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The Nature and Structure of Trade-Financial Networks: Evidence from the New Zealand Pastoral Sector, 1860-1939

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Abstract

This study applies modern network theory to trade and finance networks in the New Zealand pastoral sector before World War Two It particularly examines the manner in which networks can include trading and financial business transactions simultaneously. In addition, it provides evidence of the role of leadership in such networks, in this case played by the stock and station agents as intermediaries bringing farmers into contact with a wide range of service providers.

Keywords

business networks, leadership, pastoral industry, business history, intermediation

Disciplines

Business | Social and Behavioral Sciences

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The Nature and Structure of Trade-Financial Networks: Evidence from the New Zealand Pastoral Sector

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Recent work in business organisation provides some insights into how networks develop and change over their life cycle. A network based upon trade can evolve into a more widely-embracing trade and financial network. Larger networks may engender competent leaders who intermediate to reduce communication costs and engineer high levels of trust. This paper provides an historically based variation on such hypothesised network structures by showing that trade and finance can exist together as part of a network from the outset. The role and nature of leadership will also be shown to change over time. Its historical focus is the New Zealand pastoral industry. Pastoral agents were intermediaries in a broad trade and financial network which brought farmers into contact with a wide range of service providers. Agent firms recognised from early on that regular trading transactions between agent and farmer generated trust, reputational effects, and mutual information exchange vital for successful lending and the provision of pastoral services.

The current paper builds on our earlier work on Australasian networks by providing a more in-depth historical analysis focussed on trade-financial networks in New Zealand, demonstrating their particular features and how these changed over time.[i] It discusses the theory of networks and focusses on recent work on trade-financial network structures. The paper then applies these ideas to three case studies, the first two of which focus upon the functional relationships in networks organised around agents and cooperatives.[ii] In the third case study we examine networking from a spatial perspective by focussing upon the Otago province of New Zealand. Some conclusions follow.

II

THE THEORY OF TRADE-FINANCIAL NETWORKS

A network is a cooperative group, a cluster or web of individuals or firms organised into a tight or loose federation. Each party is dependent upon the other for resources and cooperation brings about gains for both parties.[iii] Networks describe relational contracts which may place more or less stress on bonds of trust, reciprocity, and obligation. Network members are drawn together by common and complementary interests (such as the same information, labour, capital, materials, distribution, marketing) and propinquity, which may include bonds of trade, finance, geography, religion, culture, politics, or kinship. Alvesson and Lindkvist usefully distinguish three network types.[iv] 'Economic cooperative' networks focus on economic relations and are a means of providing greater economic returns to participants. 'Social integrative' networks influence group behaviour, integrity, and satisfy a need to belong; thus they operate on a socio-emotional basis. 'Blood kinship' networks are based upon the strength of family ties and represent the polar opposite to economic spot exchange; they involve a relational contract at predominantly the social level.

Bonds of trust, the establishment of reputation, and the evolution of 'traditions' to govern behaviour are necessary aspects of network relations.[v] In an atmosphere of trust, information is exchanged freely, providing network partners with a 'thicker', more complete, amount of information than that obtained in a market, and which is 'freer' than that obtained through a hierarchy where members may protect themselves from opportunistic behaviour. Reputation commits members to the network relation in that their track record ultimately determines the success of on-going economic exchange. Emphasis on the long term nature of contractual relations means that members are less likely to gain from opportunistic behaviour which severely inhibits future exchange. The sanctions of breaking a tradition are more severe than breaking a bureaucratic rule or a market contract as the direct utility cost to the recalcitrant in the form of private or public admonishment pervades all aspects of social and economic existence.

The network form of organisation provides particular advantages to firms that foster intangible assets such as knowledge or human capital. It permits the sharing of diffused and uncodified information and provides an environment conducive to feedback processes important in technological change. In these types of firms networks may allow a reduction in transaction costs without incurring higher administrative or bureaucratic costs. However, it may also be the case that strategies adopted in networks are not cost minimising, but are adopted because they reduce uncertainty, provide fast access to reliable information and permit firms to respond to changing economic circumstances.[vi] Other major advantages are the economies of scale and scope available to small firms. In addition, networks allow rapid adaptation to market changes and accommodate a variety of entrepreneurial visions or product niches.[vii]

The above literature helps us to understand what general circumstances give rise to networks and an indication of some of their principal benefits. Recent work by Casson provides an understanding of how networks develop and change over time, an approach which is valuable to historically-based studies of networks.[viii] Networks may cover a range of different forms of economic activity including production, trade, finance, and research. Casson has shown how a network based upon trade can evolve into a more widely-embracing trade and financial network as technology-driven expansions in scale cause individually financed small production units to be supplanted by joint financing of a single large unit; the independent financiers are thus brought together.[ix] A second insight of this work is that as networks grow and become more complex intermediation by a well placed and highly competent member of the network can reduce communication costs and engineer higher levels of trust. The leader is presented as personal and consultative, because of the wide dispersion of types of expertise and the need for coordination.[x] These insights will be assessed in our study of New Zealand pastoral networks.

III

PASTORAL AGENT FIRMS, 1860-1900:

RISE OF THE MONOCENTRIC NETWORK

In the first case study we concentrate upon the network dominated by pastoral agent firms in the second half of the nineteenth century. The agents were the focal point of the network serving as expert intermediaries between farmers and providers of trade and financial services. We refer to this as a monocentric network, diagrammatically akin to a hub with spokes, whereby many functional groups were drawn into the network by dint of their close relationship with the agents. Networks change over time, indeed organisational flexibility is a key advantage of this form. We allude to the changing role of agents in the polycentric network of multiple hubs emerging from the end of the nineteenth century, a phase which is investigated in greater detail from the perspective of the cooperatives as the alternative focal point of the network, in the second case study.

