

Property Cycles in Dublin: the Anatomy of Boom and Slump in the Industrial and Office Property Sectors

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Abstract: The property development process is the means by which built space is created to accommodate the variety of urban functions. The paper examines the existence of boom-slump cycles in the industrial and office property development sectors and their relationship to Irish macroeconomic trends. The consequences of boom and slump are examined with respect to the construction sector and in relation to Dublin's built environment.

I INTRODUCTION

During the past twenty years Dublin has witnessed two periods of major activity in the office and industrial property development sectors. These have resulted from the demand for newly created floorspace generated by the growth of office activity in the economy and its concentration in the Dublin region, together with the expansion and restructuring of industrial activity in the city. Property development is generally undertaken in the expectation of profit. This can accrue to the development interest either where the flow of rental income from a building exceeds the stream of outgoings, mainly in the form of interest payments on borrowed development capital and on other recurrent costs, or where the proceeds of the sale of a building to an owner occupier or investor exceeds its total cost of development including the cost of acquiring the land, construction costs, professional fees and interest payments. This property development industry serves two separate markets. It is the user market which generates the demand for space in buildings, while the property investment market provides the demand for buildings from long-term investors seeking property as a means of acquiring

a flow of rental income from the occupiers. As the economic returns to all the interests involved in the property development process are derived from the occupiers of developments, it is the demand for built space which ultimately controls the scale of activity within the property development industry.

The aim of the paper is to investigate those economic factors which have affected the degree of activity in the industry and note some ramifications of its cyclical tendency. As the scale of demand for properties is a derived demand based upon the degree of activity in the wider economy, the paper concentrates upon fluctuations in the scale of user demand for buildings. However, it should be recognised that the supply side represented by the property development process comprises a heterogeneity of separate interests (landowners, commercial and institutional developers, construction companies, financiers and long-term investors in property) whose scale of involvement and terms of engagement in the property development process are based upon criteria which differ significantly from interest to interest. Moreover, certain of those interests, notably financiers and institutional investors, are engaged in property only as one potential arena of activity from a variety of competing fields of operation. Additionally, those interests which are more closely associated with property development alone, including commercial developers and construction companies, switch the geographical focus of their operations internationally to benefit from spatial variations in development cycles. Thus, because of the complexity of interests involved and the variability in their terms for engagement, the supply of built space cannot be treated as a simple response to changes in the scale and pattern of demand emanating from the user markets alone. However, detailed analysis of these terms of engagement lies beyond the scope of the current paper and is developed elsewhere (see MacLaran and Malone, 1986).

II DEVELOPMENT CYCLES

The cyclical nature of urban development, characterised by periods of frenetic activity followed by intervals of relative quiescence, has been recognised by a wide body of research following Cairncross's (1934) study of the building industry in Glasgow between 1870 and 1914. Summerson (1962) was able to identify distinct long swings in London's development that were present as early as the eighteenth century:

London's growth has not been a matter of gradual and even incrementation, but of distinct waves of activity at intervals roughly of about fifty years . . . an obvious relation to the alternation of periods of

peace and war, and a less obvious relation to the increase of London's population. (Summerson, 1962, p. 24)

Building cycles of considerably shorter duration than these long swings, yet longer than the "general business cycle", were also identified for a number of cities in the late nineteenth and early twentieth centuries (Ashton, 1959; Cooney, 1960; Lewis, 1961; Saul, 1962). In searching for an explanation of such cycles of intermediate duration of between 15-25 years which are associated with periods of investment in the built environment (often termed Kuznets cycles), a number of authors have investigated their relationship with the international movements of population and capital (Thomas, 1954) and the fluctuation of commodity prices and interest rates (Warren and Pearson, 1937). Although much attention has been directed towards cyclical fluctuations in either housing construction or in aggregate measures of building activity there has been a recent growth of interest in both office development (Barras, 1979; Catalano and Barras, 1980; Daly, 1982) and the industrial property development sector (Boddy and Barrett, 1979; Boddy, 1982; Cardew and Rich, 1982).

Research has also focused upon the relationships between cycles evident in different types of development activity (Lewis, 1965; Gottlieb, 1976), while Harvey (1978) has drawn upon such work in order to provide a more general theoretical framework for comprehending the production of the built environment. However, such research is frequently hampered by the lack of local economic indicators appropriate to the investigation of building cycles in particular cities. This is unfortunate because "in the last resort the demand for building is a function of local conditions" (Lewis, 1965, p. 2).

The examination of property development cycles in Dublin is facilitated by the city's pre-eminent role in the Irish economy, accommodating approximately 30 per cent of the labour force of the state and around 40 per cent of its manufacturing capacity and service workers. Its impact upon national trends is therefore considerable, and the application of national scale economic measures may be invaluable as analytical tools assisting the interpretation of such cycles. They are likely to be particularly pertinent in the context of the office sector where the Dublin sub-region (Dublin County Borough, County Dublin and Dun Laoghaire Borough) accounts for over 55 per cent of the total number of office workers in the state. However, they might be treated more tentatively with respect to the industrial sector during a period in which Dublin was long discriminated against by policies aimed at spreading industrial development to other regions. Nevertheless Dublin is of overwhelming significance in terms of the institutional investment market for both office and industrial property, and fluctuations in the relative attractiveness of different types of investment opportunity are closely reflected in changes in property development and investment in the city.

