Board games: Antecedents of Australia's interlocking directorates, 1910-2018

Abstract

Interlocking directorates can encourage innovation, co-operation, and adherence to best practice, or contribute to collusion, corruption and the stagnation of ideas. Research has identified the contingent nature of director networks, with outcomes dependent on the nature of the tie, the firms and individuals involved, and the institutional, socio-political, and cultural context. Distinguishing between helpful and harmful interlocks thus required understanding the foundations on which they were built. This article is the first systematic, longitudinal analysis of the antecedents of interlocking directorates in Australia, complementing substantial international efforts to understand and compare director networks across the twentieth century. The network has been characterised by a relatively consistent long-run level of connection, but substantial variation in cause of interlocks. The director network in Australia has responded to the pragmatics of the board member occupation, with corporate governance regulations, the progress of the professions, banking and prudential practices, and the form of large organisations encouraging ties that were built on professional expertise and geographic proximity. These findings are important for policy makers, regulatory bodies and scholars, highlighting the importance of understanding the contextual foundations of interlocks when assessing their potential for harm.

1. Introduction

In February 2021, after a year-long inquiry, the key Australian gaming regulator deemed Crown Resorts unfit to hold a licence for its new luxury facility, Sydney's Barangaroo tower. The report focussed on allegations of money laundering and links with international criminal syndicates, particularly through the activities of former executive chairman James Packer. Even after Packer stepped down from the top job, his investment company Consolidated Press Holdings (CPH), which held a substantial portion of Crown shares, was given regular business updates about the firm's activities, and Packer acted as a de facto director after leaving his executive role. Packer was enabled through several directors who were nominated to represent CPH on the Crown board, and who released confident financial figures without the knowledge of Crown shareholders. Interlocks based on cross-ownership, in this case, meant "lines of reporting were blurred, risks were not properly identified, and conflicts and potential conflicts were not recognised".[1]

Interlocking directorates – connections between firms based on shared board members – have the potential to create substantial governance and ethical issues for corporations. Collusion, corruption, resource capture, poor monitoring and the stagnation of ideas can result from directors who are too closely tied to one another.[2] As we will see below, as many as 30% of all top board seats have been occupied by an interlocked director in Australia, and yet high-profile cases of corruption such as Crown Resorts are relatively rare. The vast majority of interlocks are fairly benign, with members developing trust, sharing expertise, and forming professional communities of practice. The key question is, what separates helpful interlocks from harmful ones?

Research has identified the contingent nature of interlocking directorates, with outcomes dependent on the nature of the tie and the context in which it was formed. Thus, to fully understand the impact of interlocks for governance and business strategy, we need to understand the foundations on which they were built. Internationally, there have been substantial efforts to understand the creation of director networks over the twentieth and early twenty-first centuries. Interlocking directorates are said to stem from attempts from banks to control industrial companies; companies' attempts to obtain necessary skills and resources; the class cohesion of members; control of the State; or practical restrictions of geography. In Australia, research on the cause of interlocking directorates is disconnected, addressing particular moments in time or assuming networks were largely determined by the economy-wide logic of Australian capitalism. This is the first systematic, longitudinal analysis of the antecedents of interlocking directorates in Australia, contributing to these important global conversations.

This article will progress as follows: section II reviews the relevant literature on interlocking directorates, particularly insights regarding their antecedents. Section III outlines the method used to visualise Australia's interlocking directorates over time, and to assess the various explanations for their cause. Section IV and V examines the empirical material, with section VI concluding that Australia's director network has been characterised by a relatively consistent long-run level of interconnection, but substantial variation in the factors responsible for interlocks. Rather than responding to the broader logic of Australian capitalism, interlocking directorates were instead dependent on the practicalities of board member work. Corporate governance regulations, the progress of professions, banking and prudential standards, and the form of large organisations encouraged ties that were built on professional expertise and proximity within major Australian economic hubs. Some distinctive firm behaviour occurred in the 1980s, with the movement of money and directors within business groups contributing to a substantial proportion of ties based on market control. These findings can inform policy makers, regulatory bodies and scholars, highlighting the importance of understanding the contingency and foundations of interlocks when assessing their potential for harm.

2. Literature and theoretical framework

Interlocking directorates has been a vibrant area of research since the US *Clayton Act* of 1914 – which prevented interlocks between firms in the same industry – sparked public and scholarly interest as to their nature and impact.[3] Interlocking directorates are said to stem from a range of firm and individual motivations (see below), with positive impacts including the diffusion of innovation, reduction of environmental uncertainty, access to finance or resources, and improvements in prestige or reputation. On the other hand, interlocks, particularly very dense networks, have been found to contribute to collusion and market control, the power of financial institutions, resource capture by the State, or the stagnation of ideas and practices.[4] The vast majority of research is contemporary, examining the structure, causes and consequences of director networks over a short duration. Up to 75% of the literature focusses on North America, with interest in cases in Asia, Europe and Latin America following over the past two decades.[5] This comparative literature has highlighted the contingent nature of interlocking directorates, with the institutional, socio-political context and cultural foundations of the corporate sector influencing the type and shape of director networks.[6] Contemporary Australian research has primarily focussed on network structure, with limited and disconnected attempts to understand their cause or impact.[7] A generation ago Carroll and Alexander compared the director networks in Australia and Canada, attributing differences primarily to socio-political context rather than regulations or corporate governance.[8] As such, Australia has, so far, been bypassed by the recent geographic expansion and comparative approach of interlocking directorates research.

Internationally, historical research on interlocking directorates has examined structure, causes, and impacts on firm strategy, observing changes in networks over time.[9] Rather than continuous data, which is prohibitively laborious, scholars generally examine firms at various benchmarks. Historical research has, much like the contemporary literature, primarily examined the US and Europe. Arguably the most prominent historical work in this area is by Mark Mizruchi, who documented the long stability of the director network in the US from the early twentieth century through to the 1970s, and the decline or unravelling of these connections since the 1980s.[10] Others have adopted a comparative approach to see if this US experience applies elsewhere, with mixed results.[11] Some have examined the evolution of a global, Atlantic, British Empire or transnational corporate elite from the nineteenth century to the present, in some cases confirming the presence of an emerging global corporate community.[12] A recent comparative project adopted a broader geographic scope, with contributions on various countries in Europe, North and South America, and Asia.[13] Chapters examined the evolution of director networks in various countries across the twentieth century, highlighting the contingency of interlocks based on macro (political and economic environment), meso (social structure of the network) and micro (individual stakeholders) factors. As with the contemporary literature, Australia has not yet been included in these conversations, with business historians often mentioning interlocks alongside other forms of firm connections, but with no systematic, longitudinal appraisal of their creation.

The literature, as it stands, presents the following opportunities to contribute. Research on interlocking directorates has identified the importance of comparative research, with the nature of ties dependent on the institutional, socio-political, and cultural foundations of the corporate sector. Historical research has re-affirmed the importance of a contingent approach, highlighting the role of macro, meso and micro factors that have shaped interlocking directorates in various countries across the twentieth century. Australia has largely been left out of the contemporary and historical comparative work on director networks, with most examining the structure of networks over a short duration rather than a systematic, contextual appraisal of their creation over time. As the first longitudinal and contextual analysis of the foundations of interlocking directorates in Australia, this article contributes to our understanding of Australian business history, and to important global discussions on this topic.

The antecedents of interlocking directorates include both the firm's motivations to connect with others, and the individual director's motivations to expand their reach. From the firm perspective, interest in interlocking directorates began, in part, through fear of the power of banks in the corporate sector in the early twentieth century.[14] The *financial hegemony* perspective has argued that interlocking directorates follow the contours of the banking sector and its clients, with bankers sitting on the boards of debtors to monitor the firm's financial position and degree of risk. In the 1980s, Mintz and Schwartz found that banks and insurance companies in the US controlled the flow of capital, and therefore banking directors constituted the broad balance of power in the corporate sector.[15] Some research has found similar centrality for financial institutions.[16] However, others have found that the control of banks represents a particular stage of capitalist development, with a more reciprocal relationship between banks and industrial firms in other places and other points in time.[17] For Australia, Rolfe found some support for financial hegemony in the 1960s, and Etheridge in the 2000s, though it is unclear whether these insights apply consistently over time.[18]

Interlocking directorates may also be part of the firm's *resource dependence*. Firms exist in various states of reliance on suppliers, competitors, financiers, and so on, and interlocks may be a formal expression of the firm's attempt to obtain the correct resources. Business groups, for example, may send directors up or down the hierarchy to sit on other boards in the group.[19] Interlocks with suppliers can ensure compliance with contracts, and connections with banks may constitute the reciprocal flow of information.[20] Interlocks between firms in the same industry may reflect the flow of knowledge or more insidious aims such as a cartel.[21] The human capital of directors is also a resource that can guide multiple board appointments, with useful expertise improving company decision-making (labour) and convincing shareholders that their investments are in safe hands (symbol).[22] Individual directors may also seek resources from interlocks, with multiple directorships often corresponding with career progression and increased remuneration.[23]

The development of interlocks may represent elite *class cohesion*. Recommendations from existing board members often shape recruitment, meaning those who are members of a similar social milieu are more likely to hold interlocked board positions.[24] Class cohesion may be an attempt to improve board monitoring functions, with a strongly networked elite group of board members able to exert more power over managers than if connections were dispersed. The literature has found that interlocking directorates have developed through a broad range of elite characteristics, including geographic proximity, family connections, education at prominent schools and universities, along gender or ethnic lines, and through political connections.[25] For Australia, similarly, scholars have identified the importance of kinship, class, gender, ethnicity and social connections for the structure of board ties.[26] This suggests an important role for the interpersonal factors that shape interlocking directorates.

