The Economics of Cities of Finance

Cities of finance – usually called *financial centres* in economics texts – are urban locations specialising in the provision of financial services. From an economic perspective, financial centres are analogous to industries and measurements are made of the scale and scope of their activities and their standing relative to other centres. Like other industries, financial centres are composed of financial firms and the fortunes of these individual undertakings in aggregate determine the fortune of the whole. The firms operate in financial markets and the range of activities conducted in a financial centre depends on the particular set of financial markets present. The function of financial markets is the intermediation of financial flows, that is the matching of supplies of funds and demand for funds, and thus financial intermediation is the purpose of financial centres.[1]

Financial centres – comparative studies

There are many case studies of individual financial centres. Comparative studies, examining a number of centres and formulating general or conceptual propositions thereupon, are a much smaller genre.[2] Such studies are of two sorts. Some use qualitative histories of a variety of financial centres as their evidence. Others are quantitative studies that investigate the nature and functioning of financial centres using statistical data, both historical and modern. Of course, many case studies of individual financial centres make no attempt to locate their subjects in a general context or to address conceptual issues.

Financial centres occupy a key place in the grand schematic model of the evolution of human economic and social organisation formulated by N.S.B. Gras, an American economic historian of the 1920s.[3] Using evidence from ancient times to the early twentieth century, Gras proposes that economies evolve through a series of stages, of which the most sophisticated stage is the metropolis. The ultimate stage of development of a metropolis is a financial centre. Although purporting to

[1] Scholey (1987), 'Essential Features of International Financial Centres', 12.
[2] The studies discussed in this essay are restricted to publications in the English language.
[3] Gras (1922), *An Introduction to Economic History*.

be a universal paradigm, Gras's model is derived from British and American historical example and based on London and New York.

The most important of the qualitative comparative historical studies, and the work that has provided the conceptual context to many writings on cities of finance, is Charles Kindleberger's *The Formation of Financial Centers: A Study in Comparative Economic History,* published in 1974. This comprises a series of historical case studies of London, Paris, Berlin, Frankfurt, Italy, Switzerland, Canada and New York, focusing mainly on the role of the banking sector. Kindleberger, an eminent economist at the Massachusetts Institute of Technology, stresses the operation of powerful economies of scale and centralisation in financial markets, resulting in the emergence of a single pre-eminent domestic financial centre in each country. The same forces, he argues, led to the development of a hierarchy of international financial centres that culminated in a single pre-eminent world centre – London prior to 1914; then New York; and since the 1960s the international euromarket.

Hong Kong, Singapore, Shanghai, Beirut, Bahrain and other international financial centres of Asia, Australasia and the Middle East, cities of finance ignored by Kindleberger, are the subject of an essay by business historian Geoffrey Jones, who also makes conceptual generalisations on the basis of his comparative historical research.[4] Writing almost two decades after Kindleberger, he formulates a clear typology of the hierarchy of financial centres, discussed below, and investigates the importance of reputation, communications and willingness to host foreign firms as critical factors in the success of financial centres.

The most ambitious quantitative study of cities of finance is that of economist Howard C. Reed who undertook an empirical statistical investigation encompassing 76 cities at five-year intervals over the years 1900 – 1975 (and four more in 1980) using 9 variables measuring banking and financial activity.[5] He employs multivariate techniques to explore the hierarchical relationships amongst financial centres and the institutional links between them. Quantitative studies of financial centres have also been conducted by Goldberg, Helsley and Levy of the Faculty of Commerce and Business Administration, University of British Columbia, using 1984 data on financial centres in 42 countries and on 31 US cities.[6] The models tested by Goldberg, Helsley and Levy explain an impressive amount of the variation in the size of financial sectors between countries, regions and cities. Their results suggest that the same basic economic forces promote the development of financial centres at each geographical level.

[4] Jones (1992), 'International Financial Centres in Asia, the Middle East and Australia'. Tokyo is omitted from Jones's essay. For a discussion of the development of Tokyo see Reed (1980), 'The Ascent of Tokyo as an International Financial Center'.