III METHODOLOGY

A variety of data sources was employed in the analysis. Statistics relating to economic fluctuations and macro indicators of activity in the building industry were drawn from official publications of the Central Bank, the Central Statistics Office, An Foras Forbartha, the Department of Finance and the Department of Industry, Trade, Commerce and Tourism. These sources furnished national scale indicators for the time period 1960-1983 (see Figures 1 and 2).

Data relating to the development of industrial space in the Dublin area between 1960 and mid-1982 were obtained from an analysis of valuers' books held by the Valuation Office of the Commissioner of Valuation, and from detailed records of the East Regional Office of the Industrial Development Authority (see MacLaran and Beamish, 1985). Questionnaire surveys of estate agents and interviews with developers provided information on the scale of office completions between 1960 and 1983 (see Malone, 1985). These data are presented diagrammatically in Figures 2a-2d.

Finally, a series of in-depth interviews were carried out with a wide range of property managers from financial institutions which possessed significant portfolios of property in the Dublin area, and these generated information about institutional policy regarding the timing of property purchase and scale of acquisition.

IV THE IRISH ECONOMY AND PROPERTY CYCLES IN DUBLIN

1 *The First Property Boom*

The 1960s marked a period of rapid economic growth in Ireland following years in which real levels of national production had experienced little change or had even declined absolutely, and from which many had sought relief through emigration. Figure 1a reveals that the decade witnessed a rising scale of net capital inflows into the Irish economy, with an expansion of foreign investment in industrial production, property and the national debt. By the end of the decade the gross national product had grown by almost 50 per cent, at an average rate of around 4 per cent per annum. Most significantly, the establishment and growth of export orientated manufacturing activities resulted in an average annual expansion of industrial output of 7 per cent, generating a 240 per cent increase in the volume of industrial exports by 1969.¹ Only in 1966 did the growth in the scale of the gross national product

1. Figures relating to industrial export values, especially during the 1970s and 1980s, need to be treated with caution because of the transfer pricing policies pursued by multi-national companies in order to reduce their tax liabilities.

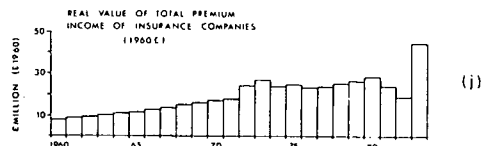
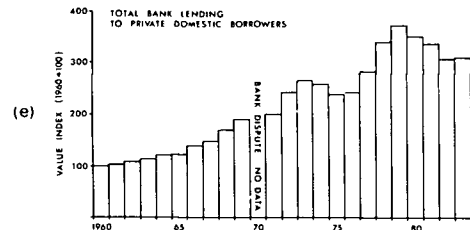
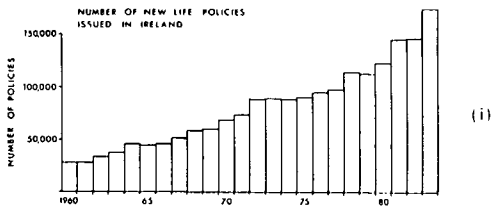
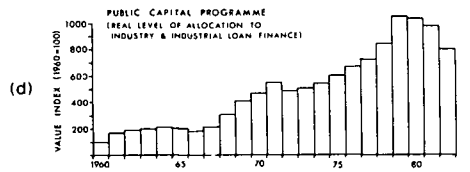
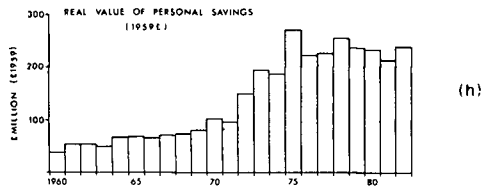
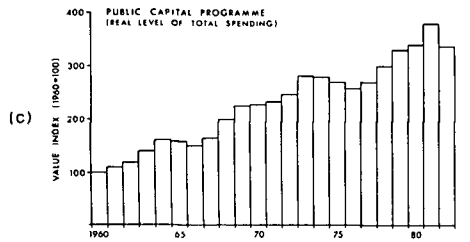
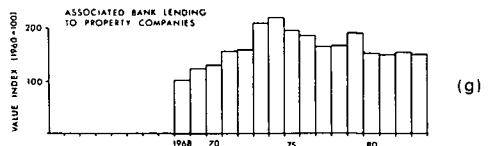
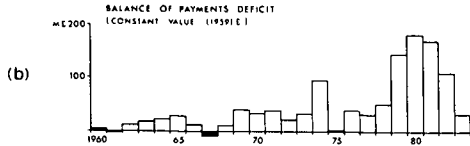
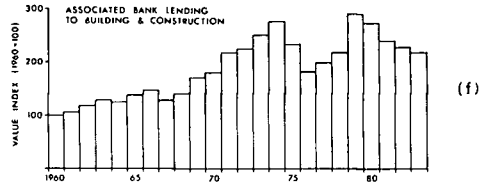
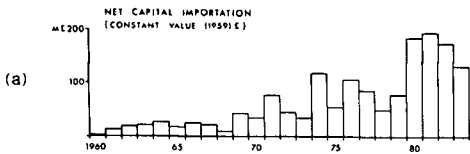


Figure 1: Irish Economic Indicators

fail to exceed 2 per cent, attributable to credit restraints imposed by the government during the previous year in order to curb inflationary pressures in the economy and tackle the growing balance of payments difficulties (Figure 1b). Nevertheless, even in that year manufacturing exports rose by 17 per cent in value terms, though levels of unemployment also increased, particularly in the construction industry which registered a rise from 9.4 per cent in 1965 to 10.6 per cent in the following year.