The State may also shape interfirm connections. Governments have influence over the regulatory environment, including the 'rules of the game' such as corporate governance guidelines and legislation preventing certain types of interlocks.[27] The State can engage with the corporate sector directly through state owned enterprises, with directors reflecting the concurrent corporate and political role of these organisations.[28] There have also been 'sliding doors' between political and corporate elites, with directors often moving between public service roles, corporate lobbying, and interlocked directorships.[29]

Finally, geography can influence interlocks through the location of company head offices and the distribution of production facilities.[30] Some have found a growing transnational corporate community through the prevalence of multinational firms and progressive ease of travel. In other instances, 'industrial districts' remain important, with firms agglomerating to access shared infrastructure, institutions and a pooled labour market.[31] In the case of interlocking directorates, in addition to the industrial, trade and institutional benefits of proximity, the highly specialised nature of board membership means large firms can access pools of appropriate labour within particular corporate 'hubs'. Even within a growing 'global elite', some have found that interlocking directorates are still concentrated around prominent nations, regions and cities.[32]

Interlocks can thus stem from range of firm and individual motivations, including attempts at bank control; obtaining necessary resources; class cohesion of members; the control of the State, or practical restrictions of geography. This article is the first to interrogate these various causes of interlocking directorates in Australia in a longitudinal and contextual way. Through an understanding of the individuals and firms involved in each tie, it will compare the relative salience of financial hegemony, resource dependence, class cohesion, and geography as explanations for the formation of interlocks over time.

3. Methods

Data are based on board members of Australia's top 100 'non-financial' companies, and the top 25 financial firms, ranked based on total assets, at eight benchmarks from 1910 up to the present (1910, 1930, 1952, 1964, 1986, 1997, 2007, 2018).[33] This scope responds to practical considerations regarding data availability – particularly Fleming et al.'s identification of Australia's *Big End of Town*.[34] Focussing on large firms also facilitates the identification of 'corporate *elite*' in each year, with members able to access substantially more power and influence relative to others in the corporate sector.[35] The scope additionally allows comparison with international comparative research on interlocking directorates.[36] Data on board members were found in trade publications, annual reports, and records held by government regulators, with coverage of 90-95% in each year. Those who sat on multiple company boards within the top 125 companies, in a single year, were classified as part of the *director network*. Those firms in the sample that shared at least one director were then classified as part of the *firm network*.

Social network analysis (SNA) was used to analyse the firm and director networks. Membership of a board indicates connections between participants – board members generally attended 10 or more meetings a year, and each member likely had some form of contact with others. If a director sat on two or more top company boards, this indicates a *tie* between those companies, as well as ties between the relevant board members.[37] More shared board memberships, or more shared directors, indicates relatively stronger ties between firms and individuals. Selected networks have been visualised through *NetDraw*. *NetDraw*'s spring-embedding function, with Gower scaling, has been used to place nodes with more shared ties closer together, and move those with fewer shared ties further apart.[38] This means that individuals with more shared boards are visually clustered together. *UCINET* has been used to analyse the firm and director networks. Firm-level analysis includes the number of connected firms, the number of ties, and the number of firms in the 'main component' (those who can access one another through one or more degrees of separation). Individual-level analysis includes the number and proportion of interlocked directors and board positions occupied by interlockers. Network density, or the proportion of ties observed relative to the maximum total ties, has been calculated for both the firm and individual networks. These measures are used to compare the overall structure of the director and firm networks over time.

Each 'set' of ties (ties held by a single director in a single year) has been assessed against the various theoretical explanations of interlocking directorates. Firm information has been gathered through archival and company sources listed above as well as various secondary sources.[39] Individual information has been gathered through extensive prosopography (collective biography) research – published elsewhere – that details members' place of birth and residence, education, career trajectory, family and political connections and social groups.[40] The firm and individual data are, inherently, limited to those for whom there is information. Newspapers reports and secondary sources are biased towards prominent, famous, or unorthodox firms and individuals. They also tend to present a celebratory of triumphalist view of the actors' activities. Company archives are often very detailed, but limited in the breadth of coverage, with many companies having no surviving archival materials. Although largely unavoidable, the combination of several different types of sources has been used to mitigate the extent of this bias and provide a contextual and comparative appraisal of the creation of interlocking directorates over time.

Regarding *financial hegemony*, ties associated with directors who sat on financial and non-financial firms identifies the potential for bank control. Details regarding the career trajectory of interlocked directors, particularly their status as an executive or career banker, provides clarification regarding the likelihood of financial hegemony. *Geographic proximity* is measured through the location of company headquarters, as listed in annual reports or registration paperwork. The analysis of *class cohesion* is based on prosopography data, with directors classified as those with hereditary power (board memberships obtained through family members or marriage), the politics and public service elite (politicians or prominent members of the public such as military leaders), or the professional middle class (professional training and career). While most clearly fell into specific designations, there was some overlap with, for example, some members obtaining board positions through a combination of family connections and professional training. In these cases, the directors exhibited the class markers of both the professional middle class, and the hereditary corporate elite, and so were coded as both in the database.

Regarding *resource dependence*, ties associated with directors who connected firms in the same industry code (based on the Standard Industrial Classification (SIC) Code) indicates their possible motivation to share knowledge or develop co-operative partnerships. Ties that reflected *cross-ownership* also represents the flow of resources. Directors' ability to deploy relevant *expertise* has been an important resource for company boards, working to improve decision-making and as a symbol of the firm's trustworthiness.[41] As such, expertise may have been developed within a single industry but their established reputation and authority was subsequently useful across multiple domains. The database categorises those who had markers of expertise relevant to corporations, regardless of the specific directorates they held in the benchmark year. This included professionals such as engineers, scientists, journalists, accountants, lawyers, as well as those who developed expertise within companies such as founders, members of family firms, or professional managers.

Each set of ties has been considered together. The presence of a particular factor has been weighted by the number of ties in the 'set' with, for example, the presence of ties with a banking firm in a set of six going further to explain interlocks in that year compared to the same in a set of two ties. The various categories have been reported as a proportion of total ties in that year, enabling the comparison of networks of different sizes. Each set of ties often included multiple explanations with, for example, membership of the elite professional class (*class cohesion*) co-occurring with expertise (*resource dependence*). While these data are limited by endogeneity, this reflects the inductive practice of observing multiple theoretical explanations in a particular event simultaneously, and the complexity and nuance of historical research.

4. Overall patterns

Australia's 'big end of town' has undergone substantial change since 1910. In the early twentieth century (1910 and 1930), a diverse assemblage of top firms reflected the importance of primary industries, shipping and wholesale trade for Australia's economy (table 1). Through the mid-twentieth century, big business was disproportionately located in manufacturing, with higher capital needs meaning the sector comprised 71 (57%) of top companies in 1964.[42] More recently, de-regulation of utilities and transport markets has increased the number of top firms in this sector (E), comprising 22% and 27% of the group in the 2007 and 2018 benchmarks. Interlocked firms represented a similar cross section of industries. The proportion of interlocked manufacturing firms peaked in 1964, then decreased to about 10% of the sample in 2018. The number of interlocked financial firms was largest in 2007 (27%), mirroring the expansion of insurance and institutional investors following compulsory superannuation legislation from the 1980s.[43] Interlocked utilities and transport firms were greatest in the 1910 benchmark, and again in 2007 and 2018.

<table 1>

While the composition of interlocked firms changed alongside the corporate sector, the overall pattern of interlocking was reasonably consistent over time. In each benchmark, interlocks connected 70-80% of the sample of firms, with the vast majority (85-98%) tied within a single component (table 1). Around 30% of board seats in each benchmark were held by interlockers, with modest variance between 23% in 2018, and 34% in 1910. The 'typical' network included around 200 board seats, 80-100 interlockers, each firm sharing four to five directors. In 1986 and to a lesser extent 1997, there was an increase in the number of ties and actors, with the 1980s network including 154 directors, 381 interlocked board positions, and seven ties per firm. The 1986 director network (figure 1) had a main component that included all but four of the interlocked directors in that sample. Although overall network density was similar to other years, there was a greater number of individuals, pockets of very dense connections, as well as certain directors who were the main conduits to outer parts of the group. To compare with a more 'typical' year, the 2007 director network had fewer nodes and more even coverage of ties (figure 2).

