

Commercial Real Estate and the 1990-91 Recession in the United States

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Abstract:

This paper presents an historical review of the 1990-91 recession in the United States with a particular focus on the role of commercial real estate (CRE). It is felt that this particular recession may be an exemplar of possible “contagion” between CRE and the real economy, as there was a substantial crash in CRE pricing which began prior to 1990. The paper also surveys some broader context for this question, with a review of American business cycles since World War II, and a review of CRE cyclicity, including a comparison between CRE and housing cyclicity. The paper suggests that CRE in general, and in particular the asset pricing spike of the mid to late 1980s, was not a major cause of the 1990-91 recession, and indeed that in general CRE, in contrast to housing, tends not to play a major role either in causing, or in helping to recover from, recessions in the U.S. real economy. However, this is not to say that there is no relationship, or that CRE never has or never could play an important role in recessions. In particular, CRE is an important asset class within the financial sector, and the financial industry can be vulnerable to (and can cause) pricing bubbles in the CRE asset market. Such a problem did occur in the late 1980s, particularly in the savings and loan crisis, which is reviewed in some depth in this paper. CRE was much more intertwined with the S&L crisis than it was with the 1990-91 recession, as the credit crunch which followed from the crisis probably played only a secondary role in causing the recession. Though CRE was important, the S&L crisis was much broader and deeper than just a reflection of excesses in the CRE industry. The paper concludes with a review of the policy responses taken to the S&L crisis, especially the FIRREA law of 1989, including some ramifications in the CRE finance industry that ended up playing a role in the Global Financial Crisis of 2008-09.

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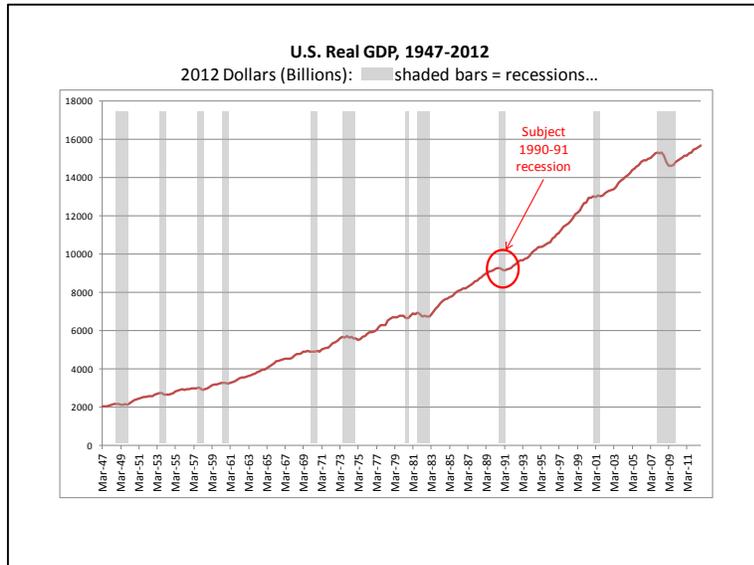
The Global Financial Crisis of 2007-09 (GFC) has had far-reaching effects on financial, economic and political conditions in the world as well as on policy development in many countries. The Crisis was clearly caused or at least triggered to a major degree by developments in the housing sectors in the U.S. and some European countries. This raises awareness of the role that real estate cycles can play in broader financial and economic conditions, in particular, possible “contagion” from the real estate sector to the broader financial sector and real economy. Responding to this consideration, the Korea Development Institute (KDI) in December 2012 organized an international symposium on “Real Estate Driven Systemic Risk: Country Cases and Their Policy Implications.” This paper presents one of the cases examined in that symposium, the case of the commercial real estate cycle of the 1980s in the United States and the ensuing recession in the American economy in 1990-91.

Although the 1990-91 recession in the U.S. was not particularly severe, it was significant and of course painful to those who suffered in it. And while most of the concern about the general relationship between real estate and the broader financial industry and macro-economy focuses understandably on the housing sector, the 1990-91 U.S. recession was one example where the commercial property sector almost certainly played a larger role than housing. Indeed, if it is possible to blame any economic downturn on commercial real estate, then surely the American 1990-91 recession is one of the prime candidates. This may give this case study a particular interest. If we cannot blame the 1990-91 U.S. recession on commercial real estate, then it may be difficult to ever place much blame on commercial real estate (as distinct from housing) as a prime cause of *any* major macro-economic recession. So, we will keep this question in mind as a sort of lure or quest: How responsible was commercial real estate for the 1990-91 U.S. recession?

The intellectual approach in this paper is that of historical research. It does not develop or employ rigorous or formal (but inevitably narrow) economic or econometric models, but instead adopts the more holistic approach of the historian, based on relevant data and largely secondary sources of writing about the subject period. The paper is organized into five sections. The first puts the 1990-91 recession into context by briefly surveying post-war business cycles in the U.S. The second explores the nature of commercial real estate cyclicity in the U.S., with some contrast to the housing sector. The third section will zero in on the recession of 1990-91 and its causes, with a particular view to the role of commercial real estate (including the “Savings & Loan Crisis” and resulting “credit crunch”). The fourth section will review the policy responses related to the S&L Crisis, notably the Financial Institutions Reform, Recovery & Enforcement Act of 1989 (FIRREA) and some key consequences thereof. A fifth section will briefly conclude.

1. Post-war U.S. Business Cycles

Let us begin by placing the 1990-91 U.S. recession in its proper context, as an example of macro-economic downturns in recent American history. The United States is a very mature economy and entered the 20th century as already one of the most developed and advanced economies in the world, a status that if anything it only strengthened by the middle of the 20th century in spite of experiencing an historically deep and long depression in the 1930s. As horrific as World War II was (1941-45 for the U.S.), it did finally propel the U.S. out of the economic doldrums, and the country entered the second half of the century with a vast industrial and agricultural capacity, a strong financial capital base, a demographic boost in the making with the



post-war “baby boom” starting up, and an appetite for government expenditure on infrastructure development especially for highways to facilitate the burgeoning use of automobiles and the suburbanization of the growing American middle class. There then ensued a half century of arguably the greatest prosperity and economic expansion in the nation’s history. This is traced out in Exhibit 1, which shows the path of the U.S. real GDP from 1947 to 2012.

