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**COMMERCIAL REAL ESTATE OVERBUILDING
IN THE 1980S:**

BEYOND THE HOG CYCLE

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Abstract: Overbuilding in commercial real estate in the 1980s is commonly viewed as an example of a speculative bubble. This paper questions that view and proposes an environment in which overbuilding could occur as a rational response to fiscal policy in the 1980s. Further, this paper contends that overbuilding could have been accompanied by bank financing, even when banks were aware that they would incur losses associated with the loans. Finally, it is maintained that banks' lending behavior was consistent with profit maximization.

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Overbuilding in commercial real estate, especially in office buildings, and the resultant default on loans collateralized by commercial real estate, has been widely identified as one factor leading to weakness in the banking sector in the late 1980s. Weakness in the banking sector in turn has been linked to a downturn in economic growth late in the decade [Litan, 1992; Browne and Case, 1992]. While much research has been conducted regarding the presumed effects of office-space overbuilding, explanations for the overbuilding phenomenon are still being debated. This paper presents an explanation of overbuilding that differs substantially from those previously advanced. ¹

The hog-cycle approach [Ginsburg, 1982; Browne and Case, 1992] is a common explanation of office overbuilding. According to Browne and Case, for example, commercial real estate construction is inherently cyclical. They attribute the cyclicity to their observation that commercial buildings take a long time to construct and that tenants in commercial buildings typically have long-term leases, and they conclude that the supply of available commercial space is relatively fixed in the very short run. As a result, they believe that

¹A number of authors (Corcoran [1987] and Voith and Crone [1988], for example) have argued that a rise in vacancy rates occurred in the 1980s as a natural response to tax laws. However, these explanations do not allow for overbuilding accompanied by increased levels of loan defaults.

any unanticipated increase in the demand for commercial space may sharply drive up rents in the short run as a relatively large pool of new potential tenants bid for the limited space available. Browne and Case maintain that these temporarily high rents will be misinterpreted by the market as long-lasting, as in the classic hog cycle, and will encourage the overbuilding of commercial space. However, the hog cycle approach has its critics. Hekman [1985] finds no empirical evidence of a hog cycle in real estate data from 1979 to 1983 that he examined.

A second explanation for overbuilding focuses on the availability of financing and has been labeled the "herd" or "lemming" theory [Litan, 1992]. Litan suggests that real estate building is influenced by the availability of financing. He proposes that overbuilding in the 1980s occurred because too much financing was made available to real estate borrowers. According to the lemming explanation, bankers made excessive real estate loans because they saw how profitable real estate lending was for other bankers and wanted to follow suit. Litan contends that these bankers thought the real estate boom would last forever or that their borrowers would be the last good ones. Along this same line, Peek and Rosengren [1992] propose that banks in New England lent heavily in the 1980s in response to a real estate price

"bubble" that the bankers apparently believed would be long lived.

Moral hazard also is cited frequently as a reason for the provision of excess lending to commercial real estate. This explanation has been applied primarily to lending by thrifts that had negative equity positions and thus nothing to lose if the loans went bad, but much to gain if they were successful [Hester, 1992; Litan, 1992]. The moral hazard argument is not generally applied to banks that typically had positive net worth in the 1980s. This point is of particular interest since banks expanded into commercial real estate lending to a significantly greater degree than did thrifts or insurance companies in the 1980s [Litan, 1992].

Finally, it has been argued that banks increased their commercial real estate lending because thrifts and other intermediaries weakened in the 1980s, providing an opportunity for banks to profit by shifting a greater proportion of their loan portfolio into commercial real estate [Hester, 1992]. Also leading banks to increase their reliance on commercial lending was a loss of their non-real estate customers to securities-backed credit markets during the decade [Litan, 1992].

Among researchers, there is a general consensus that the Economic Recovery Tax Act of 1981 (ERTA) played an important

role in commercial real estate activity in the 1980s. ERTA created tax incentives that benefitted some owners of commercial real estate. Most authors agree that these tax benefits made the construction of commercial real estate more attractive. Browne and Case, for example, maintain that ERTA helped boost "construction beyond what could have been supported by the underlying demand for commercial space."