<figure 1>

<figure 2>

The overall level of interlocking indicates that Australia's interlocking directorates operated under a consistent *modus operandi*, with some aberrant behaviour in the 1980s. This differs from common long-run explanations of Australia's interlocks, with some arguing that inter-firm connections were determined through the model of family and personal capitalism prior to the 1970s, and de-regulation through the 'neoliberal' phase then contributing to a more competitive and independent sector.[44] Overseas, research on the shape of interlocking directorates attribute change similarly, with Mizruchi timing the dispersal of the US director network at around 1970, due to a decline of a collective corporate vision prompted by de-regulation, changes in commercial banking, and a cultural shift towards maximising shareholder value.[45] Work on the UK, Italy, Finland, Austria, Switzerland, and Taiwan has similarly identified a period of co-ordination from the early twentieth century through to the post-War period, and a dispersal of connections since the 1970s.[46] However, this above data indicates that Australia more closely resembled the Netherlands, Argentina, Chile, France and Japan, with changes in the level of interlocking occurring independent of the liberal/co-ordinated economy dichotomy, and instead due to a range of pragmatic considerations.[47] These factors are discussed in detail below.

5. Antecedents of the director network

On the surface, Australia's director network was relatively stable, with the long-run maintenance of a similar level of connection, and an industry mix reflecting the broad contours of the corporate sector. However, assessing each set of interlocks reveals substantial changes in the factors responsible for the corporate network in each benchmark, with substitution of various factors contributing to a similarly-connected network over time. Rather than determined by changes in the economy-wide constitution of Australian capitalism, the director network was dependent on practical considerations for board member appointments and company leadership, namely trends in corporate governance, logistics, business groups and the professions.

a) Financial hegemony

Directors consistently sat on the board of both financial and non-financial firms, with on average 35% of all interlocks occurring with a financial institution (table 2). In some cases, interlocks created by executive bankers indicated control or monitoring of lending. For example, Sir Douglas Forbes was a key long-term manager in the Queensland National Bank and, after their merger, the National Bank of Australasia. He was noted as establishing bank control over non-financial firms, sitting on the board of clients in the 1940s and 1950s, "to manage interests acquired by the bank from clients during times of recession and drought".[48] In the 1952 benchmark Forbes was on the board of the National Bank and client Castlemaine

Perkins, and in 1964 also on the board of client manufacturing firm Boral. Both likely were associated with bank monitoring from Forbes. Similarly, in 1964, R. J. Abercrombie, the General Manager of the Bank of New South Wales was also on the board of their client Associated Portland Cement Manufacturers. Abercrombie's executive banking role was likely important for the industrial firm's access to finance.

<table 2>

However, financial hegemony was not a foregone practice, with ties between banks and their clients often unrelated to control or monitoring. In terms of the general context, Merrett and Sykes have argued that although banks and large companies were often loyal to one another through the early and mid-twentieth century, banks rarely took equity positions in clients, lending exposures were monitored through documents and correspondence rather than through board members, cross-directorates were a fraction of the firms with whom the bank did business, and the director did not necessarily represent the bank's interests when doing so.[49] In the empirical data, based on the career path of the director, most were interlocked with banks due to their general corporate expertise, and established reputation in non-financial firms. They were thus 'insiders' within the industrial rather than financial industry, and likely had very little influence over day-to-day provision of lending. For example, in 1910, only 17 ties (8%) between banks and industrial firms were formed by a career or executive banker, with the remaining ties involving directors with general expertise such as accounting, or those with longstanding careers with the non-financial partner firm (table 2). Other benchmarks throughout the early and mid-twentieth century exhibited similar characteristics, with 1-5% of ties involving executive bankers creating interlocks between financial and non-financial firms.

As time went on, firms diversified their financial business, engaging with multiple banks simultaneously. By the 1970s and 1980s, there was increasing diversity of players in the corporate lending market in general – including finance companies, merchant banks, life insurance offices, State banks, and foreign lenders – as well as a loosening of loyalty between banks and companies.[50] The boom of the corporate sector and the creation of large, diversified business groups (see below) increased the capital needs of large companies to the point that they engaged with multiple banks simultaneously. For these 'corporate raiders', Sykes estimated that as many as 30 or 40 banks were involved at any one time, each with very little knowledge of the firm's exposure to other institutions.[51] While this information was often not made public, in the interlocks database, for those who did list their bankers there is certainly evidence of diversification. Advertiser Newspapers listed seven banks in 1986, Monier Ltd listed the Commonwealth Bank (CBA), Westpac, and foreign lender Citibank; and Southern Farmers listed the SBSA, ANZ, Westpac, CBA, and Bank of New Zealand. Similarly, in 2018, Sonic

Healthcare listed a bewildering array of a dozen banks, including the major Australian institutions, as well as multinational banks from Europe, Asia and the US. Ties between banks and industrial firms comprised around the average (35%) in 1997 and 2007, declining to 15% in 2018 (table 2). The proportion of ties involving executive bankers was also average at around 5% each year. The low presence of interlocks formed by banking insiders, combined with the general diversification of banking relationships, further diluted the scope for financial hegemony in the late-twentieth and early twenty-first centuries.

b) Resource dependence

Compared to the relative unimportance of financial control, resource dependence was crucial for Australia's director network. The deployment of expertise, in particular, was an important factor motivating interlocks, contributing to, on average, 80% of ties across benchmarks (table 2, figure 3). Australian corporations employed trusted professionals and businessmen since the late-nineteenth century, with their knowledge improving decision-making, and their symbolic role giving shareholders confidence in a firm where they never set foot on the farm or in the factory.[52] Over time, expertise became more important for the network, with the proportion of ties attributable to corporate knowledge increasing from an average of 73% from 1910-64 to 88% from 1986-2018. This was, in part, due to changes in Australia's occupational structure, with an increase in the number of professionals in society corresponding with a greater proportion of corporate leaders with training in key professions.[53] Expertise also became more important for corporations from the 1980s, with high profile collapses, increased presence of institutional investors, and more comprehensive disclosure requirements necessitating trusted professionals to navigate new regulatory environments.[54] Microeconomic reform, also from the 1980s, increased competition between firms, encouraging the modernisation of management, marketing and human resource strategies and subsequently the place of these general business professionals in executive and director roles.[55] Deregulation of Australia's banking industry also created much more complicated, global capital movements, with specialised investment bankers, stockbrokers and finance professionals valued as part of the board's skills matrix.[56]

<figure 3>

In a small number of cases (around 10% of all ties associated with expertise; and 25-50% of ties between firms in the same industry), specific operational knowledge contributed to directorates within the same industry. For example, Maurice Mawby (1964 cohort) established his expertise over the mining industry as a junior analyst on the 1921 Broken Hill technical commission of inquiry into miners' phthisis and pneumoconiosis. He was 17 years old. By the age of 20 he was a company metallurgist in charge of up to 80 employees, and went from there to various safety and strategic roles in Australia's mining industry.[57] Kathryn Fagg's (2018 cohort) expertise as a chemical engineer has translated to directorships in chemical and construction manufacturing, including Boral and Incitec Pivot. Science and engineering, as very specialised professions of use to a small range of operational matters, generally attracted these targeted directorships.

Far more common was the use of expertise across diverse board memberships. Accreditation and qualifications fulfilled directors' symbolic requirements, with prominence at the top echelon of the corporate world seen to provide useful insights for company decision-making, regardless of specialty. These particular markers of expertise responded to changes in the general nature of professional work across the twentieth century, from porous barriers to entry and training through an apprenticeship model, to the enclosure of professional networks and university courses, to strong hierarchical institutions where rank-and-file members were vastly separated from elite professionals in the top echelon.[58] For example, in the accounting profession, Raymond Goward and Harry D. Giddy (1952 cohort), were trained through clerkships with key accounting firms, and in the early 1930s were awarded the title of 'chartered accountant'. To compare, towards the end of the twentieth century, corporate leaders who came through the accounting hierarchy had an undergraduate degree, professional accreditation and, often, work for one of the four large multinational corporate accounting firms.[59] Other key corporate professions – law, engineering, banking, management, finance, and so on – went through a similar process of enclosure, with expectations for corporate leaders adjusting accordingly.