Exhibit 1: U.S. Real GDP, 1947-2012

1.1. Survey of Eleven Post-War Business Cycles

Exhibit 1 indicates that during the 66 years from 1947 the U.S. gross domestic product grew eight-fold from \$2 trillion to almost \$16 trillion per year measured in real terms in constant

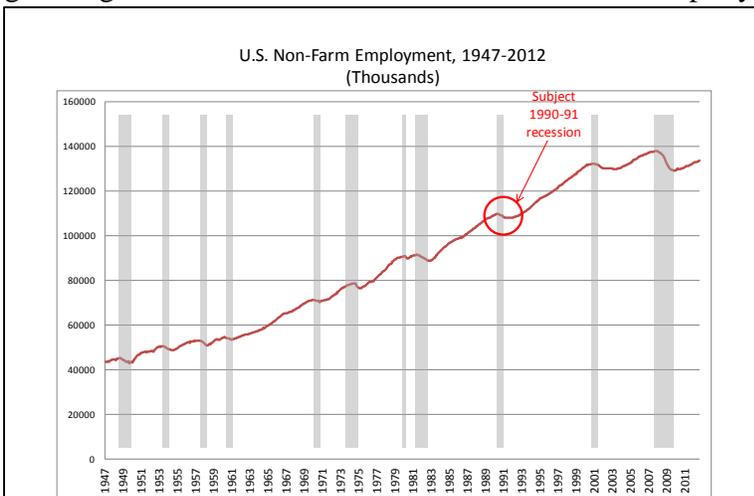


Exhibit 2 U.S. Non-farm Employment, 1947-2012.

2012 dollars. During this time the population slightly more than doubled, from 144 to 314 million, resulting in an almost quadrupling of the per capita real GDP. The exhibit also highlights eleven recessions between 1947 and 2012, as “officially” designated by the National Bureau of Economic Research (NBER), indicated by the vertical gray bands. During these recessionary periods the GDP declined in real terms and employment fell. Our subject recession, 1990-91, was the ninth

among the eleven, and occurred after the third longest upswing, 92 months from December 1982 through June 1990. Of the eleven recessions, that of 1990-91 was the only one for which there was a popular or general perception that the commercial real estate (CRE) sector may have played an important causal role.

Exhibit 2 shows a similar picture, depicting total non-farm employment between 1947 and 2012. (Farm employment is very minor.) Non-farm employment grew three-fold, from 44 million in 1947 (31 percent of the population) to 133 million in 2012 (42 percent of the population, but stubbornly below the peak of 138 million or 45 percent of the population reached in 2007). The graph reveals that the 1990-91 recession had a more sluggish recovery in employment than previous recessions (though less sluggish than the two subsequent recessions). Employment, or its opposite, unemployment, is perhaps the more important measure of the business cycle, rather than GDP, in terms of the impact on most people, and therefore in terms of political effects through the democratic process.

Exhibit 3: Eleven Post-war U.S. Business Cycles, Percentage Magnitude of Decline in Real GDP

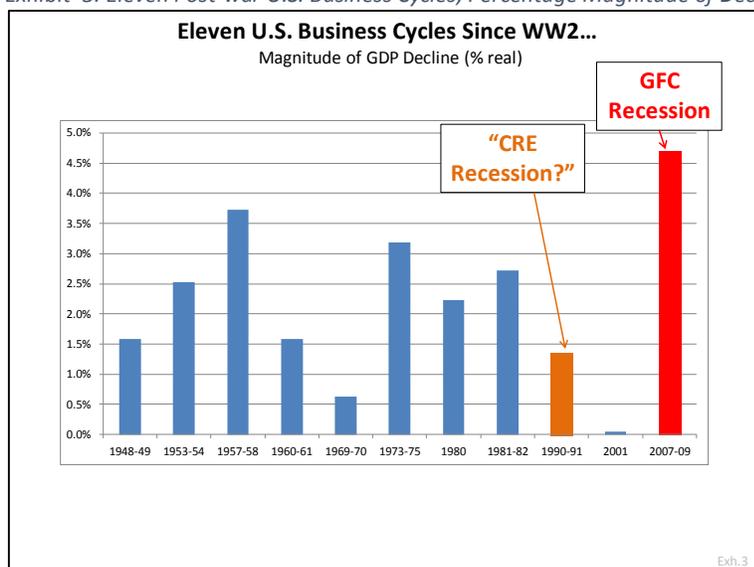


Exhibit 3 shows the eleven post-war recessions in terms of their percentage magnitudes of decline in real GDP from peak to trough of each recession. Note that our subject recession, the one that putatively may some major causal role for commercial real estate, is not among the deeper recessions. In fact, of the eleven, 1990-91 is the third smallest, with only a 1.4 percent drop in real GDP. The average drop among the 11 recessions was 2.2 percent. The champion of the post-war recessions as of 2012 was the recent

so-called “Great Recession”, the one triggered by the Global Financial Crisis (GFC), which from peak in 2007 to trough in 2009 saw a drop of 4.7 percent in real GDP. The smallest of the eleven in terms of GDP was the 2001 recession which barely registered any drop at all in GDP (though it was more serious in the employment dimension). Other than 2001, the only post-war recession smaller than 1990-91 was the one at the end of the long 1960s economic boom, which preceded a very turbulent and difficult economic period during the 1970s and early 1980s. In contrast, the period after the 1990-91 recession was very strong, with the longest continuous upswing in modern U.S. history (10 years from 1991 to 2001) culminating in historically low unemployment, low inflation, and the first and only Federal Government budget surplus in the past 40 years.