[5] Reed (1981), *The Preeminence of International Centers.*

[6] Goldberg et al (1988), 'On the Development of International Financial Centers'; Goldberg et al (1989), 'The Location of International Financial Activity: An Interregional Analysis'.

Hierarchies and typologies

The existence of a hierarchy amongst financial centres is a concept common to the studies discussed above and many others. Attempting to define the hierarchy, writers on the subject have suggested a variety of typologies of financial centres. Three approaches have been used, which may be characterised as *functional, geographical* and *evolutionary*, though in practice the categories overlap.[7] Foremost amongst the exponents of the *functional* approach is Reed, who presents an elaborate five-tier typology of international financial centres derived from his statistical investigations: (1) *host international financial centres*; (2) *international financial centres*; (3) *supranational financial centres of the first order*; (4) *supranational financial centres of the second order*; and (5) *supranational financial centres*.[8] He identifies links between financial centres at all levels and usefully suggests that the concept of *network* should complement that of *hierarchy* in the analysis of financial centres.

Jones prefers 'a simpler typology' of international financial centres based on *geographical* ties: (1) *sub-regional financial centres*; (2) *regional financial centres*; and (3) *global financial centres*.[9] *Sub-regional financial centres* focus on bilateral trade between the centre's own economy other economies. *Regional financial centres* supply financial services to an entire region (such as Europe or Asia). *Global financial centres* furnish a broad range of financial services to the entire world.

Simpler still amongst *geographical* models is economist Harry Johnson's dichotomous division between: (1) *regional financial centres;* and (2) *international financial centres.*[10] Although often mentioned in writings on international financial centres, Johnson's typology, formulated for the purposes of a report on Panama's development prospects, is rather crude and has been superseded.

The Economists Advisory Group, a London-based economics consultancy, propose an *evolutionary* typology: (1) *classical centres*; and (2) *modern financial centres.*[11] The distinction focuses on the currency denomination of international transactions, the activities of *classical centres* being conducted in their domestic currency, for instance sterling in nineteenth century London, while *modern financial centres* are euromarket based. Gorositiaga, a Panamanian economist who writes from a neo-Marxist perspective, also favours terms embodying *evolutionary* concepts: (1)*traditional international financial centres;* and (2) *new international financial centres.*[12] The former term denotes the established financial metropolises of advanced capitalist countries (such as London and New York). The latter category includes all financial centres on the periphery of the capitalist system which, according to Gorositiaga, 'lack financial autonomy and are normally intermediate

[7] Jao's discussion of typologies is a useful starting point. Jao (1993), 'Hong Kong as an International Financial Centre', 39 – 43.
[8] Reed (1981), *The Preeminence of International Centers*, 59 – 60.
[9] Jones (1992), 'International Financial Centres in Asia, the Middle East and Australia', 405.
[10] Johnson (1976), 'Panama as a Regional Financial Center', 261 – 62.
[11] Economists Advisory Group (1984), *City 2000: The Future of London as an International Financial Centre*, 7 – 14.
[12] Gorositiaga (1984), *The Role of the International Financial Centres in Underdeveloped Countries.*

regional centres, geographical extensions of the traditional centres operating in different time zones'.

Dufey and Giddy's typology is a hybrid of the *evolutionary* and *functional* approaches, classifying international financial centres into three major types according to their stage of development and the services provided: (1) *traditional centres*; (2) *financial entrepots*; and (3) *offshore banking centres.*[13] *Traditional centres* serve as net creditors to the world through bank lending or the bond market – the authors have in mind London in the nineteenth century and New York after the Second World War. *Financial entrepots* provide intermediation of international financial flows to both domestic and foreign residents, though without being net capital exporters. London's role as a euromarket centre since the late 1950s is the basis of this category. *Offshore banking centres* undertake financial intermediation primarily for non-resident borrowers and depositors, and typically the domestic financial sector is insulated from the offshore sector by controls or restrictions.