By the end of 1966, the government's corrective actions allowed a relaxation of credit restraints and permitted a succession of budgets during the following years which aimed at promoting economic growth, reaching 7 per cent in 1969. Figure 1c shows that the value of the Public Capital Programme rose rapidly during the late 1960s, and this was especially marked with respect to the Industry and Industrial Loan Finance component (Figure 1d) which grew in real terms by 13 per cent, 43 per cent and 35 per cent during 1967, 1968 and 1969, respectively. This encouragement to industrial production contributed to the rising rate of growth in the volume of manufacturing output from 2.4 per cent in 1966 to over 10 per cent two years later.

The relaxation of the mid-decade credit restraints was followed by an expansion of total domestic lending by banks, which can be seen from Figure 1e to have increased in real terms by 15 per cent during 1968 alone. This expansion was associated with a large injection of foreign capital into the Irish economy, a rapid growth in the role of the non-associated banks and a reduction in the real costs of borrowing after 1966. Associated bank lending to manufacturing industry expanded rapidly, particularly during 1968 when it grew by over 40 per cent, and was followed by a significant rise in the scale of lending to both the construction industry and to property companies, shown in Figures 1f and 1g. Sustained increases in the level of personal savings are shown by Figure 1h to have taken place after 1966, rising in real terms by over 6 per cent per annum during the late 1960s, and this facilitated a continued expansion in life assurance business. Figures 1i and 1j show that between 1966 and 1970 the number of new premiums issued rose by 47 per cent and that this represented an annual growth in premium income of around 8 per cent in real terms. A substantial proportion of these funds was channelled into property investment (see Malone, 1981; MacLaran, Malone and Beamish, 1985), and Table 1 illustrates the growing significance of real property in the portfolios of both the Irish Life and the New Ireland Assurance Companies during the early 1970s.

This decade of economic expansion was characterised by a continued transformation of Ireland's employment structure in which the numbers employed in agriculture declined rapidly while industrial and service sector employment increased substantially. The expansion of employment was