Specialist pastoral agents emerged in New Zealand from the mid nineteenth century stimulated by the demand from growing numbers of farmers for services such as produce consignment, finance, and the sale of property and livestock. Some developed from local mercantile and farming businesses, others received British financial and entrepreneurial support. A common characteristic, though, was their embeddedness in local colonial society, closely connected with many groups, which helped promote trust, reputation, and traditions vital for successful networks. In recently settled areas with poor external communications and small migrant populations social cohesion was common. Agents built upon these environmental bonds and their local connections by engineering additional local flavour as a means of building high levels of trust. They hired employees from the vicinity and decentralised responsibility to growing numbers of country branches. The branch was the principal connection between the firm's head office in the urban commercial centre and its rural clients. Branch managers were the main client contact point, and the office was centrally located in the main street adjacent to the hotel, community centre, and shops.[xi] Firms reinforced ties through visits to individual farms and by receiving farmers in their home. Branch managers were involved with local social and sporting activities, and organised agricultural shows, exhibitions, and competitions. The branch manager's wife provided moral and social reinforcement to her husband's local standing.[xii] Social integration and kinship links were reinforced by economic cooperation as agents extended their services to draw them into close long term and regular trading with farmers which further fostered trust and reputation.

These elements formed the basis for a beneficial exchange of information: agents gained sufficient knowledge of the farmer to judge whether to continue supporting him while farmers gained information and advice about many aspects of farming including the state of markets, new products, and general business and accounting techniques. Many farmers were new to the occupation and all of them faced relative isolation and novel cultivation and marketing conditions. Thus, the network provided farmers with thicker or more complete information than the simple market transaction and was freely offered as part of the reciprocation between agent and farmer.

Some agent firms began as auctioneers and wool consignees (stock and station agents) and expanded into finance provision which tied farmer clients into long term trading. Others were credit providers (pastoral finance companies) who diversified into trading services to develop a closer and regular relationship with the farmer.[xiii] The synergies from providing both trade and financial services were clearly recognised by the agents. They relent at a loss in order to secure wool handling commissions, while the organisation of livestock auctions brought them, 'closer..in touch with the producer [which is] more advantageous…for a business such as ours'.[xiv] This movement from a solely trade or financial network to a trade-financial one occurred from early in the industry's life cycle and was borne of these synergies rather than economies of scale which were few in farming during this period. The diversification of pastoral services at the same time provided agents with broad levels of competency appropriate for network leadership.

In the course of diversifying their services the agents drew additional groups into the network. Large national or international firms in banking, wool buying, shipping, insurance, and farming supplies viewed the agents as the vital conduit into the local pastoral network through an economic cooperative relationship. With pastoral services spread over long distances and engaging actors unknown to each other, the agents intermediation mitigated communication costs and acted as reputation guarantors. Pastoral agents also acted as local commission agents for shipping and insurance companies within the broader local trading community and thereby emphasised the repeated dealings of the relationship. Agents played an important informational go-between role in the development and testing of new products, passing on feedback from the farmer to the agricultural supplier. A similar informational role was played with wool buyers who exchanged knowledge of market and production conditions. Banks played an important role in the network, providing long and short term finance to the agents for onward lending to farmers. Agents were well placed to relend bank money because regular pastoral transacting provided them with sectoral expertise and an intimate knowledge of individual farming accounts. This was reinforced by the importance of reputation in long term networked relationships which mitigated opportunism by borrower farmers against their agents. Banks also transacted directly with farmers through personal accounts. This provided for cooperative behaviour between individual banks and agents, exchanging information about farmers and directing personal banking or pastoral business to each other where possible. In some cases cooperation extended to the establishment of a pastoral agent subsidiary, for example the Bank of New Zealand's (BNZ) involvement in the foundation of the New Zealand Loan and Mercantile Agency Company (NZLMA) in 1865.

From the 1880s freezing companies entered the pastoral network. As specialist and localised enterprises, they might develop close relations with the farming communities. The response of the agents was to interpose themselves between the farmer and freezing company especially through the provision of credit for farmers and the extraction of a commission from the companies. Given their accumulated experience, contacts, and access to bank finance, the agents were well placed to sustain their pivotal role in the face of this threatened competition. Agents also resorted to cooperative strategies with the freezing companies which included interlocking directorates or equity strategies by acquiring a shareholding in a freezing company.

Figure 1 illustrates the agent's role as intermediating network leader. They intermediated trade flows from farmers to shippers, insurers, wool buyers, freezing companies, and agricultural suppliers. In the reverse direction they intermediated finance flows from banks to farmers. Information flows were intermediated in either or both directions particularly with banks, farmers, wool buyers and agricultural suppliers.

FIGURE 1

AGENT-LED MONOCENTRIC PASTORAL NETWORK

about here

By the early twentieth century the bonds of the local agent-farmer network had begun to weaken. New transport and communications technology, particularly the motor car, telephone, and steamship, encouraged firms to expand their geographical coverage to exploit expanding national and international markets. Improved communications also made it easier for firms to coordinate their activities over long distances and to locate their decision-making centrally. Managers were moved between different locations with which they had no particular social or kinship ties. Moreover, expansion was achieved through incorporation which extended the degree of ownership beyond the locality. While the firms continued to play an important role in the local economy the social and kinship elements of propinquity had been reduced in favour of an economic cooperative relationship. The networking capabilities of the local agent with shipping, insurance, and agricultural supply companies also weakened as expanded levels of commercial activity caused many companies in these sectors to set up their own branches or only deal with agents who could provide national coverage. Thus, the agents began to lose their unique leadership role in the network and, as we shall see below, faced serious competition for that role from the cooperatives.

The prolonged interwar depression drove the farmer and agent further apart. The increasingly complex web of intermediaries now included government agencies, a legacy of wartime reorganisation and the subsequent downturn. Together with mortgagee groups and cooperatives, governments mitigated the special nature of the agent-farmer link. Moreover, a series of mergers increased the size and national orientation of the agent firms who also sought to diversify beyond pastoral services thus weakening some of their competency based leadership of the industry. Agents continued to support many farmer clients through the depression although this was more to protect their own exposed asset position with the banks than any sense of social network loyalty.

Taken together these factors caused the agents to lose their unique leadership role in the network. Social disengagement weakened the bonds of trust and reputation. Agent diversification and loss of network members weakened their competence and mitigated the need for a coordinator.