Offshore financial centres have attracted considerable interest from economists who have produced a number of typologies specific to them. The most elaborate is that of World Bank economist Yoon S. Park, who categorises them as: (1) *primary centres,* whose sources and uses of funds are world-wide; (2) *booking centres,* which are locations for recording transactions but where little actual banking or financial activity is carried out; (3) *funding centres,* which play the role of inward financial intermediation, channelling offshore funds from abroad towards local uses; and (4) *collection centres,* that channel excess domestic funds to external users.[14] Ian McCarthy, an International Monetary Fund economist, more simply distinguishes between: (1) *paper centres,* which are identical to *booking centres* (see above); and (2) *functional centres*, where genuine financial transactions take place.[15] Economist Y.C. Jao, the leading authority on the development of Hong Kong as a financial centre, differentiates: (1) *segregated centres,* where the authorities make clear distinctions between the offshore and domestic financial systems, or between domestic currency-denominated and foreign currency-denominated business; and (2) *integrated centres,* where there are no artificial barriers.[16]

Finally, there are authors who leave it up to the reader to guess the significance of their terminology, of which an egregious example is the book by McGahey, Malloy, Kazanas, Jacobs, the staff of the Governor of New York's Advisory Panel on Financial Services, whose plethora of usages includes: *regional financial centers; regional domestic financial centers*; *newer regional financial centers; secondary financial centers; traditional financial centers*; *heterogeneous financial centers*; *mature financial centers; new financial centers*; *international financial centers*; *major financial centers*; *world financial centers.*[17]

The typology suggested by Roberts, and used in the rest of this text, follows none

[13] Dufey and Giddy (1978), 'Financial Centers and External Financial Markets'.
[14] Park (1982), 'The Economics of Offshore Financial Centers'.
[15] McCarthy (1979), 'Offshore Banking Centres: Benefits and Costs'.
[16] Jao (1980), 'Hong Kong as a Regional Financial Centre'.
[17] McGahey etc (1990), *Financial Services, Financial Centers.*

of the above models, though sharing common elements with many of them, particularly Jones:[18]

1. *Domestic Financial Centres* – serving national financial requirements (or an economic region in the US) which may be at the apex of a hierarchy of provincial financial centres.
2. *Regional Financial Centres* – serving a regional clientele (a region in this context being an international entity such as Europe, not a sub-national entity such as Brittany or Westphalia).
3. *Offshore Financial Centres* – financial entrepots which intermediate international flows that have little connection with the financial system of the country in which they are located.
4. *Global Financial Centres* – serving a world-wide clientele.

Financial firms and financial centres

The development of financial centres is substantially determined by the behaviour of financial firms, notably their location decisions. It is not immediately obvious why the providers of financial services concentrate in a few locations, rather than being evenly spread throughout economies. To explain this phenomenon it is necessary to explore the location decisions of individual financial firms and factors influencing their success or failure in particular locations. Industrial location theory and the theory of the firm provide an analytical framework.[19] Like other firms, *demand* for their output is a crucial consideration as is the *supply* of factors of production. But the location of financial firms is also affected by powerful positive *external economies of scale* and *economies of agglomeration*. These exert a strong centralising force, attracting firms to major centres rather than lesser centres. Moreover, the actions of governments and regulatory systems are significant factors.

On the *demand-side*, it is useful to draw a distinction between retail and wholesale activities. For retail financial activities, such as commercial banking and investment advisory services, access to clients is of premium importance counteracting centralising pressures and bolstering the position of lesser financial centres. Wholesale financial transactions are large-scale and are conducted between a relatively restricted number of specialist financial firms. Other things being equal, they tend to gravitate to larger and more efficient financial markets. Similar retail/wholesale considerations apply to secondary and primary market activities. Since the introduction of the international telegraph in the 1860s, time zone compatibility with other financial centres has been a significant factor affecting the conduct of business by firms specialising in international transactions.

[18] Roberts (1994), 'Introduction', *International Financial Centres: Concepts, Development and Dynamics.*
[19] Davis (1990), 'International Financial Centres – an industrial analysis'; Bonetti and Cobham (1992), 'Financial Markets and the City of London', 18 – 20.

On the *supply-side* the principal factors are: the cost of licences or membership of markets; the availability and cost of appropriately skilled personnel; the availability of suitable office premises; and access to necessary equipment and machinery. Another consideration is the supply and cost of funds, which may be affected by reserve requirements and other regulations, taxes, such as stamp duties and withholding taxes, and the efficiency of payments and settlement systems. Regulatory impediments that distort or prevent competition, for instance the ban on the joint conduct of commercial banking and investment banking in the US and Japan, may encourage location or representation in other centres.

