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Ownership, Occupation and Risk: A View of the City of London Office Market

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Abstract:

Office returns in the City of London are more volatile than in other UK markets. This volatility may reflect fluctuations in capital flows associated with changing patterns of ownership and the growing linkage between real estate and financial markets in the City. Using current and historical data, patterns of ownership in the City are investigated. They reveal that overseas ownership has grown markedly since 1985, that owners are predominantly FIRE sector firms and that there are strong links between ownership and occupation. This raises concerns about future volatility and systemic risk in a market strongly influenced by the cyclical behaviour and shocks of the international financial system.

1. Introduction

This paper examines investment risk and return in the City of London office market. Using data on office occupation and ownership obtained as part of a research project funded by Development Securities plc, it will be argued that functional specialisation of the City and growing interlinkage between occupational and investment markets have resulted in a structure that is vulnerable to booms and slumps in both the financial services and property markets. Feedback effects may serve to increase the amplitude of any cyclical movements. The paper will also provide evidence that the City's increasingly global economic structure has been reflected in a rapid rise in foreign ownership of office space. The characteristics of that ownership and the implications for market stability will be discussed.

The City of London office market is highly significant to UK commercial property both in terms of size and in terms of value. Corporation of London (1997) estimates showed the total office floorspace in the City in 1996 to be 77 million square feet. Commercial agents, using differing geographical definitions, provide similar estimates. Thus Richard Ellis (1998) produce a stock figure of 84 million square feet. This represents around 40% of all central London office space by floor area. Using conservative estimates of rent and yield, this office stock must have a minimum capital value of £20-25 billion¹. At the end of 1996, City offices on the Investment Property Databank had a capital value of £4.6 billion, nearly a quarter of the total institutional office portfolio (IPD, 1997).

There is evidence that the investment performance of offices in the City of London (and in Central London in general) has been more volatile than that of offices in other markets. However, the higher volatility does not seem to be compensated by higher average returns. Analysis of the Investment Property Databank shows that the standard deviation of nominal returns over the period 1981-1997, at 13.9%, was higher than that for all offices (12.0%) and all commercial property (9.8%). A simple regression of annual City office market returns on IPD all property performance produces a beta of 1.25 and a negative alpha of -3.7%.² These differences are more stark when taken over the recent property cycle, 1986-1996. City offices, with a mean return of 8.4% and a standard deviation of 17.3% have a coefficient of variation of 2.07 compared to all property's 1.17 (12.1% / 10.3%).

¹ Say 80 million square feet at £25 per square foot, capitalised at an initial yield of 8% gives £25 billion. While some of the stock may be secondary, other buildings will be large prime offices. At the end of 1997, top rents were around £45 p.s.f. and yields under 6%.

² Given the small sample size, the beta estimate is not statistically different from 1.0 and the alpha estimate not significantly different from zero. Nonetheless, the figures are indicative of higher volatility and inferior performance.

It is possible to advance reasons for this apparent anomaly. The greater liquidity of the (prime) office market in the City may mean that investors are prepared to pay a premium for access to the market. The continued presence of buyers and sellers allows investors to exit from the market, even in conditions of oversupply. It may be that the figures reflect a temporary cyclical fluctuation produced by overbuilding in the late 1980s (but see Hendershott *et al.*, 1997, for a contrary view). There may be embedded market inefficiencies due to indivisibility and large lot size (limiting the possible buyers and sellers at any point in time, resulting in short run quasi-monopolistic markets) or to the imposition and relaxation of planning constraints. The risk-return figures may reflect valuation errors (exacerbated by low initial yields). In particular, an initial failure to mark values down once the cyclical peak has passed may result in later sharp downward corrections, and hence greater volatility.

In this paper, however, it will be argued that the greater volatility of City offices results, in part, from the development of the City of London market as a highly specialised international financial services centre. This process has produced a highly undiversified economic structure, vulnerable to cyclical movement in the world financial markets. At the same time, the ownership of offices has become more financial in nature, serving to integrate the property and financial markets. As a result, a downturn in financial services activity has a direct impact on the performance of the office stock, which then feeds back to the financial services sector. Thus, a negative feedback mechanism operates that can deepen downturns. The converse applies in a boom phase. As a result, the amplitude of market cycles may be increased. It is contended that this feedback mechanism has not been fully priced in the property market.

The next section discusses the functional specialisation of the City historically and more recently. This specialisation is reflected in the occupational characteristics of office space. The paper then examines evidence for changing ownership patterns and of the growing convergence of occupational and ownership patterns. In both ownership and occupation, it is shown that international activity has grown in significance since the mid-1980s. The results are placed in a wider international context in the conclusion, which considers global market convergence, the nature of investment decision-making and the possibility of systemic risk as a result of the intertwining of investment and occupational markets.

2. Functional Specialisation and the City

Wider economic, political, technological and social forces determine the context in which changes in occupation and ownership in the City of London office market take place. These determine the future trajectory of the City and hence the patterns of supply and demand in the property market. Four broad, inter-related themes may be identified:

- *Globalisation of business and financial services;*
- *Developments in information and communications technology;*
- *Changing working practices and business organisation;*
- *Regional economic integration.*

Although the extent of 'globalisation' has been challenged³, it seems clear that the last three decades have seen intensification of global trading and cross-border activities. This is particularly true in financial services, where deregulation and financial liberalisation, allied to improvements in information technology have created a global market place for equities, bonds, currency and derivative products based on those financial assets. The implications for property markets of this 'new international financial system' have been discussed in Coakley (1994), Lizieri (1991, 1995) and Pryke (1991, 1994). One consequence of the new financial system has been growing concentration of international financial activity in a relatively small number of 'world cities'. London, New York and Tokyo are considered to be the three principal world financial centres. Within London, global financial activity is heavily

³ See, for example, Weiss (1997); Hirst & Thompson (1996) for contrary views.

concentrated in the traditional 'Square Mile' of the City of London and in the fringe area around it. In order to resist competition from rival centres, these global financial centres need to exploit agglomeration economies through depth and breadth of markets. This entails a growing specialisation of activity.

International competition within financial sectors has led to consolidation and merger and acquisition activity. Much of this M&A activity is cross-border. In the mid-1980s, associated with Big Bang, many UK broking operations were acquired by overseas banks and institutions. UK City-based firms such as Barings, BZW, Kleinworts, Mercury, Morgan Grenfell, Smith New Court and Warburgs passed into Dutch, French, German, Swiss and US ownership. Pension fund portfolios and life insurance firms have been acquired by non-UK firms (CIN by La Salle, Pearl by AMP for example). Currently, a new round of mergers and acquisitions seems to be occurring, exemplified by the UBS and Swiss Bank merger.

This functional specialisation of the City of London, it should be stressed is the latest stage in a historic process of specialisation. The City's evolution as a financial and commercial centre stemmed from its dominance of Britain's international trade (Ingham, 1984; Baum *et al.* 1998). However, the commercial and financial functions initially generated limited demand for specialist office buildings, certainly by contrast to the growth in warehousing related to port activities. By the nineteenth century, however, the concentration of commercial services generated speculative office development. By mid-century, specialised property companies had been established to supply the office market (Scott, 1996). The growth of office and warehouse premises in the City led to the displacement of the residential population. Briggs (1963) suggests the City's residential population shrank from the first decade of the nineteenth century. By 1866 (the first date for which reliable data are available) the City's day-time population, 170,000, was already well in excess of its residential population. By 1901 the City's residential population amounted to less than a tenth of its working population, while by 1935, when the City's day-time population reached a peak of 500,000, its residential population had shrunk to only one fiftieth of this figure (Dunning & Morgan, 1971).

The City also contained a substantial manufacturing sector, in the printing and paper trades, in clothing and specialised manufacture (jewellery, scientific instruments). Thus, despite the growth in office based activity, the City contained a range of functions. As Figure 1 shows, offices do not become the largest land-use sector until the post-war period. Thereafter, offices become increasingly dominant. By the late 1970s, on the eve of financial deregulation, private sector offices made up three quarters of total floorspace. By 1996, following the late 1980s office boom, the proportion had risen to over 83%⁴.