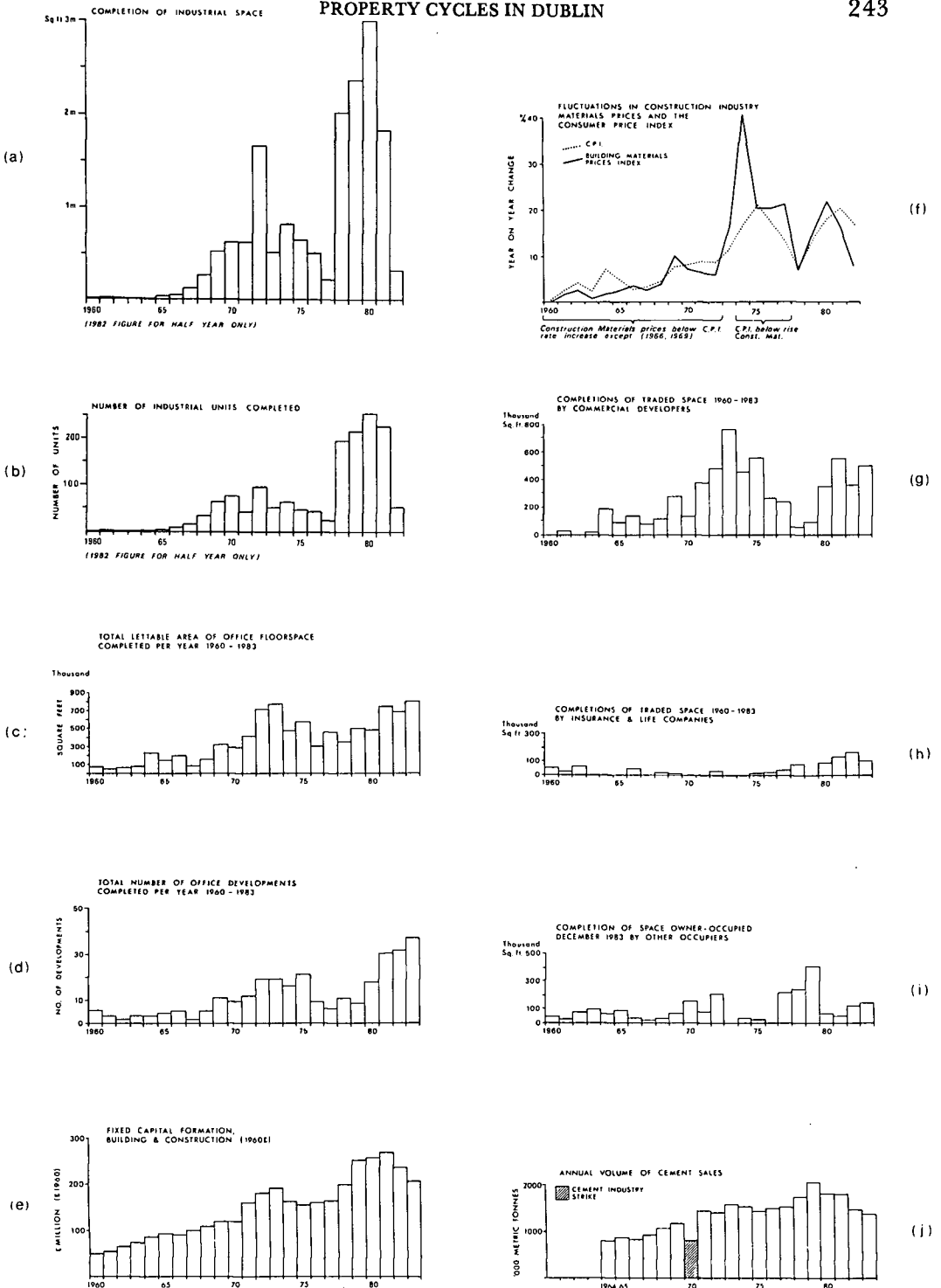


Figure 2: Industrial and Office Completions, and Irish Economic Indicators

particularly marked in white collar occupations, the number of office jobs growing by around 37 per cent between 1961 and 1971. The effects were most evident in central Dublin where the number of office workers increased from around 42,000 to over 72,000 during that period, growth being especially rapid in the commercial and public sectors (Bannon, 1973 and 1979). Concurrently, the restructuring of industrial activity in the region, associated with the establishment of new plants on greenfield sites and the decentralisation of firms from central locations during the late 1960s and early 1970s, generated a considerable demand for new industrial space in the Dublin sub-region. Thus, a survey of the 514 establishments which had located on industrial estates in the outer area of the city between 1965 and 1974 revealed that more than a quarter had relocated from the inner city (Dublin Corporation Planning Department, 1975).

Table 1: *The Changing Significance of Property in the Portfolios of Irish Life and New Ireland Assurance Companies during Selected Years*

		<i>Percentages of Total Portfolio by Value</i>								
		1960	1965	1970	1971	1973	1974	1975	1980	1983
Irish Life	(i)	15.0	13.2	13.7	24.5	27.9	28.1	25.4	25.4	19.3
	(ii)	9.5	12.2	13.8	11.8	11.2	11.4	10.0	2.7	1.8
New Ireland	(i)	12.9	10.4	13.4	20.3	25.7	36.1	35.0	11.1	10.2
	(ii)	19.2	34.3	34.6	34.4	24.4	23.6	22.8	12.9	8.2

Notes: Property (i) includes land, house property, office furniture, etc.
(ii) comprises mortgages.

Sources: Department of Industry, Trade, Commerce and Tourism: Assurance Companies, Stationery Office, Dublin – various years.

These processes of economic restructuring generated changing levels of demand for particular types of floorspace, which were reflected in changing patterns of land use in the central area of Dublin. Thus, Table 2 demonstrates that while the total area of industrial floorspace in the inner city declined by over 30 per cent between 1966 and 1974, the quantity of floorspace devoted to office activities grew by around 95 per cent or over 9 million square feet (850,000 sq. m.). Although a proportion of this expanded office space would have resulted from the conversion of residential properties to commercial functions, a sizeable proportion of that increase must have been accounted for by new development, as would have been most of the increase in industrial floorspace in peripheral locations.

Table 2: *Land Use Analysis in the Inner City Area 1966-1974*

Main uses	Gross floor area 1974 (sq. metres)	Gross floor area 1966 (sq. metres)	Changes	
			Actual	Percentage
Residential	3,100,700	3,188,900	-88,200	-2.77
Offices	1,749,200	898,600	+850,600	+94.66
Industry	1,272,400	1,822,600	-550,200	-30.19
Wholesale	941,300	917,300	+24,000	+2.62
Civic & public	776,000	658,600	+117,400	+17.83
Retail	668,200	590,500	+77,700	+13.16
Education	442,500	328,200	+114,300	+34.83
Leisure & entertainment	365,600	382,800	-17,200	-4.49
Other uses	358,800	271,100	+87,700	+32.35
Derelict buildings and vacant spaces	195,900	203,700	-7,800	-3.83

Source: Dublin Corporation Planning Department, "Land Use in the Inner City Area", *Working Paper 9*, April 1975.

Figures 2a to 2d show that the production of industrial buildings and offices was accomplished during two major phases of output, whether measured in terms of floorspace or the number of buildings completed. The year 1967 marked a major turning point in the development of industrial property in the Dublin area. Until that time fewer than ten units accounting for a total of less than 60,000 sq. ft. (5,575 sq. m.) of space had been completed annually. During 1967 the quantity of industrial space completed in the Dublin area more than doubled, doubling again during 1968 and doubling yet again in 1969. The number of separate units completed also increased from only 9 in 1966 to 63 in 1969. The spatial characteristics of these developments during the period 1960 to 1982 have been examined in detail elsewhere (see MacLaran and Beamish, 1985).