A common assumption in the existing explanations for commercial overbuilding is that bankers, developers, and tenants had information about the deterioration of conditions in the commercial real estate sector that they either misinterpreted or simply ignored. For example, after finding little empirical support for several of the popular explanations reviewed above, Browne (1993) concludes that banks must have "...failed to recognize that the risks they incurred as individual banks were affected by the actions of their fellows."

In contrast, the explanation proposed in this paper maintains that bankers, developers, and tenants did not necessarily make systematic errors in judgment or ignore relevant information. Rather, these parties acted rationally, using all available information. Further, it is argued here that ERTA alone may have been sufficient to lead to overbuilding. Rising vacancy rates accompanied by additional

office-building construction and an eventual rise in commercial real estate loan defaults could conceivably have been rational responses to ERTA. This paper will show that real estate overbuilding (represented by fully anticipated rising vacancy rates, increased office construction, and the corresponding financing by banks, even when such financing is known to result in net loan losses) can be generated in the context of profit maximizing behavior by all market participants.

A Sketch of the Market for Office Space

To demonstrate the points made in the section above, a simple real estate market environment is sketched. In this environment, the real estate sector is composed of bankers and landlords who wish to maximize profits and tenants who wish to maximize utility given their office space budget. Office space is exchanged between tenants and landlords, exclusively with 10-year leases that define price and other terms and are legally binding on both parties. Landlords both construct office buildings, using funds borrowed from bankers, and operate the structures once complete. Landlords pledge the office buildings as collateral on the loans they receive from banks. Office buildings are assumed to be a fixed-cost asset in that their operating costs are the same whether they are

fully occupied or empty. Office space is not homogeneous. Two types of office space exist, Classes A and B. Class A space is relatively newer and has more amenities than does Class B space. As a result, tenants pay a premium for Class A space. Moving costs are fixed for all tenants. For simplicity, all office space is initially leased. Bankers finance all real estate projects for landlords that add to their bank's profits.

The Role of ERTA

In 1981, fiscal authorities signed ERTA into law. Among the provisions of ERTA was a reduction in the time period over which real assets were depreciated. Depreciation schedules for commercial real estate, including office buildings, were shortened from about 40 years to 15 years. In addition, ERTA introduced the Accelerated Cost Recovery System, which "front-loaded" depreciation write-offs. This front-loading provided proportionately greater write-offs in the early years than did the straight-line depreciation method but smaller write-offs in later years. This provision further enhanced returns to building owners.

If the passage of ERTA was a "surprise" and thus was not capitalized into real estate values, ERTA increased landlords' non-rent return from owning office buildings. The benefits to

Class A (called A) owners were much greater than those to Class B (called B), however, because A-space buildings were relatively new and often had most or all of their depreciable base while B-space buildings were usually 20 or more years old and had a relatively small depreciable base.

Under ERTA, landlords who owned A space that was fully leased found their returns to be above normal in the very short run. This occurred because the non-rent component of landlords' returns rose with ERTA. B-space landlords likely did not experience above-normal returns. B-space landlords who resold their properties may have capitalized ERTA when they resold their buildings. If so, new landlords only received normal returns. If not, some portion of ERTA returns may have accrued to new landlords. ²

New office-building construction, which was almost always A space, captured the benefits of ERTA more fully than did B

²A space that was not newly constructed also could take advantage of ERTA simply by being sold. The depreciation benefits would not likely be offset by tax liabilities on paper gains. Conceivably, Class-B space could be resold at market values and purchasers would regain the whole depreciable base. If a two-party transfer occurred, negotiations between the seller and purchaser would determine whether the purchaser gained any returns from ERTA or was left with only normal returns, but tax liabilities on paper gains would limit the appeal of doing so.

A second case is that B-space owners sold the buildings to other entities wholly owned by themselves (i.e., sold the buildings to themselves) to increase its depreciable base. This strategy may not have been employed by B-space owners as any sale of B space for a higher value also created paper gains that were subject to substantial federal tax liabilities. Browne and Case [1992] point out, however, that this strategy could have been profitable for some B-space owners.

space.³ If no growth of potential tenants is assumed, new office-building construction could occur if A rents were reduced relative to B rents, encouraging a shift of tenants from B space to A space, and conceivably yield no less than normal returns to A landlords.⁴

Leasing Arrangements

The previous section argued that ERTA placed A-space landlords in a favorable position relative to B-space landlords. The ability of A-space landlords to build additional space and price it attractively while maintaining at least normal returns could have led to a rise in B-space vacancy rates and unchanged or only slightly changed A-space vacancy rates in an unfettered market.

