of products from the farm gate to the textile mills of Bradford, and back from foreign manufacturers to Australian retailers. Importers, located in the principal ports, had larger businesses than the retailers they served. Those sectors of the economy providing services to the export and import trades - government services, finance, distribution and other services - made up more than a third of GDP.

By contrast, domestic manufacture was mostly small scale and technologically primitive at the beginning of the twentieth century. Manufacturing contributed only 12 per cent of GDP in 1901. It was concentrated in those industries where bulky low value goods such as building materials had a degree of protection from import competition, or in areas such as newspaper printing, or the processing of perishable foodstuffs. However, the seeds of change were evident even then as continuous process technology was being applied in industries such as flour milling, brewing, distilling, confectionary, dairy products and primary metals before the turn of the century.

By the seventh decade of the twentieth century the structure of the Australian economy had undergone great change. Agriculture and mining's share of GDP had fallen to less than ten per cent. Manufacturing had emerged as the largest sector of the economy and now generated 26 per cent of GDP. By 1964 there was only one pastoral company in the top ten; six others remained resource-based (petroleum, mining, and sugar) but their connections were with the industrial rather than agricultural sector.

Table 1 about here

The primary ASIC categories confirm this shifting sectoral distribution among Australia's top one hundred firms (Table 1). In 1910 the top 100 firms were spread quite widely over wholesale/retail, mining, transport, and manufacturing. Thenceforth, there was relative decline in all of the principal sectors except for manufacturing whose share of assets rises from 25 per cent in 1910 to 71 per cent by 1964. Most of the largest private sector firms were by 1964 located in the science based and capital intensive industries of the second industrial revolution - electrical engineering, chemicals, petroleum refining, rubber, plastics, machinery, automobiles, and primary metals.²²

Table 2 about here

Australian experience in manufacturing differs from that of more advanced industrial economies in two respects. First, the importance of manufacturing industry amongst the top 100 Australian firms peaks decades later than was the case in Britain.²³ However, Taylor and Baskerville's study reveals a similar rising share for manufacturing amongst the leading thirty Canadian corporations.²⁴ Second, studies of big business in other nations have emphasised the importance of the food and tobacco, textiles, chemicals, petroleum, metals, machinery, and transport equipment industries as the location of most of the largest industrial firms (Table 2). These consumer goods and heavy industries were particularly affected by the technological and market imperatives that were driving the growth of scale in manufacturing industry. Data in table 3 shows that these industries were also dominant in Australia although with a somewhat greater contribution of less technologically complex industries such as clay, concrete, paper and leather products. Australia's largest manufacturing firms were primarily located in the 'consumer goods' industries in the early decades of the century but their relative importance declined over time giving way to the 'heavy industries'. However, this latter group never came to approach the importance it held in the economies of the United States, Germany and Japan.

Table 3 about here

Foreign direct investment was evident in many parts of the economy including the banking, insurance, mining, pastoral, and timber industries, and increasingly after WW1, in many parts of manufacturing.²⁵ Summary data from the lists of the largest 100 firms indicates the weight of foreign firms. In 1910 'free standing' foreign firms and subsidiaries of foreign multinationals make up nearly a third of the top 100 firms and comprise nearly a half of all assets. The share of foreign firms and their assets falls

sharply in 1930 and 1952. By 1965 this trend had been reversed when the importance of foreign firms approximates what it had been in 1910. The fall and subsequent rise in the importance of foreign firms reflects a number of factors. The growth of the market and government protection of manufacturing provided opportunities for the emergence of large domestic firms. Some of the 'free standing firms', particularly the pastoral firms, transfer their domicile to Australia. However, there are strong reasons for believing that our data does not fully capture the influx of subsidiaries of multinationals after WW1.

Australia stood apart from the industrial economies of the northern hemisphere in terms of absolute size as well as its structure. Its population and domestic markets were only a fraction of the size of those of the leading economies. For example, the largest company in each of the four years analysed was Dalgety (1910), Colonial Sugar Refining (1930), and Broken Hill Proprietary (1952 and 1964). In each case the leading firm was at least 20 per cent larger than its nearest domestic rival but compared poorly with dominant firms in other nations. Thus Dalgety's £8m of assets in 1910 puts it well down the list of the world's top hundred industrial firms for 1912 at 62nd and the second largest firm, British Tobacco (Australia) would only just have got in the list at 99.²⁶ Colonial Sugar Refining's assets in 1930 would not have brought it close to the top fifty industrials globally for 1937 and it was only one-sixtieth the size of America's top industrial company of 1930, US Steel. By 1952 Australia's BHP possessed little more than a thirtieth of the assets of America's Standard Oil (New Jersey) four years earlier.²⁷ In Canada, which might be a more appropriate comparator, the largest non-financial corporation in 1929 after Canadian Pacific Railway was International Paper which was nearly six times larger than Colonial Sugar Refining. The diminutive nature of Australian corporations is likewise reflected in a comparison with the top 25 in the United States: the aggregate assets of the

Australian firms representing only 3, 3.6, and 4 per cent of their American counterparts for the years 1910/17, 1930, and 1948/52.

Table 4 about here

Within the Australian market, however, the top 25 large scale enterprises were relatively more important than in a number of other major economies. If we follow Schmitz's approach of comparing the size of the leading 25 firms with the level of national income we find that these corporations occupied a more dominant position in Australia (Table 4). The assets of the leading 25 industrial firms in America and Japan accounted for ten per cent of GDP in 1917 and 1918 respectively compared with nine per cent for Germany in 1912 but 19 per cent in Australia in 1910. In 1930 the respective figures for America and Japan were 19 and 17 per cent with 10 per cent for Germany in 1937. Australia remained ahead with 21 per cent in 1930. For Britain we have market capitalisation figures of 11 and 28 per cent respectively for 1912 and 1937.²⁸ Dominance fell slightly in Australia after WWII to 16 per cent in 1952 although the US figure was also down to 11 per cent in 1948. The importance of big business in Australia then rose sharply to 26 per cent of GDP by 1964.

An alternative measure of the importance of large scale enterprise to the Australian economy is to examine the size distribution within the largest 100 firms. A comparison of the ratio of the aggregate asset value of the bottom five firms to the top five indicates the gap between the smallest and largest. In 1910 the ratio was 0.039, a figure reflecting the dominance of foreign pastoral companies in an immature corporate economy. The ratios were 0.094 in 1930, 0.074 in 1952 and 0.068 in 1964. Thus, the dominance of the five largest firms was highest in 1910, fell through to 1930, before rising gradually up to 1964. The rising importance of the assets of five smallest firms

between 1930 and 1964 reflect the maturing of the corporate economy with the emergence of greater numbers of large corporations.²⁹ This broadening base of large scale enterprises, especially in manufacturing, is reflected in high levels of concentration in many industries. Oligopolies and monopolies were evident in sugar refining, brewing, shipping, banking and wool broking even before WWI.³⁰

IV

A key question is whether the rise of large scale enterprise in Australia, that was located increasingly in manufacturing, provided the basis for what Chandler has called 'competitive managerial capitalism'.³¹ Chandler sought to explain the rapid expansion of the American economy from the second half of the nineteenth century in terms of the leading role of efficient large scale enterprises which invested in production, marketing, and management. Production and marketing innovations yielded economies of scale and scope, and internalisation of coordination potentially lowered transactions costs. Firms sustained these benefits by investing in organisational capabilities such as rationalised management structures to effect decision-making and research infrastructures to develop new processes and products. German firms followed the three-pronged investment but the legality of cartels encouraged more inter-firm collusion rather than outright mergers. This 'cooperative managerial capitalism' is, nonetheless, viewed as preferable to Britain's 'personal capitalism' where firms failed to invest in trained managers and rational administrative structures. The timing of Australian industrialisation differed from that of the USA and these other high income economies, lagging behind by many decades, but how does the performance of its leading firms fit with the alternative typologies identified by Chandler? In this section we will look at the external operating conditions faced by

Australian firms and in the next at the extent of their internal investments in corporate capabilities.

By the mid-twentieth century Australia possessed an economy in which a number of key industries were dominated by large enterprises although this had not led to marked improvements in efficiencies relative to those of firms in similar industries overseas. Australian manufacturing industry was not internationally competitive and continued to rely on the highest trade barriers for protection in the industrial economies.³² Improvements in efficiency were constrained by powerful inertia in the institutional structure of the Australian economy which shaped the response of business to the opportunities afforded by new technologies. Australian business was a prisoner of path dependency. The business skills, technologies, and organisational structures that served the wealthy mercantile economy of nineteenth-century Australia did not lend themselves to an easy transition to the 'modern industrial enterprise'. Farms, mines, and manufactures were connected to their suppliers and customers by a dense network of highly specialised merchants, financiers, insurers, warehousemen, and shippers. Up to the turn of the century the businesses linking buyers and sellers were often larger in terms of assets and employees, better capitalised, more likely to be multilocal, and used more advanced accounting systems and sophisticated technologies, especially in transport and communication, than the production and distribution units they serviced.