Once established financial firms usually have a strong commitment to financial centres since they often have substantial *sunk costs* (irrecoverable expenditures and investments). A loyal and skilled workforce, for instance, is difficult and costly to replicate in a new location. So are intangible assets, particularly a network of relationships with other trustworthy firms and a sound client-base.[20] Reputations take years or even decades to build-up and some aspects may be virtually irreplaceable: for instance, for more than a century-and-a-half the mere address New Court has been a shorthand for N.M. Rothschild & Co., implying stability and soundness which are highly-prized attributes in investment banking and of considerable commercial value. Naturally, the effect of substantial sunk costs is to make financial firms reluctant to relocate unless absolutely necessary.

Economies of scale and economies of agglomeration

Economies of scale may be divided into *internal* economies and *external* economies. Economies of agglomeration are a related concept. *Internal economies of scale* accrue to firms when there is a positive relationship between the scale of activity and efficiency, a concept that is widely known. Internal economies are generally less important in the service sector than in manufacturing. However, financial firms may find that there are creative benefits in bringing together staff who conduct business in different markets and advantages in the centralisation of decision-making. There may also be considerable *economies of scope* deriving from the supply of related products to clients or from the simultaneous satisfaction of related demands.

External economies of scale are perhaps rather less familiar to non-economists. They accrue to firms when a positive relationship exists between efficiency and the size of the *industry* in which they operate. An *industry* in the current context is a financial centre. There are many reasons why a larger financial centre may provide a more advantageous operating environment than a smaller centre. The quality of financial markets, that is their liquidity and efficiency, is strongly correlated with the scale of operations. These are highly desirable features, meaning lower dealing

[20] The significance of contacts in New York and London is emphasised, respectively, in the studies by Robbins and Terleckji (1960), *Money Metropolis: a Locational Study of Financial Activities in the New York region*, and Dunning and Morgan (1971), *An Economic Study of the City of London.*

costs and diminished likelihood of market failure. The larger number and greater range of activities of other financial firms produces a more creative environment that may generate new business opportunities and demand from other practitioners. It may also stimulate competition, perhaps promoting efficiency and probably engendering keener pricing, which will persuade clients to place their business with firms based there.

Economies of agglomeration accrue to financial firms from the presence of complementary concentrations of activities in financial centres. Merchants and commodity markets, in particular, were vital sources of commercial and financial information. The ready availability of the services of lawyers, accountants and printers, and in more recent times computer specialists and public relations consultants, enhances the competitiveness of financial firms and the attraction of location in a particular centre. It was no accident that in London the newspaper industry, whose lifeblood is information, was traditionally located adjacent to the financial services district.

Above all else, the crucial factor for success for financial firms is *information.* The quantity and quality of information is vital for the competitiveness of financial firms and, other things being equal, new firms will locate in financial centres with superior information flows, while centres with inferior information flows will lose financial firms through failure due to uncompetitiveness or the migration of firms to other centres.

Superior access to up-to-date and accurate information has traditionally been the most significant specific external economy of scale for financial firms. In the early modern era information vital to financial firms was largely part-and-parcel of trade transactions and it was the towns that hosted fairs and markets, and particularly ports, that became financial centres. Amsterdam emerged as Europe's leading international financial centre in the seventeenth century because of its role as a major port and the hub of a network of regional and inter-continental trade flows. As a result it became Europe's foremost 'information exchange', an advantage that was enhanced by important innovations in the sophisticated analysis and application of information.[21] In the eighteenth century Amsterdam was overtaken as a port by London, but by virtue of its established role as the focal point for information flows and the high reputation and competitiveness of its financial markets and financial firms it continued to be the pre-eminent international financial centre. It was the French military occupation of 1795 that undermined Amsterdam's position and allowed London's emergence as unequivocally the leading international financial centre.