However, office space is typically let with long-term leases, and these legally-binding contracts greatly restrict the ability of tenants to take advantage of office-space rental differentials in the short run. Assuming that leases

³Kotlikoff [1991] points out that if the owners of existing assets (B-space buildings in this example) are older than the owners of new assets (A space), then an act like ERTA could make the owners of old capital less wealthy and owners of new capital more wealthy.

⁴Existing A tenants also may move from their current space to new A space. However, since rents on A space are greater than rents on B space, then for any narrowing of the relative spread between A- and B-space rents, the price elasticity of demand may be greater for B tenants. Further, since moving costs are the same for all tenants, moving will only occur if rental savings exceed moving costs. Generally, B tenants will be more likely to move than A tenants.

are for 10-year terms (typical in the industry) and that they are uniformly distributed, then only 10 percent of the tenants in an office building can relocate in any year without facing a legal cost. Further, for those tenants that cannot relocate without legal cost, it is assumed that the cost is proportionally greater the longer the remaining term of the lease.⁵

Since ERTA provided benefits to A-space owners and allowed them to attract B-space tenants, the question arises of why B-space owners did not simply reduce rents to retain tenants. Although the answer to this question is not clear, anecdotal reports abound that indicate that, when an office-building owner reduces rents for some tenants (the owner would only have a strong incentive to reduce rents for the 10 percent of tenants whose leases were expiring the year after the passage of ERTA, for example), the pressures to reduce rents for other tenants is strong, even in the face of legally binding leases.

There are at least two possible explanations for these

⁵Legally binding leases between lessors and lessees are breakable by either party, but it is assumed that the injured party can almost without cost obtain damages up to the remaining value of rent. A possible exception is bankruptcy, where either party can break the lease by incurring bankruptcy costs. Note that relatively low bankruptcy costs benefit the tenant in negotiations, but not the landlord. That is, tenants may "walk away" from a lease through bankruptcy and reduce the wealth of the landlord. If the landlord declares bankruptcy, however, the office-building asset is normally transferred to a secured creditor or simply retained by the landlord. In either case, tenants' lease terms may remain unaltered and thus landlords' threats of bankruptcy may not result in tenants' concern over their own wealth.

pressures. First, office-space costs represent a substantial portion of total costs for many tenant firms and the possibility that these firms' competitors could receive lower costs could place the firms paying higher costs at a competitive disadvantage. Second, it is more likely that all tenant firms will have the landlord's reservation lease rate revealed to them as soon as the lease rates for some tenants are lowered. These tenants then will find it less costly to negotiate lower rent levels with landlords once the reservation price has been revealed. ⁶

Landlords may or may not yield to the pressures placed on them by tenants. For these pressures to be binding, landlords must believe that tenants have a cost of breaking their leases that is below their expected gains. Therefore, the credibility of tenants' ability and intent to break leases is important. If tenant threats are not credible, landlords presumably will hold to the lease terms. If threats are credible, then landlords may yield, lowering the lease rates for all tenants that they believe will break leases.

Tenants and landlords will negotiate new lease terms

⁶Wheaton and Torto (1988) support the view that confidential rental-rate information is valuable to landlords. They state, "Actual contract rental data are regarded as proprietary by landlords who seem to feel that the information is strategic in negotiating new leases." Also, this phenomenon apparently transcends national boundaries. A *Wall Street Journal* (Chandler and Bussey, 1993) article reported in 1993 that landlords in Tokyo, "...are quietly slashing rents, though many now make tenants sign confidentiality agreements so the word won't get around."

anytime both parties believe that such negotiations will make them better off. For example, landlords may offer lower rents in exchange for extensions of the leasing term. Thus tenants gain lower rent but obligate themselves for longer periods, and landlords give up a portion of rent revenues in the short run, but hedge against possible future higher vacancy rates.