Figure 1: The percentage distribution of City floorspace, 1939-78

Year	Offices	Warehouses	Industry	Shops	Public Buildings	Other	Total (m. Sq ft)
1939	44.5	26.4	11.7	4.9	7.7	4.7	84.4
1949	55.7	18.2	8.7	4.8	9.9	2.8	56.6
1959	59.7	15.2	7.6	4.3	9.1	4.1	68.1
1964	61.7	13.7	7.0	4.2	9.7	3.9	74.6
1968	62.1	13.4	6.7	4.2	9.7	3.9	77.0
1978	75.0	3.0	1.0	3.9	17.0		82.2

Sources: Dunning and Morgan (1971); Barras (1979)

⁴ Calculated by authors from City of London Corporation data. The 1980s speculative office boom involved transfer of non-office sites to office use in addition to intensification of use of existing sites.

This accelerating specialisation of land-use has a direct parallel in employment patterns. As Figure 2 indicates, employment in insurance, banking and finance increased from 30% to 50% of the total between 1961 and 1991, while business services rose from 8% to 23%. Since business services is comprised mainly of accountancy and legal services, heavily oriented towards financial activity, it can be seen that some three quarters of all employment relates to banking and finance. These aggregate figures disguise another trend: growing specialisation within the finance and finance-related industries. Over the 1980s, the rise in financial employment in the City is accompanied by decentralisation of business (see Figure 3). Much of this decentralisation involved the out-migration of retail financial services and banking and the back office, administrative functions of the FIRE sector. As LPAC (1995, iv) note: *for businesses primarily serving UK based customers, downsizing and upgrading frequently results in decentralisation from central London. In contrast, organisations serving international markets show greater resilience in maintaining or increasing their presence in London*. The City, then, became still more specialised in wholesale financial activity and global trading.

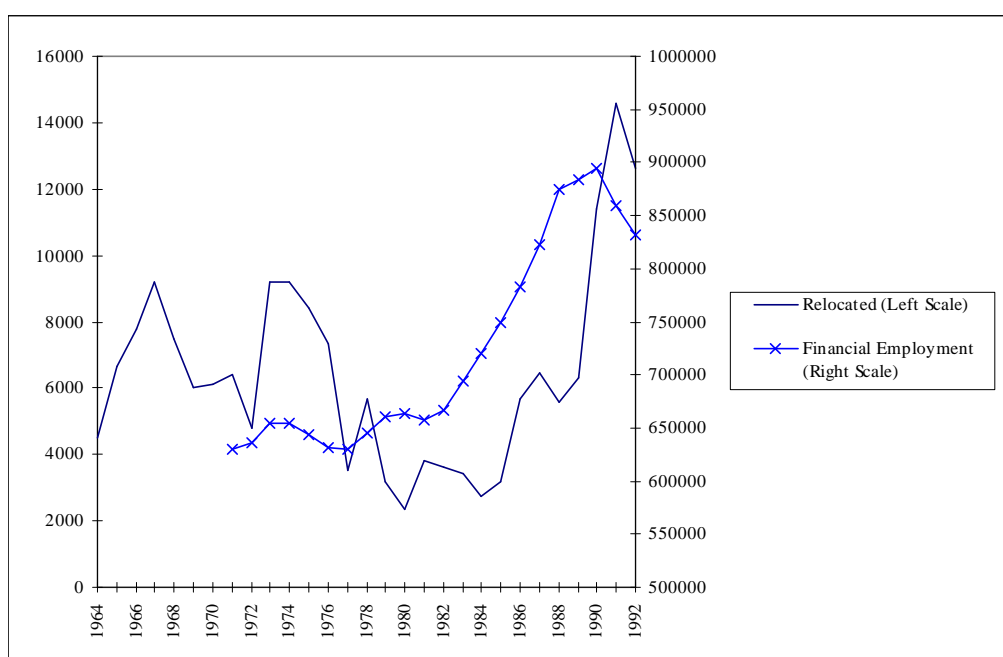
Figure 2: The percentage distribution of City office employment, 1961-91

Sector	1961	1971	1981	1991
Insurance, banking & finance	31.1	43.1	41.9	51.0
- Banking	N/A	19.1	22.7	28.5
- Insurance	N/A	13.3	13.1	13.3
- Other financial services	N/A	7.1	6.1	9.2
Business services	8.2 **	9.9 **	12.3	23.4
Printing and publishing	11.1	10.4	9.2	1.5
Other	49.7	36.6	36.5	24.1
Total	100.0	100.0	100.0	100.0

Sources: 1961-71 - Barras (1979); 1981-91 - data provided by Corporation of London.

Note: ** = 'Professional and scientific services'

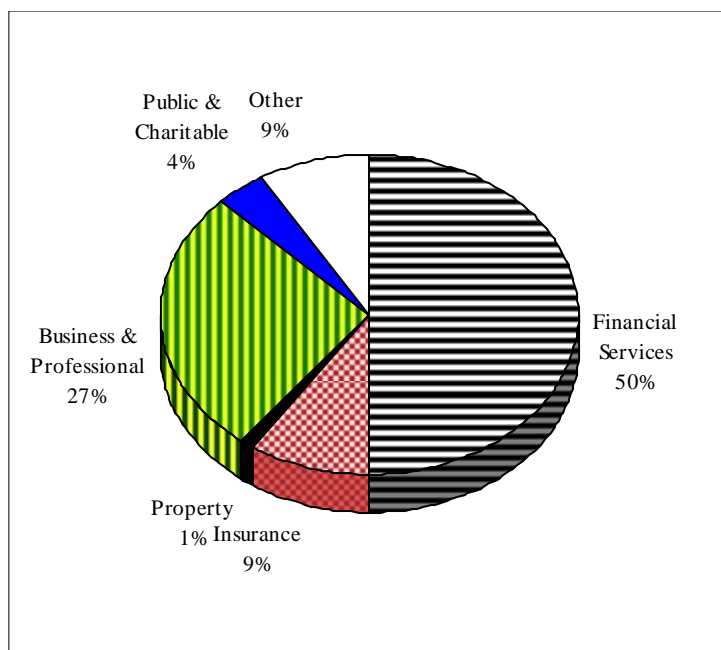
Figure 3: Decentralisation and the Growth of Financial Services



Sources: BSL / JLW

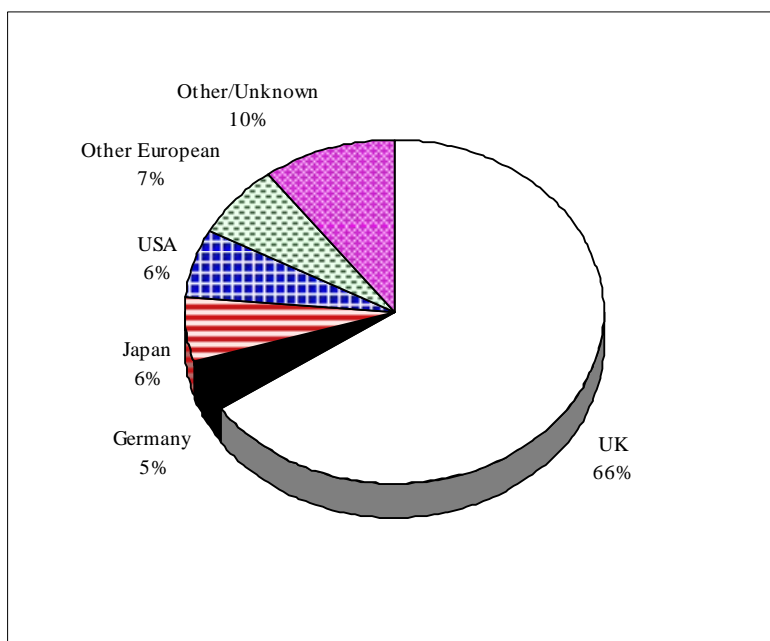
These employment statistics are confirmed by analysis of the occupation of City offices commissioned from the EGi/Chesterton database (see appendix for details of data sources). At the end of 1997, half the office space in the City was occupied by financial service firms, 60% by FIRE firms and 87% by FIRE and business services (Figure 4). Figure 5 confirms the international nature of the City's employment market. Over a third of office space was occupied by overseas firms, with US, German and Japanese firms holding the largest share amongst foreign occupiers.