The modern era of communications technology began in the 1840s with the commercial application of the electric telegraph, one of whose earliest usages was the conveyance of financial information.[22] The telegraph allowed almost instanta-

[21] Smith (1984), 'The Function of Commercial Centers in the Modernisation of European Capitalism: Amsterdam as an Information Exchange in the Seventeenth Century'.
[22] Hall and Preston (1988), *The Carrier Wave*, 37–54; Michie, *London and New York Stock Exchanges 1850–1914*.

neous contact effecting dramatic reductions in time-delays. For instance, the opening of telegraphic communications between the New York and New Orleans markets in 1848 cut communication time from a minimum of four days, while the trans-Atlantic cable that linked London and New York in 1866 eliminated a time-delay of three weeks.[23] Financial firms were also in the forefront of users of the telephone as soon as long-distance calls became technically possible from the late 1880s.[24] The impact of these innovations in communications technology upon financial centres remains to be properly researched, but most probably they boosted the centralisation of financial activity in major centres at the expense of lesser centres by advantaging firms in centres with superior communications over others and because customers preferred to conduct business in their larger and more liquid markets.

The logical conclusion of the dynamic of external economies of scale and economies of agglomeration is that all activity should be concentrated in a single financial centre (or perhaps a set of centres at the domestic, regional and global levels). Indeed, Kindleberger suggests that there has been a single dominant financial centre at the global level since the early nineteenth century.[25] In fact, the historical pattern has been less clear-cut and there are reasons why the centralising dynamic does not proceed to its logical end (some of which are mentioned by Kindleberger).[26] Centralisation generates dis-economies such as crowding and congestion. It can also raise costs through competitive bidding for scarce resources such as skilled personnel or prime locations. For retail financial services centralisation may even *increase* information costs because of the distance from clients, and lesser centres, whose firms are more closely in touch with clients, may enjoy a competitive advantage. In recent decades computer and electronic communications technology have bolstered lesser centres by making financial information universally available.[27] Amsterdam's success as a financial centre in the 1980s has been partly ascribed to attempts by international banks to compete by decentralising.[28] Finally, in the real world political and regulatory barriers and incentives exist that distort the free operation of economic forces.

Politics and regulation

The actions of governments, of institutions such as central banks, and of regulatory bodies, have had highly significant effects on the development of financial

[23] Garbade & Silber (1978), 'Technology, Communication and the Performance of Financial Markets: 1840 – 1975', 820 – 21.
[24] Feuerstein, 'The Early History of the Telephone', 420.
[25] Kindleberger (1974), *The Formation of Financial Centers: A Study in Comparative Economic History*, 4.
[26] Ibid, 10 – 11.
[27] O'Brien (1992), *Global Financial Integration: The End of Geography*, 74 – 76.
[28] Ter Hart & Piersma (1990), 'Direct Representation in International Financial Markets: The Case of Foreign Banks in Amsterdam'.

centres often outweighing the economic factors discussed above. Many examples can be found of political support for financial centres. For instance, London's rise as an international financial centre owed much to public policy, although this was not the explicit purpose of government action. In the seventeenth and eighteenth centuries British military action against the Dutch and other powers promoted London's growth as a port while the prodigious borrowing requirements of the state was the bedrock of the development of a sophisticated capital market.[29] In the nineteenth century one of the keys to London's pre-eminence as a global financial centre was Britain's balanced budgets and unwavering commitment to the gold standard, making sterling the foremost international currency. There were also positive contributions from the Bank of England, a quasi-public body pioneering the role of lender of last resort, benignly light tax imposts and the absence of cumbersome regulatory interference.

Following the outbreak of the First World War, the Federal Reserve Bank of New York actively fostered the development of New York as an international financial centre.[30] In the 1920s the Banque de France took similar initiatives.[31] The Bank of England's support for the restoration of sterling to the gold standard sooner rather than later in the early 1920s was motivated by considerations about London's competitive position as an international financial centre.[32] A generation later, the Bank of England played a significant role in facilitating and encouraging the development of the euromarkets in London in the 1950s and 1960s, the vital ingredient of London's re-emergence as a global financial centre.[33] Since the 1960s governments have promoted financial centre status as an economic development strategy. The first to do so deliberately and vigorously was Singapore following independence in 1965.[34] In subsequent years, Luxembourg, Jersey, Panama and Bahrain followed suit and the governments of Canada, Australia, and doubtless other states, investigated the possibility of promoting their domestic financial centres as offshore financial centres. The legislation authorising the establishment of International Banking Facilities in the US in 1981 was a political response to such initiatives intended to win back to US financial centres international banking business that had been driven offshore by earlier US government measures.