The domestic capital markets were immature when compared with those in Britain or the USA. Only a minority of companies sought a stock exchange listing. The capital markets prime activity before the 1890s was trading in speculative mining stock. A market in government securities grew slowly before World War I after which the huge volume of war debt dominated the market for decades. New issues for industrial stocks remained extremely modest until the 1920s and 1930s. Underwriting services were

virtually unknown. In short, Australia did not possess a capital market that could provide the funds necessary to allow the wholesale rationalisation and re-equipping of industries. Technical standards in new science-based industries such as plastics were still primitive in the 1930s.³³

The emergence of 'competitive capitalism' was dampened further by the role of government. In Canada tariff policy protected inefficient small and medium sized firms in many industries.³⁴ A similar situation existed in Australia where producers had only to ask to receive all manner of 'protection'. Tariffs were particularly noticeable in Victoria before Federation while the new Federal government soon imposed the protectionist Lyne tariff in 1908. By the 1920s manufacturers were sheltered by tariffs while farmers received subsidies that took a myriad of forms including pricing many government services at less than cost. Government intervention was seen as promoting the national interest by allowing Australia to provide employment for a larger population in a protected home market. Concern about the size of Australia's population and its ability to defend the huge continental land mass became a national obsession in the 1920s and 1930s. Falling commodity prices from the mid-1920s weakened the lure of the farm sector to immigrants while the national birth rate continued to fall. A protected manufacturing sector would offer jobs to new migrants and provide a defence capability. This combination of rising tariffs and subsidies taxed the principal export industries, wool and minerals, to bring about a transfer of resources into lower productivity and city based manufacturing and service industries. However, the manner in which assistance was given to favoured industries was to have important consequences for the behaviour of Australian business. The tariffs given to manufacturing were 'made to measure' on an industry by industry basis and were set at whatever level was necessary to prevent exit by local manufacturers. Workers shared in the rents generated by the wedge between domestic and import prices through a centralised wage

fixing system operated by the federal government that tied minimum wages to price increases.

Australian business operated in a negotiable environment in which competitive pressures were mediated by government intervention and regulation. Firms came together in industry associations to negotiate with governments and statutory bodies like the Tariff Board. Many industries, including interstate shipping, jams, barbed wire, flour and bread, coal, brewing, fertilisers, and bricks, had already entered into cartel arrangements in regional markets before World War I.³⁵ Co-operation between producers strengthened in the absence of any effective legislation that punished the abuse of market power.³⁶ Manufacturers shared out sales territories, exercised their market power over retailers through exclusive brand agreements, full line forcing, and by imposing minimum retail prices. Established firms behaved in a predatory fashion against new entrants who would not comply with the established norms of collusive behaviour. Business people boldly defended their behaviour by asserting that competition was 'wasteful'. Everybody was better off if the incumbents simply shared out the spoils. This lack of competitive pressures in many product markets reduced the need for firms to adopt aggressive strategies driven by new product and process technologies to survive.

The small and fragmented nature of the domestic market weakened the ability of 'first movers' in those industries where plant economies of scale existed to acquire significant cost advantages over their rivals. Australia's population rose from just under 4.5 million in 1911 to 6.6 million in 1933 and 11.6 million by 1966. However, the major markets were spread across six capital cities that were roughly 600 miles apart. By 1933 only Sydney and Melbourne had populations of one million and the next largest cities around 300,000. In 1966 both Sydney and Melbourne had grown past two millions but no other capital had reached the million mark. High transport costs offset

the advantages of large scale production in many industries, especially where value was low in relation to volume. Long distance carriage of goods took place by sea and rail. Coastal shipping rates reflected collusion and protection by the exclusion of non-Australian flag carriers. Nor did rail provide low cost transport between states. The lack of a uniform gauge on the main line between Sydney and Melbourne increased costs through additional transshipment. Long distance road haulage was restricted prior to the 1960s by under investment in highways. Some states imposed regulations to curtail the use of intra-state road haulage from the 1930s, until such legislation was overturned by the courts in the mid-1950s, in an effort to protect the revenue base of their railways.

High transport costs meant that many manufacturing firms in capital intensive and science based industries continued to serve regional rather than national markets until after World War II. The principal exceptions were in the primary metals, chemicals, petroleum refining, and automobile industries where production was concentrated in one or two states. These industries were characterised by substantial plant economies of scale which offset transportation disabilities and left them better placed to sell nationally. For the rest, such as breweries or general engineering, producing in a single city meant serving that regional market.

For many firms the route to becoming a national supplier, or at least serving the eastern states, was to invest in production and distribution facilities in several cities. While greenfield investments were not uncommon, especially by multinational firms, merger and acquisition was a popular device for entering new markets, particularly in the 1950s and 1960s.³⁷ However, the extent of merger activity was lessened by the absence of a market for corporate control before the 1970s. Permissive company laws allowed directors of target companies to refuse bids without disclosure to their shareholders. Furthermore, financial institutions would not fund hostile

bids. In these circumstances only willing sellers were acquired, and large firms took over smaller ones in exchange for cash and shares. The largest companies were immune to capital market disciplines.

When mergers did occur it is unclear that operational efficiencies were increased as a consequence. The motives for merger were often to eliminate a competitor or establish a market presence. While few detailed studies are available, the fragments of circumstantial evidence suggest that acquired firms were not integrated fully or swiftly into the parent's operations.³⁸ Many post-merger organisations were more akin to British-style confederations of loosely aligned and autonomous businesses than the rationalised and integrated operations of notable US firms. Australian business people possibly lacked the organisational capabilities or the motivation to rationalise the increased resources at their disposal.

V

This leads on to the issue of whether Australian firms invested in developing corporate capabilities and building integrative hierarchies commensurate with the rising scale of big business? Any answer to this question is necessarily speculative in the absence of wider firm specific research. However, fragmentary evidence suggests that in general Australian firms were not particularly capable in this regard. The evidence from the previous section suggests that most firms were largely creatures of their external environment. In section three it was seen that although high concentration levels existed in many Australian industries, leading firms were small by global standards and therefore may have been less suited to investment in organisational capabilities.

Table 5 about here

Diversification is viewed by Chandler as, “central to the continuing evolution of the modern industrial enterprise”.³⁹ It provides economies of scope and encourages the development of the organisational capabilities of a firm’s resources of production, marketing, personnel, and research. Diversification was generally more common among German and American than British or Japanese firms: in 1930 18 per cent of the top 200 Japanese firms produced more than one distinct line of goods and 21 per cent in Britain compared with 59 in America and 67 in Germany (Table 5). America and Germany also dominate the list of highly diversified enterprises with at least four distinct product lines.⁴⁰ Australian firms tended towards British and Japanese experience with a lower level of diversification of 26 per cent of the top 100 firms in 1930 rising gradually to 36 per cent by 1964.

Integrating stages in the production and distribution process was an important avenue of expansion of large scale enterprises, especially in the United States and Canada.⁴¹ Australian firms in capital intensive and science based manufacturing industries were less vertically integrated than was the case in other industrial economies. For instance, Broken Hill Proprietary Limited began its life as a base metal miner and smelter in the 1880s before diversifying into iron and steel production in 1915. By 1935 it had acquired its only domestic rival to have achieved a monopoly. Its integration into fabricating in the 1920s and 1930s involved the establishment of a number of subsidiaries and what were in effect joint ventures with British metal fabricators, John Lysaght and Stewart and Lloyds. The other important Broken Hill mines, who formed a loose alliance known as the Collins House Group, also integrated forward into basic non-ferrous metal production and fabricating. However, these vertical links were not achieved by internalisation but by a joint venture in the Broken Hill Associated Smelters, and a series of

long term contracts with other smelters and joint ventures in a number of fabricating firms. Joint ventures rather than vertical integration were common in the paper pulp and petrochemical industries. There was limited vertical integration in the oil industry as only a few companies had Australian refining capacity before the mid-1950s, and as there was no local commercial production of crude until the 1970s. Automobile producer General Motors Holden manufactured many of its components in house, 'notably castings, brake equipment, shock absorbers and transmission equipment' but the other local automobile producers relied to a much greater degree on external suppliers. Automobile producers also franchised their dealerships rather than undertaking direct marketing.⁴²

Few manufacturers integrated forward into distribution, particularly at the retail level. Australian retailing was transformed from the late nineteenth century by the rise of department stores in the capital cities, and later from the 1920s by the emergence of chain variety stores. These large retailers integrated backwards into purchasing rather than into manufacturing. Traditionally, Australian retailers had relied on large local importers who acted as wholesalers of softgoods, ironmongery and so on for their supplies. Increasingly, the department stores and later variety chains opened their own buying offices overseas. They eliminated the local wholesalers handling imported lines and dealt directly with manufacturers abroad.⁴³ They also bought directly from local manufactures. Only a handful, such as Foy & Gibson, ran manufacturing operations of any significance. Their monopsony power gave them leverage over suppliers.