In the office sector the demand for space resulted in a significant real upward movement in office rents during 1967, and between 1971 and 1972 the rate of rental increase had reached over 20 per cent per annum which was well over twice the level of general inflation. The year 1968 witnessed a rise in the scale of completion of offices, the quantity of space and the number of developments reaching completion both doubling during that year (see Malone, 1981).

Figure 2e demonstrates that these trends were reflected in a rising real level of fixed capital formation in building and construction in the economy as a whole during the late 1960s. However, a combination of factors resulted in an interruption to the upward trend in the property cycle during 1970-1971. With regard to the industrial sector, following the rapid rate of industrial

growth of the late 1960s, industrial production nationally reached a temporary plateau in which reduced levels of investment in new activity resulted from apprehension about the profitability of new investment because of increasing wage and raw material costs. Both property sectors were adversely affected by industrial unrest. A protracted strike by bank workers resulted in a very restricted money market and coincided with a dispute in the cement industry. Furthermore, in order to check the growing demand pressures in the economy the real overall value of the Public Capital Programme remained unchanged during 1970. In Dublin, these trends resulted in a curtailment of the rate of expansion of industrial space during 1970, followed by a 46 per cent reduction in the number of industrial units completed during 1971. The completion of office space also declined during 1970 by around 14 per cent in comparison to the previous year. Together these had a particularly severe effect upon the construction industry, unemployment in that sector rising from 11.2 per cent to 14.6 per cent of the labour force. As can be seen from Figure 2e, for the first time since 1966 the real level of fixed capital formation through building and construction failed to register any growth.

However, sluggish growth in industrial production and limited activity within the construction industry resulted in reduced demand for credit during 1971, a year in which the level of the Central Bank's credit guidelines to lending institutions failed to be reached. The level of net capital importation, illustrated in Figure 1a, simultaneously increased and the real cost of borrowing was further reduced. These conditions of abundant capital and labour power permitted a significant expansion of property development activity. In Dublin, the number of industrial units completed during 1972 was more than twice that of the previous year, and the quantity of space produced rose by over 160 per cent to 1.65 million sq. ft. (153,000 sq. m.) marking the peak level of output during the first boom. The following year witnessed the peaking of the office boom with a total of 769,000 sq. ft. (71,440 sq. m.) of floorspace in nineteen developments.

2. *The Onset of Slump Conditions*

A number of factors were associated with the termination of the first property boom. A growing demand for credit during 1972 from both private and public borrowers resulted in a sharp upward movement of interest rates during the second half of the year. By late 1973 overdraft rates lay between 12.5-14 per cent, having almost doubled during the previous eighteen months. Construction costs also increased rapidly in the wake of the oil crisis of 1973 (Figure 2f). These trends placed a considerable cost burden upon speculative property developments. Moreover, the slowdown in the international economy which had been apparent even prior to the oil crisis led to the shelving of expansion plans by industrial companies and resulted in a

very limited demand for new industrial space during the following years. In Dublin an over-supply of industrial space emerged, especially in the case of units larger than 15,000 sq. ft. (1,395 sq. m.), and as the level of rental increase for initial lettings fell behind the general rate of inflation during 1973 many speculative developments were shelved and construction activity was often halted leaving buildings unfinished. Although a number of these properties were subsequently purchased cheaply by speculative investors who completed them in preparation for an anticipated increase in demand, the level of industrial completions reached its lowest level in 1977 when little over 200,000 sq. ft. (18,580 sq. m.) of floorspace was produced in only 23 units. The real return from new office lettings also declined after 1972, though the level of increase for initial rents remained above the level of general inflation until late in 1976. While Figure 2c indicates that the peak level of completion for office space was achieved during 1973, the subsequent reduction in output appears to be more erratic than that pertaining to industrial space. Both reveal an initially major drop in output, in 1973 in the case of industrial property and 1974 in the case of offices, followed by a brief recovery and subsequent decline. However, an examination of Figure 2i reveals that a significant proportion of the total amount of office space completed over the following years, amounting to 70 per cent between 1977 and 1979, was taken up by owner-occupiers and it is believed that much of the remaining floorspace was pre-let. This period of downturn was also one in which the contribution of commercial property development companies such as Hardwicke and Dodder was of declining significance in the creation of office space (see Figure 2g), being associated with the development of only 11 per cent of the total area developed during 1979 in contrast with roughly 90 per cent in 1973 (see Malone, 1981).

After 1974 the associated banks reduced their level of lending to the building industry and to property companies (Figures 1f and 1g). Nationally, the level of fixed capital formation in construction remained at a low level until 1978 (Figure 2e) when the volume of cement sales recorded in Figure 2j registered a significant rise which heralded the onset of the second property boom.