Figure 4: Occupation By Type of Organisation, 1997



Source: EGi/Chesterton, analysed by authors

Figure 5: Occupation by Nationality



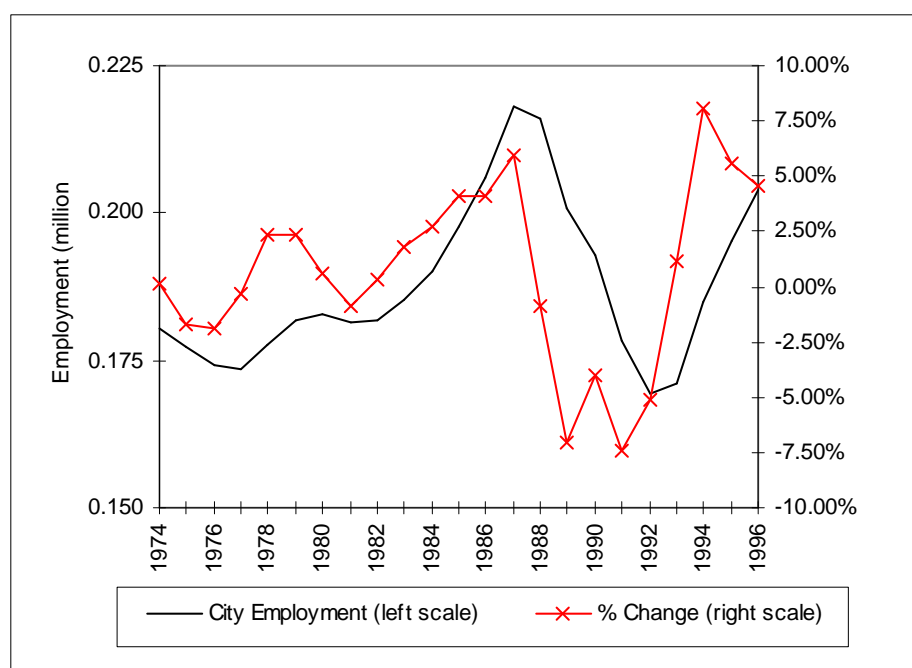
Source: EGi/Chesterton, analysed by authors

Thus the City has become increasingly functionally specialised in terms of employment and land-use. This specialisation is a necessary corollary of its role as a global financial centre. In order to compete and maintain market share, the City must offer both depth and breadth of market - a fact emphasised in the publicity of the City Corporation and London First, as part of the process of boosterism:

“London is the heart of the world's financial business and the centre of financial innovation and information. Its supportive legal, regulatory and fiscal regimes are underpinned by a highly efficient technological infrastructure and an unrivalled concentration and variety of expert services. In addition to its financial and physical infrastructure and magnificent working environment, the City also benefits from dedicated and expert local government. The Corporation of London draws on over 800 years experience of supporting the financial infrastructure and providing the quality of service appropriate to a leading world centre.”
[Powerhouse of World Finance - Corporation of London, <http://www.cityoflondon.gov.uk/col/index.htm>]

The agglomeration economies derived from the size of labour and capital markets, specialisation of activity, dense information networks and a culture of innovation are a source of considerable competitive strength. However, the result is a highly undiversified economic structure, sensitive to cyclical patterns and shocks in global financial markets. Since the mid-1970s, this has resulted in a highly cyclical pattern of employment in the City (see Figure 6). As the next section explores, this sensitivity is exacerbated by the nature of property ownership.

Figure 6: Business Services Employment in the City



Source: Hendershott *et al.*, 1997, adapted from BSL.

3. Patterns of Office Ownership in the City

To examine patterns of ownership of City offices, the commissioned analysis of the EGi/Chesterton database was complemented by the construction of a sample database of office ownership between 1972 and 1997 (see appendix for further details). The historic database reveals that similar processes of concentration and internationalisation have been occurring in office ownership.

Figure 7 shows the distribution of office ownership by type of organisation at the end of 1997. In the core area of the City, FIRE firms own 80% of office space. This is not a function of owner-occupation; the FIRE sector owns 81% of tenanted, investment, property. On the fringes of the City, there are larger holdings by industrial firms and business and professional services (mainly law firms). Even here, over 70% of office space is owned by FIRE firms.

Figure 7a: Office Ownership By Type of Organisation: City Core, 1997

Main Business of Owner:	Total	Owner-Occupied	Investment
Industrial Manufacturing, Petrochem, Utilities	1.0%	2.9%	0.4%
Construction	0.4%	0.0%	0.5%
Financial Services incl. Banking & Securities	23.9%	50.4%	14.2%
Insurance (Retail & Broking)	15.8%	9.9%	17.9%
Property Services	0.9%	1.4%	0.7%
Property Development/Investment	39.5%	16.2%	48.1%
Business & Professional Services	2.9%	4.0%	2.5%
Conglomerates	0.2%	0.3%	0.1%
Public (incl. Railtrack, BTel) & Charitable	12.1%	12.5%	12.0%
Other	3.3%	2.3%	3.7%
TOTAL	100%	100%	100%

% of floorspace. Source: EGi/Chesterton analysed by authors.

Figure 7b: Office Ownership By Type of Organisation: City Fringe, 1997

	Total	Owner-Occup	Investment
Industrial Manufacturing, Petrochemicals, Utilities	5.3%	16.0%	0.9%
Construction	2.8%	2.3%	3.0%
Financial Services incl. Banking & Securities	14.4%	18.1%	12.9%
Insurance (Retail & Broking)	11.9%	19.0%	9.0%
Property Services	1.0%	0.0%	1.4%
Property Development/Investment	44.2%	17.1%	55.3%
Business & Professional Services	6.1%	11.5%	3.8%
Conglomerates	0.0%	0.0%	0.0%
Public (incl. BR, BT) & Charitable	6.4%	13.5%	3.5%
Other	7.9%	2.4%	10.1%
TOTAL	100%	100%	100%

Source: EGi/Chesterton, analysed by authors

The EGi/Chesterton database shows that some 20% of office space in the City core in 1997 was owned by foreign firms - around 975,000 square metres (10.5 million square feet) of lettable space. The largest portfolios are held by firms from German (316,000 square metres), Japan (259,000 square metres) and US (171,000 square metres). Overseas ownership is slightly less pronounced on the fringes of the City. Combining the two samples produces an estimated overseas share of 19%. Applying this share to the Corporation of London's stock estimate suggests that some 1.3 million square metres (14.4 million square feet) of City office space is in foreign ownership, with a capital value of between £3.6-£4.5bn.