Politics and regulation have also curtailed or inhibited the operations of financial centres. Britain's departure from the gold standard in 1931 undermined London's standing as an international financial centre.[35] Likewise the various controls introduced by US administrations in the 1960s and early 1970s to restrict international financial flows to assist the US balance of payments diverted activity from

[29] Meyer (1991), 'The Formation of a Global Financial Center: London and Its Intermediaries'.
[30] Burk (1992), 'Money and Power: the shift from Great Britain to the United States'; Costigliola (1977), 'Anglo-American Financial Rivalry in the 1920s'.
[31] Myers (1936), *Paris as a Financial Centre.*
[32] Costigliola, 'Anglo-American Financial Rivalry in the 1920s', 926 – 7.
[33] Fry (1970), *A Banker's World*, 11 – 38.
[34] Bryant (1989), 'The Evolution of Singapore as a Financial Centre'.
[35] Roberts (1991), 'The City of London as a Financial Centre in the Era of the Depression, the Second World War and Post-War Official Controls'.

New York, boosting London, Switzerland and the offshore financial centres.[36] Tokyo's emergence as an international financial centre was long delayed by government restrictions on foreign bank participation in Japanese financial markets.[37] In the mid-1980s Switzerland's competitiveness as a financial centre was judged to be being diminished by its government's inflexibility over tax.[38] But such matters are picayune by comparison with the disastrous impact on financial centres of political turmoil and, especially, war.

Rise and fall of financial centres

The preceding discussion has identified the foremost economic features of financial centres, or their constituent firms, as being a hierarchical structure, powerful external economies of scale, significant economies of agglomeration and large sunk costs. With these traits, it would be unlikely for the composition or ranking of the hierarchy of financial centres to exhibit rapid or frequent changes, and indeed stability is a hallmark. In principle, innovations in communications technology could have resulted in radical reordering of the hierarchy, but in fact they seem to have reinforced the existing order or their centralising and decentralising elements have cancelled each other out.

War and political turmoil have been the most common reasons for the fall of financial centres. The demise of Amsterdam following the French invasion of 1795 has already been mentioned. Other examples are Geneva in the wake of the French Revolution of 1789 because of its commitment to financing the *Ancien Regime*, Paris in 1870 due to defeat in the Franco-Prussian War, Berlin as a result of the chaos following Germany's defeat in the First World War, London in the wake of the 1931 crisis, Shanghai because of Japanese occupation in 1937, Yokohama following Japan's defeat in the Second World War, Beirut due to the outbreak of the Lebanese civil war in 1975, Panama since 1987 thanks to the antics of General Noriega, and no doubt there are other instances. Once the dynamic of external economies of scale had been put into reverse, their fortunes went into a sharp downward spiral.

The above misfortunes provided opportunities for other centres. London assumed the role hitherto held by Amsterdam in the 1790s. In the First World War when London's ability to conduct international financial business was dramatically curtailed, New York emerged as a fully-fledged rival. Switzerland's rise in the 1930s certainly benefited from international investors' disillusionment with London and sterling. The decline of Beirut was matched step-by-step by the rise of Bahrain.[39] Other financial centres have emerged more gradually, their assumption of the role

[36] Johnston (1983), *The Economics of the Euro-Market*, 12–14.
[37] Shinohara (1986), 'Tokyo as an International Finance Center: Financial Liberalisation and International Standardisation'.
[38] Christensen (1986), *Switzerland's Role as an International Financial Center*, 2.
[39] Gerakis and Roncesvalles (1983), 'Bahrain's offshore Banking Center'.

of regional financial centre or even global financial centre reflecting the maturity of their domestic or regional economies, notably Paris in the 1850s, Berlin in the 1870s, Hong Kong in the 1970s and Tokyo in the 1980s.