3 *The Second Boom and Subsequent Slump*

The reduced level of development activity which followed the first property boom meant that the oversupply of space which had been generated in both the office and industrial sectors was progressively reduced as vacant space was gradually taken up. A resurgence in world trade early in 1976, the improved international competitiveness of the Irish economy associated with a reduction in inflation and the currency's depreciation, together with expansionary budgets during 1976, 1977 and 1978 lifted the economy out of the

recession which it had experienced in 1974 and 1975. The gross national product grew by 3½ per cent during 1975, 5 per cent in 1977 and by 7 per cent in the following year. Figures 1c and 1d show that substantial real increases in the scale of the Public Capital Programme had been budgeted for during those years, while the 1977 budget was particularly noteworthy for its public sector employment expansion, in its granting a reduction in the rate of stamp duty on offices as a stimulus to development activity, and for its substantial concessions to industry in order to boost the scale of its investment. The Industrial Development Authority's (IDA) incentives for industry also created a climate of optimism for Irish industry which was encouraged to expand, and the volume of manufacturing production grew by over 8 per cent per annum between 1976 and 1979. A fairly steady reduction in interest rates since early 1974, associated with reduced demand for credit facilities during the recession and an increased scale of foreign capital flowing into the economy during 1976 and 1977, resulted in the availability of relatively cheap credit by the fourth quarter of 1977. Figure 1e shows that the scale of bank lending to private borrowers during that year registered a rapid increase, rising by over 16 per cent in real terms and followed by a further 21 per cent rise during the following year, the demand for credit from manufacturing and from the construction industry being particularly marked. By late 1977 the user demand for industrial space in Dublin had reached a stage at which estate agents were indicating that a shortage of prime industrial space was emerging. During 1978 the rise in industrial rents again outstripped the general rate of inflation, rising more than twice as rapidly as general inflation and outpacing the inflation rate for building materials. Office rents experienced an even greater real rate of increase for initial lettings (13 per cent). These conditions facilitated a second development boom in which the surplus capacity in the construction industry, reflected by unemployment rates of 22 per cent among building workers in 1977, was progressively taken up.

In the Dublin area, 1978 saw an almost ten-fold increase in the quantity of industrial space completed compared to the previous year and an eight-fold rise in the number of industrial units developed. This second boom, which lasted for four years, reached a scale of output far in excess of that which was achieved during the previous boom, rising to over 3 million sq. ft. (278,700 sq. m.) in 1980. This boom was associated with a rapid influx of institutional investment from the insurance sector. Among the more important Irish institutional investors were Irish Life, New Ireland and Hibernian Insurance which increasingly recognised the significance of standard industrial properties as a valuable medium for the investment of their growing premium income (Figures 1i and 1j). Other institutions investing in industrial property included the Royal London Mutual Insurance Society,

Scottish Provident, Canada Life, the National Mutual Life Association of Australasia, the Irish Pension Fund Property Unit Trust and also drawn towards industrial property investment were a number of company pension funds seeking to enhance their portfolios of real property but lacking the funds to acquire more costly office properties. In addition, the state-owned Industrial Credit Corporation acquired over 60 industrial units during these four years, amounting to nearly 800,000 sq. ft. (over 74,000 sq. m.) of space, while the Allied Irish Investment Bank also made significant acquisitions. (For a discussion of institutional investment and the role of real property in Ireland, see MacLaran, 1986).

By the early 1970s it had become increasingly evident that the IDA's regional policy of not promoting industrial development in the Dublin area while encouraging new industries to locate in the regions was achieving a measure of success. Between 1966 and 1981 the net increase in manufacturing employment in Dublin was only 6.5 per cent compared to 11.9 per cent for the state as a whole. Moreover, the scale of job losses in Dublin during the 1974-1975 recession resulted in a net loss of over 12,000 manufacturing jobs in Dublin between 1973 and 1977, compared to a target of 7,300 additional jobs (Industrial Development Authority, 1978). The long-established industries of the inner city were particularly hard hit by the recession. Thus, in 1976 the IDA commenced promoting Dublin as an industrial centre and became involved in the direct provision of industrial properties as well as participating in joint development ventures with private developers and institutional investors (see MacLaran and Beamish, 1985). The impact of its involvement can be gauged from the fact that by mid-1982 it had in some degree been associated with the development of nearly one-third of the factory units built in the Dublin area since 1960 and had become the largest owner of industrial space in the area. This activity had the effect of delaying the impact of the onset of reduced private sector involvement in the development of factory space after 1978, and has attracted criticism from private sector interests for having saturated the market for factory space.

In the office sector the second post-war boom was again lagged slightly in time upon the industrial sector when measured in terms of completions. Although 1981 marks the date for a significant expansion in terms of total space reaching completion, it was 1980 which marked the turning point for both the number of developments completed (Figure 2d) and the amount of leased space coming onto the market, representing a five-fold increase over the previous year. Malone (1985) has shown that this second boom was characterised by the re-emergence of the commercial developers who were associated with over three-quarters of the total area completed in 1981, though their significance again decreased after that date (Figure 2g). Although the maximum level of completion of office space was not reached until

1983, 1981 marked the peak year in terms of traded (leased) space.