Figure 8: Ownership in the City of London By Country of Origin, 1997

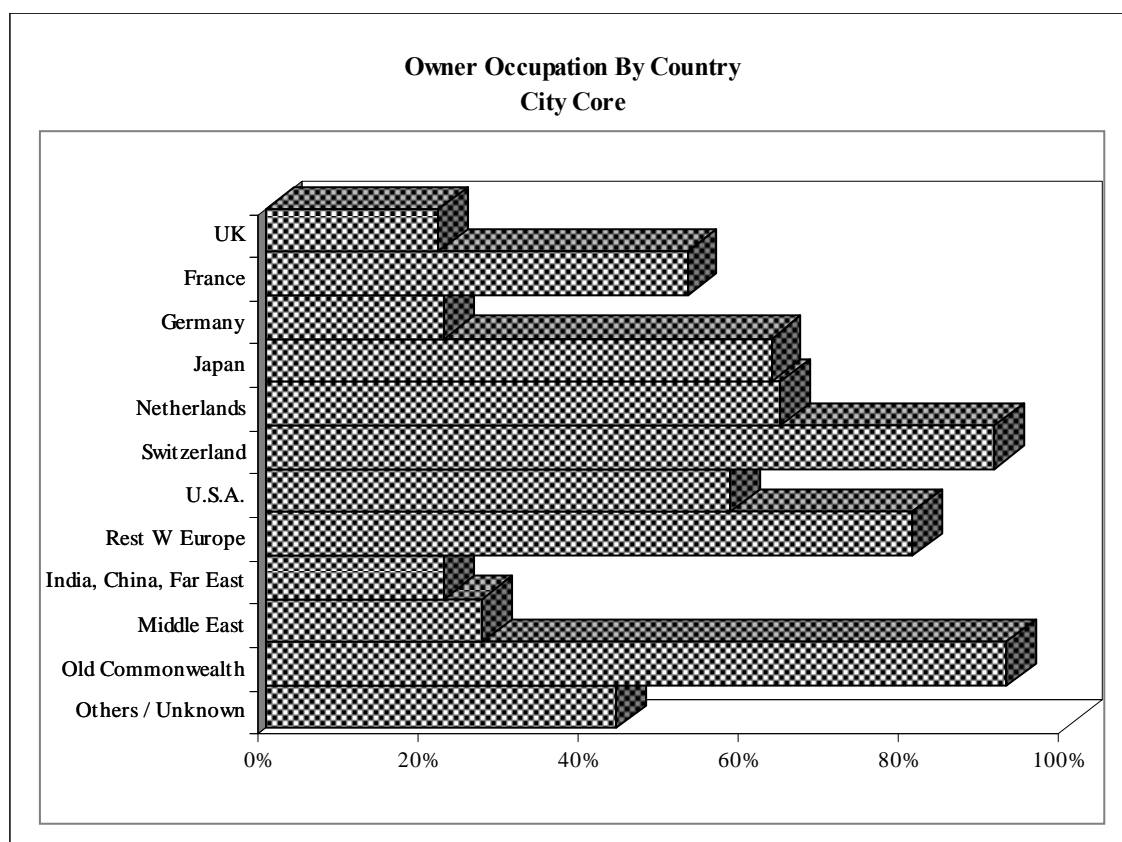
Column %	Core	City Fringe	Combined
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Country	Total	O/Occ Total	Total	O/Occ Total	Total	O/Occ Total
UK	80.3%	64.0%	85.8%	85.8%	81.3%	68.2%
France	1.3%	2.4%	0.0%	0.0%	1.0%	2.0%
Germany	5.8%	4.8%	3.8%	0.3%	5.5%	4.0%
Japan	4.8%	11.2%	0.6%	0.0%	4.0%	9.0%
Netherlands	0.9%	2.3%	0.0%	0.0%	0.8%	1.8%
Switzerland	1.1%	3.8%	0.0%	0.0%	0.9%	3.1%
USA	3.2%	6.8%	3.2%	9.7%	3.2%	7.3%
Rest W Europe	0.6%	1.8%	5.9%	3.4%	1.5%	2.1%
India, China, Far East	0.8%	0.7%	0.2%	0.1%	0.7%	0.6%
Middle East	0.7%	0.7%	0.1%	0.3%	0.6%	0.6%
Old Commonwealth	0.4%	1.2%	0.6%	0.5%	0.4%	1.1%
Others / Unknown	0.2%	0.3%	0.0%	0.0%	0.2%	0.2%

Source: EGi/Chesterton, analysed by authors

Around 27% of office floorspace in the City core is in owner occupation. Levels of owner-occupation vary greatly by country of owner (Figure 9). In aggregate, 49% of overseas owned space is in owner occupation with around a third of owner-occupied stock being owned overseas. As a result, overseas ownership of investment property is lower at around 14%. Only German (and, to a lesser extent, Japanese) investors hold substantial amounts of tenanted property (Figure 10). Some of the owner-occupied stock will, however, be sub-let.

Figure 9: Owner Occupation by Nationality, City Core, 1997



Source: EGi/Chesterton, analysed by authors

Figure 10: Ownership of Office Investment Property, City of London, 1997

Country	Space Sq M	Percent
UK	4,106,995	86.2%
France	32,012	0.7%
Germany	287,470	6.0%
Japan	101,892	2.1%
Netherlands	18,182	0.4%
Switzerland	5,435	0.1%
USA	74,029	1.6%
Rest W Europe	62,543	1.3%
India, China, Far East	35,887	0.8%
Middle East	26,012	0.5%
Old Commonwealth	6,869	0.1%
Others / Unknown	5,649	0.1%
TOTAL	4,762,981	

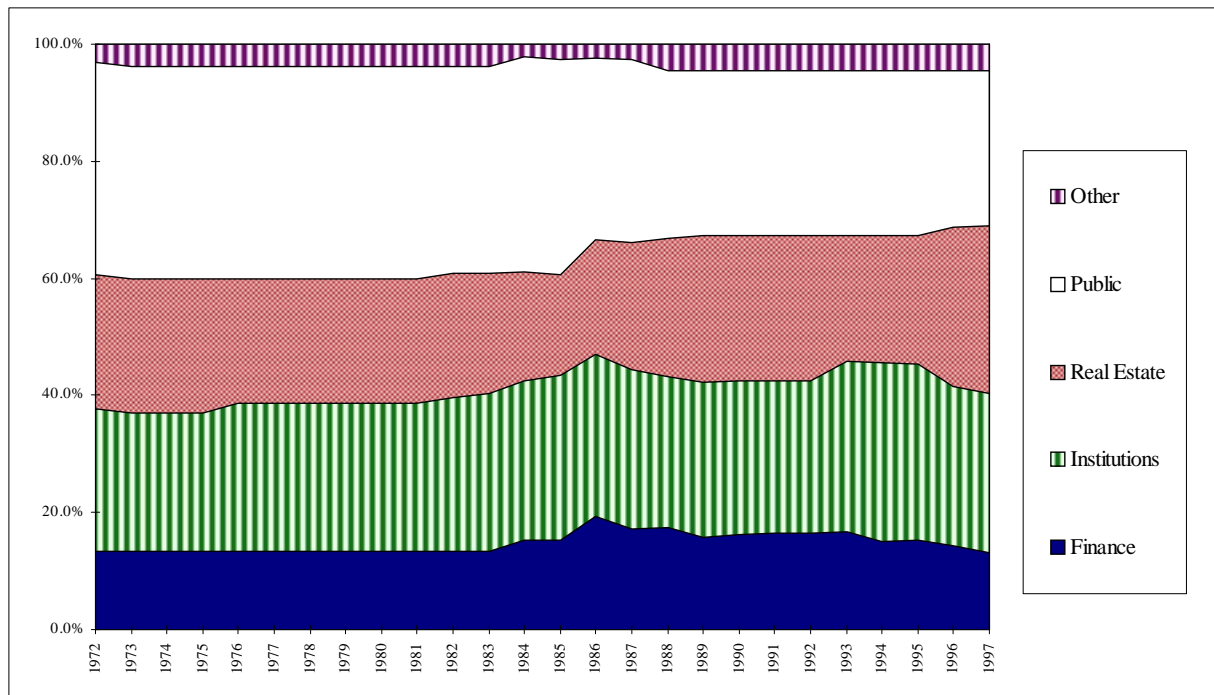
Source: EGi/Chesterton, analysed by authors

The snapshot provided by analysis of the EGi/Chesterton database confirms that ownership patterns are both concentrated by type of organisation and global in nature. They thus mirror the functional specialisation and internationalisation observed in relation to employment and occupation. Analysis of the historic database shows that the degree of concentration has increased markedly in the period since financial deregulation (ōBig Bangō) and that overseas ownership on the scale observed is a comparatively new phenomenon.