The table in Exhibit 4 quantitatively summarizes all eleven post-war recessions in terms of official duration of the recession (in months), GDP decline magnitude, employment decline magnitude and duration, and duration of the preceding upswing in the economy. The putative “CRE Recession” (if we may somewhat prematurely and over-simplistically label the 1990-91 recession by such a moniker) was a generally below-average recession in terms of its severity.

Exhibit 4 Eleven Post-war U.S. Business Cycles, Summary Statistics

Recession	Mnths Dur	GDPfall	EmplFall	EmpDeclDur	PriorGroDur
1948-49	11	1.6%	5.2%	13	37
1953-54	10	2.5%	3.4%	13	45
1957-58	8	3.7%	4.2%	10	39
1960-61	10	1.6%	2.2%	12	24
1969-70	11	0.6%	1.5%	8	106
1973-75	16	3.2%	2.8%	6	36
1980	6	2.2%	1.3%	4	58
1981-82	16	2.7%	3.1%	17	12
1990-91	8	1.4%	1.5%	11	92
2001	8	0.0%	2.0%	30	120
2007-09	18	4.7%	6.4%	25	73
AVG	11.1	2.2%	3.0%	13.5	58.4
Median	10	2.2%	2.8%	12	45

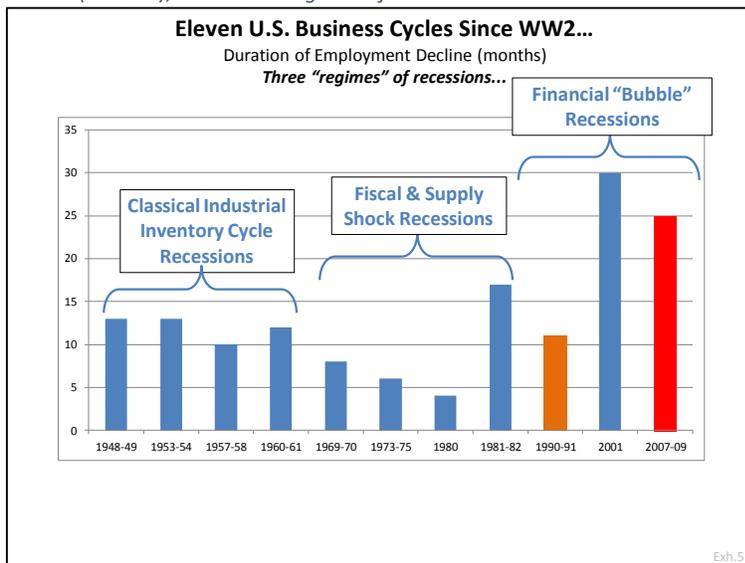
However, it ushered in a new type of recession characterized by greater damage to employment, particularly white-collar employment, and more sluggish employment recoveries, than had been characteristic of the previous eight recessions.

1.2 Recession Regimes and a Typology of Recessions

Exhibit 5 highlights the duration of employment decline across the eleven post-war recessions, and suggests a typology of recessions characterizing three

consecutive “regimes.” The early post-war recessions, including the first four (through the early 1960s), were classical industrial inventory cycle recessions. During this period the U.S. economy was still heavily based on manufacturing, and the recessions were caused by the build-up of excessive inventory in the industrial supply chains along with slight hiccups in aggregate demand growth. These recessions tended to be sharp but short-lived, with large lay-offs primarily of blue-collar workers followed by quick rebounds and strong recovery of employment.

Exhibit 5 Eleven Post-war U.S. Business Cycles, Duration of Employment Decline (months), and Three Regimes of Recessions



The next four recessions, characterizing the 1970s and early 1980s were different. They were fundamentally caused by irresponsible U.S. Federal Government fiscal policy exacerbated by increasing U.S. dependence on imported commodities which made the economy vulnerable to international commodity supply shocks. During the 1960s the U.S. Government did not raise taxes sufficiently to cover the costs of the unpopular Vietnam War, which led to budget deficits that led to a growth in inflation. At

the same time growing dependence of the U.S. economy on petroleum products which were increasingly imported from other countries made the economy susceptible to sharp rises in the international price of oil, which occurred in the early 1970s and again at the end of that decade. The end of the dollar gold standard and the Bretton Woods fixed-exchange-rates regime in the

early 1970s reflected and exacerbated the dollar inflationary pressures. Caused both by fiscal excess and oil price shocks, the inflation led the central bank, the FRB, to apply tight monetary policy to try to control the inflation, and this led to recessions. The 1970s became known as the decade of “stagflation,” a combination of sluggish economic growth together with inflationary pressures that was new to the U.S. economic scene. By the turn of the decade into the early 1980s inflation was running at double digit rates and seemed scarily out of control. The new Federal Reserve Board Chairman appointed by President Carter, Paul Volcker, ultimately implemented a redirection of FRB monetary policy, starting in October 1979, to target money supply growth instead of balancing inflation and employment targets. This led to sharp spikes in interest rates, two severe back-to-back recessions in the early 1980s, but ultimately tamed the inflation monster in the U.S. dollar.

The 1990-91 recession was the first of the more recent regime of recessions, those related to financial or asset market bubbles. Each of the last three recessions, 1990-91, 2001, and the “Great Recession” of 2007-09, was related to a previous financial or asset market bubble that burst. For the 1990-91 recession it was the commercial real estate (CRE) market in the 1980s. For the 2001 recession it was the so-called “Dot.Com Bubble” in the stock market of the late 1990s. For the 2007-09 recession it was the housing market in the mid-2000s along with the related and other excesses of the GFC. As we will discuss in more depth later, the 1990-91 recession was due in part to the so-called “credit crunch” which grew out of the financial crisis dominated by the collapse of the savings and loan (or “thrift”) industry in the U.S. in the late 1980s, which in turn was related to asset price inflation most notably in the CRE sector. As has been famously asserted by Reinhart and Rogoff, recessions caused by financial crises tend to last longer than other types of recessions, because of the de-leveraging that must occur and which takes time, suppressing aggregate demand and/or constraining liquidity in the meantime.