Nor were firms quick to build integrative hierarchies. Before World War 1 many firms, particularly in importing, retailing, and manufacturing, were more akin to 'family capitalism' than to 'managerial capitalism'. Separation of ownership from control was minimal. Firms bore family names and continued to draw their directors and managers from within the family

circle. There is little evidence of hierarchies of salaried managers outside the banks, pastoral companies, or mining houses. There were no educational programs to train managers, and the universities and schools of mines produced only a limited supply of professional engineers, industrial chemists, metallurgists, and the like.⁴⁴ In the early 1950s a study of the largest 102 companies in Australia including financial institutions and subsidiaries of foreign firms indicated that founding families were in a position to control the majority of those companies through their positions on boards and through stockholdings. Only a third of domestic companies could be identified as management controlled.⁴⁵ Company histories and biographies of business men in the inter war period suggest the absence of any sophisticated specialisation of managerial task along functional lines, and the lack of a career ladder within organisations. A who's who of nearly 1,450 Australian business men published in 1929 indicates that only 30 per cent worked as managers, and only nine per cent of those had worked their way up through the hierarchy of their present employer. Less than four per cent of these salaried managers possessed a university degree.⁴⁶

There were exceptions, of course, amongst both domestic and foreign firms. Broken Hill Proprietary Ltd, the integrated iron and steel producer, was run by career managers from its inception. However, this sprawling business empire operated in the mid-1930s with a minuscule head office staff.⁴⁷ Likewise the sugar producer, Colonial Sugar Refining Company Ltd, relied heavily on salaried managers with functional skills. By the mid-1950s a complex organisation chart was needed to describe its activities and functional specialisations. Subsidiaries of foreign multinationals brought their parent's management practices with them. General Motors-Holden was staffed by expatriate executives. The British chemical giant ICI had impressed its modern organisational structure on its Australian and New Zealand business by the early 1950s.⁴⁸ In Canada foreign ownership and export staples

were also important characteristics in the pioneering of corporate capabilities.⁴⁹

Table 6 about here

High survival rates among firms are indicative of their ability to exploit organisational capabilities as a source of competitive advantage in order to sustain prime mover advantages. The ability to survive within the cohort of leading firms is especially impressive given the rapid and volatile rates of economic and political change which have been a feature of the twentieth century. Turnover rates measure the loss of companies from the list through relative decline or being acquired by a firm not in the list. Among the top 200 Japanese firms average turnover rates varied from 2.9 per cent per annum in 1918-30, to 1.7 per cent, 1930-54 and 1954-73. Using Chandler's data, turnover rates for American, British, and German firms have been calculated at between 1.0 and 1.8 per cent per annum (Table 6). By comparison, turnover rates among Australian firms appear to have been somewhat higher. This may suggest that Australian enterprise had not achieved the settled oligopoly which Chandler views as characteristic of a mature corporate economy

Within the last decade or two, however, there appears to have been some significant advances in corporate capabilities helped, no doubt, by the continued growth in firm size and the adoption of microeconomic reforms especially a reduction in protectionism and a strengthening of competition policy. Thus, from 218 public companies, excluding mining, analysed for 1975, 173 had diversified and most of these had adopted a divisionalised structure that reflected products and geographically distinct markets. A study of American and Australian manufacturing companies using 1981 data for Australia reinforces the point by indicating that the majority of the largest

one hundred Australian manufacturers were diversified and operated a divisional structure. Domestic firms were more diversified than subsidiaries of foreign multinationals. Those latter firms tended to use a functional organisational structure when they produced a single product.⁵⁰

VI

By using asset data for Australia's top 100 firms across four selected years initial impression are offered about the nature and growth of large scale enterprise in modern Australia. They indicate that although enterprise was on a much smaller scale than other high income nations concentration levels were high relative to the size of the economy. Comparative advantages drove the sectoral distribution of the nation's leading firms into the resource and related service industries. The central questions for Australian economic and business development concern whether comparative largeness generated the forms of competitive managerial capitalism and enhanced corporate capabilities which Chandler has emphasised for the United States and questioned for Britain. Initial evidence would suggest that Australian firms were slow to develop these benefits in an environment dominated by negotiation and compromise and where small consumer and capital markets constrained the development of economies of scale and a shift into those industries which benefited from new technologies. However, these conclusions remain speculative until further firm level investigations have been pursued. It is hoped that this paper, with its identification of those leading companies, will provide a stimulus to such work.

TABLE 1

AUSTRALIA: PERCENTAGE DISTRIBUTION OF TOP 100 COMPANIES BETWEEN PRIMARY ASIC CLASSIFICATIONS
(a) Number of Companies (b) Assets

Year	A: Agriculture, Forestry, Fishing and Hunting		B: Mining		C: Manufacturing		D: Electricity, Gas & Water		E: Construction		F: Wholesale and Retail Trade		G: Transport and Storage		L: Entertainment, Recreation, Restaurants, Hotels, & Personal Services		Total	
	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
1910	9	10	13	13	30	25	9	5	-	-	28	37	11	9	-	-	100	100
1930	6	5	5	4	39	40	10	13	-	-	31	30	5	5	4	3	100	100
1952	1	1	9	11	55	58	3	4	-	-	27	24	4	2	1	1	100	100
1964	-	-	5	5	71	71	2	1	2	1	18	19	2	1	-	-	100	100

Source: See text.

TABLE 2
SECTORAL DISTRIBUTION OF LEADING FIRMS
(percentage)

	Food, drink, tobacco, textiles (consumer goods)	Heavy industries (producer goods) ie. chemicals, petroleum, metals, machinery, transport equipment	Miscellaneous
United States			
1917	21	65	14
1930	20	63	17
1948	20	67	13
1973	14	61	25
Japan			
1918	42	41	17
1930	47	38	15
1954	30	58	12
1973	15	66	19
Germany			
1913	21	69	10
1929	27	61	12
1953	24	65	11
1973	17	68	15
Britain			
1919	45	47	8
1930	44	40	16
1948	38	47	15
1973	24	53	23
Australia			
1910	57	27	17
1930	36	31	33
1952	35	40	25
1964	21	54	25

Note: Covers top 200 industrials for each nation and industrials among top 100 for Australia.

Source: C.J. Schmitz, The Growth of Big Business in the United States and Western Europe, 1850-1939 (Basingstoke, 1993), p.36; W.M. Fruin, The Japanese Enterprise System (Oxford, 1992), p.164.

TABLE 3

FOREIGN OWNERSHIP OF AUSTRALIA'S TOP 100 COMPANIES, 1910-64

	Companies registered overseas in 1910, 1930 & 1952		Companies with 51% or more foreign equity in 1964	
	By Total Assets	By number of companies	By Total Assets	By number of companies
	%	%	%	%
1910	49	31		
1930	25	20		
1952	12	9		
1964			41	36

Source: See text.

TABLE 4
TOTAL ASSET VALUATION OF LEADING 25 FIRMS

	1910-18		1930-38		1948-53	
	US\$m	% of GDP	US\$m	% of GDP	US\$m	% of GDP
United States	7,934	10	17,714	19	28,840	11
Japan	616	10	1,227	17	-	-
Germany	1,131	9	3,778	10	3,310	9
Britain	1,399	11	7,662	28	7,480	18
Australia	290	19	702	21	1,269	16

Notes: Market capitalisation used for Britain. The column dates for Australia are 1910, 1930 and 1952. The closest dates for other countries are listed in each column as follows: United States 1917, 1930, 1948; Japan 1918, 1930; Germany 1913, 1938, 1953; Britain 1912, 1937, 1948. All figures are in US\$m.

Sources: C.J. Schmitz, The Growth of Big Business in the United States and Western Europe, 1850-1939 (Basingstoke, 1993), p.34; A.D.Chandler, Scale and Scope. The Dynamics of Industrial Capitalism (Cambridge, MA, 1990), pp.638-732; W.M. Fruin, The Japanese Enterprise System (Oxford, 1992), pp.329-41.

TABLE 5
 DIVERSIFICATION
 (percentage)

	1910-1919	1929-1930	1948-1954	1964-1973
United States	-	59	73	-
Japan	13	18	27	33
Germany	-	67	74	-
Britain	-	21	39	-
Australia	14	26	33	36

Notes: These are calculated as more than one activity at the three digit level of classification. Covers top 100 firms for Australia and 200 for other nations. Dates cover United States for 1930,1948; Japan 1918, 1930, 1954, 1973; Germany 1929, 1953; Britain 1930, 1948; Australia 1910, 1930, 1952, 1964.

Sources: As for Table 4.

TABLE 6
TURNOVER RATES

Country	Period	Percentage	Percentage p.a.
Japan	1918-1930	35	2.9
	1930-1954	41	1.7
	1954-1973	32	1.7
Australia	1910-1930	45	2.3
	1930-1952	48	2.2
	1952-1964	33	2.8
United States	1917-1930	18	1.4
	1930-1948	24	1.3
Britain	1919-1930	11	1.0
	1930-1948	21	1.2
Germany	1913-1929	29	1.8
	1929-1953	31	1.3

Notes: Figures for USA, Germany and Britain include only food, chemical and machinery industries. Turnover measures companies leaving the top 200 (100 Australia) because of either the relative decline of their asset value or if they merged with another firm not qualifying for the top 200 (100).

Sources: As for Table 4.