Figures 11 and 12 show office ownership by type of firm from 1972 to 1997. Two major trends may be observed. The first is the increase in the share of ownership by FIRE firms. This rises from under 60% in 1973 to nearly 70% in 1997. This increase occurs most clearly in the immediate aftermath of Big Bang and financial deregulation. Applied to Corporation of London stock estimates, the rise is equivalent to an additional 7.7million square feet of space. Within the FIRE sector, institutional holdings fluctuate between 24% and 30% while property company ownership fell from 23% in 1972 to 17% in 1985 and then rose to 29% by 1997. As will be discussed below, this suggests that there was a change in the nature of property companies over the period with traditional property investment firms giving way to more entrepreneurial, financially-oriented firms.

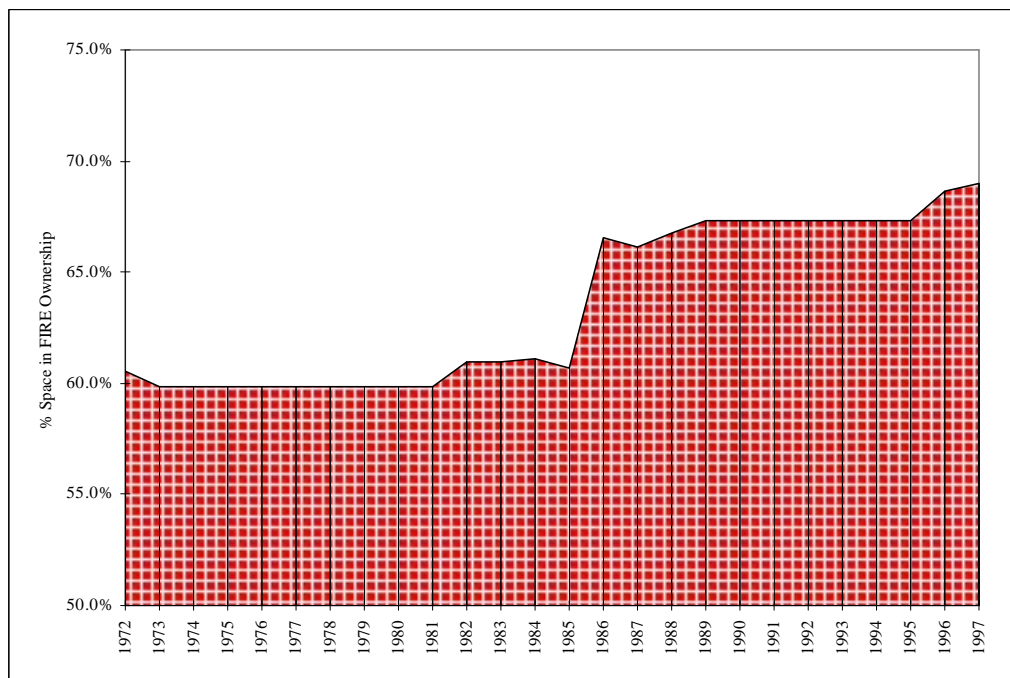
The second major trend that can be discerned is the decline in public and charitable ownership. The share of space owned by traditional owners of land and property - the guilds, livery and worshipful companies - and the public sector falls from 36% in 1972 to 26% in 1997 with, once again, the bulk of change occurring after 1985. Much of this shift relates to sales by the Worshipful Companies although some represent transfers from public to private ownership: for example the redevelopment of former railway lands to office and mixed-use sites. Another feature is the extent of concentration. In 1997, over half the office space on the database was owned by just eight firms.

Figure 11: City Office Ownership by Type of Organisation, 1972-1997



Source: authorsødatabase.

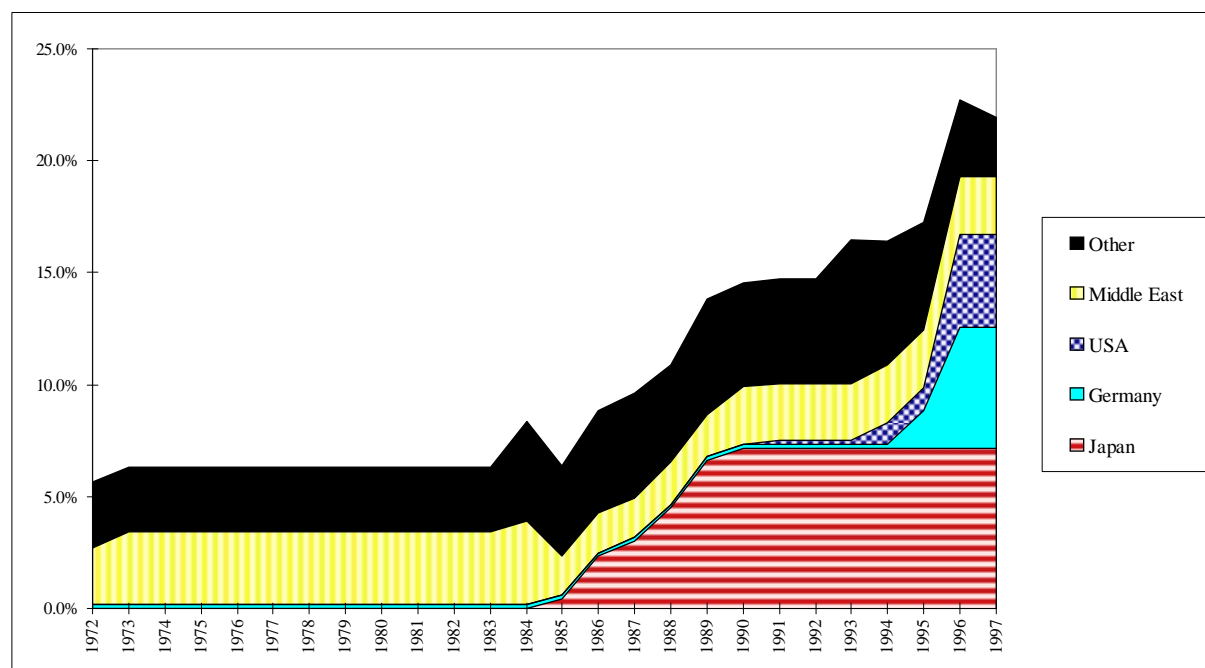
Figure 12: City Office Ownership by FIRE Sector, 1972-1997



Source: authorsødatabase.

If changing organisational ownership is relatively gradual, the historic pattern of international ownership is much more dramatic. Foreign ownership was stable across the 1970s and early 1980s. 1985 represents a watershed. From that point, financial deregulation, liberalisation of capital flows and the boom phase of the City office cycle produced conditions that were conducive to the growth of international ownership. The initial growth came from Japanese and Western European acquisitions. In the early 1990s, transfer of ownership reached a plateau, with UK ownership stable at around 85%. From 1995, the level of overseas ownership increased once again, with major purchases by German and US funds.

Figure 13: International Ownership of City Office Space, 1972-1997



Source: authorsødatabase.

Figure 14 combines analysis of ownership and occupation in the City Core. The table reveals that specialisation in function and concentration of ownership by sector have resulted in 53% of space being simultaneously owned *and* occupied by FIRE firms. 74% of space in simultaneously owned and occupied by FIRE and related business services firms. Only by excluding the mediating role of property companies and abstracting out service suppliers is any separation of ownership and occupation observed. Even with a very restrictive definition, around 29% of office space is both owned and occupied by financial firms.