The future location of the European Economic Community's leading financial centre was a subject of topical interest at the time Kindleberger wrote *The Formation of Financial Centers* in 1974 and in the final paragraph he ventures a prediction – Brussels![40] It was an unfortunate choice since two decades later Brussels remains a backwater as regards regional and international financial services, despite its significance as the home of European institutions. In fact, the choice is contradictory to his preceding text and to the analysis presented here. If he had paid closer attention to his own work he would probably not have come to that conclusion – the episode confirms the case for greater mindfulness of the lessons of economic theory and economic history.

Bibliography

Bonetti, Shane and David Cobham, 'Financial Markets and the City of London', in David Cobham (ed), *Markets & Dealers: The Economics of the London Financial Markets*. London: Longman. pp. 1 – 24 (1992).

Bryant, Ralph C., 'The Evolution of Singapore as a Financial Centre', in Kermail Singh Sandu and Paul Wheatley (eds) *Management of Success: The Moulding of Modern Singapore*. Singapore: Institute of Southeast Asian Studies. pp. 337 – 72 (1989).

Burk, Kathleen, 'Money and Power: the shift from Great Britain to the United States', in Y. Cassis, *Finance and Financiers in European History, 1880 – 1960*. Cambridge: CUP. pp. 359 – 69 (1992).

Christensen, Benedicte Vibe, *Switzerland's Role as an International Financial Center*. Washington DC: IMF (1986).

Costigliola, Frank C., 'Anglo-American Financial Rivalry in the 1920s', *Journal of Economic History*, vol. XXXVII, pp. 911 – 34 (1977).

Davis, E.P., 'International Financial Centres – an industrial analysis'. *Bank of England Discussion Paper*, no. 51 (1990).

Dufey, Gunter and Ian Giddy, 'Financial Centers and External Financial Markets', Appendix 2 of *The International Money Market*, Engelwood Cliffs, NJ: Prentice Hall. pp. 35 – 47 (1978).

Dunning J.H. and E.V. Morgan, *An Economic Study of the City of London*. London: Allen & Unwin (1971).

Economists Advisory Group, *City 2000: The Future of London as an International Financial Centre*. London: Lafferty Publications (1984).

Feuerstein, Raymond, 'The Early History of the Telephone in England, 1877 – 1911' (D.Phil. University of Sussex) (1990).

Fry, Richard, ed., *A Banker's World: the Revival of the City 1957 – 1970*. London: Hutchinson (1970).

Garbade, Kenneth D. and William L. Silber, 'Technology, Communication and the Performance of Financial Markets: 1840 – 1975', *Journal of Finance*, vol. XXXIII (3), June, pp. 819 – 32 (1978).

Gerakis A. S. and O. Roncesvalles, 'Bahrain's Offshore Banking Center', *Economic Development and Cultural Change*, vol. 31. pp. 271 – 93 (1983).

[40] Kindleberger (1974), *The Formation of Financial Centers: A Study in Comparative Economic History*, 71.

Goldberg, Michael A., Robert W. Helsley and Maurice D. Levi, 'On the Development of International Financial Centers', *Annals of Regional Science*, vol. 22 (special festschrift issue) (Feb), pp. 81 – 94 (1988).

Goldberg, Michael A., Robert W. Helsey and Maurice D. Levi, 'The Location of International Financial Activity: An Interregional Analysis', *Regional Studies*, vol. 23 (1) pp. 1 – 7 (1989).

Gorositiaga, X., *The Role of the International Financial Centers in Underdeveloped Countries*. London: Croom Helm (1984).

Gras, N.S.B., *An Introduction to Economic History*. New York: Harper & Bros (1922).

Hall, Peter and Paschal Preston, *The Carrier Wave: New Information Technology and the Geography of Innovation, 1846 – 2003*. London: Unwin Hyman (1988).

Jao, Y. C., 'Hong Kong as a Regional Financial Centre: Evolution and Prospects', in Leung Chi-Keung, J. W. Cushman, Wang Gungwu, *Hong Kong Dilemmas of Growth*. Canberra: Australian National University. pp. 161 – 94 (1980).