TABLE 7
AUSTRALIA: TOP 100 COMPANIES RANKED BY TOTAL
ASSETS - 1910, 1930, 1952, 1964

1910

Companies	Rank	Total Assets (£A)	Where Registered	ASIC Sub-division
Dalgety and Company Ltd	1	8,080,160	England	F46-47
British Tobacco Co.(Australia) Ltd	2	5,223,260	England	C21-22
Colonial Sugar Refining Co Ltd	3	4,646,250	NSW	C21-22
New Zealand Loan & Mercantile Agency Co Ltd	4	4,409,630	England	F46-47
New Zealand & Australian Land Company Ltd	5	3,524,080	England	A1
Australian Mortgage, Land and Finance Co Ltd	6	3,236,270	England	F46-47
Australian Estates and Mortgage Co	7	3,073,270	England	F46-47
Goldsbrough, Mort & Co Ltd	8	2,732,700	Vic	F46-47
Mount Lyell Mining and Railway Co Ltd	9	2,045,050	Vic	B11
Elder Smith and Co Ltd Adelaide	10	2,027,940	SA	F46-47
Australian Gaslight Company	11	1,745,430	NSW	D36
Broken Hill Proprietary Co Ltd	12	1,510,830	Vic	B11
Scottish Australian Investment Co Ltd	13	1,487,680	England	A1
Melbourne Tramway and Omnibus Co Ltd	14	1,438,130	Vic	G52
Mount Morgan Gold Mining Company Ltd	15	1,387,140	Qland	B11
Sulphide Corporation Ltd	16	1,385,610	England	C29
D.and W. Murray Ltd	17	1,370,030	England	F46-47
Chillagoe Co Ltd	18	1,358,390	Qland	B11
Carlton & United Breweries Ltd	19	1,318,440	Vic	C21-22
Tooth and Co., Ltd Sydney	20	1,311,540	NSW	C21-22
Brisbane Electric Tramways Invest Co Ltd	21	1,310,680	England	G52
Geo. P. Harris Scarfe & Co Ltd	22	1,297,980	SA	F46-47
Lovell & Christmas Ltd	23	1,281,170	England	F46-47
Huddart Parker Ltd	24	1,218,130	Vic	G53
Robert Reid and Co Ltd	25	1,203,910	England	F46-47
Howard Smith Company Ltd	26	1,162,710	Vic	G53
Paterson Laing and Bruce Ltd	27	1,127,960	England	F46-47
Broken Hill Proprietary Block 10 Co Ltd	28	1,118,990	Vic	B11
Australian Pastoral Co Ltd	29	1,020,770	England	A1
Burns, Philp and Co Ltd	30	975,220	NSW	F46-47
Caledonian Collieries Ltd	31	971,440	NSW	B12
Adelaide Steamship Company Ltd	32	927,740	SA	G53
Queensland National Pastoral Co Ltd	33	850,000	Qland	A1
Kauri Timber Co Ltd	34	836,290	Vic	A3
S. Hoffnung and Co Ltd London & Sydney	35	813,550	England	F46-47
Peel River Land and Mineral Co Ltd	36	757,390	England	A1
Millaquin Sugar Co Ltd	37	649,860	Qland	C21-22
D. & J. Fowler Ltd.,London,Adelaide, &c	38	644,790	England	F46-47
Zinc Corporation Ltd	39	608,120	Vic	C29
Great Fitzroy Mining Ltd	40	573,790	Vic	B11
Robert Harper & Co Ltd	41	564,730	Vic	C21-22
Thomas Brown and Sons	42	555,210	England	F46-47

South Australian Brewing Co Ltd	43	547,000	SA	C21-22
Melbourne Electric Supply Co Ltd	44	542,680	England	D36
Henry Jones Co-operative Ltd	45	542,080	Vic	C21-22
Farmer & Co Ltd	46	538,980	England	F48
Australasian Mortgage and Agency Co Ltd	47	537,730	England	A1
Emu Bay Railway Co Ltd	48	518,600	Tas	G52
Tooheys Ltd., Sydney	49	508,000	NSW	C21-22
Perth Electric Tramways Ltd W.A.	50	504,940	England	G52
W & A McArthur Ltd	51	495,310	England	F46-47
Electric Supply Co of Victoria Ltd	52	489,430	England	D36
South Australian Gas Company	53	487,780	SA	D36
Qland Investment and Land Mortgage Co Ltd	54	478,810	England	A1
Henry Bull and Co Ltd	55	463,590	England	F46-47
Kalgoorlie Electric Tramways Ltd W.A.	56	463,570	England	G52
John Sharp & Sons Ltd	57	462,510	Vic	F46-47
Adelaide Electric Supply Co Ltd	58	453,450	England	D36
Dunlop Rubber Co of Australasia Ltd	59	445,430	Vic	C34
Beath Schiess & Felsted Ltd	60	435,890	Vic	F46-47
Mort's Dock & Engineering Co Ltd Sydney	61	430,740	NSW	C33
Amalgamated Zinc (de Bavay's) Ltd	62	430,090	Vic	C29
Swan Brewery Co Ltd (Perth W.A.)	63	404,710	Vic	C21-22
Queensland Meat Export and Agency Co Ltd	64	391,400	Qland	C21-22
Silverton Tramway Co Ltd	65	390,860	Vic	G52
Buckley and Nunn Ltd. London & Melb	66	387,240	England	F48
Castlemaine Brewery & Wood Bros & Co... Ltd	67	377,280	NSW	C21-22
Castlemaine Brewery Co Ltd Melb	68	375,670	Vic	C21-22
Walleroo-Mt Lyell Fertilizers Ltd	69	371,260	SA	C27
Herald & Weekly Times Ltd Melb	70	360,660	Vic	C26
Fairymead Sugar Co Ltd	71	349,710	Qland	C21-22
Walleroo and Moonta Mining & Smelting Co Ltd	72	339,960	SA	B11
Finney Isles & Co Ltd	73	330,220	Qland	F48
Daily Telegraph Newspaper Co	74	322,730	NSW	C26
J. Kitchen and Sons Ltd Melb	75	317,450	Vic	C27
Bagot, Shakes and Lewis Ltd., Adelaide	76	317,360	SA	F46-47
British Broken Hill Proprietary Co Ltd	77	314,700	England	B11
South Aust Land Mortgage and Agency Co Ltd	78	313,860	England	A1
Harrison Jones and Devlin Ltd Sydney	79	312,660	NSW	F46-47
North Coast Steam Navigation Co Ltd Sydney	80	311,120	NSW	G53
Swallow & Ariell Ltd	81	299,650	Vic	C21-22
Broken Hill South Silver Mining Co No Liability	82	293,760	Vic	B11
Sydney Ferries Ltd	83	282,420	NSW	G53
Walter Reid & Co Ltd	84	277,430	Qland	F46-47
Winchcombe Carson Ltd	85	267,910	NSW	F46-47
Electric Light & Power Supply Corp. Ltd	86	253,090	NSW	D36
Broken Hill Proprietary Block 14 Co Ltd	87	252,920	Vic	B11
North Shore Gas Co Ltd	88	242,740	NSW	D36
Cascade Brewery Co Ltd Hobart	89	242,200	Tas	C21-22
Standard Waygood Hercules Ltd	90	238,730	NSW	C33
Metropolitan Gas Co.	91	237,390	Vic	D36
Perkins & Co Ltd	92	232,180	Qland	C21-22
Perdriau Rubber Co Ltd	93	228,830	NSW	C34
Broken Hill South Blocks Ltd	94	226,680	Vic	B11
Brisbane Gas Co Ltd	95	226,540	Qland	D36

Wunderlich Ltd	96	220,930	NSW	C28
Kodak (Australasia) Ltd	97	217,580	Aust	C33
Nicholson & Co Ltd	98	212,430	NSW	F48
Broken Hill Jcn Nth Silver Mining Co No Liability	99	208,150	Vic	B11
Paul & Gray Ltd	100	190,290	NSW	F46-47
Mean Assets All Companies		946,996		

1930

Companies	Rank	Total Assets (£A)	Where Registered	ASIC Sub-division
Colonial Sugar Refining Co Ltd	1	14,890,071	NSW	C21-22
Dalgety & Co Ltd	2	10,805,119	England	F46-47
British Tobacco Co (Aust) Ltd	3	9,651,913	Vic	C21-22
Broken Hill Pty Co Ltd	4	8,528,444	Vic	C29
Australian Gas Light Co	5	7,780,671	NSW	D36
Tooth & Co Ltd	6	7,423,767	NSW	C21-22
Goldsbrough Mort & Co Ltd	7	6,957,453	Vic	F46-47
New Zealand Loan & Mercantile Agency Co Ltd	8	6,367,740	England	F46-47
Melbourne Electric Supply Co Ltd	9	6,154,692	England	D36
Elder Smith & Co Ltd	10	5,698,998	SA	F46-47
Dunlop-Perdriau Rubber Co Ltd	11	5,647,430	Vic	C34
Electrolytic Zinc Co of A/asia Ltd	12	5,592,661	Vic	C29
Adelaide Electric Supply Co. Ltd	13	5,576,780	England	D36
Burns Philp & Co Ltd	14	5,274,060	NSW	F46-47
Myer Emporium Ltd	15	4,999,629	Vic	F48
Australian Mercantile Land & Finance Co Ltd	16	4,755,530	England	F46-47
Metropolitan Gas Co	17	4,663,061	Vic	D36
Nestle & Anglo-Swiss Condensed Milk Co (A/asia) Ltd	18	4,648,598	Nsw	C21-22
New Zealand & Australian Land Co Ltd	19	4,644,549	England	A1
Australian Iron & Steel Ltd	20	4,245,542	NSW	C29
Australian Estates & Mortgage Co Ltd	21	4,063,082	England	F46-47
Associated Newspapers Ltd	22	3,873,067	NSW	C26
Carlton & United Breweries Ltd	23	3,799,535	Vic	C21-22
Howard Smith Ltd	24	3,559,393	Vic	G53
Millar's Timber & Trading Co Ltd	25	3,429,979	England	A3
Anthony Hordern & Sons Ltd	26	3,248,452	NSW	F48
Adelaide Steamship Co Ltd	27	3,218,048	SA	G53
D & W Murray Ltd	28	3,161,846	England	F46-47
Hoyt's Theatres Ltd	29	3,116,908	Vic	L91
Mount Lyell Mining & Railway Co Ltd	30	3,006,372	Vic	B11
Commonwealth Fertilisers & Chemicals Ltd	31	2,964,885	Vic	C27
North Broken Hill Ltd	32	2,931,838	Vic	B11
South Australian Gas Co	33	2,899,220	SA	D36
Huddart Parker Ltd	34	2,823,369	Vic	G53
Midland Railway Co of WA Ltd	35	2,742,718	England	G52
Broken Hill South Ltd	36	2,581,362	Vic	B11
Scottish Australian Investment Co Ltd	37	2,510,588	England	A1
Union Theatres Ltd & Australasian Films Ltd	38	2,476,385	NSW	L91
Tooheys Ltd	39	2,473,576	NSW	C21-22
City Electric Light Co Ltd	40	2,340,461	Qland	D36
Henry Jones Co-op Ltd	41	2,167,191	Vic	C21-22
David Jones Ltd	42	2,113,222	NSW	F48
Farmer & Co Ltd	43	1,946,126	England	F48
Caledonian Collieries Ltd	44	1,937,023	NSW	B12
Holden's Motor Body Builders Ltd	45	1,915,347	SA	C32
Robert Reid & Co Ltd	46	1,883,704	Vic	F46-47
Sulphide Corporation Ltd	47	1,879,365	England	C29
Marcus Clark & Co Ltd	48	1,841,152	NSW	F48