In the U.S. by the 1980s the economy was heavily based on the service sector and on consumer spending, and that spending was heavily financed by borrowing, excessively so in the years leading up to the recessions. The result would be recessions that would strike the service sector and white collar employment for extended periods, as consumer demand growth was held back by the de-leveraging process during and after the recessions. Even the 2001 recession, which was very mild in terms of GDP decline, exhibited the longest duration of decline in employment of all the post-war recessions (30 months, even longer than the 25-month employment decline of the subsequent GFC-triggered “Great Recession” of 2007-09). In the 1990-91 recession employment declined for 11 months, but it took 32 months in total for employment to recover back to its peak level of before the recession, longer than for any previous post-war recession. (Previously the post-war recession that took longest to recover back to previous peak employment was 1981-82 which took 28 months. But the 2001 recession would require 48 months to get back to its prior employment peak, and the Great Recession still as of 2012 has not gotten back even very close to its prior 2007 employment peak after over 60 months and counting.)

In summary, the “CRE recession” of 1990-91 was not particularly severe, but it was exemplary of a new type of recession in the U.S., at least, new since the Great Depression, a recession caused or triggered at least in part by a financial crisis, and a recession that would hit the service sector of the economy more strongly than previous recessions. 1990-91 was also a recession that would have major political consequences, arguably causing the loss of Republican George H.W. Bush to Democrat Bill Clinton in the 1992 presidential election. And, as we shall

discuss later, some of the policy actions adopted to deal with the financial crisis that preceded the 1990-91 recession, notably the establishment of the Resolution Trust Corporation (RTC), had far-reaching consequences in the CRE finance industry in the following decades, including possibly some implications for aspects of the more recent GFC. But let us back up. Is it a misnomer to label 1990-91 the “CRE recession”? How responsible was commercial real estate, really, for the recession? To help us answer that question, let us first examine the nature of CRE cyclicity in the United States.

2. Commercial Real Estate Cyclicity in the United States.

Real estate is widely and popularly considered to be a rather “cyclical” sector of the economy. However, most of this conception is focused on the housing sector, and as such, real estate would almost necessarily be cyclical, synchronous with the overall economic business cycle, because housing is such a large and basic sector of the economy. More to the point, this conception of cyclicity does not specify a particular direction of causality, whether housing downturns cause economic downturns or vice versa (and of course this can vary over time, and such causality can flow in both directions). But our focus in the present paper is not on housing, but on the commercial real estate (CRE) sector. And we are more concerned with real estate “contagion”, that is, causality flowing from a downturn in the real estate sector to a resultant downturn in the broader economy.

In the United States the CRE sector is most widely viewed as referring to income-producing property, a characteristic which enables it to serve readily as an investment asset. This definition of CRE therefore includes not only “commercial buildings” *per se* (such as office, industrial, and retail buildings) but also rental housing, as most such housing in the U.S. is developed and owned in the private sector. In practice, an effective delineation of the CRE sector would exclude very small rental housing (which in fact includes a fair number of stand-alone single-family homes for rent). Typically mortgages on buildings containing fewer than five apartment units are treated as “residential” rather than “commercial.”¹

Even if we include rental housing as thusly defined within the definition of CRE, it is still true that in the U.S. CRE is a much smaller sector than housing. By asset market value, housing currently exceeds \$20 trillion, while CRE is probably no more than about \$10 trillion. Furthermore, housing is a direct consumption good, a component of “final demand” in the economy, whereas CRE is generally a factor of production (including trade and distribution). In an economy dominated by consumer spending, housing would therefore seem more likely to be in a direct causal relationship to the overall real economy than would CRE.² On the other hand,

¹ The definition distinguishing between CRE and housing is essentially trying to get at the degree to which the assets are traded in the investment industry as opposed to serving primarily as long-lived consumption products providing housing services but not traded in the investment industry. Of course, the line between these two conceptions can be rather blurry or multi-dimensional. For example, recently a REIT has been launched to buy large numbers of single-family homes and rent them out as rental units. Such a REIT is clearly an investment asset.

² Housing construction is only one way that the housing sector broadly defined impacts the GDP. Depending on how it is defined, “housing services consumption” (which includes things like utilities, home furnishings, apartment rents and homeowners’ imputed rents, etc) may typically amount to more than 10 percent of the GDP (in addition to housing construction, which includes new homebuilding plus remodeling), according to the National Association of Home Builders.

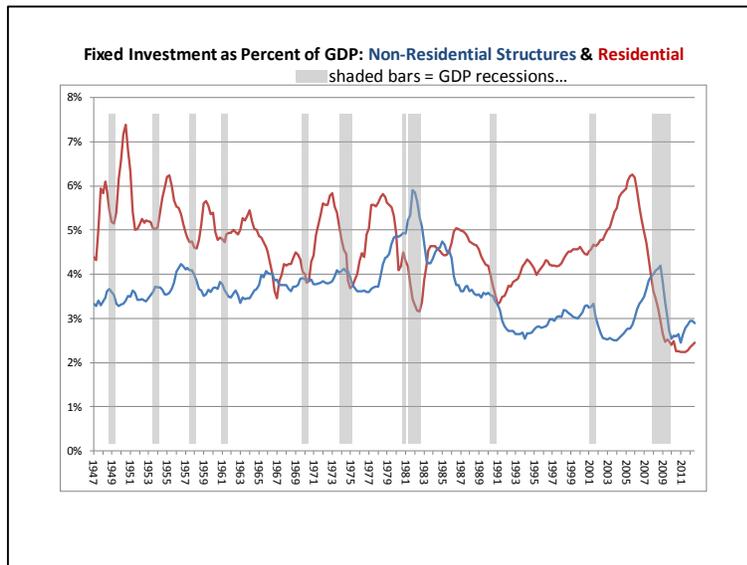
CRE is not just a factor of production. It is also an investment asset class, part of the capital asset market not unlike stocks and bonds.³ It is thus possible for CRE to directly impact the financial sector, and through this route CRE may have a stronger and more causal relationship to the overall real economy than through its direct role as physical capital in the production process. Reductions in the value of CRE assets can undercut financial institutions' balance sheets, which in turn reduces their ability to lend money for any purpose, not just CRE. When the financial sector becomes distressed and constrained in its fundamental and vital economic role of providing liquidity and leverage, the real economy can suffer as a consequence. Indeed, this is how it is perceived that some non-trivial portion of the cause of the 1990-91 recession may be laid at the doorstep of the CRE sector in the U.S.