Useful expertise was also recognised through company founders and managers who worked through the ranks of top firms. In these cases, much like professionals, markers of expertise were developed in one industry, but later leveraged through diverse directorships. For example, James Burns (1910 cohort) was the co-founder of top shipping firm Burns Philp. He then sat on boards across several industries including banking and insurance.[60] Similarly, James Gosse (1952 cohort) started work as a clerk in top wholesaler George Wills & Co, remaining with the firm for 50 years, eventually as its managing director. In 1952, after his retirement, Gosse remained on as a board member, as well as a range of other firms in banking, mining and shipping.[61] More recently, Geoff Dixon's (2007 cohort) long career with airline Qantas was leveraged to a directorship in media, and Philip Garling's (2018 cohort) career, culminating as CEO of construction firm LendLease, translated to board memberships in construction and energy.

Although human capital, through expertise, was the most important board 'resource', for most of the twentieth and early twenty-first centuries, a small number of cases (10% on average) represented structural ownership or business group connections (table 2). Cross ownership accounted for an exceptionally high number and proportion of interlocks in 1986, from 14 ties

(6%) in 1964, 153 ties (40%) in 1986, and 35 ties (11%) in 1997. This was due to a change in form, and increase in importance, of business groups in this decade. Leading firms engaged in unrelated diversification through speculative takeovers, prompted by the decline of their traditional industries and enabled by the newly-deregulated banking system and lax auditing and regulatory requirements.[62] Several diversified business groups were in the database of top companies, and they used executive directors to solidify their control over firms further down the hierarchy. For example, conglomerate Elders IXL and subsidiaries Elders Finance and Elders Resources created a cluster of at least seven shared directors and 22 ties. The decline of cross-ownership and interlocking directorates was largely due to the collapse of most diversified business groups in the late 1980s and early 1990s. More generally, microeconomic reform, an overhaul of banking prudential regulation, and improvements in corporate governance and disclosure aimed to reduce the presence of cartels, including those that involved interlocking directorates.[63] As a result, the proportion of ties associated with cross-ownership declined to pre-1980s levels of 5-10%.

c) Class

The popular conception of the corporate elite is one of intergeneration wealth and nepotism.[64] In Australia, scholars have implied "insidious forms of control exercised by elite groups of entrepreneurs and their families", with less polemic work similarly establishing the importance of key families in big business prior to the 1970s.[65] While family or hereditary capitalism may have been important for Australian business more broadly in the early and mid-twentieth century, interlocking directorates have reflected, for the most part, the top rungs of the professional middle class. Those appointed to multiple top board positions, and thus with substantial power over firm decision-making, generally held markers of professionalism rather than reflecting the contours of family ownership. From 1930-64, an average of 40% of ties were associated with some form of family connection (membership of family firms, ties achieved through marriage, or intergenerational directors). Male members of prominent corporate dynasties such as the Elder, Hoskins, Baillieu, Myer, and Murdoch families held directorships of multiple companies. Marriage was important to the functioning of the director network, particularly in the mid-twentieth century when women were excluded from board membership. While marriage operated in the corporate sector in various ways, the most direct hereditary path involved appointing the son in law rather than the daughter to the family company board.[66] Intergenerational directors involved sons holding similar professional accreditation and working alongside their father or assuming his work upon retirement. For example, Montague Cohen (1910 and 1930 benchmarks) was a prominent Melbourne-based corporate lawyer. His only child Harold also trained as a lawyer, worked in the family law firm, and in 1930 sat on the same company boards as his father.[67]

Although hereditary connections were relatively important in the middle decades of the twentieth century, even in these years they were easily surpassed by the 50-60% of ties that were associated with professionals. There was some overlap between the two categories, with almost half (40%) of the hereditary power ties also involving membership of the professional middle class. Members of prominent families often trained in key professions, and leveraged both expertise and family connections to obtain board positions. In the case of Harold Cohen above, while training as a lawyer was possible independently, his membership of several top company boards was less likely without his father's prominence. From the 1980s, members of the professional middle class strengthened their hold over the corporate elite, with the proportion of ties increasing from 54% to 75% between 1964 and 1986, and an average of 88% since the 1990s (figure 4). The professionalisation of company boards in Australia was similar to the role of professionals and managers for interlocking directorates in the Netherlands, the US, and Switzerland.[68] While increased presence of the professional middle class has been attributed to the unravelling of director networks elsewhere, in Australia their dominance since the 1980s has been associated with greater homogeneity in the group, and the maintenance of a similar level of connection.

<figure 4>

While there have been important connections between business and political elites in Australia, this was not common amongst interlocked directors.[69] The sample of firms excludes government enterprises, removing a likely source of connection between government and private firms that have been important elsewhere.[70] However, analysis of the sample before and after the suite of government privatisations in the 1980s and 1990s reveals very few interlocks between those former government companies and other corporations. Similarly, analysis of directors' professional and career backgrounds shows little presence of 'sliding doors' between politicians or senior public servants, and corporate board positions. Members of the political or public service (including military) class accounted for on average, 6% of ties (table 2).

d) Geography

Geographic proximity can be a key practical consideration of interlocked directors. Proximate directors can easily attend board meetings, and manage the competing time and scheduling requirements of multiple directorships. Directors can also socialise with others in the community, becoming members of similar suburbs, social groups and sports clubs.[71] Aside from the needs of directors, large firms are also more likely to be located in national or regional hubs, as they can access shared infrastructure, institutions and pools of labour.[72] In Australia, interlocks were directly related to the location of company headquarters, with 91% of ties between firms headquartered in the same city in 1910, with this declining steadily to 40% in 2018 (table 2). The overwhelming importance of geographic proximity in the early twentieth century was due to the time and prohibitive cost of transportation, ensuring that firms largely looked to local elites for their directors. Over time, transport became cheaper and easier, meaning directors could sit on the boards of firms in different cities, and firms could look further afield for directors. However, despite reasonably easy and cost-efficient transport, 40% of ties in the most recent benchmark were between firms in the same city, outstripping the prominence of many other factors. As has been found for other countries and regions, key economic hubs – principally Australia's largest cities of Sydney and Melbourne – remain important for the development of interlocking directorates.[73]

Multinational firms (MNEs) have influenced the geography of Australia's interlocks. In the early twentieth century, many top firms were headquartered in London as 'free standing companies': drawing on the city's elite directorate and share investors, while maintaining operations in the antipodes.[74] In 1910, 18 interlocked firms and 20 individuals were based in London, resulting in 43 ties (table 3). London-based free-standing companies became much less common throughout the twentieth century, with existing firms gradually shifting their head offices to Australian cities. British MNEs were also replaced by waves of firms from the US, Europe and Asia throughout the post-WWII decades.[75] The free-standing company model was largely abandoned, with MNEs required to establishing an Australian subsidiary, with a local head office and board. As such, modern MNEs have their infrastructure and personnel based within major Australian hubs with, for example, the Australian subsidiary of British Petroleum based in Melbourne, US firm Coca-Cola Amatil based in Sydney, and US mining firm Newmont Australia based in Perth (as of 2018).

<table 3>

6. Discussion and conclusions

As the first longitudinal and contextual analysis of the antecedents of interlocking directorates in Australia, this article expands our understanding of Australian business history, and provides important comparative insights to understand the contingent nature of director networks around the world. Australia's director network has been characterised by a consistent long-run level of interlocks, but substantial variation in the factors responsible for their formation. Interlocks were not determined by changes in the economy-wide logic of Australian capitalism, but have been, as Ville and Merrett argue for Australia's general business environment, *sans doctrines*, with practical considerations of board member work overshadowing ideological considerations.[76] Geographic proximity, for example, has been a key factor determining Australian interlocks, and even with the affordances of a transnational corporate elite, 40% of ties in 2018 were between firms headquartered in the same city. Similarly, financial hegemony was uncommon, not necessarily from lack of appetite, but from practical considerations derived from the regulatory environment, the importance of geographic proximity, and the value of expertise. The Australian case thus more closely resembles the findings of Ginalski et al. for Switzerland, with a more 'reciprocal' relationship between banks and industrial firms.[77]

Resource dependence, particularly human capital in the form of expertise, was the most important factor responsible for Australia's director network. Some expertise was used within a particular industry, but often training and accreditation developed in one domain established directors' usefulness across diverse board member work. From the 1980s, expertise became more important for the network, with changes in the occupational structure, more stringent auditing and disclosure requirements, microeconomic reform and deregulation of the banking industry prompting an increase in the recruitment of professionals. Mirroring the prominence of expertise in the corporate elite, interlocks were also dominated by the top echelons of the professional middle class. While family or hereditary ties may have been important for Australian business more broadly, this was not widespread amongst interlocked board members. Instead, recruitment to multiple board positions was shaped by the occupational requirements of directors, and trends in corporate governance and regulation. This is similar to other locales where considerations for directors' occupation – through professionals and managers – have dominated appointment decisions.[78]

Business groups and cross-ownership, a key longstanding anxiety of interlocking directorates, were unimportant overall, though their presence in the 1980s substantially increased the proportion of ties used for inter-firm collusion and control. As with the example of Crown Resorts in the introduction, this was a key area where interlocks were harmful to Australia's corporate sector, with the widespread movement of people and money between entities contributing to the collapse of most of these large groups from the late-1980s, a severe recession in Australia, and criminal charges laid at the feet of those responsible.[79] While the specific mechanisms by which these interlocks operated requires more targeted research, this case highlights the importance of understanding the foundation of interlocks when assessing their potential for harm. The function and impact of director networks depends on the foundations on which they are built, and while they are not always bad, in some circumstances they can be. As such, future research could focus on a better understanding of the link between antecedents and impacts, providing more information to prevent adverse governance, monitoring and ethical outcomes in the future.