Goodyear Tyre & Rubber Co (Aust) Ltd	49	1,796,233	NSW	C34
Harris Scarfe Ltd	50	1,724,947	SA	F46-47
Herald & Weekly Times Ltd	51	1,720,118	Vic	C26
Paterson Laing & Bruce Ltd	52	1,711,898	England	F46-47
Australian Glass Manufacturers Co Ltd	53	1,693,990	Vic	C28
Australian Paper Manufacturers Ltd	54	1,693,569	NSW	C26
Zinc Corporation Ltd	55	1,593,053	England	C29
Australian Agricultural Co Ltd	56	1,573,778	England	A1
Colonial Gas Association Ltd	57	1,547,108	England	D36
United Provisions Ltd	58	1,441,102	Vic	C21-22
J C Williamson Ltd	59	1,429,849	NSW	L91
Electric Light & Power Supply Corp Ltd	60	1,413,797	NSW	D36
Mark Foys Ltd	61	1,388,220	NSW	F48
Cresco Fertilizers Ltd	62	1,380,146	SA	C27
South Australian Farmers' Co-op Union Ltd	63	1,357,031	SA	F46-47
Yarra Falls Ltd	64	1,356,392	Vic	C23
Farmers & Graziers' Co-op Grain Ins & Agency Co Ltd	65	1,346,862	NSW	F46-47
Advertiser Newspapers Ltd	66	1,329,396	SA	C26
Swan Brewery Co Ltd	67	1,321,741	Vic	C21-22
Abermain Seaham Collieries Ltd	68	1,314,204	NSW	B12
General Industries Ltd	69	1,294,523	NSW	C33
Kandos Cement Co Ltd	70	1,281,354	NSW	C28
Commonwealth Oil Refineries Ltd	71	1,275,815	Vic	C27
North Shore Gas Co Ltd	72	1,249,094	NSW	D36
Westralian Farmers Ltd	73	1,236,957	WA	F46-47
Southern Portland Cement Ltd	74	1,224,724	NSW	C28
S Hoffnung & Co Ltd	75	1,201,888	England	F46-47
Gordon & Gotch (A/asia) Ltd	76	1,159,648	Vic	F46-47
Australian Cement	77	1,145,219	Vic	C28
Goode Durrant & Co Ltd	78	1,129,494	England	F46-47
Amalgamated Wireless (A/asia) Ltd	79	1,104,698	NSW	C33
Queensland National Pastoral Co Ltd	80	1,091,390	Qland	A1
Morris Hedstrom Ltd	81	1,082,056	Fiji	F46-47
Winchcombe Carson Ltd	82	1,064,214	NSW	F46-47
Bond Industries Ltd	83	1,029,265	NSW	C24
Union Theatres Investments Ltd	84	1,027,054	NSW	L91
Edwards Dunlop & Co Ltd	85	1,023,253	NSW	F46-47
Bennett & Fisher Ltd	86	1,007,193	SA	F46-47
Kauri Timber Co Ltd	87	998,431	Vic	A3
O Gilpin Ltd	88	979,757	Vic	F48
Mort's Dock & Engineering Co Ltd	89	978,153	NSW	C33
Peters American Delicacy Co Ltd	90	960,905	NSW	C21-22
James Stedman Henderson's Sweets Ltd	91	947,058	NSW	C21-22
Buckley & Nunn Ltd	92	942,523	Vic	F48
Brisbane Gas Co	93	934,364	Qland	D36
Henry Berry & Co (A/asia) Ltd	94	914,695	Vic	F46-47
Castlemaine Perkins Ltd	95	914,606	Qland	C21-22
Melbourne Steamship Co Ltd	96	891,128	Vic	G53
Wunderlich Ltd	97	855,447	NSW	C28
Murdoch's Ltd	98	854,943	NSW	F48
Australian Knitting Mills Ltd	99	853,581	Vic	C24
Millaquin Sugar Co Ltd	100	853,334	Qland	C21-22
Mean Assets All Companies		2,748,511		

1952

Companies	Rank	Total Assets (£A)	Where Registered	ASIC Sub-division
Broken Hill Proprietary Co Ltd	1	61,231,301	Vic	C29
Colonial Sugar Refining Co Ltd	2	48,527,883	NSW	C21-22
Consolidated Zinc Corporation Ltd	3	39,694,991	England	B11
Australian Paper Manufacturers Ltd	4	33,505,658	NSW	C26
Imperial Chemical Industries of Aust & NZ Ltd	5	29,111,466	Vic	C27
Dalgety & Co Ltd	6	27,585,164	England	F46-47
British Tobacco Co (Australia) Ltd	7	25,298,229	Vic	C21-22
General Motors-Holden's Ltd	8	24,989,138	Vic	C32
Elder Smith & Co Ltd	9	21,392,822	SA	F46-47
Australian Consolidated Industries Ltd	10	20,192,871	Vic	C28
Felt & Textiles of Australia Ltd	11	19,363,231	NSW	C23
Dunlop Rubber Australia Ltd	12	18,914,408	Vic	C34
Electrolytic Zinc Co of Australia Ltd	13	18,546,851	Vic	C29
Myer Emporium Ltd	14	17,179,986	Vic	F48
City Electric Light Co Ltd	15	17,000,000	Qland	D36
New Zealand Loan & Mercantile Agency Co Ltd	16	15,720,354	England	F46-47
Mount Isa Mines Ltd	17	15,368,554	Qland	B11
Tooth & Co Ltd	18	15,332,439	NSW	C21-22
Burns Philp & Co Ltd	19	15,249,137	NSW	F46-47
Carlton & United Breweries Ltd	20	15,035,782	Vic	C21-22
Australian Gas Light Co	21	14,106,732	NSW	D36
Goldsbrough Mort & Co Ltd	22	14,069,414	Vic	F46-47
Broken Hill South Ltd	23	13,909,602	Vic	B11
North Broken Hill Ltd	24	13,058,140	Vic	B11
Associated Pulp & Paper Mills Ltd	25	12,894,430	Vic	C26
Email Ltd	26	12,475,504	NSW	C33
Australian Mercantile Land & Finance Co Ltd	27	10,929,713	England	F46-47
Woolworths Ltd	28	10,344,907	NSW	F48
Nestles Food Specialities (Australia) Ltd	29	9,900,558	NSW	C21-22
G.J. Coles & Co Ltd	30	9,626,802	Vic	F48
Drug Houses of Australia Ltd	31	9,397,114	Vic	C27
Bradford Cotton Mills Ltd	32	9,258,683	NSW	C24
Australian Estates Co Ltd	33	9,092,664	England	F46-47
F.W. Hughes Industries Ltd	34	8,947,768	NSW	C21-22
McPherson's	35	8,215,434	Vic	F46-47
Kauri Timber Co Ltd	36	7,984,748	Vic	A3
John McGrath Industries Ltd	37	7,765,764	NSW	C33
New Broken Hill Consolidated Ltd	38	7,744,708	England	B11
Henry Jones Co-operative Ltd	39	7,664,572	Vic	C21-22
David Jones Ltd	40	7,483,352	NSW	F48
Australian Newsprint Mills Ltd	41	7,225,898	Tas	C26
Mount Lyell Mining & Railway Co Ltd	42	6,913,834	Vic	B11
Grocery & General Merchants Ltd	43	6,894,075	NSW	F46-47
Howard Smith Ltd	44	6,815,717	Vic	G53
Courtaulds (Australia) Ltd	45	6,744,449	NSW	C23
Swan Brewery Co Ltd	46	6,462,394	Vic	C21-22
Containers Ltd	47	6,375,253	Vic	C31
Olympic Tyre & Rubber Co	48	6,317,458	Vic	C34