IV

AGRICULTURAL CO-OPERATIVES 1900-1930:

EMERGENCE OF THE POLYCENTRIC NETWORK

The establishment of agricultural cooperatives by New Zealand farmers in the late nineteenth century is characterised by a desire to take advantage of cooperative buying power and to reduce transportation and marketing costs associated with placing produce on the local and British markets. Technological developments such as refrigeration and seemingly unlimited British demand for produce meant that farmers experienced rising living standards. In addition, an increase in State control of domestic transport such as railways and decreases in international shipping rates meant that farmers experienced few of the problems of their American counterparts.[xv]

We can identify three phases of network development with regard to cooperatives. First, agricultural cooperatives concentrated on short term financing of produce or livestock purchases, and on negotiations with suppliers for discounted rates on freight or insurance. Secondly, co-operatives moved into supplying a wider range of pastoral services and many cooperatives operated separate finance or insurance departments to entice farmers to supply pastoral products. Often, as was the case with stock and station agents, finance was offered at zero economic profit (or even loss) in order to gain access to a flow of income over time. Thirdly, the State provided the legal infrastructure to support cooperatives during the 1920s. We examine each in turn.

Farmer cooperatives adopted the appearance of the pastoral agents several decades previously in being small and localised. By contrast, as noted above, many agents had grown to an extent that they were more distant from the local communities which they serviced. Cooperatives located themselves at the centre of the pastoral network, sometimes acting as an intermediary between agents and farmers. However, their smallness and limited access to national and international informational networks meant that many transactions still took place directly between stock and station agent and farmer. The rate of change in network structure depended on the type of pastoral industry. By 1900 dairy cooperatives had developed from localised organisations to become regional concerns. In 1885 a group of cooperative dairy factories formed the Waikato Dairy Factories Association; similar examples can be found in the South Island. Close settlement and the growth of the factory system in the dairy industry encouraged a cooperative spirit in the Waikato, Taranaki and Southland.[xvi] As one contemporary noted '[c]ontact with fellow-farmers resulting in the recognition and expression of common interests is ... encouraged when farmers cart their milk to the factory daily; ... the fact that all farmers are similarly affected by the manufacturing policy provides a very definite urge to common action'.[xvii] Cooperative-led networks were less popular amongst sheep and grain farmers, perhaps due to the larger minimum efficient scale required in this production which implied a greater geographical dispersion of farms.

The transportation, marketing, and selling of produce placed cooperatives at the centre of a polycentric trade-financial pastoral network. Indeed, a functional overlap between stock and station agents and cooperatives emerged by the 1910s. Cooperatives obtained economies of scale by merger and acquisition. For example, the New Zealand Cooperative Dairy Company Limited (NZCDC) was the product of a merger between the Waikato Cooperative Cheese Company and the New Zealand Dairy Association in 1919 after severe competition in the proceeding decade. Further expansion via acquisition of the Thames Valley Cooperative Dairy Coampany (1920), and companies in Marakopa (1920), Manawaru (early 1920s; date unclear), Te Aroha (1920) and Waihou Valley (1922) gave the NZCDC a virtual monopoly over butter and cheese making in the Waikato region. Other mergers to take place in the 1920s included the Cooperative Dairy Company of Otago (with Dunedin Butter Company), and the North Island's Opotiki Cooperative Dairy Company (with Nukuhou, Waiotahi and Cheddar Valley).

Competition between cooperatives and agents intensified during the 1920s as many cooperatives expanded their services to include bridging finance, insurance, stock selling, shearing services and merchandise. Indeed, stock and station agents acknowledged that the expansion of cooperatives posed a competitive threat. Many cooperatives focused on the provision of finance and marketing. The first New Zealand based cooperative to do so was the NZCDC, who were soon followed by other factories offering farm finance to entice farmers to supply products to their company.[xviii] Finance became an important mechanism with which to contract the farmer to supply the factory with dairy products during the term of the loan, with repayments usually deducted from monthly butterfat cheques.

The effectiveness of rural cooperatives as pastoral service providers depended crucially on the motivation behind their inception, together with their organisational structure, incentive schemes, enforcement procedures, and the availability of information. Their organisational structure and the inception motivation were crucial for long term viability. Cooperatives borne out of regional political militancy did not survive to become important providers of pastoral services. However, cooperatives that were based primarily on economic relationships became increasingly competitive with agents. One advantage of joining a cooperative-led network was that it permitted alternative resolution of many of the incentive problems associated with on-going relational contracts in stock and station led networks. Farmers contributed equally to the financial base of cooperatives and received equal shares in any proceeds (or were equally responsible for defaults). Given conditions of moral hazard an individual's strategic behaviour *vis-à-vis* other farmers was to lower contributions to the general pool (perhaps to the minimum permitted), to request a larger amount of credit and to allocate a higher proportion of any borrowings to non-productive activities. Thus, the incentive structure associated with these types of cooperatives fostered free rider problems as farmers could not be induced to supply proper amounts of productive inputs when their actions could not be observed and contracted for directly. Resolution of this problem took different guises. Smaller regional cooperatives relied upon kinship and social integrative relationships as a deterrence. Larger cooperatives were based upon economic cooperative ideals and took 'first call' on farmers' produce and income for repayment of borrowings (for example, a percentage of the butterfat cheque per month). Thus, even though production took place on an individual basis, the group aspects of the association and the empowering of principals led to a decrease in non-cooperative behaviour on the part of borrowers (for example, allocating borrowings to non-productive activities or defaulting on the loan).

The emergence of State marketing boards in New Zealand was partly a legacy of the First World War and the experience of the bulk purchasing agreements of the Imperial Government Supplies Department, and marks the third phase of the polycentric network. Marketing boards were first given legislative support in New Zealand in 1921 when the government enacted the *Meat Export Control Act 1921-1922*. A year later the New Zealand dairy industry received similar powers under the *Dairy Produce Export Control Act 1923* and other experiments in state marketing were tried in the fruit, honey, kauri gum, wheat and flour, poultry, and tobacco industries. The operation of these producer boards was left to the individual industry. Most boards aimed to ensure that New Zealand farmers received the highest returns possible on the British market by minimising transportation and marketing costs, undertaking advertising and better timing the arrival of produce to coincide with high prices.[xix] In some areas the boards facilitated the trade and financial networks in the pastoral sector; in others the boards took over control of functions previously undertaken by stock and station agents and cooperatives (for example, by having monopoly control in exporting meat and dairy produce). Thus, for farmers supplying the export market the establishment of a state monopoly (often located in capital cities) removed the social-integrative bonds characteristic of earlier networks dominated by agents and cooperatives.