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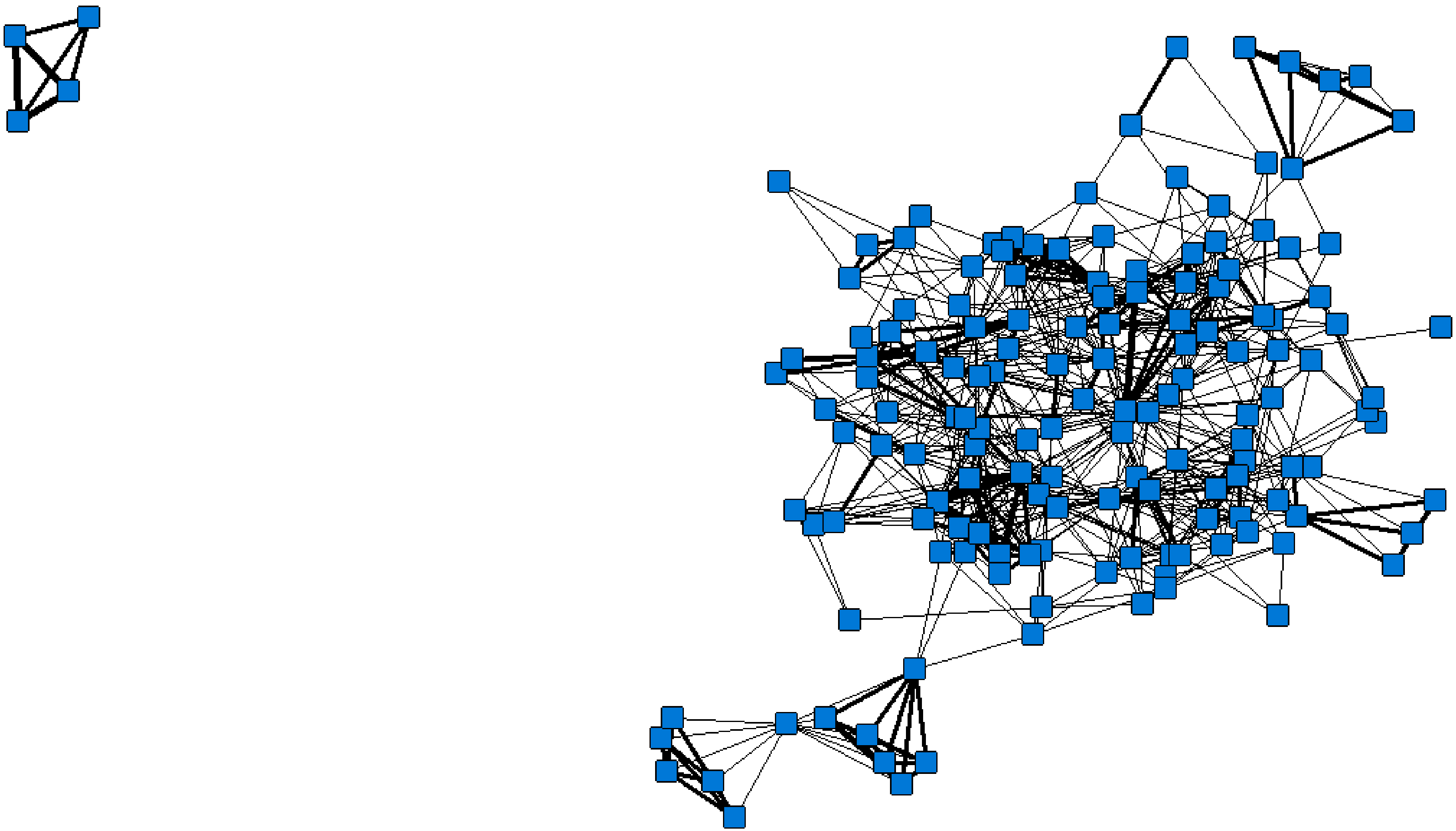
Table 1: Sample and network structure

		1910	1930	1952	1964	1986	1997	2007	2018
Sample	*Sample size*	111	118	116	102	117	122	112	114
	Number of non-financial firms	91	97	96	80	98	99	87	97
	Number of financial	20	21	20	21	19	23	24	17
	Total directors	510	619	667	668	900	957	811	813
	Total board positions	642	759	787	800	1118	1129	943	934
Industry sample (%)	*A: Primary industries*	18 (14)	17 (14)	9 (7)	4 (3)	3 (2)	4 (3)	1 (1)	0 (0)
	B: Mining	13 (10)	5 (4)	9 (7)	5 (4)	18 (14)	20 (16)	13 (10)	20 (16)
	C: Construction	0 (0)	0 (0)	0 (0)	2 (2)	6 (5)	2 (2)	6 (5)	5 (4)
	D: Manufacturing	30 (24)	39 (31)	55 (44)	71 (57)	51 (41)	31 (25)	8 (6)	17 (14)
	E: Transport/utilities	20 (16)	15 (12)	7 (6)	4 (3)	11 (9)	7 (6)	28 (22)	34 (27)
	F: Wholesale trade	15 (12)	11 (9)	9 (7)	5 (4)	2 (2)	9 (7)	4 (3)	0 (0)
	G: Retail trade	4 (3)	9 (7)	10 (8)	9 (7)	4 (3)	11 (9)	3 (2)	6 (5)
	H: Finance	25 (20)	25 (20)	25 (20)	25 (20)	30 (24)	25 (20)	47 (38)	34 (27)
	I: Services	0 (0)	4 (3)	1 (1)	0 (0)	0 (0)	16 (13)	14 (11)	9 (7)
	J: Public administration	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Interlocked firms, industry (%)	*A: Primary industries*	12 (11)	10 (8)	7 (6)	3 (3)	3 (3)	1 (1)	0 (0)	0 (0)
	B: Mining	8 (7)	5 (4)	6 (5)	5 (5)	14 (12)	17 (14)	8 (7)	13 (11)
	C: Construction	0 (0)	0 (0)	0 (0)	1 (1)	3 (3)	2 (2)	5 (4)	5 (4)
	D: Manufacturing	20 (18)	30 (25)	37 (32)	39 (38)	38 (32)	19 (16)	6 (5)	11 (10)
	E: Transport/utilities	17 (15)	12 (10)	5 (4)	2 (2)	10 (9)	5 (4)	14 (13)	25 (22)
	F: Wholesale trade	4 (4)	6 (5)	5 (4)	2 (2)	1 (1)	6 (5)	3 (3)	0 (0)
	G: Retail trade	3 (3)	4 (3)	6 (5)	3 (3)	4 (3)	5 (4)	3 (3)	3 (3)
	H: Finance	16 (14)	17 (14)	16 (14)	18 (18)	19 (16)	19 (16)	30 (27)	17 (15)
	I: Services	0 (0)	2 (2)	1 (1)	0 (0)	0 (0)	12 (10)	9 (8)	5 (4)
	J: Public administration	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Firm network	*Ties (connections between firms)*	402	390	372	364	660	512	324	294
	Connected firms (% of all firms)	80 (72)	86 (73)	83 (72)	73 (72)	92 (79)	86 (70)	78 (70)	79 (69)
	Firms in main component (% of connected firms)	68 (85)	77 (90)	77 (93)	71 (97)	89 (97)	84 (98)	71 (91)	70 (89)
	Average degree (interlocked firms)	5.03	4.53	4.48	4.99	7.2	5.95	4.15	3.7
	Density	0.05	0.043	0.05	0.057	0.059	0.058	0.048	0.043
Director network	*Number of directors*	510	619	667	668	900	957	811	813
	Ties (board seats held by interlockers) (% of board seats)	221 (34)	239 (31)	197 (25)	224 (28)	381 (32)	301 (27)	241 (26)	218 (23)
	Interlockers (% of directors)	89 (17)	96 (16)	78 (12)	93 (14)	154 (17)	129 (13)	109 (13)	98 (12)
	Density	0.06	0.054	0.067	0.08	0.06	0.065	0.065	0.059