Ampol Petroleum Ltd	49	6,271,126	NSW	F46-47
Commonwealth Industrial Gases Ltd	50	6,215,168	NSW	C27
Associated Newspapers	51	6,007,614	NSW	C26
Foy & Gibson Ltd	52	5,981,205	Vic	F48
Humes Ltd	53	5,959,189	Vic	C28
Amalgamated Retailers Ltd/Waltons Ltd	54	5,950,292	NSW	F48
Mount Morgan Ltd	55	5,949,073	Qland	B11
Huddart Parker Ltd	56	5,750,918	Vic	G53
Hoyts Theatres Ltd	57	5,716,778	Vic	L91
Herald & Weekly Times Ltd	58	5,594,915	Vic	C26
Clyde Industries Ltd	59	5,430,988	NSW	C33
MacRobertson (Australia) Ltd	60	5,353,059	Vic	C21-22
Robert Reid & Co Ltd	61	5,330,938	England	F46-47
James Hardie Asbestos Ltd	62	5,268,751	NSW	C28
Larke Hoskins and Co Ltd	63	5,070,967	NSW	F46-47
H.C. Sleight Ltd	64	5,040,998	Vic	F46-47
Tooheys Ltd	65	4,826,200	NSW	C21-22
Western Mining Corporation Ltd	66	4,818,574	Vic	B11
Yarra Falls Ltd	67	4,749,390	Vic	C23
Amalgamated Wireless (Australasia) Ltd	68	4,737,416	NSW	C33
Patons & Baldwins (Australia) Ltd	69	4,706,952	Vic	C23
Colonial Gas Association Ltd	70	4,668,150	England	D36
Anthony Hordern & Sons Ltd	71	4,664,403	NSW	F48
Peters Consolidated Milk Industries Ltd	72	4,662,380	NSW	C21-22
Repco Ltd	73	4,653,392	Vic	C32
Winchcombe Carson Ltd	74	4,603,596	NSW	F46-47
Standard Cars Ltd	75	4,569,926	Aust	C32
Adelaide Steamship Co Ltd	76	4,567,555	SA	G53
Taubmans Industries Ltd	77	4,523,570	NSW	C27
A.G. Healing Ltd	78	4,492,188	Vic	C33
Davies Coop & Co Ltd	79	4,383,621	Vic	C23
Electronic Industries Ltd	80	4,382,960	Vic	C33
York Motors (Holding) Ltd	81	4,369,493	NSW	F48
Godfrey Phillips Holdings Ltd	82	4,310,853	Vic	C21-22
Ansett Transport Industries Ltd	83	4,024,122	Vic	G54
Commonwealth Fertilisers & Chemicals Ltd	84	4,010,103	Vic	C27
Metropolitan Portland Cement	85	4,001,618	NSW	C28
G. & R. Wills & Co Ltd	86	3,906,716	SA	F46-47
General Industries	87	3,868,014	NSW	C33
Kraft Holdings	88	3,845,331	Vic	C21-22
Younghusband Ltd	89	3,795,304	Vic	F46-47
Chrysler Australia Ltd	90	3,665,538	SA	C32
Wm, Haughton & Co Ltd	91	3,609,808	Vic	F46-47
Cox Brothers (Australia) Ltd	92	3,573,898	Vic	F48
Overseas Corporation(Australia) Ltd	93	3,532,364	Vic	C31
J.&A. Brown & Abermain Seaham Collieries Ltd	94	3,496,931	NSW	B12
Prestige Ltd	95	3,474,279	Vic	C24
Associated Leathers Ltd	96	3,432,512	Vic	C34
Bitumen & Oil Refineries (Australia) Ltd	97	3,431,604	NSW	C27
Farmer & Co Ltd	98	3,328,647	England	F48
Rootes (Australia) Ltd	99	3,267,724	Vic	C32
Castlemaine Perkins Ltd	100	3,267,353	Qland	C21-22
Mean Assets All Companies		9,969,744		

1964

Companies	Rank	Total Assets (£A'000)	% equity owned by overseas interests	ASIC Sub- division
Broken Hill Proprietary Co Ltd	1	390,402		C29
Shell Group Australia	2	278,556	51% or more	C27
Colonial Sugar Refining Co Ltd	3	136,303		C21-22
General Motors-Holden's Pty Ltd	4	131,018	51% or more	C32
Imperial Chemical Industries of Aust & NZ Ltd	5	105,593	51% or more	C27
Dalgety and New Zealand Loan Ltd	6	101,967	51% or more	F46-47
Mobil Oil Australia Ltd (Parent Co. accounts only)	7	83,048	51% or more	C27
Ampol Petroleum Ltd	8	80,108		C27
British Petroleum Co. of Australia Ltd	9	78,589	51% or more	C27
Conzinc Riotinto of Australia Ltd	10	75,281	51% or more	B11
Mount Isa Mines Ltd	11	73,422	51% or more	B11
Woolworths Ltd	12	72,427		F48
Myer Emporium Ltd	13	71,995		F48
Elder Smith Goldsbrough Mort Ltd	14	70,962		F46-47
Australian Consolidated Industries Ltd	15	66,694		C28
Ford Motor Co. of Australia Ltd	16	63,013	51% or more	C32
British Tobacco Co. (Australia) Ltd	17	59,622	20% to 50%	C21-22
Coles (G.J.) & Company Ltd	18	58,365		F48
Australian Paper Manufacturers Ltd	19	53,835		C26
Sleigh (H.C.) Ltd	20	51,900		F46-47
Australian Oil Refining Pty Ltd	21	51,636	51% or more	C27
Waltons Ltd	22	48,348		F48
Alcoa of Australia Pty. Ltd.	23	47,982	51% or more	C29
Burns Philp & Co Ltd	24	45,894		F46-47
Boral Ltd	25	45,289		C27
Metal Manufactures Ltd	26	44,733	51% or more	C31
Carlton and United Breweries Ltd	27	44,254		C21-22
Comalco Industries Pty Ltd	28	43,951	51% or more	C29
Jones (David) Ltd	29	43,198		F48
Ansett Transport Industries Ltd.	30	42,942		G53
Dunlop Rubber Australia Ltd	31	42,605		C34
Lysaght (John) (Australia) Ltd	32	42,496	51% or more	C31
Caltex Oil (Australia) Pty Ltd	33	40,922	51% or more	C27
Palmer (H.G.) (Consolidated) Ltd	34	40,208		F48
Australian Gas Light Co. (Parent Co. Accounts)	35	40,173		D36
Tubemakers of Australia Ltd	36	38,996	51% or more	C29
Tooth & Co Ltd	37	37,501		C21-22
Esso Standard Oil (Australia) Ltd	38	36,637	51% or more	F46-47
International Harvester Co. of Australia Pty Ltd	39	32,071	51% or more	C32
Felt and Textiles of Australia Ltd	40	31,765		C23
Electronic Industries Ltd	41	30,835		C33
E. Z. Industries Ltd	42	30,790		C29
Carpenter (W.R.) Holdings Ltd	43	29,380		F46-47
Cox Brothers (Australia) Ltd	44	27,785		F48
North Broken Hill Ltd	45	27,045		B11
Fairfax (John) Ltd	46	27,006		C26
Hooker (L.J.) Investment Corporation Ltd	47	26,566		E41
Olympic Consolidated Industries Ltd	48	26,386		C34