Figure 14: Ownership and Occupation in the City Core, 1997

Owner:	Occupier:	Financial Services	Insurance	Property & Construction	Bus & Prof Services	Public and Charitable	Other	TOTAL OWNED
Financial Services		20.2%	2.4%	0.2%	3.4%	0.4%	1.0%	27.5%
Insurance		5.3%	1.6%	0.3%	4.8%	0.2%	1.6%	13.8%
Property & Construction		19.2%	3.2%	0.5%	10.4%	1.0%	3.2%	37.7%
Bus & Prof Services		0.1%	0.2%	0.0%	2.4%	0.0%	0.3%	3.0%
Public and Charitable		3.7%	0.8%	0.2%	4.5%	2.2%	1.2%	12.7%
Other		1.4%	1.1%	0.0%	1.4%	0.0%	1.3%	5.2%
TOTAL OCCUPIERS		49.9%	9.4%	1.3%	26.9%	3.8%	8.6%	100.0%

Note: total percentages by floorspace

Source: EGi/Chesterton, analysed by authors.

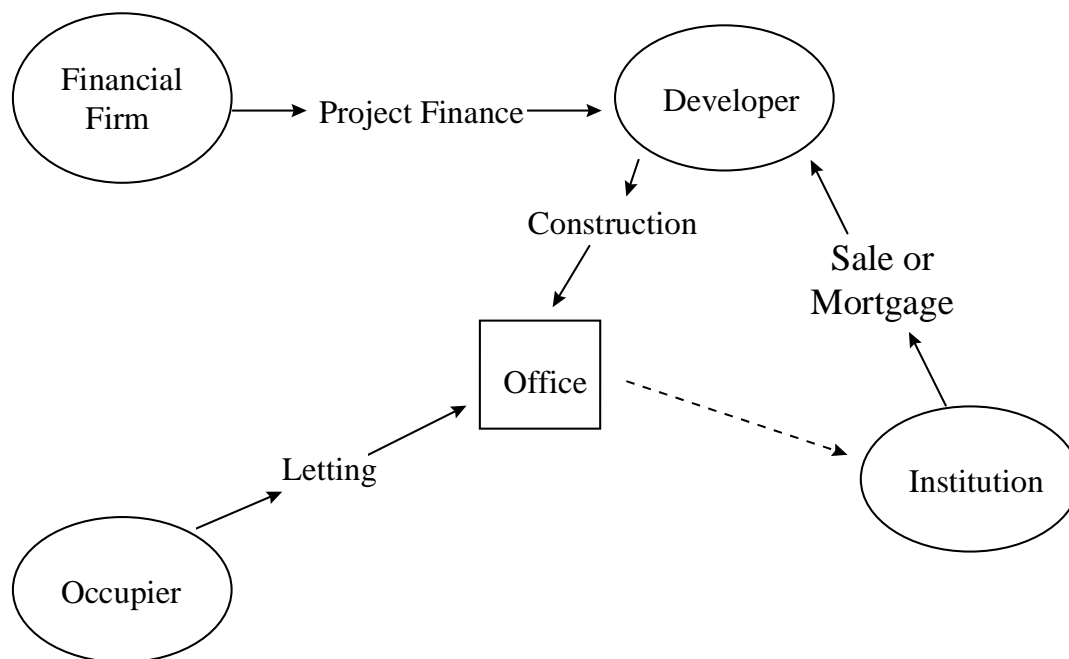
Analysis of office ownership and occupational patterns in the City of London, then, has shown that the known functional specialisation and internationalisation of activity is mirrored by growth in the financial ownership of space and increasing foreign holdings of offices. The growing linkage of ownership and occupation in the context of a highly undiversified local economy has potentially serious consequences, particularly should financial recession and a property slump coincide. This is explored in the next section.

4. Ownership, Occupation and Risk in the City Office Market

In the 'traditional' model of property development, there exists a separation of roles and functions. The developer obtained project finance from a bank, constructed the building, let the building to an occupier and then either sold the building to an institution (repaying the loan and taking developer's profit) or obtained long-term funding from an institution or bank (see Figure 15). As a result, risk in relation to the property process was spread between different organisations. This separation of roles facilitates the pricing of risk.

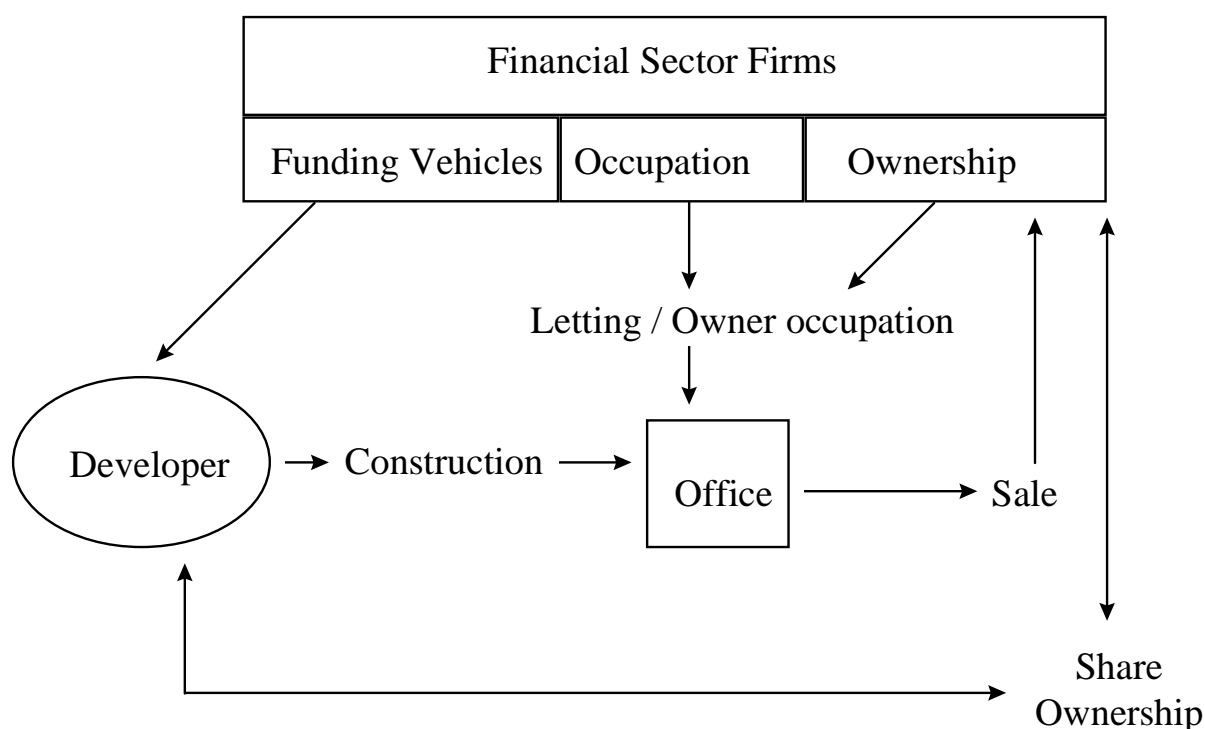
In the City property market of the 1980s and 1990s, these distinctions have become blurred. Firstly, as revealed in the analyses above, the types of firms that own of City offices are, simultaneously, the occupiers of that space either as owner-occupiers or as tenants. Secondly, changes in the type of organisation owning (and developing) property in the City have been associated with changes in the nature of financing and funding that development. The 'traditional' model of development funding and financing has given way to a far greater variety of financial engineering techniques (Pryke, 1994; Lizieri, 1995)⁵. It is worth noting that the 'traditional' model was a relatively short lived phenomenon, lasting from the 1960s until the mid-1980s. Historically, the provision of business space in the City has taken on many forms. One consequence of the more varied and complex forms of funding is that commercial property markets are more closely integrated with the other capital markets and hence are exposed to their volatility. This more integrated structure is represented in Figure 16.