The establishment of marketing boards was followed by government involvement in establishing the institutional structure for the provision of other pastoral services, especially bridging finance. The enactment of the *Rural Intermediate Credit Act* in 1927 provided administrative and financial backing for local cooperative credit associations.[xx] The cooperative credit associations were locally based organisations providing a limited liability structure to farmers. By 1930 there were more than 30 operating in the North Island. Economic considerations and community spirit were at the heart of several associations: as a contemporary noted 'many substantial farmers "who were not likely to require loans themselves, have nevertheless joined the associations in order to ensure their formation and to see that they receive a good start. By doing so they are playing their part in fostering the co-operative spirit among the farming community along the lines provided for"'.[xxi] The associations provided bridging finance previously obtainable from other firms in the pastoral network such as agents or finance companies, and testify to the complexity of the trade-financial network by the late 1930s. Rural credit associations established solved the free rider problem by assigning individuals to act as principals (four directors elected by the association to oversee local borrowers) although it is justifiable to think of the whole group as undertaking the principal role. As Belshaw noted 'the formation of credit associations and insistence on guarantees in respect of direct loans [provided] a strong incentive to independent and gratuitous supervision. Members of the credit associations [would] endeavour to safeguard their shareholdings'.[xxii]

The regional structure of cooperatives reduced the importance and difficulties information asymmetries posed in any pastoral economic relationship.[xxiii] Up to the 1930s the cooperative was co-located with stock and station agents as the leader of the pastoral network; the relative strength of each leader changing during the early twentieth century. Figure 2 illustrates the new polycentric network with two network leaders.

FIGURE 2

COOPERATIVE- & AGENT-LED POLYCENTRIC PASTORAL NETWORK

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As we have noted for agents generally, one of the important features of cooperatives was that they tended to operate within relatively confined geographical and social spaces, increasing the availability of information to lenders and ensuring low monitoring costs. The accuracy of information not only decreased the likelihood of moral hazard and free rider problems but allowed loan contracts to be state contingent as both parties to the loan were able to observe community-wide or individual farmer shocks and modify the terms of the contract given different contingencies. Such transactions were consistent with the norms of agricultural communities that derived utility from cooperative behaviour and stable community income and consumption.

V

PASTORAL NETWORKS IN THE PROVINCE OF OTAGO, 1860-1939

The extensive primary evidence relating to pastoral agents in the southerly province of Otago permits a more detailed examination of the nature of pastoral networks in this region. The example substantiates the formation of a network around local agents in the second half of the nineteenth century and the subsequent entry of farmer cooperatives. Commercial and manufacturing activity in Otago was centred around the port city of Dunedin which benefited from a large natural harbour. The Central Otago gold rush from 1863 accelerated economic progress and particularly stimulated agricultural output to supply the rapidly expanding population. While gold speculation was believed to have created 'deep-rooted distrust' in the local trading community, the wool staple attracted, 'excellent constituents'.[xxiv] The region, and Dunedin in particular, was dominated by Scottish emigrants many of whom were known to each other and retained strong links back to their country of origin.

Phase 1: Local Pastoral Agents

Local agent firms appeared from the 1860s. These included Wright Stephenson (1861), National Mortgage Association (NMA) (1864), Murray Roberts (1868), Donald Reid (1878), and Stronach Morris (1888). Dalgety and New Zealand Land & Mortgage Agency were national firms which operated in Dunedin but recognised the importance of emphasising and developing local ties. Although most firms entered the pastoral industry specialising in a particular service they soon diversified across the mutually supportive main areas of lending, consignment, and auctioneering.

Agent links within the local community were strong. Donald Reid was a successful farmer and politician from North Taieri. His son in law, Thomas Fergus, joined the partnership, was a director of several Dunedin companies, and was well known in Central Otago where he had been an engineer, railway contractor, and politician. NMA originated in the business of Dunedin entrepreneur George Gray Russell. Wright Stephenson had interlocking directorates with other local businesses such as the Dunedin Savings Bank and featured prominent farmers and breeders amongst its leading figures. The Stronach and Morris families had experience with local farming and land investment enterprises and boasted that 'the members of our firm have all been brought up in Dunedin and are well known to all classes of the community'.[xxv] They built on this endemic cohesiveness through policies designed to engineer trust. Each firm had offices located in Dunedin's central business district. Reids employed several former farming clients as branch managers while their agents on commission included a publican, bailiff, and bank manager.[xxvi] NMA adopted similar policies, including amongst their appointments the son of the local mayor at Gore.[xxvii] Links existed between agency firms. Donald Stronach had been the local manager for NZLMA for ten years before establishing his own firm. Auctioneers Edward Bowler and Jack Macarthur both moved to Reid after long service at Dalgety.[xxviii] By 1891 the agents had established a woolbrokers' association and were organising joint wool sales with a set scale of charges and settlement dates. Within a few years all of the major firms were members and the association's responsibilities had extended to representing its members in bankruptcy hearings and debt collection. Competition, however, remained strong in the areas of service, credit, and reputation.[xxix]

The origins of competency based leadership of pastoral networks are thus quite clear: many agents were experienced entrepreneurs, had good local connections, cooperated on some key issues with other firms, and, by providing a widening range of financial and trading services, quickly developed sectoral expertise. The growing size and complexity of the Otago networks emphasised the need for a coordinating leader.