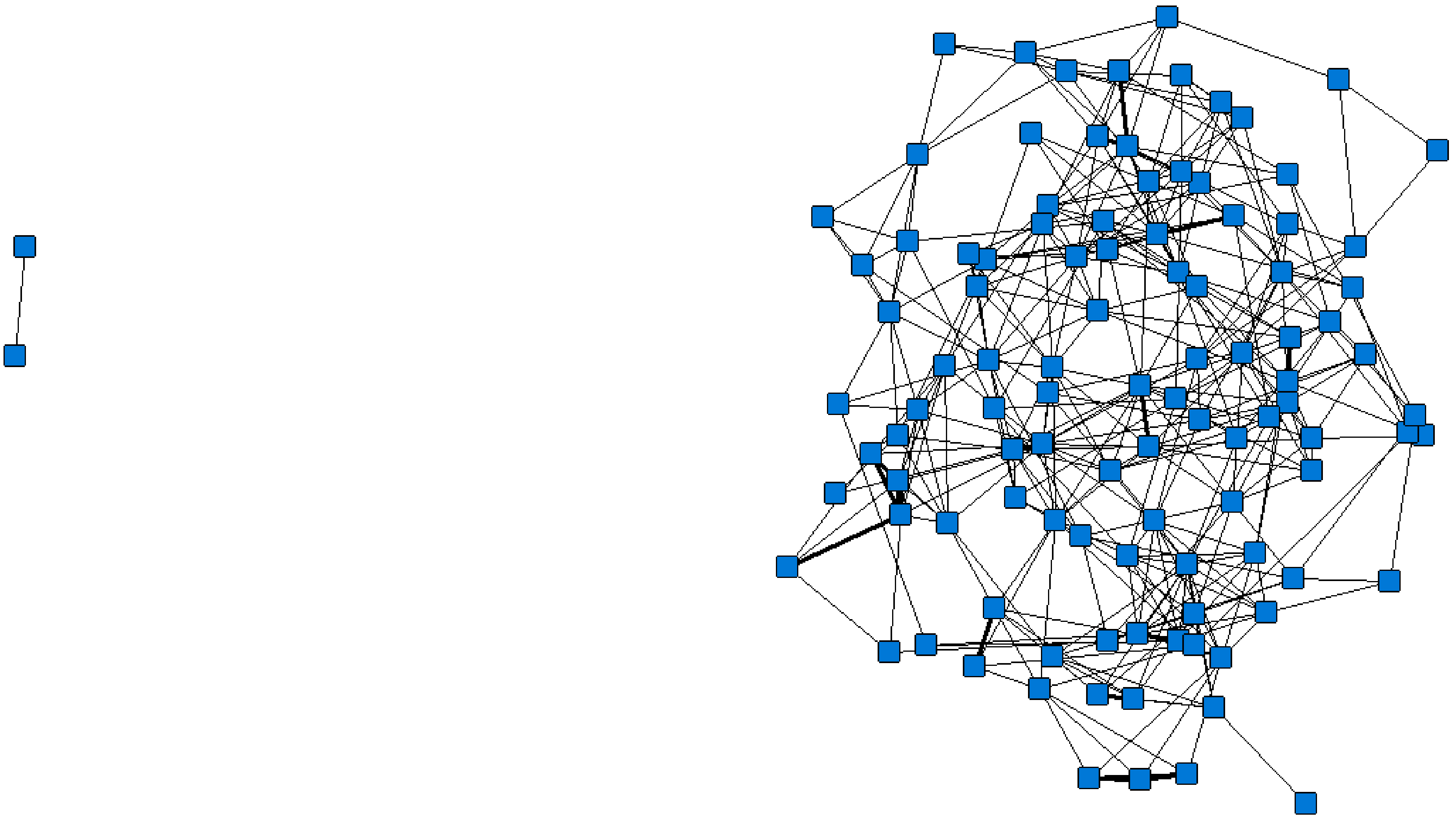
Note: Sample based on top 100 'non-financial' and top 25 'financial' firms. Industry classifications based on Standard Industrial Classification Code (SIC Code). Network metrics calculated with *UCINET*.

Figure 1: 1986 director network



Note: Nodes denote interlocked directors. Ties indicate individuals sat on at least one board together, thicker ties indicate they sat on more than on board together. Network produced with *NetDraw*, using the spring-embedding function with Gower scaling.

Figure 2: 2007 director network



Note: Nodes denote interlocked directors. Ties indicate individuals sat on at least one board together, thicker ties indicate they sat on more than on board together. Network produced with *NetDraw*, using the spring-embedding function with Gower scaling.

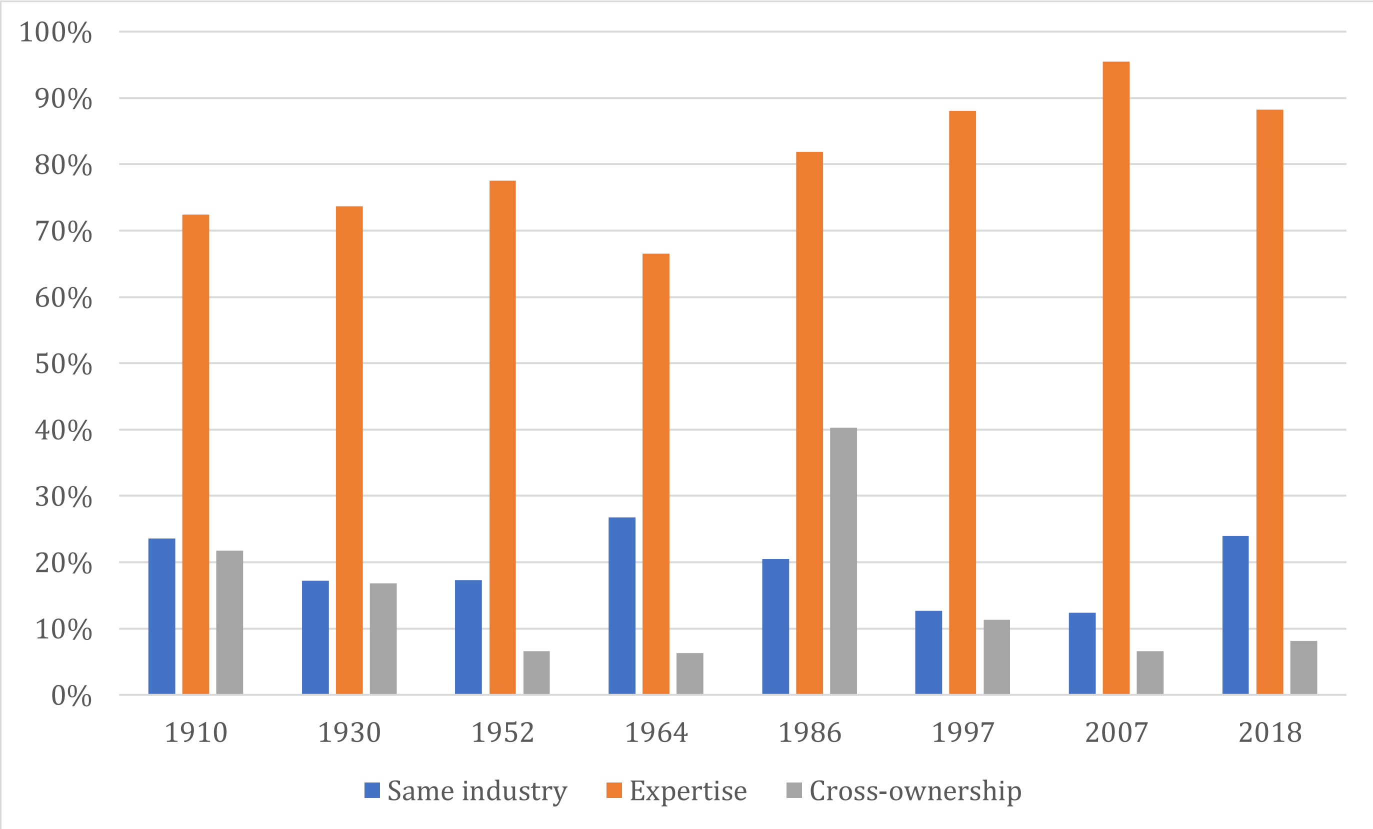
Table 2: Interlocks analysis

		Financial hegemony		*Resource dependence*			*Class cohesion*			*Geographic proximity*
	Sample size	*Interlocks with financial institutions*	*Financial interlocks involving career bankers*	*Same industry classification*	*Expertise*	*Cross-ownership*	*Elite professionals*	*Hereditary power*	*Public service*	*Same head office city*
1910	221	99 (45)	17 (8)	52 (24)	161 (72)	48 (22)	132 (60)	23 (10)	8 (4)	202 (91)
1930	232	94 (41)	9 (4)	40 (17)	171 (74)	39 (17)	118 (51)	83 (36)	23 (10)	170 (73)
1952	196	58 (30)	4 (2)	34 (17)	152 (78)	13 (7)	118 (60)	84 (43)	16 (8)	121 (62)
1964	224	72 (32)	8 (4)	60 (27)	149 (67)	14 (6)	121 (54)	99 (44)	22 (10)	125 (56)
1986	380	101 (27)	5 (1)	78 (21)	311 (82)	153 (40)	285 (75)	44 (12)	11 (3)	151 (40)
1997	309	109 (35)	14 (5)	39 (13)	272 (88)	35 (11)	272 (88)	11 (4)	5 (2)	104 (34)
2007	243	90 (37)	11 (5)	30 (12)	232 (95)	16 (7)	224 (92)	11 (5)	11 (5)	110 (45)
2018	221	33 (15)	9 (4)	53 (24)	195 (88)	18 (8)	187 (85)	11 (5)	10 (5)	89 (40)