Figure 15: Traditional Separated Model of Property Market Relations



⁵ Pryke (1994) notes that the changing nature of the financially-oriented firms trader-developer property companies in the City had important spatial consequences. The reluctance of institutions to get involved in developments on the fringe of the traditional City area occurred at a time when development opportunities in the traditional core were constrained by planning and conservation controls. As a result, the combination of speculative activity and new types of occupier (notably the international occupiers identified above) led to a territorial expansion of the City's functional boundaries, a *spatial deregulation* breaking down tradition and inertia. He suggests that this expansion was gradual and limited by the *lingering spatial pull of the spatial matrix of the traditional City*.

Figure 16: Integrated Property-Finance Market Relationships



There is evidence, then, that *ownership* of the City office stock is dominated by the FIRE sectors - the same financially-oriented firms that *occupy* the space. This is as true of investment property as the owner-occupied stock. While property companies do own a significant proportion of the tenanted City stock, the character of the firms involved in the central London markets changed over the 1980s, driven by the increasing size of prime office buildings. Only larger companies (whether property investment companies or trader-developers), able to tap the capital markets, could participate in the restructuring of the City. The same financial services firms that occupy and own the space provide the more complex funding arrangements that mix debt and equity and spread risk through syndication and securitisation: these firms carry the default risk. Thus, changes in ownership and in financing of office property have served to tie together the occupational, investment and development markets. This must lead to the possibility of *systemic* risk.

Systemic risk exists where failure in one part of the (financial) system has spillover effects in other parts, threatening the stability of the system as a whole. Systemic risk has been a subject of growing concern since the ability of regulatory authorities to control and manage crises has diminished. With power and assets concentrated in fewer institutions and markets, the threat of a cascade through the system is real. Heinman and Alexander (1997, p82) suggest that the *rapid changes occurring in the international financial system have resulted in new sources of, and transmission mechanisms for, systemic shocks*. Similarly, Phillips (1993, p6) notes that *the expansion of market linkages which cut across national boundaries and embrace a wide range of financial and non-financial firms raises concerns about the ability of central banks to contain systemic difficulties, should they emerge*.

It should be noted that the international financial system has proved robust in dealing with major failures in recent years. However, the localised effects of internationally induced crises are considerable. The linkage of real estate to financial markets has led to concern amongst regulatory bodies (see, for example, Bank for International Settlements, 1993; Renaud, 1994; Folkerts-Landau & Ito, 1995; Goldstein & Folkerts-Landau, 1993). The expansion of lending into real estate, fuelled by rapid asset price inflation and deregulation (giving access to new sources of funds) created problems for Japanese, Nordic, UK and US banks in the aftermath of the world recession. Cyclical decline was associated with

major falls in property values. The losses incurred by banks were sufficiently large to force curtailment of portfolio growth to meet regulatory capital requirements such as the capital adequacy and solvency requirements of the Basle Accord. This created the so-called 'credit crunch' where reduced (and more costly) lending hampered business expansion and prolonged the recession. Ghosh *et al.* (1994) discuss the impact of the Canary Wharf failure on bank profitability around the world.

The functional specialisation of the City, the concentration of ownership and the linkage of investment, occupational and development markets thus pose a potential threat to stability. Demand is driven by the international financial business cycle. In downturns, reduced occupational demand depresses rents and hence capital values leading to deterioration of the quality of loan books. This depresses the asset base of the financial sector. The converse is true in an upturn, with strong asset values underpinning expansion. Thus linkages between the office market and the other financial markets serve to deepen the amplitude of cyclical movements.

Functional specialisation is thus a two edged sword. The concentration of international financial and business activity in the City contributes to the depth of markets, permits specialisation and creates the agglomeration economies that are critical to the City's competitive position. At the same time, an undiversified economic structure and interlocking markets create dangers of downward spirals and spillover effects whenever the international financial system is subject to shocks. The City of London office market, with its tightly-linked ownership, occupational and financial structures, may contribute to that danger.

While these risks are real, they should not be exaggerated. At the peak of bank lending to UK real estate in 1991, the £56 billion outstanding to property companies and construction firms represented less than 12% of UK-based banks' loan book (Davis, 1993). Following a long period of disinvestment, the proportion of UK institutional assets directly invested in real estate is around 7% (ONS, 1997). City offices make up around 10% of the capital value of the IPD index. Thus less than 1% of insurance and pension fund assets are directly owned City offices. This, however, understates institutional involvement: they will be significant owners of property company shares and may have financial interests through bonds and other debt instruments. To this must be added their owner-occupied operational property. Furthermore, ownership of City offices is probably confined to a handful of larger funds, given lot sizes. For foreign owners, and for UK owners with international portfolios, exposure to real estate in other international financial centres needs to be factored in. The impact of a major downturn in the City office market would thus be major but not necessarily catastrophic.

As Lizieri & Finlay (1995) note, since the economic forces that drive these cycles are international in nature, property-financial crises tend to be co-ordinated around the world in major financial services cities, frustrating risk diversification strategies (see also Goetzmann & Wachter, 1995; Ball *et al.*, 1996). Fainstein (1992) notes similar linkages between real estate and financial services in New York. She argues that deliberate governmental strategies to enhance office-based sectors helped create a vast and concentrated financial services sector whose decline post-1987, exacerbated the real estate slump:

...developers and their financial backers anticipated an ever-increasing demand from the securities industries and their service providers. When demand failed to materialise, vacancies mounted and a number of well-known developers foundered causing their financial backers to absorb heavy losses. This further stress forced financial institutions into greater retrenchment: since these institutions were themselves among the major consumers of office space, their property-caused contraction further reduced the market for real estate. (op cit pp 134-135)

A similar story can be told in most major financial services markets. For example, Lizieri (1995) examines the concentration of financial services in the core financial district of Toronto, the pronounced office construction boom and slump and the adverse effects of property developer failure and non-

performing real estate debt. He traces ownership and debt structures of buildings around Bay Street to reveal the tight interdependence between real estate and financial services.

In the light of this potential downside risk and with evidence of poor risk-adjusted returns in financial service centre office markets, how is it possible to explain continued high levels of investment and apparent over-pricing of assets? At one level, much decision-making in the property development process remains informal, 'entrepreneurial' and thus vulnerable to speculative bubbles and herd behaviour. This is the thesis advanced, *inter alia*, by Fainstein (1994) and represented in populist form in Ross Goobey (1992). As Byrne (1996, p2) notes, *'the collapses of property markets in 1974/5, and again at the end of the 1980s exposed a (continuing) paucity of analysis upon which investment had been made and some schemes had been carried forward, and showed that lessons had been hardly learnt by the industry.'* Research also suggests that the risk assessment procedures in place in banks lending on commercial property were often haphazard (Beardsley, 1997; McGrail & Pryke, 1997).

While these behavioural factors may explain individual decisions, it would be hard to maintain that they offer an explanation for systematic mispricing. Across the 1980s, many financial firms and institutional investors were adopting formal quantitative decision-making models for both asset allocation (with models based on the precepts of portfolio theory) and stock selection (detailed analysis of investment worth or unbundling of capitalisation rates). The larger institutional investors active in the City market were *more* likely to adopt such formal strategies. Why, then, did these models not direct investment away from the City and other international financial centres, forcing down prices, damping the cycle and restoring risk-adjusted returns?

There are a number of possible technical explanations at the asset allocation level. Portfolios generated by the Markowitz optimiser framework are typified by 'corner solutions' - a small number of assets with high weightings and zero weights elsewhere. This may be a function of the undue influence that extreme values have on covariance structures. This is exacerbated in property markets by the unreliability and lack of comparability of the data - the computer adage Garbage In, Garbage Out springs to mind. Thirdly, portfolio theory should be expectations driven yet most studies used *ex post* data which makes the results highly dependent on the time period chosen. Fourthly, the models used real estate data alone, creating a missing variable problem.