By a more focussed study at the local level we can identify the firms involved in specific pastoral networks. What emerges is that each agent was at the centre of a particular network of 'friendly' firms providing different functional services to the pastoral sector. Members of this network transacted with each other whereever possible thereby emphasising the elements of trust and reputation. These links are particularly well documented for the case of NMA (Figure 3) which transacted its banking business with National Bank of New Zealand, its shipping with Union steamship, its insurance with National Insurance, its agricultural equipment with Reid & Gray, and its refrigeration with Longburn Freezing works. The links which drew together these particular firms were notably personal. Interlocking directorates were particularly important. NMA's general manager, G. R. Ritchie, was also chairman of directors of Union Steamship and National Insurance and sat on the Boards of several other closely linked local companies. NMA's chief accountant and secretary were also involved in similar interlocking directorates. Conversely, James Mills, chairman of Union Steamship, sat on the Board of NMA. These three firms had contiguous head offices in Water Street and, indeed, exchanged premises on several occasions. In smaller centres, office-sharing was not uncommon, National Insurance and NMA using the same offices at Timaru.[xxx] Sharing of travellers with insurers or agricultural suppliers was also quite common.[xxxi] The links with Longburn and Reid & Gray were reinforced with periodic equity investments in these firms. Correspondence provides further confirmation of a specific network, NMA writing to Union Steamship, 'you know you can rely upon us always working in with you to our mutual advantage'.[xxxii] Likewise, the NMA looked to the NBNZ to influence farmers banking with them to send their pastoral business to NMA in the same way as BNZ and BNSW did for their friendly agents.[xxxiii]

FIGURE 3

OTAGO AGENT-LED MONOCENTRIC PASTORAL NETWORK BY THE 1880s

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These high levels of interconnection with other members of the network helped the agents to coordinate policies and arbitrate any potential areas of disagreement between firms, for example in setting freight rates and sailing schedules for wool shipments. In this way network loyalty could be maintained, NMA stressing the maxim, 'never to change business relationships unless compelled to do so', aware of all the benefits of long term transacting in terms of trust and reputation.[xxxiv] Nonetheless, the networks sometimes came under pressure. The pastoral agent's closest connection and first loyalty was to the farmer as the source of most of his income and most extensive trading, financial, and informational transactions. If the agent was not satisfied with the shipping terms being offered by the network company it would threaten to look to another firm from outside the network even though it risked losing long term benefits and agency commissions. For example, NMA fostered competition in the shipment of frozen meat in the 1880s between SSA and White Star to try and prevent either company gaining a monopoly of this valuable new trade.[xxxv]

Phase 2: National Agents and a Local Cooperative

Towards the end of the nineteenth century the locus of economic activity in New Zealand was shifting northwards to Wellington and Auckland which were more centrally located and could more easily handle large ocean-going steamships travelling both east and west. Moreover, the Wairarapa region close to Wellington was developing into an important centre of dairying. Otago agents responded to these changes by an expansion in size, incorporation, extension of their operations northwards, and the centralisation of decision-making, mostly in Wellington. Wright Stephenson incorporated in 1906 and expanded northwards, establishing a Wellington Head Office by 1919 which was viewed as, 'a more convenient place to centre our accounts than Dunedin'.[xxxvi] At the time its decentralised structure, with each branch being operated with considerable autonomy, was replaced by centralisation from Wellington.[xxxvii] Murray Roberts also shifted its Head Office to Wellington in 1910. NMA and Donald Reid, however, remained largely regional firms.

In Otago, as elsewhere, the distancing of the major pastoral agents from local communities contributed to the growth of farmer cooperatives as the alternative point of a polycentric network. Although the region was not a major dairying area and thus cooperative factories were less common, the Otago Farmers' Cooperative (OFC) was established in Dunedin in 1895. It took the appearance of the agency firms a decade or two previously in being small and localised where social and kinship elements were carefully fostered: rural branches were considered the 'eyes and ears' of the firm and branch managers were preferably married, 'for social reasons, and because of the great assistance possible'.[xxxviii] Its relationships with some network members differed from agents like NMA, however. In particular, its relationship with its farmers was an equity based one as it was owned by farmer shareholders and therefore responsibility for it fell upon the local rural community and the bonds of trust were especially strong. The improvement in monitoring which this also implied can be seen by the example of the firm instructing their solicitor to search a particular will since they had 'heard' that an indebted client may have been a beneficiary.[xxxix]

While its local social integration very strong, OFC's ability to provide competent leadership was somewhat restrained. It was formed with a view to reducing agent commission rates for the sale and consignment of produce. OFC affiliated with the Farmers' Cooperative Wholesale Federation, a national organisation, by contributing the equivalent of two per cent of its own paid up capital, to obtain supplies at discounted prices. Within a few years it was financing farmers in relation to short term produce credit and, in some cases, the provision of stock mortgages. Thus, its network had extended from trade to some trade-finance features. Its smallness, however, meant that some transactions, including most property sales, occurred directly between agent and farmer. Its limited capital base meant that finance was sometimes arranged directly with mortgagees although sometimes mediated by OFC. Moreover, in an increasingly competitive industry with agents drawing upon national and international sources of finance, information, and entrepreneurship, strong emphasis on the local network put OFC at a disadvantage. Poor quality entrepreneurship helps explain their problems throughout the 1920s and the heavy write down of their shares in the following decade. Thus, whilst its social integration was a powerful force generating trust, governance, and reputational benefits, its ability to provide competent leadership was restrained by its limited service diversification and geographic reach. The limited size of the network in which it operated also meant smaller savings in communication costs.

VI

CONCLUSIONS

In a recent study of business networks Casson has shown how a network based upon trade can evolve into a more widely-embracing trade and financial network as technology-driven expansions in scale cause individually financed small production units to be supplanted by joint financing of a single large unit; the independent financiers are thus brought together.[xl] There were few scale economies emerging in New Zealand pastoralism where most production units remained small. However, we are able to provide an historically based variation on Casson's hypothesised network by showing that trade and finance can exist together as part of a network from the outset. Indeed, the trade-finance nexus provided critical synergies in the formation and development of New Zealand pastoral networks which agent firms recognised from very early on: regular trading transactions between agent and farmer generated trust, reputational effects, and mutual information exchange vital for successful lending, while finance bound the two parties into long term relations which would generate trade commissions. This explains why lending at zero profit or below was not uncommon. In our intermediated network, moreover, agents soon realised the benefits of cooperation with each other in trading procedures and, perhaps to a lesser degree, loan policies. As the trade-finance network expanded in size and complexity a well-placed and competent leader could mitigate rising communication costs and engineer higher levels of trust. We have seen how agents and cooperatives took on this role, sometimes in competition with each other, and with differing degrees of success. The trade-finance network was indeed a powerful organisational form fostering the rapid expansion of New Zealand farm production and export.