Since a landlord's cost of building ownership is largely fixed, to maximize revenues the landlord must simultaneously view the anticipated rental revenue stream from both the square footage rented and lease rate per square foot. Yielding to tenants who demand lower rents reduces rent revenues because of the lower lease rate per square foot but keeps vacancy rates down. Not revealing the reservation lease rate would likely result in higher vacancy rates as some tenants relocate (presumably to A space), but the landlord would maintain higher leasing rates per square foot. Since 10 percent of the tenants in any B office building are likely to relocate in any given year, the strategy employed by landlords depends on the price elasticity of demand for B space. If a landlord does nothing, revenues will be reduced by 10 percent. If the landlord chooses to lower the rental rate to the tenants whose leases are up in an effort to retain them, then the lower price has been revealed to all tenants; the landlord is likely to have to reduce the rent not only for those whose

leases have expired but also for some proportion of those tenants whose leases have not yet expired. If the landlord perceives that total rents would have to be reduced more than 10 percent to retain the tenants whose leases have expired, then the landlord will choose to let the tenants relocate or will "run off" tenants, assuming a one-year planning horizon. ⁷

Landlords' expectations about the price elasticity of demand for office space is crucial to their strategies regarding tenant "run offs." Studies by Hekman [1985], Wheaton and Torto [1988], Rosen [1984], and Shilling, Sirmans, and Corgel [1987] find a range of elasticity estimates. Wheaton and Torto find that a decrease of 1 percent in the vacancy rate was associated with a 2 percent annual increase in rents in the national market, whereas the other authors find that rents increased in individual markets up to 6.3 percent. However, Hekman finds a coefficient of -0.11 for A space alone. In light of these vacancy rate/rent relationships, landlords clearly may be likely to lower rents for A space to a greater degree than for B space. A strict interpretation of these elasticities suggests that landlords may expect to maximize revenues by running off tenants,

⁷Landlords' tendency to let tenants run off would be reinforced by the belief that some new tenants would be attracted at the current lease rates per square foot. For simplicity, this aspect is ignored here.

especially for B space.

What Do the Data Show?

National commercial real estate vacancy data are difficult to obtain. As a result, data were collected for the downtown Richmond, Virginia, office market. This market totaled about 2.7 million square feet of office space in 1979, and grew to about 6 million square feet of speculative office space by 1994.

Figure 1 shows that vacancy rates for both A and non-A (B and C) space fell from 1979 to 1981, but that A rates fell more dramatically. Further, vacancy rates for A space remained below 10 percent until late 1985. Vacancy rates for non-A space surpassed 10 percent in 1983 and by 1985 were averaging above 20 percent. The dramatic increase in A- space vacancy rates in the fourth quarter of 1986 was the result of a large completed office building that was empty. However, the tax benefits to new buildings provided by ERTA were removed in 1986, making the post-1986 rise in vacancy rates unimportant to the explanation proposed here.

The pattern of A and non-A vacancy rates suggests that A space was fully leased (in the sense that a vacancy rate of less than 10 percent may be considered normal) in the early 1980s, whereas vacancy rates for non-A space rose. This

pattern is consistent with the idea that A landlords viewed their properties as profitable, whereas non-A landlords experienced high vacancy rates and may have risked loan default.

The Role of Financing

The previous section contends that landlords may, under very plausible conditions, choose to let tenants run off to maximize their rent revenues and thus their profits. Since leases are assumed to be uniformly distributed, it is unlikely that B landlords would allow tenants to run off for more than a few years, as the vacancy rate would likely dominate rental rate reductions rather quickly. Thus, whereas it is quite conceivable that the passage of a tax law like ERTA could force vacancy rates up and simultaneously drive up new office building construction over relatively short periods, the construction of new offices also requires that banks finance the projects. Without loans, no new building activity and hence no rising vacancy rates may take place.

The Banker's Dilemma

Normally, the construction of office buildings requires financing. In this section, it is shown that rational, profit-maximizing banks may choose to make real estate loans

that cause them to sustain losses, i.e., bad real estate loans.