With the above general considerations in mind, let us take a look at the evidence regarding cyclicity, particularly in the CRE sector, but let us begin by also considering the housing sector.

2.1. Construction Cycles

One important potential link between real estate and the overall economy is the construction industry, that is, the development of new buildings, be they single-family houses or commercial buildings. Construction can be a large and labor-intensive industry in any economy, so it can play a major role as a driver of economic growth (or lack thereof). In this role, we come

Exhibit 6 Fixed Investment as Percent of GDP, 1947-2012: Non-Residential Structures & Residential



back to the point that housing is a consumption good, part of aggregate final demand, whereas commercial construction adds to the production capacity on the supply side of the economy (although retail buildings are very directly linked to consumer spending, and rental apartments are clearly housing consumption).

With this in mind, consider Exhibit 6, which depicts the share of building construction in the U.S. GDP separately for residential and non-residential structures. (Note

that in Exhibit 6, a portion of what we're generally defining as the CRE sector, namely multi-family rental housing structures, are lumped in with the "residential" category.) The history in Exhibit 6 covers the same 1947-2012 period examined previously in Section 1, with its eleven post-war recessions again delineated by the gray bars. First note that usually residential

³ This of course is also the case for housing, to the extent that residential mortgages trade directly or indirectly in a secondary market (as has long been the case in the U.S.), or even just to the extent that home mortgages are an important part of the asset holdings of banks and financial institutions (as is common in many countries). However, in the case of CRE, both the equity and the debt components of the property investment are financial assets and form part of the capital asset market, not just the debt component as in the case of housing.

construction is a larger share of the economy than non-residential building construction. Over the 66-year period housing construction averaged 4.6 percent of GDP while commercial averaged 3.6 percent.⁴

In Exhibit 6 it is important to note that housing construction is more cyclical than commercial building construction. In the early decades the cycles were relatively short, and the housing share of the economy was relatively large with the post-war demographic-based housing boom. On the other hand, the long upswing in housing construction throughout the 1990s to a near-record peak of over 6 percent of GDP in 2005-06 was rather different, based less on demographics than was the earlier post-war decades with their shorter housing construction cycles. The long housing construction boom was propelled in its last years (mid-2000s) by a wave of mortgage capital and bubbly pricing, and it finally came to a sudden end in the crash which was such a prominent part of the Great Recession of 2007-09. This housing construction crash was notable in several respects. The magnitude of the fall, four percent of GDP, was unprecedented and crippling to the economy. The depth of the drop, to an annual rate of barely over 2 percent of GDP, was unprecedented in the post-war period, and no doubt reflected substantial excess physical housing supply as well as financial and demand side difficulties. The persistence of the housing construction trough was also unprecedented. The Great Recession was the first post-war recession in which the economy could not rely on housing construction to play an important helpful role in the recovery out of the recession.⁵

In Exhibit 6 non-residential building construction appears generally less cyclical and less related to the general business cycle than housing. In particular, we noted that housing construction was usually a pretty reliable component of the recovery out of recessions, but this was not so for non-residential building construction. CRE construction has tended to lag well behind the business cycle recoveries or to follow a more independent path on its own. Most notable in the historical pattern of commercial building construction is the prominent peak as a percent of GDP in the late 1970s and early 1980s in spite of the severe double-dip recession at that time. We will have more to say about this in the next section, but it is notable in Exhibit 6 that there has been a general secular decline in CRE construction as a percent of GDP since that peak. The biggest subsequent upturn peaked in 2008, clearly *after* the beginning of the Great Recession and a full two years after the housing construction boom collapsed *prior* to the onset of the recession. In general Exhibit 6 suggests that CRE construction has usually been more a victim of recessions than a cause of them at least in terms of the direct role of the construction sector in the economy.

2.2. Real Estate Asset Market Pricing Cycles

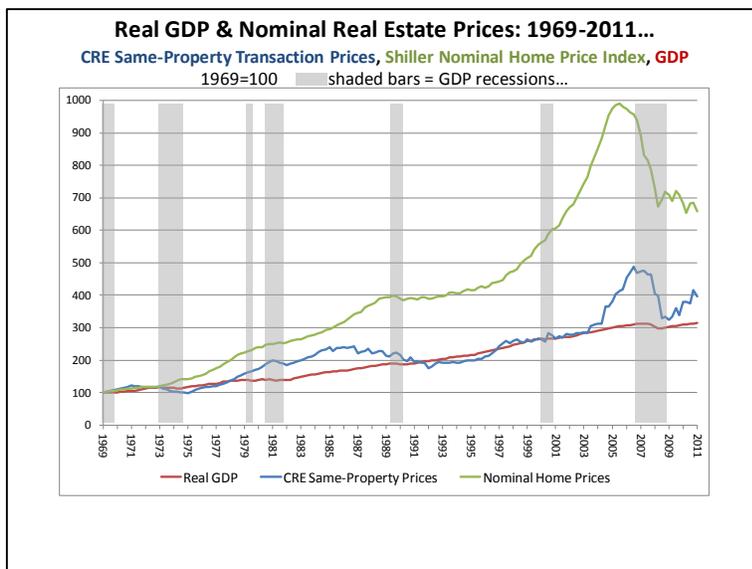
A different but potentially equally important perspective on the relationship between real estate and the real economy relates to the asset pricing cycle. Asset market pricing, referring to the prices at which properties are trading, are not unrelated to construction, as high prices will tend to stimulate development on the one hand while an excessive construction binge on the other hand can lead to physical over-supply which can depress rents and asset prices. But

⁴ Some of the non-residential construction included in the exhibit is not actually CRE but reflects institutional and governmental structures.