FIGURE 1

AGENT-LED MONOCENTRIC PASTORAL NETWORK

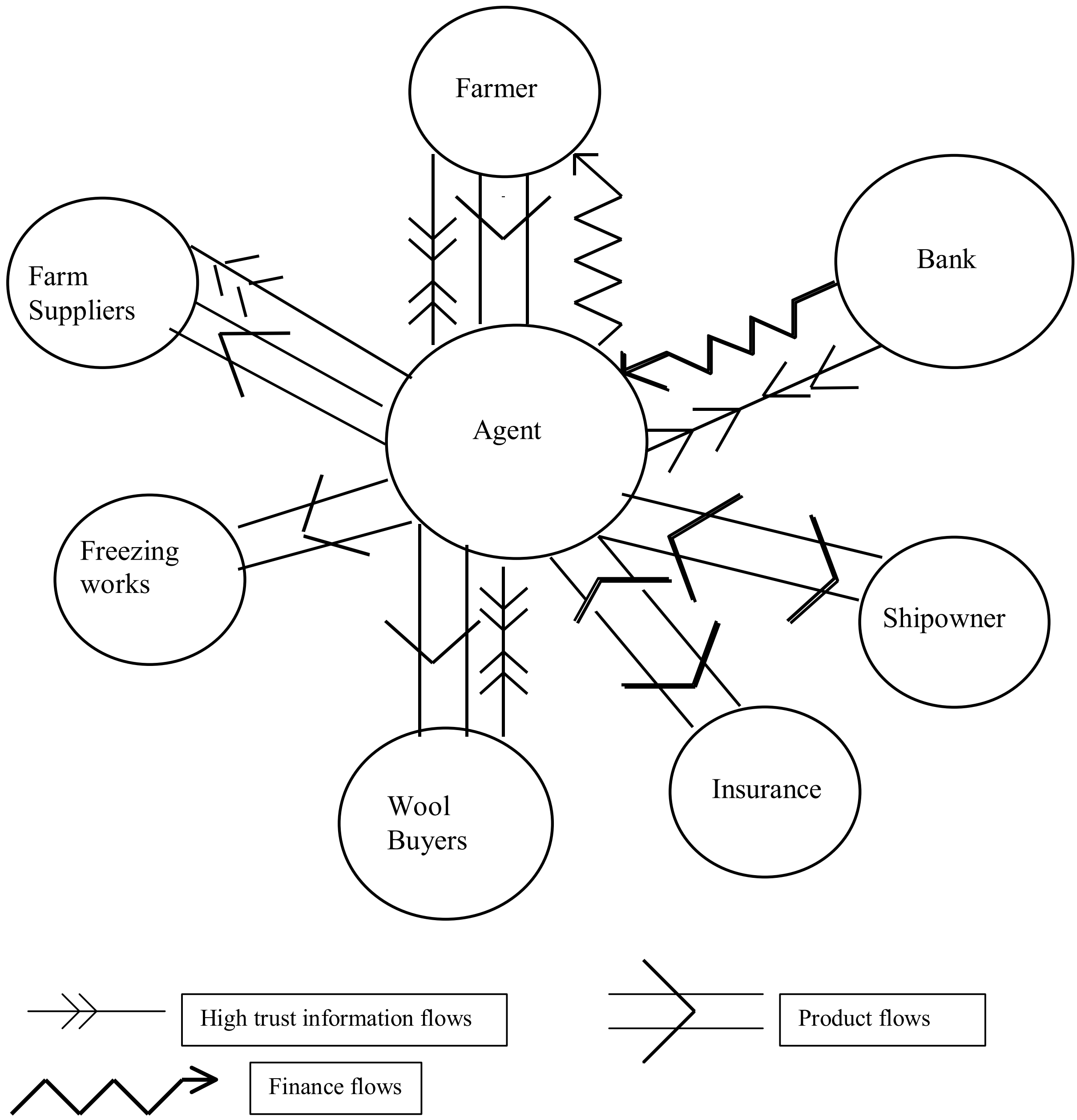


FIGURE 2

COOPERATIVE- & AGENT-LED POLYCENTRIC PASTORAL NETWORK

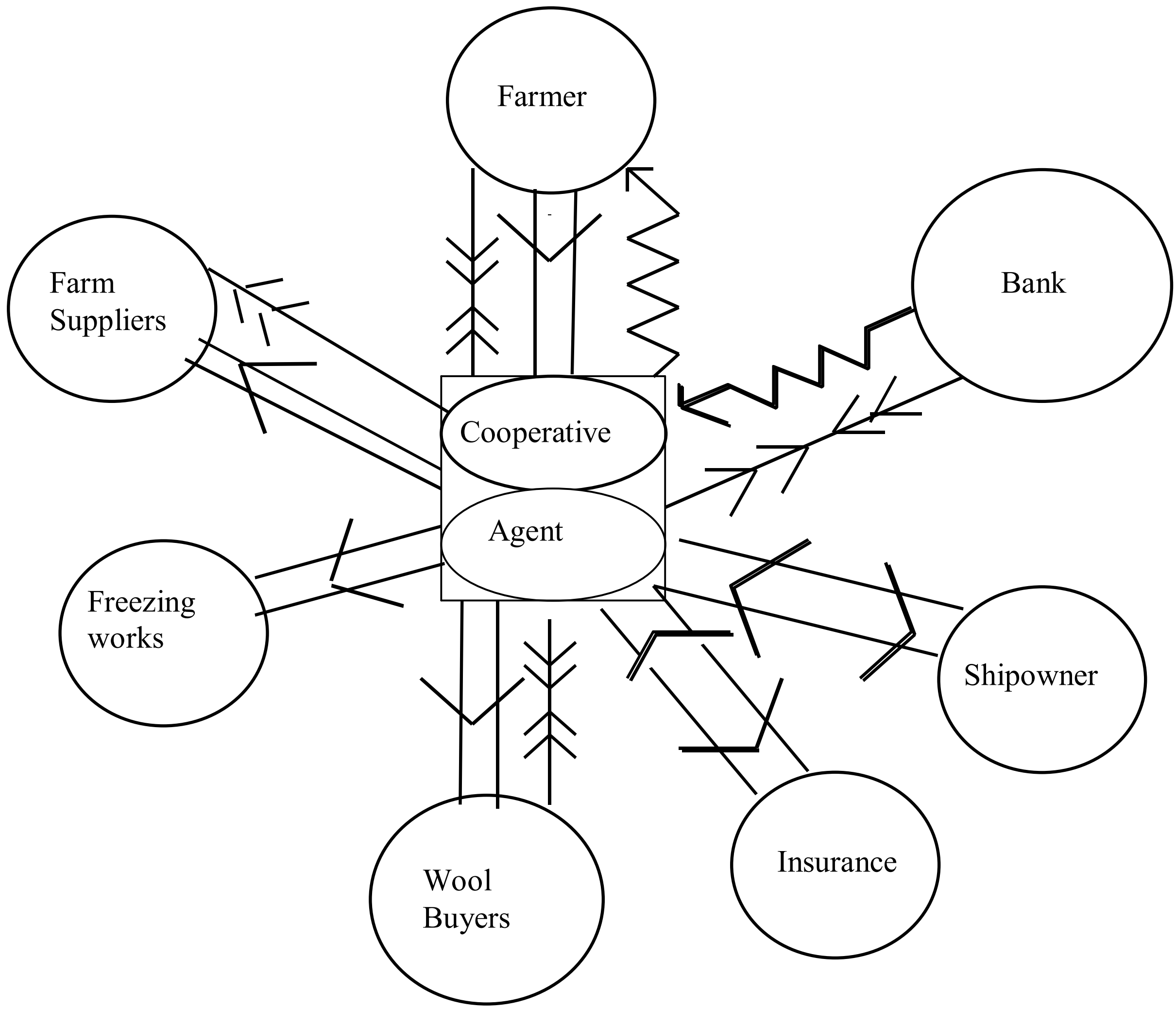
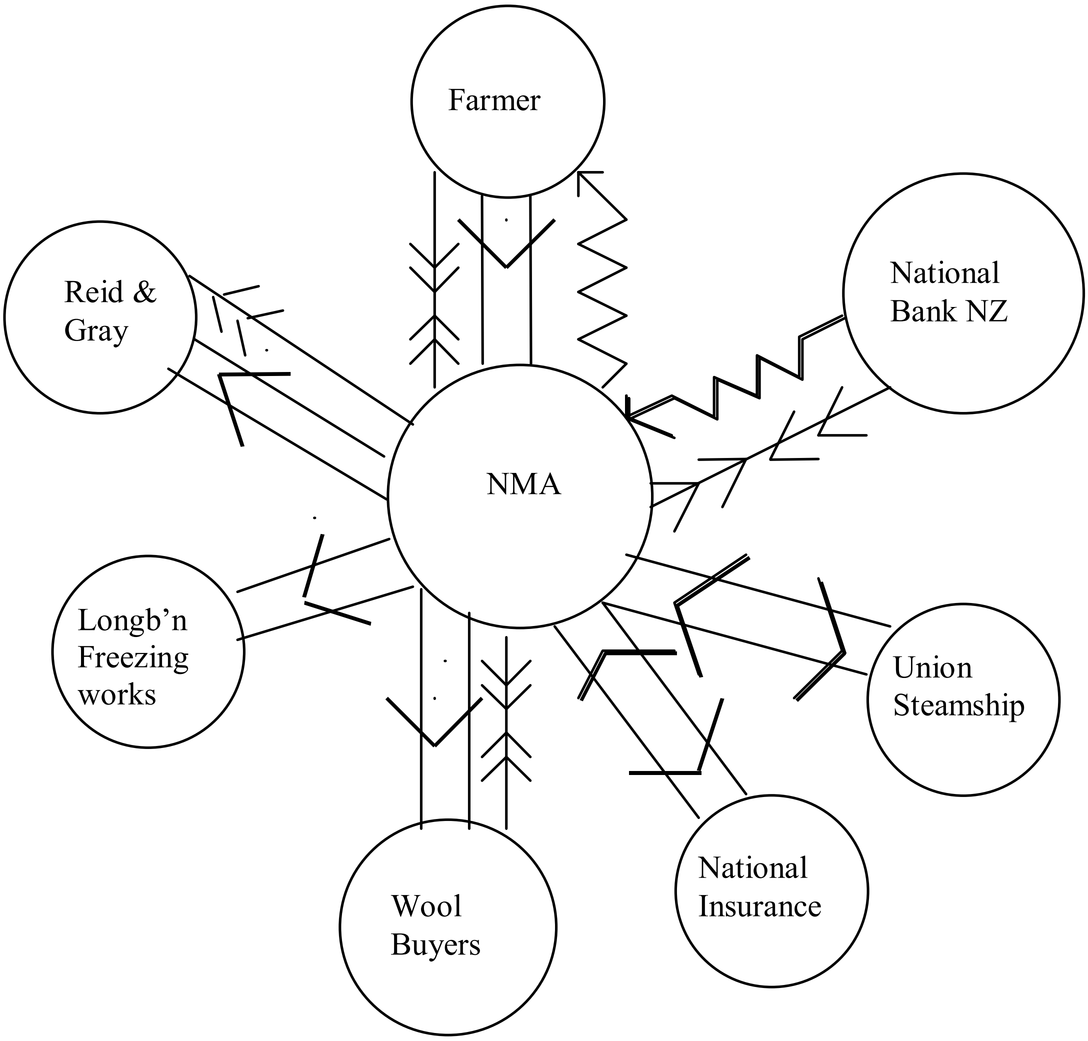


FIGURE 3

OTAGO AGENT-LED MONOCENTRIC PASTORAL NETWORK BY THE 1880s



NOTES

i. We are grateful to James Bond, Susan Granger, and Andrew Parnell for research assistance funded by an ARC small grant. Professor Forbes Munro and the participants at the Glasgow session of 'Entrepreneurs, Networks, and Business Culture' kindly provided helpful comments on some of the ideas contained in this paper.. For earlier work see S. Ville and G. Fleming, 'From Kinship to Relations Economic? The Development of Pastoral Networks in Australasia' in A. Slaven and J. F. Munro (eds) *Entrepreneurs, Networks, and Business Culture* (1998).