Litan [1992] puts forth what he believes to be "... the well-known observation that commercial real estate activity appears to be heavily influenced by the availability of finance, or liquidity. When times are good and money is available, lenders lend and builders build." Certainly in the 1980s times were good, available money was lent, and buildings were built. But why in the face of evidence that the returns from owning commercial space were diminishing and vacancy rates were rising did lending activity continue to occur? As Hester [1992] stated, "The puzzle is why it [commercial construction spending] remained as high as it did and why commercial banks would increase their commercial mortgage lending in such conditions."

This puzzle may be solvable. Banks (which were the only financial intermediaries that substantially increased their exposure to commercial real estate in the 1980s) may have simply been acting in a rational, profit-maximizing manner when they made lending decisions that appear irrational ex post. The key insight comes from separating banks' marginal loan decisions from the average return on banks' real estate assets that is observed ex post.

This point may be described by the development of a

simple hypothetical example. Consider two neighboring towns, each with a bank. Each bank faces a dilemma one day when a developer in each town unveils plans for a new A-space office building in the respective downtowns. The developer in each town has 10-year lease commitments from B-space tenants who would be attracted to the new local building because of favorable rents made possible by ERTA; tenants are assumed not to be able to move between the two towns. Assume also that the new buildings will generate returns in excess of the costs of borrowing at market rates of interest. Each developer, commitments in hand, approaches the local bank for a construction loan and a subsequent permanent loan for a 10-year term. Each local bank weighs its options, knowing that granting the loan will result in higher vacancy rates in B buildings in the local town (whose mortgages the local bank wholly holds).

Each bank also knows that if it makes the loan some of the mortgages on B-space office buildings it holds will likely default. If it does not make the loan, the developer can apply and get credit at the bank in the neighboring town since the neighboring bank does not have to be concerned about losing tenants from B-space buildings on which it holds mortgages. Assume that each local bank anticipates that its new building would add \$200,000 in profits, but would result

in \$300,000 in defaults on existing loans in its portfolio. Each bank faces the same dilemma over whether to lend to its local developer. Bank A's decision rule may be represented as a two-part decision process. First, the payoff to Bank A is contingent on the willingness of Bank B to finance the project, so Bank A must decide if Bank B will always finance the developer. Since Bank B is unconcerned with loan defaults in Bank A's territory, Bank B will always gain a payoff of \$200,000 from financing the developer, and is always willing to provide the financing.

The second part of Bank A's decision is to evaluate its payoffs given that Bank B is willing to provide financing. The payoff is as follows:

Payoff to Bank A

Make Loan	-100,000
Don't Make Loan	-300,000

Thus Bank A will always make the loan to the local developer. This occurs even though the bank fully anticipates that it will lose money and knows that vacancy rates will rise. Bank B will also act in the same fashion in response to developers in its territory.

Summary and Conclusion

Overbuilding in the 1980s in commercial real estate, particularly in the office-building sector, has been widely cited as a cause of banking problems and of sluggish economic growth. Most explanations of commercial real estate overbuilding during that decade describe the period as an example of a speculative bubble and find little evidence of the period being driven by underlying economic fundamentals.

This paper describes an office market in which overbuilding activity, as it is commonly described, can be generated as a rational response to the passage of ERTA in 1981. Viewed ex post, rising commercial real estate vacancy rates do not necessarily indicate the existence of a real-estate bubble, given that ERTA raised non-rent returns to relatively new office buildings, but not to older buildings. Expected returns from newly constructed office buildings may be sufficient for builders to build and for banks to lend, even when overall vacancy rates are rising and banks are experiencing more commercial real estate loan defaults. It is concluded that rising vacancy rates accompanied by new building activity and bank financing (even when "bad loans" are fully anticipated) could be rational responses to ERTA.

It should be noted that it is not the intention of this paper to propose that only the phenomena discussed here drove

overbuilding in the 1980s. Clearly many other factors were at work. Rather, this paper proposes that during the 1980s at least some of the actions of tenants, landlords, and bankers that formerly have been labeled as irrational may have been aimed at the rational pursuit of profits. Finally, the results of this paper imply that some of the overbuilding and resultant "bad" lending by banks that occurred during the 1980s was likely driven by actions of the fiscal authorities rather than by the actions of bad bankers.

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