Australian Estates Co. Ltd	49	25,273	51% or more	F46-47
Chrysler Australia Ltd	50	25,051	51% or more	C32
Associated Pulp and Paper Mills Ltd	51	24,868		C26
Repco Ltd	52	24,432		C32
Broken Hill South Ltd	53	24,406		B11
Lend Lease Corporation Ltd	54	24,159		E41
Clyde Industries Ltd	55	23,853		C33
New Broken Hill Consolidated Ltd	56	23,699	51% or more	B11
Weston (George) Foods Ltd	57	23,293	51% or more	C21-22
Petroleum Refineries (Aust.) Pty Ltd	58	23,218	51% or more	C27
McPherson's Ltd	59	23,208		F46-47
Email Ltd	60	22,883		C33
Broken Hill Associated Smelters Pty Ltd	61	22,764	20% to 50%	C29
British Motor Corp. (Australia) Pty Ltd	62	22,652	51% or more	C32
Goodyear Tyre & Rubber Co. (Australia) Ltd	63	22,374	51% or more	C34
Rothmans of Pall Mall (Australia) Ltd	64	22,374	20% to 50%	C21-22
Healing (A.G.) Ltd	65	22,232		C33
Humes Ltd	66	22,021		C28
Herald and Weekly Times Ltd	67	21,621		C26
Concrete Industries (Monier) Ltd	68	20,172		C28
Ready Mix Concrete Ltd	69	19,463		C28
Unilever Australia (Holdings) Pty Ltd	70	19,215	51% or more	C21-22
Kodak (Australasia) Pty Ltd	71	19,185	51% or more	C33
Grace Bros. Holdings Ltd	72	18,834		F48
Australian Mercantile Land & Finance Co. Ltd	73	18,809	51% or more	F46-47
Nestle Co. (Australia) Ltd	74	18,305	51% or more	C21-22
Hardie (James) Asbestos Ltd	75	18,148		C28
Drug Houses of Australia Ltd	76	18,090		C27
Jones (Henry) Co-operative Ltd	77	17,573		C21-22
Commonwealth Industrial Gases Ltd	78	17,419	51% or more	C27
Bradford Cotton Mills Ltd	79	17,003		C24
Australian and Kandos Cement Holdings Ltd	80	16,814		C28
Petersville Australia Ltd	81	16,761		C21-22
News Ltd	82	16,597		C26
Philips Industries Holdings Pty Ltd	83	16,416	51% or more	C33
Fibremakers Ltd	84	16,341	51% or more	C23
Australian Newsprint Mills Holdings Ltd	85	15,899		C26
South Australian Gas Company	86	15,848		D36
Massey-Ferguson Holdings (Australia) Ltd	87	15,401	51% or more	C32
Tooheys Ltd	88	15,371		C21-22
Amalgamated Wireless (A'asia) Ltd	89	15,058		C33
Containers Ltd	90	15,043		C31
Cyclone Company of Australia Ltd	91	14,985		C31
Davies, Coop & Company Ltd	92	14,930	20% to 50%	C23
Assoc. Portland Cement Manufacturers(Aust) Ltd	93	14,788	51% or more	C28
Allied Mills Ltd.	94	14,734		C21-22
Martin (John) & Co Ltd	95	14,678		F48
Gadsden (J) Australia Ltd	96	14,485		C31
Adelaide Steamship Co. Ltd.	97	14,179		G53
Consolidated Press Holdings Ltd	98	14,123		C26
Volkswagen (Australasia) Ltd	99	13,938	51% or more	C32
Australian Aluminium Company Ltd.	100	13,883	51% or more	C29
Mean Assets All Companies		41,574		

Australian Standard Industrial Classification, 1969

- A Agriculture, Forestry, Fishing and Hunting**
- 1 Agriculture
 - 2 Services to Agriculture
 - 3 Forestry and Logging
 - 4 Fishing and Hunting
- B Mining**
- 11 Metallic Minerals
 - 12 Coal
 - 13 Crude Petroleum(incl Natural Gas)
 - 14 Construction Materials
 - 15 Other Non-Metallic Minerals
 - 16 Services to Mining
- C Manufacturing**
- 21-22 Food, Beverages and Tobacco
 - 23 Textiles
 - 24 Clothing and footwear (including Knitting Mills)
 - 25 Wood, Wood Products and Furniture (except Sheet Metal)
 - 26 Paper and Paper Products, Printing and Publishing
 - 27 Chemical, Petroleum and Coal Products
 - 28 Glass, Clay and other Non-metallic Mineral Products
 - 29 Basic Metal Products
 - 31 Fabricated Metal Products
 - 32 Transport Equipment
 - 33 Other Industrial Machinery and Equipment and Household Appliances
 - 34 Leather, Rubber and Plastic Products and Manufacturing n.e.c.
- D Electricity, Gas and Water**
- 36 Electricity and Gas
 - 37 Water. Sewerage and Drainage
- E Construction**
- 41 General Construction
 - 42 Special-Trade Contracting
- F Wholesale and Retail Trade**
- 46-7 Wholesale Trade
 - 48 Retail Trade
- G Transport and Storage**
- 51 Road Transport
 - 52 Railway Transport
 - 53 Water Transport
 - 54 Air Transport
 - 55 Other Transport and Storage
- H Communication**
- 56 Communication
- I Finance, Insurance, Real Estate and Business Services**
- 61 Finance and Investment
 - 62 Insurance
 - 63 Real Estate and Business Services
- J Public Administration and Defence**
- 71 Public Administration
 - 72 Defence
- K Community Services**
- 81 Health
 - 82 Education, Libraries, Museums and Art Galleries
 - 83 Welfare and Charitable Services and Religious Institutions
 - 84 Other Community Service
- L Entertainment, Recreation, Restaurants, Hotels and Personal Services**
- 91 Entertainment and Recreational Services
 - 92 Restaurants, Hotels and Clubs
 - 93 Personal Services

94 Private Households Employing Staff
 99 Non-Classifiable Establishments

Sources: See text.

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- ¹ We are grateful to Helen Bridge for excellent research assistance on highly demanding data sets. Helpful comments on earlier drafts of the paper were received from Mira Wilkins and Kris Inwood, together with the participants at the Anglo-American Business History Conference held at the University of Glasgow and the Annual Conference of the Economic History Society of Australia and New Zealand held at the Australian National University both in 1997.
- ² A. D. H. Kaplan, *Big Enterprise in a Competitive System* (revised edition, Washington DC, 1964); A. D. Chandler, *Scale and Scope. The Dynamics of Industrial Capitalism* (Cambridge, MA, 1990); W. M. Fruin, *The Japanese Enterprise System. Competitive Strategies and Cooperative Structures* (Oxford, 1992); L. Johnman, 'The Large Manufacturing Companies of 1935', *Business History*, 28 (1986); P. L. Payne, 'The Emergence of the Large-scale Company in Great Britain, 1870-1914' *Economic History Review*, 2nd Ser., XX (1967); C. J. Schmitz, *The Growth of Big Business in the United States, and Western Europe, 1850-1939*, (Basingstoke, 1993); C. J. Schmitz, 'The world's largest industrial companies of 1912', *Business History* 37, 4 (1995); P. Wardley, 'The anatomy of big business: aspects of corporate development in the twentieth century', *Business History* 33, (1991); P. Wardley, 'The largest corporate employers of labour in the United Kingdom in circa 1907 and circa 1935', *Business History*, forthcoming; L. Hannah, *The Rise of the Corporate Economy* (London, 1983); M. Levy-Léboyer, 'The large corporation in modern France', in A. Chandler and H. Daems (eds) *Managerial Hierarchies. Comparative Perspectives on the Rise of the Modern Industrial Enterprise* (Cambridge, MA, 1980); H. Pohl (ed.) *The Concentration Process in the Entrepreneurial Economy since the Late Nineteenth Century* (Stuttgart, 1988); N. Horn and J. Kocka (eds) *Recht und Entwicklung der Grossunternehmen in 19 und frühen 20 Jahrhundert*. Alfred D. Chandler, Jr., Franco Amatori and Takashi Hikino, eds, *Global Enterprise: Big*

Business and the Wealth of Nations (Cambridge, 1997).

- ³ Angus Maddison, *Dynamic Forces in Capitalist Development* (Oxford, 1991).
- ⁴ Schmitz, 'Largest', p. 90.
- ⁵ Levy-Léboyer, 'France' p. 155 draws attention to different depreciation practices by French firms.
- ⁶ Schmitz, 'Largest', p. 94 shows a close correlation between the two for a selection of leading American firms in 1912 until the highly capitalised US Steel is removed. However, the discrepancies can be greater when comparing workforce and capitalisation methods of measurement. See Johnman, 'Large manufacturing companies', p. 228.
- ⁷ Wardley, 'Anatomy', p. 276 seeks to overcome this problem by imputing a price-yield relationship to unlisted equity but this must remain a guesstimate.
- ⁸ For a discussion of the range of multinational enterprise forms see Geoffrey Jones, *The Evolution of International Business: An Introduction* (London and New York, 1996), pp.32-35.
- ⁹ *Shell in Australia: The story of a great achievement* (Melbourne, 1928), p. 33 and D. K. Fieldhouse, *Unilever Overseas: The anatomy of a multinational 1895-1965* (London, 1978), Table 3.1, p. 71. We owe the point that the assets of these two companies would exceed the amount of capital employed so pushing them both further up the list to Mira Wilkins.
- ¹⁰ N. G. Butlin, Alan Barnard & J. J. Pincus, *Government and Capitalism: Public and Private Choice in Twentieth Century Australia*, (North Sydney, 1982).
- ¹¹ For example, in 1930 the workforces of New South Wales railways and the Australian Post Office were 44 365 and 43 872, respectively. These far exceeded that of BHP and its subsidiaries at 10 288 (1935) or GM Holden at about 6 000 (1936). *Commonwealth of Australia Yearbook* (1930), *B.H.P. Review Jubilee* (1935), and GMH Annual Report (1936). Railway companies were among the largest enterprises in most countries such as Britain, USA, and Canada where they were private sector

organisations.

¹² Hannah, *Corporate Economy*, for example, analyses only manufacturing firms. More recent changes in attitude are reflected in Mary Rose's observation that, 'there can be no doubting the necessity to move beyond the Chandlerian school's preoccupaion with manufacturing industry'. M. W. Kirby and M. B. Rose, 'Introduction' in M. W. Kirby and M. B. Rose (eds) *Business Enterprise in Modern Britain* (London, 1994). p. 24. For an example of a wider perspective see, G. Jones, 'Great Britain: Big business, management and competitiveness in twentieth-century Britain' in Chandler, Amatori and Hikino, eds, *Big Business*, pp. 102-38.

¹³ On this basis nine of the top ten and 18 of the top 25 firms in 1910 would have been banks. In 1930 the top ten would all be banks as would 20 out of the top 25. In 1952 it would again be all financial institutions in the top ten and 15 of 25. Although pastoral agency and land investment firms were involved in lending they have been included because their activities spread well beyond finance.