ii. We elaborate upon the description of trade and financial networks found in M. Casson, *Information and Organisation: A New Perspective on the Theory of the Firm* (Oxford, 1997), chapter 4.

iii. Powell, W. W. (1990) 'Neither market nor hierarchy: Network forms of organisation', *Research in Organisational Behaviour*, 12, p. 303.

iv. Alvesson, M. and Lindkvist, L. (1993) 'Transaction costs, clans and corporate culture', *Journal of Management Studies*, 30 (3).

v. Powell, 'Neither market nor hierarchy', pp. 301-4, 323; Ouchi, W. G. (1980) 'Markets, bureaucracy and clans', *Administrative Science Quarterly*, 25., p. 137.

vi. Powell, 'Neither market nor hierarchy', pp. 322-3.

vii. Powell, 'Neither market nor hierarchy', pp. 303-5, 325; Eccles, R. G. and D. B. Cranes, (1987) 'Managing through networks in investment banking', *California Management Review*, 30 (1), pp. 177-81; Piore, M. J. and C. F. Sabel (1984) *The Second Industrial Divide: Possibilities for Prosperity,* New York.

viii. M. Casson, *Information and Organisation: A New Perspective on the Theory of the Firm* (Oxford, 1997); 'Institutional Economics and Business History: A Way Forward?" *Business History*, 39 (4), pp. 151-71.

ix. Casson, *Information and Organization*, pp. 131-3.

x. Ibid, pp. 139-41.

xi. J.H. Angus, *Donald Reid Otago Farmers Ltd: A History of Service to the Farming Community of Otago* (Dunedin, 1978), p. 83.

xii. Angus, *Reid*, p. 85.

xiii. Agents also attracted clients by assuming some responsibility for community-wide matters including acting as legal and political advocate, and providing finance for infrastructure improvements such as road, railway, and port development.

xiv. HA, NMA, UN 28, Box 10, Special London letterbook, 26/6/1923 and AGM of 6/7/1920.

xv. T. Brooking, 'Superficial similarities: Why did farmer protests assume such different forms in late nineteenth century New Zealand and the USA?' in J. Phillips (ed) *New Worlds? The Comparative History of New Zealand and the United States* (Wellington, 1989), pp. 113-55. This point was also made by F.B. Stephens, 'Co-operation in New Zealand', in H. Belshaw, D. Williams and F. Stephens (eds) *Agricultural Organisation in New Zealand* (Melbourne, 1936), pp. 745-63. Nevertheless, in some regions (for example, Otago in the 1880s) stock and station agents and grain merchants provided scapegoats for an outburst of anti-middleman sentiment; see Brooking, 'Superficial similarities', pp. 121-2, Stephens, 'Co-operation', p. 745.

xvi. By 1900 42% of dairy factories were cooperatives. For a list of cooperative dairy companies see A.H. Ward, *A Command of Cooperatives* (New Zealand Dairy Board, 1975), pp. 236-40.

xvii. Stephens 'Co-operation', p. 749; see also H. Belshaw, *The Provision of Credit with Special Reference to Agriculture* (Cambridge, 1931), pp. 272, 276.

xviii. On the New Zealand Dairy Finance Company see H. Belshaw, 'The financing of land purchases and of farming operations', in Belshaw, Williams and Stephens, *Agricultural Organisation*, pp. 168-72, and Stephens, 'Cooperation', pp. 749-55.

xix. The economic success of some of these producer boards is examined in F. Capie, 'The First Export Monopoly Control Board', *Journal of Agricultural Economics* (1978), pp. 133-41.

xx. See also Belshaw, 'Financing of land', pp. 162-67, and *Provision of credit*, pp. 264-84.

xxi. Belshaw, *Provision of credit*, p. 273.

xxii. Belshaw, *Provision of credit*, p. 279.

xxiii. The informational advantages enjoyed by local cooperatives was noted by several contemporary commentators; see, for example, Belshaw, *Provision of credit*, pp. 273, 279; 'Financing of land purchases', p. 171.

xxiv. UN 28, letterbooks of JM Ritchie, 1865.

xxv. Angus, *Reid,* pp. 15, 37, 57; J. C. Irving, *A Century's Challenge. Wright Stephenson and Co. Ltd, 1861-1961* (Wellington, 1961) p. 18; Hocken Archives, University of Otago (hereafter HA/UO), Stronach Morris (hereafter SM) UN 14 letterbooks, 15 April, 1911; Fletcher Challenge Archives Centre (hereafter FCAC), Wright Stephenson (hereafter WS) 0001, Annual Report, 1920.

xxvi. Angus, *Reid,* pp. 31, 89, 91-2.

xxvii. G. Parry, *NMA. The Story of the First Hundred Years of the National Mortgage and Agency Company of New Zealand, 1864-1964* (Wellington, 1964), pp. 67, 73.

xxviii. HA/UO, SM, UN 25/68/2, 'Stronach Morris and Co. Ltd', p. 1; Angus, *Reid,* pp. 48-9, 69, 82, 124.

xxix. Angus, *Reid,* pp. 28, 41-2.

xxx. UN 28. GM outward letters, 1946.

xxxi. Stronach Morris and sheep dip producer, Ness and Company, entered into a joint arrangement to hire a traveller who would seek to sell the dip and acquire new business for Stronach Morris simultaneously. Stronach Morris was a small firm and this provided a useful means to reduce their costs. HA/UO, SM, UN 14, letterbooks, 25/10/97.

xxxii. UN28, GM outward letters, 1948.

xxxiii. UN28, GM outward letters, 1926.

xxxiv. UN28, GM outward letters, 1924.

xxxv. Parry, *NMA*, pp. 103, 110-12.

xxxvi. FCAC, WS 0001, annual reports.

xxxvii. FCAC, WS 0585. Report by W. D. Hunt to the Management Committee of Wright Stephenson, 1906.

xxxviii. HA/UO, Otago Farmers' Cooperative (hereafter OFC), Board Minutes, vol. 6, September 1930.

xxxix. HA/UO, OFC Board Minutes, vol. 8, February 1935.

xl. Casson, *Information and Organization*, pp. 131-3.