⁵ A slight exception was the first phase of the double-dip recession of the early 1980s, when housing construction did not rebound after the brief 1980 recession, though it did rebound strongly after the “second dip” in 1982 (and on the other hand commercial construction did grow strongly after the “first dip” 1980 recession).

construction and asset pricing are not the same thing, and they do not necessarily always move in lock-step together. Asset prices in the property market reflect the entire stock of built space on the supply side, not just new construction. On the demand side, the asset market fundamentally reflects potential purchasers' desire and ability to own property, not necessarily to use or occupy property. In the case of housing, ownership demand most fundamentally reflects demographic and social or cultural evolution impacting household formation and tenure decisions (own vs rent). Home ownership demand also reflects the aggregate economy, including aggregate income as well as income distributional characteristics, and it also reflects the availability and cost of residential mortgage debt financing (interest rates and housing affordability). In the case of CRE, demand for property ownership, as distinct from demand for property occupancy or usage, reflects the desire of investors to hold real estate assets. This in turn reflects investment demand for either (or more likely both) real estate equity or debt, which in turn reflects the overall liquidity in the capital market (interest rates) as well as particular preferences of investors for real estate as an investment asset class in comparison (or competition) with stocks, bonds, and other forms of financial investment that flows to other forms of underlying physical capital assets (such as corporate industrial assets).

Exhibit 7 Real GDP and Nominal Real Estate Prices, 1969-2011



While the asset pricing cycle does not as directly enter into the GDP as does the construction cycle, asset pricing (reflecting asset valuation) directly impacts the balance sheets of the financial institutions that provide the equity and (more importantly) the debt capital which finances real estate investment. As real estate has traditionally been an important component of the assets held by the banking sector in the U.S., real estate asset pricing can have a major impact on the health and capability of the banking industry.

Since that industry has traditionally been a primary and vital source of liquidity and leverage for the normal functioning of the entire economy, the link between real estate asset pricing and the real economy can, at least in principle, be powerful, even if slightly indirect. This is why it is of such interest to central bankers and economic policy makers to track real estate asset prices.

Exhibit 7 depicts the history of the U.S. real estate asset pricing cycle in single-family housing and in CRE from 1969 through 2011. The real estate price indices in the Exhibit reflect the evolution of same-property asset prices in nominal (current) dollars, that is, the type of price evolution faced by the asset investors or owners, who buy and hold, and ultimately sell, the same physical asset across time, denominated in current (nominal) money prices. This type of price indexing, based on same-property price changes, reflects the aging and depreciation in real terms of the individual assets, to the extent that the assets reflect physical, functional, and economic obsolescence (in spite of normal upkeep expenditures by the owners). The home price data in the

Exhibit comes from Robert Shiller's web site, based on repeat-sales price indices, and the CRE data are the author's estimates, splicing together several index series.⁶ The exhibit also shows the evolution of the U.S. GDP during the subject 42-year period of history, when the GDP approximately tripled in real terms (as the U.S. population increased by a little over 50 percent, and the number of households increased by over 80 percent).

A striking feature of Exhibit 7 is that same-property home prices increased at a noticeably higher trend rate than same-property CRE prices. While this may be partly attributable to different sources and types of data, it may largely reflect different types of urban locations. CRE tends to locate in "central places," whereas housing tends to locate more peripherally in the urban area. During the historical period shown in the exhibit there was a continuation of a long term trend for location values and land rents to decline in central places relative to peripheral zones in U.S. metropolitan areas. This trend reflected continuing improvements and advancements in transportation and telecommunications, reducing geographical "friction," causing a decline in rent gradients reflected in greater dispersion of population and reduction in metropolitan density. In effect, centrality of location was experiencing a secular decline in value, at least relatively speaking, while metropolitan expansion was leading to a growth in peripheral location values. Based on a classic spatial economic theory (including the monocentric city model), this would tend to favor housing over CRE in terms of long-term secular price growth rates. Overall, the average annual nominal increase in the house price index in Exhibit 7 from 1969 to 2011 was 4.59 percent, while the CRE rate was 3.34 percent per year. During the same period the Consumer Price Index increased at a 4.37 percent rate, which suggests that the average commercial property exhibited a real depreciation rate of about one percent per year (reflecting the combination of both land value and structure value), while the average owner-occupied house just maintained a roughly constant real value (possibly typically reflecting a gain in land or location value offsetting a decline in structure value, in real terms).

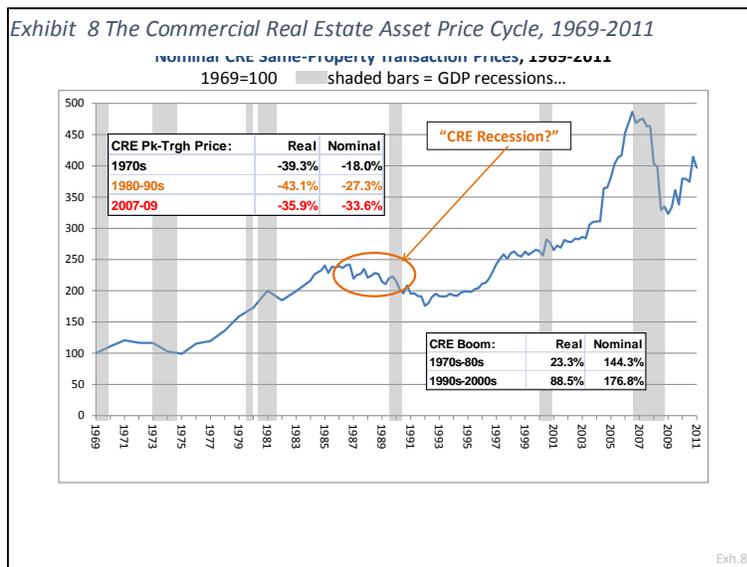
Apart from the difference in secular trend, Exhibit 7 reveals noticeably greater cyclicity in the CRE asset pricing history than in the housing markets during 1969-2011, up until the 2000s housing bubble and burst. This is opposite to what we observed in Exhibit 6 where construction activity appeared to be more cyclical in housing than in CRE. It is interesting to note that the peak in CRE asset pricing preceded the recessions in 1973-75, 1990-91, and 2007-09, and therefore might conceivably have played some partially causal role in those three recessions. But home prices (as distinct from construction) did not suffer downturns (at least not in nominal terms) prior to any recession until the Great Recession of 2007-09, when home prices fell earlier than CRE prices. The lack of a significant down-cycle in U.S. housing pricing before the 2000s, at least in nominal terms and on a nationwide average basis (leaving aside some specific experiences of some regional or metropolitan markets), is perhaps of great significance from a market psychology or behavioral perspective. Indeed, this historical pattern is much