The scale of development in the two sectors parallels the rising real level of fixed capital formation in building and construction in the economy as a whole during the late 1970s (Figure 2e). Thus, there were significant correlations (at the 1 per cent level) between the level of fixed capital formation and the scale of construction of industrial space in Dublin between 1960 and 1981 (Pearson's $r = 0.877$) as well as with the annual number of developments reaching completion (Pearson's $r = 0.910$). Similarly, the relationship between the scale of development of offices between 1960 and 1983 and the level of fixed capital formation in building and construction was also high (Pearson's $r = 0.766$ for office space and Pearson's $r = 0.812$ for the number of developments reaching completion). However, this second period of large-scale development activity reached its peak at a time when Irish economic expansion was rapidly faltering, especially in the wake of massively inflationary increases in oil prices which doubled between 1978 and 1980. Difficulties in obtaining occupiers for newly completed industrial buildings, rising interest rates associated with large-scale public sector borrowing, together with rising building costs which outpaced the rate of increase in industrial rents during 1980 (and office rents during 1982), resulted in a greatly reduced output of industrial property development after 1981. The industrial property sector entered another period of quiescence in which considerable quantities of space were to remain vacant and rental levels for new lettings remained relatively unchanged or even declined absolutely during the following three years.

The longer time scale for on-site completion of office developments masks a considerably reduced scale of development activity in this sector after 1982. Of particular significance in this context was the reduction in demand for office space emanating from the public sector as a result of reduced recruitment in response to escalating budgetary deficits. Its importance can be gauged from the fact that the public sector had taken up around 60 per cent of the leased space coming onto the office market during the previous two decades (Malone, 1981). By November 1983 about a quarter of the total area of office space completed during the previous 3 years remained unlet, amounting to 650,000 sq. ft. (60,385 sq. m.), while over a third of the space under construction in December 1983 could be described as being on offer within the user market, accounting for a further 275,000 sq. ft. (25,545 sq. m.) (see Malone, 1983). In the face of such an over-supply of office space, development sites have remained dormant in the expectation of a future up-swing in the property cycle, or development schemes have been altered to reduce their scale of office content and enhance the retail element, for which the market remained relatively buoyant.

V THE CYCLE OF BOOM AND SLUMP

From the foregoing examination of development cycles in two property sectors a number of interesting points emerge. The appearance of a substantial over-supply of financial capital sufficient to generate relatively cheap credit and some evidence for an increased superfluity of labour power in the construction industry which holds down a significant element in building costs are features which are common to the commencement of both periods of boom. They do lend support to Harvey's (1982) contention that the built environment represents a channel of investment for periodic surpluses of capital and labour power. However, these do not represent sufficient conditions for the initiation of a development boom, for user demand must be forthcoming for development profit to be realised. Rising user demand for floorspace under conditions in which the supply of newly built space remains relatively inelastic due to its slow pace of production, generates an increase in rental levels for initial lettings. Enhanced rental values render profitable those schemes which had previously been considered "risky" or "marginal", encouraging an expansion of the supply of space through new development. However, no mechanisms exist to ensure that the production of space is exactly tailored to match demand. In the case of office developments which may take around three years to reach completion, there is likely to be an extended period during which development activity attempts to catch up with demand and in which rising rents induce more and more development activity. Although the development time scale for industrial space is shorter, its far greater susceptibility to the vagaries of the business cycle render the development of speculative ventures very risky as the demand for space may rapidly disappear. With regard to both sectors, in time the rising tide of completions and the reduction in the scale of user demand has the effect of halting the upward trend in rental levels. As an over-supply of space emerges, rental levels for new lettings remain static or may even decline absolutely. Given that the effect is to render new schemes potentially unprofitable, the level of development activity is consequently reduced, while those schemes which do proceed are likely to be either pre-let or for owner occupation. Similar sequences of events have been shown to characterise property development cycles in London (Barras, 1979) and Sydney (Daly, 1982). With respect to office development in London, Barras summarises the events underlying the degree of engagement by development interests as follows:

The upward pressure of demand leads to increasing rents in the user market and declining yields in the investment market, as existing stocks of available space are taken up. Capital values rise, so increasing the

potential profitability of development. Developers are encouraged to initiate schemes, although it will be three to four years before they are completed and can be added to the stock of available space. If demand continues to grow, available space on the market will further decline and developers will continue to initiate new schemes. By the time the "first wave" of developments are coming onto the market, there is a potential over-supply from the volume of schemes which have already been started. Though the boom appears at its height, the profitability of new schemes is in fact much reduced. However, only when the over-supply actively materialises does development activity slacken off. By this time the volume of newly developed space coming onto the market causes rents to stabilise or fall, yields to rise and capital values to fall. Development then only continues at a low level until the supply of available prime space has declined sufficiently for the cycle to begin again. (Barras, 1979, p. 1).