Note: The sample size is based on *ties* in the *individual network*, specifically the number of board seats occupied by interlockers (table 1). Percentages, as a proportion of the sample in that year, are reported in parentheses. Percentages do not add up to 100: each set of interlocks may have been associated with multiple categories simultaneously, and some sets were impossible to assign to certain categories due to lack of evidence.

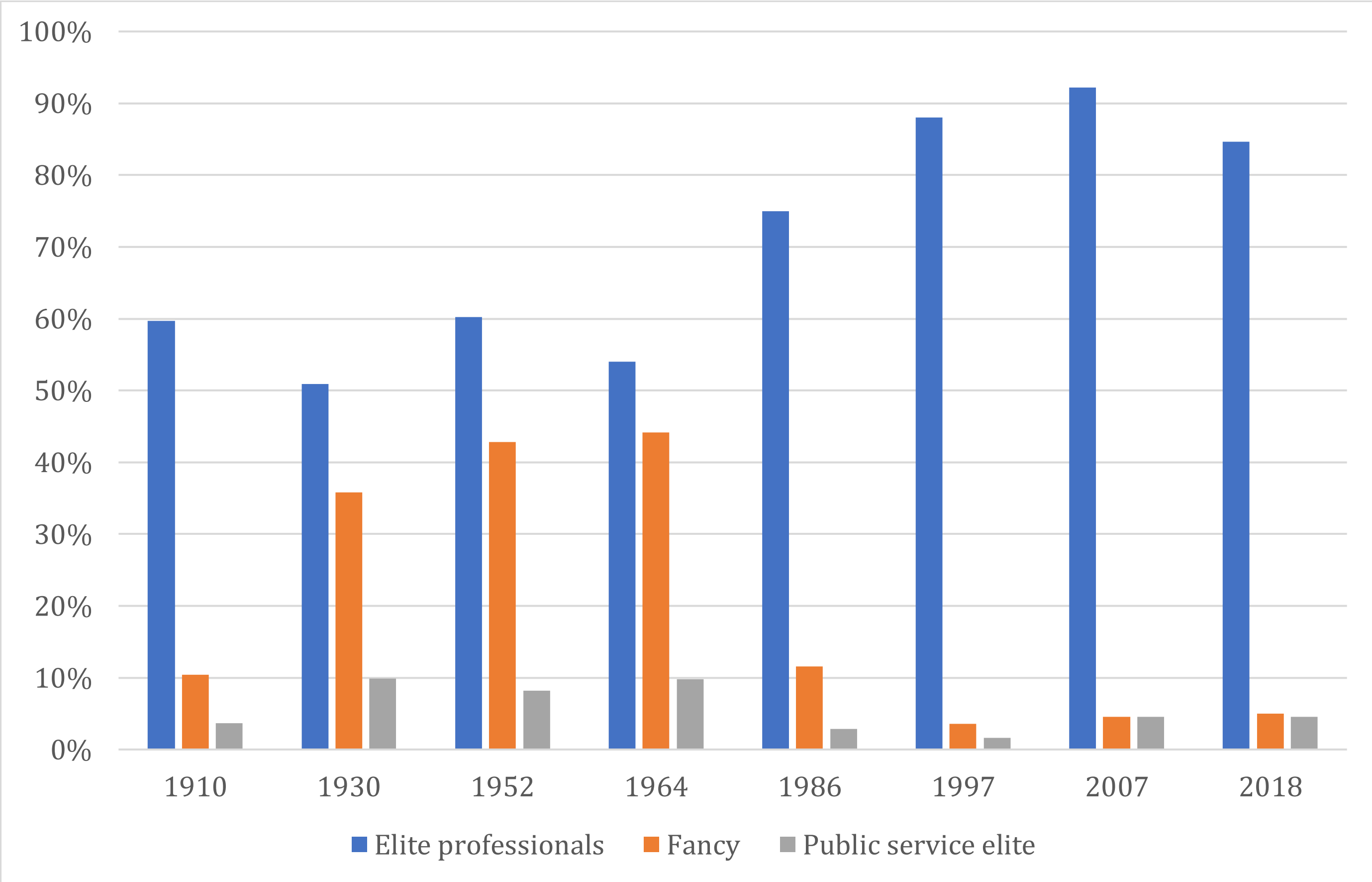
Interlocks with financial institutions indicates ties linked to individuals who sat on the board of at least one financial and one non-financial firm, a small proportion of which were formed by *career bankers*. *Same industry classification* specifies ties associated with individuals who sat on boards within the same SIC code; *expertise* indicates ties associated with directors who held some form externally-recognised knowledge useful to corporations; *cross-ownership* measures ties linked to individuals who sat on the board of companies that were also connected through ownership structures. *Class cohesion* (*elite professionals; hereditary power;* and *public service*) indicates ties associated with directors who fell into these three class categories. *Geographic proximity* is indicated by ties associated with individuals who sat on the board of companies that had the *same head office city*.

Figure 3: Resource dependence, proportion of total ties



Note: Based on data in table 2.

Figure 4: Class cohesion, proportion of total ties



Note: Based on data in table 2.

Table 3: Interlocks with same head office city

	Sample	*London*	*Sydney*	*Melbourne*	*Adelaide*	*Brisbane*	*Perth*	*other*
1910	202	43 (21)	47 (23)	98 (49)	10 (5)	4 (2)	0 (0)	0 (0)
1930	170	24 (14)	47 (28)	75 (44)	18 (11)	8 (5)	0 (0)	0 (0)
1952	121	4 (3)	56 (46)	59 (49)	2 (2)	0 (0)	0 (0)	0 (0)
1964	125	4 (3)	47 (38)	62 (50)	11 (9)	0 (0)	0 (0)	0 (0)
1986	151	0 (0)	62 (41)	71 (47)	10 (7)	2 (1)	6 (4)	0 (0)
1997	104	0 (0)	67 (64)	31 (30)	0 (0)	6 (6)	0 (0)	0 (0)
2007	110	0 (0)	84 (76)	24 (22)	2 (2)	0 (0)	0 (0)	0 (0)
2018	89	0 (0)	51 (57)	22 (25)	0 (0)	4 (4)	6 (7)	6 (7)

Note: Sample size denotes the number of ties associated with firms with the same city headquarters (see table 2). Percentages included in parentheses.