⁶ From 1985 the index is the TBI, the transaction based version of the NCREIF Index, available on the NCREIF.org website. Prior to 1985 and subsequent to 1977, the index is a de-smoothed version of the appraisal-based NCREIF Property Index (NPI). Prior to that, the index is a de-smoothed version of appraisal-based indices of comingled institutional real estate investments (predecessors of the NPI). The CRE price index in Exhibit 7 reflects larger, prime commercial properties of the type held by tax-exempt institutions such as pension funds. This general type and scale of CRE assets makes up a substantial fraction of all U.S. CRE by value (though only a small portion of the number of individual properties). Exhibit 7 cannot go back farther in history because of lack of reliable broadly focused and continuous pricing evidence reflecting the market or asset class as a whole.

longer than the 42-year period shown in Exhibit 7. From the Great Depression in the 1930s until the bursting of the housing bubble after 2006, there was no significant down-cycle in U.S. national average nominal house prices. This long historical experience could well have helped to lull home-buyers and Wall Street investors into a complacency and an over-confidence that housing prices never could fall, and this mentality could have played a role in causing the Great Financial Crisis of 2007-09.⁷ But note the different picture presented by commercial real estate.

2.3. Commercial Real Estate Asset Price Cycles

As highlighted more specifically and quantified in Exhibit 8, during the 42-year period from 1969 through 2011, CRE exhibited three clear and substantial asset pricing cycles in both nominal and real terms. In nominal dollars (as shown in the exhibit), three major cyclical pricing peaks are clearly evident in 1971, 1987, and 2007; and three major pricing troughs are evident in 1975, 1992, and 2009. The three



cycles seem to have strikingly similar period lengths, all between 16 and 20 years, and this despite the general macro-economic business cycle, which experienced five major recessionary periods during the same span of time. Two of the general recessions did not halt or even significantly slow the growth in CRE asset pricing. In particular, the double-dip recession of 1980/81-82, and the Dot.com recession of 2001, were not significantly echoed in the private commercial property asset market, even if they may have taken a toll in

the commercial space markets governing rents and occupancies, and even if they took a toll on the rate of new construction of commercial buildings.

The three CRE pricing cycles were also interestingly similar in terms of the magnitude of the drop in real asset prices, after adjusting for inflation. The three drops in real terms according to the index in Exhibit 8 were 39 percent, 43 percent, and 36 percent respectively for the downturns in the 1970s, 1980s/90s, and 2000s. In nominal terms, however, each subsequent downturn was more severe than the previous, at 18 percent, 27 percent, and 34 percent, respectively. The 2007-09 drop was completed much more quickly (two years) during a time of lower inflation (only about 1 percent per year) compared to the earlier downturns which took from four to five years to run their course, during periods when inflation was running at over 3 to

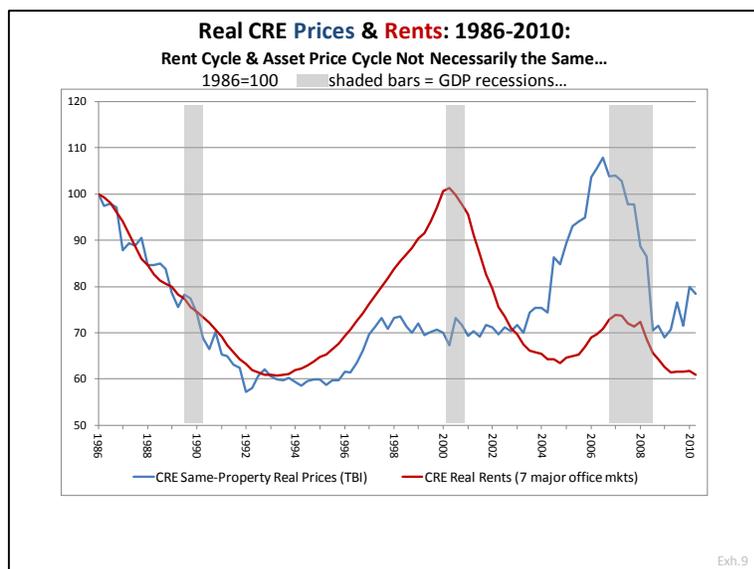
⁷ In the aftermath of the 1990-91 recession home prices did fall in real terms (net of inflation), but the drop was not very large on average nationwide. However, in some regions (such as New England and California) there were significant drops even in nominal house prices, and in the case of New England the drop began before or contemporaneous with the recession (indeed, contributing to a regional banking crisis in New England). But overall, if anything, the noteworthy aspect of housing prices related to the 1990-91 recession was their contrast to commercial property in that prices of existing homes did not fall significantly or widely in nominal terms in spite of the recession, repeating their performance during previous recessions in this regard.