In Dublin, both of the periods of booming property development were characterised by an over-involvement in speculative ventures which resulted in an increase in the number of vacant premises. This stemmed the tide of rising rental levels at a time when rising interest rates, caused by growing demand for credit, together with an increase in the costs of construction rendered more schemes marginal in terms of their potential profitability. Thus, between 1960 and the early 1980s, significant relationships (at the 1 per cent level) are found to exist between the supply of credit in the economy, as measured by the scale of total bank lending to private domestic borrowers, and the scale of both industrial and office floorspace completed (Pearson's $r = 0.867$ and Pearson's $r = 0.794$, respectively), and between the level of associated bank lending to construction and the scale of industrial and office completions (Pearson's $r = 0.783$ and $r = 0.673$, respectively). However, the degree of correlation between bank lending to construction and the scale of completions was higher up to the middle of the 1970s. Thereafter, the increasing scale of development activities and forward funding of schemes by the investment institutions together with the expansion in the role of the non-associated banks, seems to have been instrumental in depressing the degree of association. In the context of the industrial property sector a further important relationship was found between the real value of the Industry and Industrial Loan component of the Public Capital Programme and the scale of both the completion of industrial space ($r = 0.872$) and the number of industrial units ($r = 0.888$) during the following year.

Interestingly, both property sectors revealed significant degrees of association (at the 1 per cent level) with indicators of international capital movements represented by the scale of net capital importation ($r = 0.680$ for office

space, $r = 0.690$ for industrial space) and the size of the balance of payments deficit ($r = 0.566$ for offices, $r = 0.824$ for industrial space), findings which are reminiscent of the research undertaken into the relationship between capital flows and building cycles in nineteenth-century economies (Thomas, 1954). An additional similarity to that body of work is the tendency for the amplitude of industrial building cycles to be far more accentuated than those pertaining to offices (see Gottlieb, 1976, p. 66), as is the tendency for the industrial cycle to lead on commercial developments. In Dublin the degree of association between the two sectors is markedly higher when comparison is made between the annual output of office space and the previous year's level of industrial space completed ($r = 0.757$, series 1960-1981 and 1961-1982). Gottlieb (1976, p. 70) explains this relationship between the cycles of the different property sectors in the following way:

Industrial building provides the facilities which expand local jobs and production and thus generates local commercial and residential expansion.

However, the tendency for industrial space to lead over office completions may result rather from the lengthier development time scale associated with office development. While industrial space may be generated within 12-18 months of initiation of new schemes, office developments are likely to take around twice as long, being especially prone to delays because of problems over site assembly due to title problems with and multiple ownership of inner city potential redevelopment sites, as well as difficulties over planning permissions and objections from community groups.

VII CONSEQUENCES OF THE BOOM-SLUMP CYCLE

It may be argued that the cost to the economy which results from vacant buildings is likely to be less than that which results from the appearance of shortages of appropriate space. However, the tendency for the industry to become "over-heated" by speculative development in response to an upward drift in user demand, generates an over-supply of space which can only be eradicated slowly. The cost of such lettings voids to the developer and investor (individual or institutional) is considerable. This tendency for the property development industry to be dominated by cyclical fluctuations in the scale of its activity also has important ramifications for the construction industry with respect to the formation of profits and the conditions of employment of its labour force. (For a discussion of these points see MacLaran and Malone, 1986). During periods of relative quiescence the building industry is in a relatively weak bargaining position in relation to developers, and the building

industry's profit margins are therefore likely to be squeezed. Those developments which are initiated earliest in a period of rising demand in the user market and in which rental levels are increasing are not only likely to reach fruition at a time when space is still scarce and command a premium level of initial rent, but are also likely to have benefited from relatively low construction costs. Ironically, as construction companies recognise the potential for gaining increasing shares of development profit through raising tender prices, they unwittingly accelerate the onset of the ensuing slump by increasing the costs of development and rendering more ventures potentially unprofitable.

As the public sector is a major source of finance for the construction industry, financing over two-thirds of total output, the scale of the public sector programme has had a dramatic effect upon the general level of construction activity in the economy. Unfortunately, as was noted earlier, the scale of the public sector's capital programme tends to parallel the level of private sector activity rather than operate in a counter-cyclical fashion. This exacerbates the problems associated with the inherent tendency of the industry to experience periods of over-heating followed by periods of severe depression. The consequences for the labour force have been particularly severe and during the present slump are reflected in an estimated 45 per cent unemployment rate among construction workers during 1984. In turn, the characteristic insecurity of employment is likely to contribute to problems with respect to labour relations in the industry, while the chronic instability in the size of the labour force makes it difficult for the industry to gear up to service the requirements of any subsequent upturn in demand for construction activity.

An additional consequence with respect to the office development cycle is the effect upon the areas peripheral to the core of the tendency for operations to expand geographically into such secondary areas during times of boom conditions in the property market. This results in the "upgrading" of land-use from residential and industrial uses as these areas become the focus for often large-scale schemes making use of the sizeable sites which had previously accommodated industrial functions. Such large-scale developments have not only the ability to lower the potentially damaging externality costs associated with such marginal localities, but may through their sheer size be able to extend the boundaries of the prime area of office property to incorporate these new developments. The result of this geographically "pulsating" process is that considerable pressure is placed upon residential activity in the inner city not only as a consequence of the direct threat of land-use change to office use, but indirectly as a result of the declining inner area's industrial employment base. At times of slump these riskier developments are unlikely to be commenced and the derelict or cleared redevelopment sites which

become "frozen" awaiting an upturn in the development cycle fail to enhance the desirability of the inner city as a residential environment. At such times, those speculative schemes which are undertaken are generally confined to the prime areas. Unfortunately, in the Dublin context, this comprises the very areas in which the built environment is already of a high quality.

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