[1] Bavas, “Crown Resorts”; ABC, “James Packer’s company”.
[2] Mizruchi, “What do interlocks do?”; Smith and Sarabi, “What do interlocks do revisited”; Caiazza and Simoni, “Directorate ties”.
[3] Caiazza and Simoni, “Directorate ties”.
[4] For a review of this literature, see Mizruchi, “What do interlocks do?”; Smith and Sarabi, “What do interlocks do revisited”; Caiazza and Simoni, “Directorate ties”. Some examples include Mintz and Schwartz, “Financial interest groups”; Redding, “Weak organisations”; van Veen and Kratzer, “National and international interlocking directorates”; Cárdenas, “Transnationally interconnected?”; Cárdenas, “Cohesive networks”.
[5] Lamb and Roundy, “The ties that bind”; Caiazza and Simoni, “Directorate ties”.
[6] Smith and Sarabi, “What do interlocks do revisited”; Caiazza et al., “Interlocking directorates”; Oehmichen, “East meets West”.
[7] Wheelwright, *Ownership and Control*; Hall, “Interlocking directorates”; Stening and Wai, “Interlocking directorates”; Carroll et al., “Interlocking directorates”; Alexander, “Boardroom networks”; Alexander et al., “Business power”; Roy et al., “Board size”; Murray, “Interlocking directorates”; Murray, *Capitalist networks*; Kiel and Nicholson, “Board composition”; Etheridge, “Director interlocking”.
[8] Carroll and Alexander, “Finance capital”.
[9] Roy and Bonacich, “Interlocking directorates”; Stanworth and Giddens, “Modern corporate economy”; Brayshay et al., “Interlocking directorates”; Heemskerk et al., “Global corporate elite”; Barnes and Ritter, “Corporate interlocking”; Windolf, “German-Jewish economic elite”.
[10] Mizruchi, *American Corporate Network*; Mizruchi, *Fracturing*; Schifeling and Mizruchi, “American corporate network”.
[11] Rinaldi and Vasta, “Persistent and stubborn”; Korom, “Austria Inc. under strain”; Koibuchi and Okazaki, “Evolution of corporate networks”; Ginalski et al., “National cohesion”; Lluch and Salvaj, “Longitudinal study”.
[12] Buchnea, “Bridges and bonds”; Heemskerk et al., “Global corporate elite”; Takes and Heemskerk, “Centrality”; Ginalski et al., “National cohesion”; Lluch and Salvaj, “Longitudinal study”; Carroll and Fennema, “Transnational business community”; Brayshay et al., “Interlocking directorates”; Fellman, “From dense to loose”; Carroll, “Transnationalists”; Bucheli and Salvaj, “Adaptation strategies”.
[13] David and Westerhuis, *Power of Corporate Networks*.
[14] Ibid.
[15] Mintz and Schwartz, “Financial interest groups”.
[16] Dritsas et al., “Big business’ networks”; da Silva and Neves, “Business coalitions”.
[17] Ginalski et al., “National cohesion”; Sweezy, “Managerial revolution”; Tomka, “Interlocking directorates”.
[18] Rolfe, *The Controllers*; Etheridge, “Director interlocking”.
[19] Koibuchi and Okazaki, “Evolution of corporate networks”; François and Lemercier, “French capitalism”; Auvray and Brossard, “French connection”.
[20] An and Jin, “Interlocking of newspaper companies”.
[21] See Rolfe, *The Controllers* for support of this for Australia.
[22] Abbott, *Systems of Professions*; Forsyth, “Class, Professional Work, and the History of Capitalism”.
[23] Lamb and Roundy 2016; Westphal and Stearns 2006.
[24] Koskinen and Edling, “Bipartite network”.
[25] O’Hagan, “American interlocking directorates”; Bühlmann et al., “Swiss business elite”; Kono et al., “Lost in space”; Heemskerk and Fennema, “Network dynamics”; Windolf, “Coordination and control”.
[26] Wright, “The boarding pass”; Alexander, “Boardroom networks”.
[27] Bucheli and Salvaj, “Adaptation strategies”; Höpner and Krempel, “German company network”; François and Lemercier, “French capitalism”.
[28] Lee and Velema, “State power and familism”; Korom, “Austria Inc. under strain”; Rinaldo and Vasta, “Persistent and stubborn”; Rinaldi and Vasta, “Italian corporate network”.
[29] Muscchio and Read, “Bankers”; Agrawal and Knoeber, “Political role?”. See Vidovich and Currie, “Governance networks” for work on Australia.

[30] Green and Semple, "Corporate interlocking directorate"; Kono et al., "Lost in space"; Kentor et al., Interlocking corporate directorates"; O'Hagan and Green, "Tacit knowledge transfer"; Takes and Heemskerk, "Centrality".
[31] Funk, "Making the most"; Marshall, *Principles*; Porter, "Clusters"; Ville and Wright, "Buzz and pipelines".
[32] O'Hagan and Green, "Tacit knowledge transfer"; Kentor et al., Interlocking corporate directorates".
[33] The specifics of identifying firms can be found in Fleming et al., *Big End of Town*, p.4-6. For example, financial firms have their own list, as their asset-heavy nature would otherwise skew the data. Ranking based on assets (rather than share capital or number of employees) was used by Fleming et al. due to data availability and considerations of the Australian environment such as high capital-labour ratios, and the fact that many top firms, particularly in the early twentieth century, had unquoted or rarely traded shares. All firms were incorporated under Australian law (though not necessarily listed on the stock exchange), which required them to publish a balance sheet.
[34] Fleming et al., *Big End of Town* was used for lists of top firms up to 1997, and the same procedure adopted for the 2007 and 2018 benchmarks.
[35] Kansikas, "Institutional business elites".
[36] Chapters on smaller countries in David and Westerhuis' collection examine corporate networks among the top 125 firms across a similar range of benchmarks. See David and Westerhuis, *Power of Corporate Networks*.
[37] Feld, "Social ties".
[38] Gibson et al., "Information visualisation".
[39] For example, Fleming et al., *Big End of Town*; Ville, "Australia"; Sykes, *Bold Riders*; Richardson, "Origins and development".
[40] Wright, "The boarding pass"; Wright and Forsyth, "Managerial capitalism".
[41] Abbott, *Systems of Professions*; Forsyth, "Class, Professional Work, and the History of Capitalism".
[42] Fleming et al., *Big End of Town*; Butlin et al., "Statistical narrative".
[43] Mees and Brigden, *Workers' Capital*.
[44] Ville and Merrett, "Australia"; Fleming et al., *Big End of Town*.
[45] Mizruchi, *Fracturing*.
[46] Schnyder and Wilson, "Structure of networks"; Rinaldi and Vasta, "Persistent and Stubborn"; Korom, "Austria Inc. under strain"; Lee and Velema, "State power and familism"; Ginalski, "National cohesion"; Fellman et al., "From dense to loose".
[47] Koibuchi and Okazaki, "Evolution of corporate networks"; François and Lemercier, "French capitalism"; Lluch and Salvaj, "Longitudinal study"; Westerhuis, "Dutch corporate network".
[48] Watson, "Forbes".
[49] Sykes, *Bold Riders*; Merrett, "Corporate governance".
[50] Sykes, *Bold Riders*; Merrett, "Corporate governance"; Wallace, "Business financiers".
[51] Sykes, *Bold Riders*.
[52] Forsyth, "Class, Professional Work, and the History of Capitalism".
[53] Wright and Forsyth, "Managerial capitalism".
[54] Fleming et al., *Big End of Town*. Clarke et al., *Corporate Collapse*.
[55] Ville and Merrett, "Australia".
[56] Merrett, "Corporate governance".
[57] Strahan, "Mawby".
[58] For a comprehensive discussion of this phenomenon for the corporate elite, see Wright and Forsyth, "Managerial capitalism".
[59] Deloitte, PriceWaterhouseCoopers, KPMG, Ernst&Young.
[60] Abbott and Gibbney, "Burns, Sir James".
[61] Gosse, "Gosse, Sir James Hay".
[62] Fleming et al., *Big End of Town*; Carnegie and O'Connell, "Corporate collapse"; Sykes, *Bold Riders*; Ville, "Australia".
[63] Merrett, "Corporate governance"; Round and Shanahan, *From Protection to Competition*.
[64] Dalzell, *Enterprising Elite*; Fellman, "From dense to loose"; Lee and Velema, "State power and familism"; Lluch and Salvaj, "Longitudinal study"; O'Hagan, "American interlocking directorates".
[65] Ville and Merrett, "Australia", 166; Ville, "Australia"; Rolfe, *The Controllers*; Rawling, *Who Owns Australia*; Campbell, *The 60 Rich Families*; Ville and Merrett, "Australia"; Richardson, "Origins and development".

[66] For more detail on the place of women in Australia's corporate community, see Wright, "Good wives and corporate leaders".
[67] Falk, "Cohen, Montague".
[68] Westerhuis, "Dutch corporate network"; Schifeling and Mizruchi, "American corporate network"; Ginalski et al., "National cohesion".
[69] For more on the historical connection between government and business, see Tsokhas, *A Class Apart?*; Buckley and Wheelwright, *No Paradise for Workers*.
[70] Lee and Velema, "State power and familism"; Korom, "Austria Inc. under strain"; Rinaldi and Vasta, "Persistent and Stubborn".
[71] Wright, "The boarding pass".
[72] Porter, "Clusters".
[73] O'Hagan and Green, "Tacit knowledge transfer"; Kentor et al., "Interlocking corporate directorates"; Kono et al., "Lost in space".
[74] Wilkins, "Free-standing company"; Ville and Merrett, "Australia".
[75] Ville et al., "Magnitudes, origins and directions"; Ville and Merrett, "Wealthy resource-based colonial economy".
[76] Ville and Merrett, "Australia".
[77] Ginalski et al., "National cohesion".
[78] Ivanov and Ganev, "Bulgarian business elite"; Bühlmann et al. "Swiss business elite"; Forsyth, "Class"; Stanworth and Giddens, "Modern corporate economy".
[79] Sykes, *Bold Riders*.