¹⁴ For example, taking 1940 market values of equity would put four banks in the top ten companies and six in the top 25.

¹⁵ *Australian Investment Digest* vol 1, no. 1, January 1920, p.

¹⁶ These include R. L. Nash, *The Australasian Joint Stock Companies Year Book*, (Sydney) which was published between 1896 and 1914; A. Jobson and A. M. Pooley, *The Digest Year Book of Public Companies of Australia and New Zealand*, (Sydney) published between 1928 and 1966; H. Y. Braddon, *Australian Company Law*, (Adelaide, 1912); A. R. Hall, *The London Capital Market and Australia, 1870-1914* (Canberra, 1963); H. L. Wilkinson, *The Trust Movement in Australia* (Melbourne, 1914); E. L. Wheelwright and J. Miskelly, *Anatomy of Australian Manufacturing Industry* (Sydney, 1967). Information on share prices can be found in *The "Wild Cat" Monthly* published by the *Bulletin* magazine. Sporadic information on workforce sizes can be found in a number of publications including *Jobson's*, *J. B. Were's Statistical Service* (Melbourne), and *Ambrose Pratt's, The National Handbook of Australian Industries* (Melbourne, 1934).

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- ¹⁷ Professor Mira Wilkins has recently indicated to us some additional 'invisible' subsidiaries of American multinationals whose asset values are not revealed in Australian sources but which possess extant archives. We hope to add these to our database subsequently along with any Australian firms missing from national sources but subsequently revealed through company records.
- ¹⁸ M. Stichtenoth, 'The 100 Largest Australian domiciled companies, 1920-52: evidence and conjectures' (Honours thesis, Department of Economic History, Monash University, 1986).
- ¹⁹ For estimates of entry by foreign firms see: G.N. Blainey, 'The history of multinational factories in Australia' in Akio Okochi and Tadakatsu Inoue, eds, *Overseas Business Activities*, (Proceedings of the Fuji Conference, Tokyo, 1984), pp. 183-210; Colin Forster, *Industrial Development in Australia 1920-1930*, (Canberra, 1964), appendix III, pp. 230-2; Donald T. Brash, *American Investment in Australian Industry*, (Canberra, 1966), appendix A 'Survey of American-affiliated companies known to be manufacturing in Australia at 30 June 1962', pp. 289-327. The Australian government did not collect or disseminate data on the operations of foreign firms before the 1960s. See, for instance, the Department of Trade & Industry, *Directory of Overseas Investment in Australian Manufacturing Industry 1966*, (Canberra, 1966), and Commonwealth Treasury, Treasury Economic Paper No. 1, *Overseas Investment in Australia*, (Canberra, 1972).
- ²⁰ Stichtenoth, 'Australian domiciled companies', pp. 46-9 discusses these problems.
- ²¹ N. G. Butlin, 'Australian National Accounts, in W. Vamplew (ed.) *Australians: Historical Statistics*, (Sydney, 1987), p. 133.
- ²² Also see P. H. Karmel & M. Brunt, *The Structure of the Australian Economy*, (Melbourne, 1962), Chapter 3.
- ²³ Wardley, 'Anatomy' pp. 283-4. He also includes finance and conglomerates/holding companies.

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- ²⁴ G. D. Taylor and P. A. Baskerville, *A Concise History of Business in Canada* (Oxford, 1994), pp. 313, 441.
- ²⁵ G. Blainey, 'The history of multinational factories in Australia' in Akio Okochi and Tadakatsu Inoue, eds, *Overseas Business Activities*, (Proceedings of the Fuji Conference, Tokyo, 1984), pp.183-210; Colin Forster, *Industrial Development in Australia 1920-1930* (Canberra, 1964) appendix III, pp. 230-2.
- ²⁶ Our data are in Australian currency. The number of British pounds required to buy an Australian pound were .992, .943, .797 and .797 in 1910, 1930, 1952 and 1964 respectively. The comparable data for United States dollars are 4.833, 4.586, 2.226 and 2.225. David Pope, 'Private Finance', in Wray Vamplew, ed, *Australians: Historical Statistics* (Sydney, 1987), Table PF 47-56, pp. 244-45.
- ²⁷ Schmitz, 'Companies of 1912', pp. 87-90; Schmitz, *Big Business*, pp. 32-3.
- ²⁸ Schmitz, *Big Business*, p. 34. These calculations also required reworking the data of Chandler *Scale and Scope*, pp. 638-58 and Fruin, *Japanese Enterprise System*, pp. 328-41. Calculations relating market capitalisation to national income for America produced very similar results to those for assets.
- ²⁹ Wardley, 'Anatomy', p. 283 identifies an opposite movement in his top 50 firms; comparing the top and bottom company, concentration rises to 1934/5 and thenceforth declines.
- ³⁰ For example, A. G. Lowndes, *South Pacific Enterprise. The Colonial Sugar Refining Company Limited* (Sydney, 1956), p. 25; K. Dunstan, *The Amber Nectar. A Celebration of Beer and Brewing in Australia* (Melbourne, 1987), pp. 7-39; A. Barnard, *The Australian Wool Market* (Melbourne, 1958), p. 72.
- ³¹ Chandler, *Scale and Scope*.
- ³² K. Anderson and R. Garnaut, *Australian Protectionism: Extent, Causes and Consequences* (Sydney, 1987), Tables 2.1 and 2.2, pp.7-8.
- ³³ T. Hewat, *The Plastics Revolution: The Story of Nylex* (South Melbourne,1983), p.26.
- ³⁴ G. Williams, 'The National Policy tariffs: industrial development through import

substitution', *Canadian Journal of Political Science* 12, 1979, pp. 333-68.

³⁵ Wilkinson, *Trust Movement*.

³⁶ Canadian governments have also been viewed as holding back from the trust-busting policies of the United States. Taylor & Baskerville, *Business in Canada*, p. 364.

³⁷ J. A. Bushnell, *Australian Company Mergers 1946-1959* (Melbourne, 1961); I. C. Stewart, 'Australian Company Mergers 1960-1970', *Economic Record*, 53, 141, March 1977, 1-29; I. C. Stewart, 'Company merger characteristics and the institutional environment: an analysis of Australia and overseas nations 1960-1970', unpublished PhD, University of New England, 1974, 2 Volumes.

³⁸ G. N. Blainey, unpublished history of ICIANZ in possession of the authors; W. J. Reader *Imperial Chemical Industries A History*, volume two: *The First Quarter Century* (London, 1975), pp. 206-12; G. N. Blainey, *Jumping over the Wheel* (St Leonards, 1993), chapter 8; J. Poynter, *Russell Grimwade* (Melbourne, 1967); and Fieldhouse, *Unilever Overseas*.

³⁹ Chandler, *Scale and Scope*, pp. 38-40.

⁴⁰ Chandler, *Scale and Scope*, pp. 644-50, 673-9, 705-13; Fruin, *Japanese Enterprise System*, p. 21.

⁴¹ Taylor and Baskerville, *Business in Canada*, p. 311 note that all manufacturing and extractive firms in the top 20 of 1929 were vertically integrated at least in part.

⁴² P. Stubbs, *The Australian Motor Industry: a Study in Protection and Growth* (Melbourne, 1972), pp.166-76, 219-20.

⁴³ H. Mortimer Franklin, *A Glance at Australia in 1880* (Melbourne, 1881), see 'Some of the leading mercantile houses in Australia', pp. 196-414; R. W. Dalton, *Economic and Trade Conditions in Australia*, (London, 1930), pp. 181-99.

⁴⁴ M. Edelstein, 'Professional engineers in Australia: institutional response in a developing economy, 1860-1980', *Australian Economic History Review*, 28, 2, 1988, pp.8-32; C. B. Schedvin, *Shaping Science and Industry: a History of Australia's Council for Scientific and Industrial Research, 1926-49* (St Leonards, 1987) .

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- ⁴⁵ E. L. Wheelwright, *Ownership and Control of Australian Companies* (Sydney, 1957), pp. 4, 119.
- ⁴⁶ Poynter, *Russell Grimwade*; C. D. Kemp, *Big Businessmen: Four Biographical Studies*, (Melbourne, 1964); International Press Service Association, *Who's Who in Australia 1929*, Sydney, [nd].
- ⁴⁷ G. Blainey, *The Steel Master: Essington Lewis*, (South Melbourne, 1971); *B.H.P. Review Jubilee*, 1935.
- ⁴⁸ Lowndes, *South Pacific* ch. 12; L. J. Harnett, *Big Wheels and Little Wheels* (Melbourne, 1964); Organisational chart in 24th Annual Report of ICIANZ, 1952, in author's possession.
- ⁴⁹ Taylor & Baskerville, *Business in Canada*, p. 312.
- ⁵⁰ R. H. Chenhall, 'Some elements of organisational control in Australian divisionalised firms', *Australian Journal of Management*, 1979, pp. 1-36; N. Capon, C. Christodoulou, J. U. Farley and J. M. Hulbert, 'A comparative analysis of the strategy and structure of United States and Australian corporations', *Journal of International Business*, Spring 1987, pp. 51-74. Also see K. Sheridan, *The Firm in Australia: A theoretical and empirical study of size, growth and profitability*, (Melbourne, 1974), pp. 132-6.