Jao, Y. C., 'Hong Kong as an International Financial Centre: Evolution and Prospects', *The Asian NIEs: Success and Challenge*. Hong Kong: Lo Fung Learned Society, pp. 39 – 82 (1993).

Johnson, Harry G., 'Panama as a Regional Financial Center: A Preliminary Analysis of Development Contribution', *Economic Development and Cultural Change*, vol. 24 (2), January, pp. 261 – 86 (1976).

Johnston, R.B., *The Economics of the Euro-Market: History, Theory and Policy*. London: Macmillan (1983).

Jones, Geoffrey, 'International Financial Centres in Asia, the Middle East and Australia: A Historical Perspective', in Youssef Cassis (ed) *Finance and Financiers in European History, 1880 – 1960*. Cambridge: CUP pp. 405 – 28 (1992).

Kindleberger, Charles P., *The Formation of Financial Centers: A Study in Comparative Economic History*. Princeton Studies in International Finance; no. 36. Princeton, NJ: International Finance Section Department of Economics Princeton University (1974).

McGahey, Richard, Mary Malloy, Katherine Kazanas, Michael P. Jacobs, *Financial Services, Financial Centers: Public Policy and the Competition for Markets, Firms and Jobs*. Boulder Colorado: Westview Press (1990).

McCarthy, Ian, 'Offshore Banking Centres: Benefits and Costs', *Finance and Development*, (December) pp. 45 – 48 (1979).

Meyer, David R., 'The Formation of a Global Financial Center: London and Its Intermediaries', in Reset Kasaba (ed.), *Cities in the World-System*, Westport, CT: Greenwood Press (1991).

Michie, Ranald, *The London and New York Stock Exchanges 1850 – 1914*. London: Allen & Unwin (1987).

Myers, Margaret G., *Paris as a Financial Centre*. London: P.S. King (1936).

O'Brien, Richard, *Global Financial Integration: The End of Geography*. London: RIIA/Pinter Pubs (1992).

Park, Yoon S., 'The Economics of Offshore Financial Centers', *Columbia Journal of World Business*, vol. 17 (Winter) pp. 31 – 35 (1982).

Reed, Howard C., 'The Ascent of Tokyo as an International Financial Center', *Journal of International Business Studies*, vol. 11 (3) pp. 19 – 35 (1980).

Reed, Howard Curtis, *The Preeminence of International Centers*. New York: Praeger Publishers (1981).

Robbins, Sidney M. and Nestor E. Terleckyj, *Money Metropolis: a locational study of financial activities in the New York region*. Cambridge, Mass.: Harvard University Press (1960).

Roberts, Richard, 'The City of London as a Financial Centre in the Era of the Depression, the Second World War and Post-War Official Controls', in Anthony Gorst, Lewis Johnman and W. Scott

Lucas (eds), *Contemporary British History 1931 – 1961: Politics and the Limits of Policy*. London: Pinter Publishers, pp. 62 – 74 (1991).
Roberts, Richard, ed., 'Introduction', *International Financial Centres: Concepts, Development and Dynamics*. Cheltenham: Edward Elgar (1994).
Scholey, Sir David, 'Essential Features of International Financial Centres', in *International Financial Centres: Structure, Achievements and Prospects*, Proceedings of the 40th International Banking Summer School 1987. Swiss Bankers Association: Interlaken/Basle, pp. 11 – 24 (1987).
Shinohara, Naoyuki, 'Tokyo as an International Finance Center: Financial Liberalisation and International Standardisation', in Richard B. Finn (ed) *US-Japan Relations; A Surprising Partnership*. Harvard University Center for International Affairs, Program on US-Japan Relations. Annual Review, 1986. pp. 75 – 95 (1986).
Smith, Woodruff D., 'The Function of Commercial Centers in the Modernisation of European Capitalism: Amsterdam as an Information Exchange in the Seventeenth Century', *Journal of Economic History*, vol. XLIV (4), December, pp. 985 – 1005 (1984).
Ter Hart, H.W. and J. Piersma, 'Direct Representation in International Financial Markets: The Case of Foreign Banks in Amsterdam', *Tijdschrift voor Economische en Sociale Geografie*, vol. 81 (2), pp. 82 – 92 (1990).