These provide partial explanation of the failure of portfolio theory based models to achieve substantial risk diversification. Another key factor, however, lies in the data requirements of portfolio optimisers. Since the models require time-series data on market performance, on rents, yields and capital values, only those markets that are sufficiently well developed and able to provide appropriate statistics will be included. This inevitably privileges large metropolitan markets and the CBD office markets of major cities. Thus pre-existing patterns of capital flows are reproduced and strengthened.

This tendency compounds the major failing in international real estate investment strategies: the failure to consider economic fundamentals. It is here that the linkage between decision making and wider economic forces become of critical importance in London and elsewhere. There was a failure to appreciate that the markets (major city centre office markets), the assets (prime office buildings) and the source of income (rents from financial service occupiers) were driven by the same global economic forces. Olympia & York provides a stark, but by no means unique, example. The fortunes of the O&Y property empire were tied to the performance of financial services in Toronto, London and New York - a performance that moved in lockstep.

Operational reasons reinforce this flow of investment. In seeking to acquire or fund real estate on an international basis, an investor will need to consider cost implications. Given high management and transaction costs, it seems rational to limit acquisitions to a relatively small number of properties with large lot sizes to benefit from scale economies. Thus, typically, international investors sought prime or trophy office buildings (or, less commonly, retail developments) located in major metropolitan CBDs such as the City of London. Psychic, "comfort" factors come into play here, too. Well-known locations and prestige sites may well be more acceptable to investment committees and trustees than potentially profitable but obscure or less attractive investments. Generally, property research and management services are heavily concentrated in financial services CBDs.

At the individual, buy/sell/fund, stock selection decision level, the use of intrinsic net worth or fair value models based on explicit DCF analysis or on "unbundling" the capitalisation rate (all risks yield) may have a similar impact. DCF models require market analysis (with the data requirements outlined above) and consideration of tenant covenant. Tenant covenant models - based on credit rating, sector rating and firm size - privilege international financial and business services firms which, once again, are predominately located in major metropolitan centres. The decision-making process, and the information privileged by that process, means that funds, investment and ownership are channelled into a relatively small number of key centres. Similar arguments can be put forward with respect to project-specific bank funding and the analysis of risk, and to the pricing and rating of real estate backed securitised vehicles like commercial mortgage backed securities and bond issues. In the latter case, tenant covenant and the quality of information on the underlying portfolio are critical for the attainment of a favourable rating from firms such as Moodys or S&P.

Thus, the very investment decision models that are designed to overcome the deficiencies of intuitive, informal, individual decision-making in property markets may serve to reinforce the concentration of capital and investment in office markets such as the City of London; markets which appear vulnerable to sharp cyclical downturns caused by, and exacerbating, international financial market shocks. In part, this results from treating real estate as a distinct asset class, rather than recognising the common industry effects that contribute to both office returns and the performance of occupiers, lenders and investors based in those markets. The failure to recognise the potential feedback effects results in an underestimate of risk in the market. In the longer term, evidence of greater volatility and the closer integration of property with the other capital markets may result in the more accurate pricing of this risk.

Finally, the implications of the high level of overseas ownership of office space in the City revealed above, need to be considered. The forces leading to globalisation of financial activity are likely to lead to a growth in overseas ownership of real estate assets in world cities. However, there is little literature to confirm such trends. Edward Erdman's 1989 review of the overseas influence on the London office market does not mention ownership, concentrating exclusively on occupational demand. Similarly,

Pryke (1994), in his discussion of changes in City office markets, does not identify overseas ownership as a significant factor. By the 1990s, the trend for overseas acquisitions in the City had become clear. Thus, LPAC (1995) discuss how institutional disinvestment from the central London office market could be seen as an opportunistic response to increasing demand from a wide range of overseas investors⁶ and commercial agents were documenting the extent of overseas purchases.

The extent of overseas ownership does not seem to be reproduced in London's European financial competitors. Tentative estimates for Frankfurt and Paris by Henderson Investors confirm this view. In Frankfurt, owner-occupation is the norm. Where investment property does exist, the majority of landlords are German, led by the open-ended funds. Foreign ownership is probably between 1%-5%. In Paris, foreign ownership levels have increased in recent years, with overseas investment accounting for some 90% of major office purchases in 1996 and 1997. Even if this trend continued, the aggregate share of space in foreign ownership would only rise to around 5% by the turn of the century.

Motivations for overseas investors acquiring City office space will vary greatly and so, hence, will the impact of that ownership. Much of the space is likely to be owner-occupied. Why would a firm own rather than rent space? A number of possible reasons may be advanced. These include:

- *the space is seen simultaneously as an operational base and as a financial asset;*
- *ownership signals commitment to local clients;*
- *ownership of space brings control of space.*

The first two reasons would suggest that overseas ownership may signal commitment to the City as a location implying some form of stability. However, the inflexibility of the standard UK lease may be too great for firms unsure as to their position in the City. As a result, ownership would imply *less*, not more, commitment. Overseas *investment* ownership is presumably motivated by risk and return considerations. While fears are expressed over capital flight, there is no intrinsic reason why overseas investment ownership should be more volatile than ownership by a UK institution or property company.

⁶ This is an interesting inversion from the more commonly expressed view that overseas investors snapped up bargains resulting from institutional withdrawal and the difficulties experienced by a number of property companies in the early 1990s.

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Appendix: Data sources for the study of office ownership and occupation.

The office database compiled by Chesterton for Estates Gazette interactive (EGi) was used to analyse the current situation. This has good coverage of the City core (with around 75% of records having ownership details) but less comprehensive data on the fringe. There is information on around 92% of the City floorspace. A series of special tabulations were run examining nationality of ownership, the type of organisation owning, the business of occupier and the type of ownership.

As with all secondary data, analysis is dependant upon the definitions employed. Ownership is defined as freehold (fee simple) ownership or long leasehold (lease of 30 years or more). Even with the lengthy UK lease, 30 years is an exceptional letting; depreciation and functional obsolescence implies an intention to expend capital. Nonetheless, the freeholder retains the reversionary capital value (over 50% of the value of City offices is land) and more modern long leases have ground rents with escalation clauses. Type of organisation was defined according to standard industrial clarification. Unfortunately this means that there was no category for pension funds although insurance companies were separately identified.

Nationality of ownership presents further problems. A firm may be UK incorporated, but largely or wholly owned by an overseas parent. Is St Martin's a UK or a Kuwaiti company, for example? For listed companies, traded on the stock market, a considerable proportion of shares may be owned overseas - 17% of UK listed ordinary shares are owned overseas. However, the issue here is one of control: only majority or significant shareholding will have a direct impact on decision-making. Clearly, dividend income (derived from rental income) is flowing out of the country. Finally, for a truly multinational firm, it is not clear where the locus of operation lies. In such cases, the firm's formal head office was used as the basis for designation in the historical analysis (see below). These are, in many instances, judgement calls.

The Chesterton/EGi database, then, provides valuable information as a snapshot of the City market. However, it was not possible to trace the history of the ownership. No source was found that would permit such an analysis. Accordingly, a sample database of City offices was assembled and agents' records, on-line sources, deals gazettes and direct interviews used to complete a historic record from 1972 to 1997. The final database contained 126 buildings for which complete data existed.

The floorspace of the properties on the database, at 10.2 million square feet, represents around 17.5% of the core Chesterton database. The database is broadly representative of the core City market (see Figure A1). Data on type of organisation and nationality of current and past owners were collected, together with the dates of transactions. This enables a time series view of ownership patterns in the City. Data definitions conformed to those used by Chesterton although pension funds were separately identified. The database recorded multiple ownership (and the proportions owned by each party) and distinguished commercial from traditional ground rent/long leasehold arrangements.

Figure A1: Nationality of Ownership of City Offices, 1997

Nationality	Reading database, %	Chesterton/EGi %
United Kingdom	78.1%	80.3%
Japan	7.2%	4.8%
Germany	5.4%	5.8%
USA	4.1%	3.2%
Middle East	2.6%	0.7%
Other European	0.6%	3.9%
Other	2.0%	0.3%

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