5 percent per year even during the recessions. Thus in the earlier downturns considerable inflation accumulated during the nominal price decline such that it was considerably magnified in real terms. The magnitude of the downturn in nominal values can actually be more important than that in real (constant purchasing power) terms, because of the impact on the financial sector. Banking institutions in the U.S. invested in CRE largely in the form of fixed-interest-rate debt, often of short to medium-term maturity, and often at relatively high loan-to-value (LTV) ratios in excess of 70 percent. Thus, banks (and the thrifts which were similar to banks) were very exposed to the three CRE asset price downturns in the history depicted in Exhibit 8.

2.4. Space Market and Asset Market Cycles

A final perspective that is of interest regarding CRE cyclicity is illustrated in Exhibit 9. The exhibit depicts the same asset price index as in Exhibit 8 (the NCREIF based TBI) only here adjusted for inflation and indexed to 100 at the end of 1986. Superimposed on this asset price

Exhibit 9 Commercial Real Estate Asset Prices & Rents, Adjusted for Inflation, 1986-2010



index is an index of CRE rents in the space markets, as reflected by CoStar reported asking rents in the office markets in seven major metro areas (Boston, New York, Washington DC, Atlanta, Chicago, Dallas, San Francisco).⁸ While only illustrative, the exhibit highlights an important point. Commercial real estate asset markets are not the same thing as commercial real estate space markets, and while both may be cyclical, and certainly are related to one another, they do not necessarily follow the same cycle, at least not always. The late 1980s and early 1990s saw both space and asset markets in a severe down-cycle, reflecting physical

over-building in the office markets in the late 1980s as well as the CRE asset price cycle downturn and the general recession of 1990-91. But the turn of the millennium and the associated Dot.com recession of 2001 was a different story. While that recession punctured what had been a booming rental market, it had little impact on the asset market. In contrast, the Great Recession at the end of the decade took only a relatively mild bite out of the space market in a context where CRE generally was not substantially physically over-built going into the recession, but it knocked the legs out from under the asset market that had built a substantial pricing bubble leading up to the GFC. A final point perhaps worth noting regarding Exhibit 9 is that neither the rental nor the asset markets exhibit a secular upward trend in real terms regarding pricing. Indeed, consistent with our earlier point about the value of central location in U.S.

⁸ The Exhibit starts in 1986 because it is difficult to get good reliable rental indices prior to that point in history.

metropolitan areas, there is a slight downward trend in both rents and asset prices after adjusting for inflation.⁹

To summarize this brief survey about real estate cyclicity in the United States, it is important to note that the CRE sector is smaller in magnitude than housing, and tends to be less strongly or directly related to the general macro-economic business cycle. Within CRE, there are three different types of cycles that can be important: construction, asset pricing, and the space markets; and these are not necessarily or generally the same. Of these three, construction is most directly related to the GDP, but given the generally modest magnitude of CRE is not usually as likely as housing construction to be a causal element in a GDP recession. Instead, for CRE, it is the asset market pricing cycle that generally holds the greatest danger to the economy, through its potential to cause distress in the financial sector, as the banking industry in particular tends to be exposed to CRE asset price downturns due to the important role of CRE loans in financial institutions' balance sheets. With the background we have now covered in this and the preceding section regarding post-war U.S. recessions in general and CRE cyclicity, let us now delve into the main focus of this paper, an exposition of the causes and characteristics of the 1990-91 recession, and in particular, of commercial real estate's role therein.

3. The Causes of the 1990-91 Recession and the Role of Commercial Real Estate.

The 1990-91 recession was a frustration, not only for the millions of people who suffered in it, and to the politicians who were punished by the voters for it (not least, President George H.W. Bush), but to the professional economists who had trouble explaining it and discerning its cause. At the time it seemed less explicable than previous recessions, and there was considerable disagreement among leading macro-economists of the day as to exactly what had gone wrong with the booming U.S. economy of the 1980s. In fact, as noted at the end of Section 1, 1990-91 was a bit different from previous U.S. recessions. It was the first of the recent breed of recessions that had a substantial financial crisis cause and a sluggish recovery characterized by lackluster employment growth.

3.1. Literature Review: What the Economists Have Said...

Reviewing the literature at the time and shortly thereafter, we can see a range of explanations and models for the 1990-91 recession. A trio of papers was published in the May 1993 issue of the *American Economic Review* by leading macro-economists of the time, attempting to dissect and understand the causes of the 1990-91 recession. Robert Hall of Stanford surveyed eight possible causes of the recession that had been mooted in the literature, rejecting most of them as major factors, including the so-called "credit crunch." Hall pointed out that the major way the credit crunch would affect the real economy would be through an associated drop in fixed investment, which he characterized as being rather small for the 1990-91 recession, and no greater than the drop in consumption. He also noted that the regulatory

⁹ Another important point about space and asset markets in CRE, though not illustrated in the exhibits, is that space markets tend to be highly segmented between different property usage types and different metropolitan locations. The market for office property in Boston may be doing fine even as the market for offices in Washington DC and the market for retail property in Boston are doing poorly. In contrast, money is fungible and flows easily from one type of asset to another, so the asset market tends to be more integrated, tending more to obey the "Law of One Price" (though not perfectly so).

restrictions placed on the banking and insurance sectors in the aftermath of the S&L crisis just prior to the recession, which would presumably have caused the credit crunch, took effect only gradually, much more slowly than the onset of the recession. Ultimately he theorized that the recession was caused by a combination of factors that synergized non-linearly, probably set off by the Iraq invasion of Kuwait in the summer of 1990 and the resulting international oil price shock. Gary Hansen and Edward Prescott of UCLA and the Minneapolis FRB (respectively) focused their article on a so-called “technology shock” as the possible cause of the recession, meaning a change in the shape of the aggregate production function as a result of regulatory and institutional changes. They concluded that such a shock may have had a role in causing the recession, but not in making its subsequent recovery so sluggish.

Olivier Blanchard of MIT wrote the most analytical and empirical of the three *AER* articles. He concluded that the main *proximate* cause of the recession was a consumption shock, and that this also explained why the recovery was so sluggish compared to earlier inventory-driven recessions, as consumption takes longer to recover sufficiently to propel production and incomes. As to what caused the consumption shock, Blanchard’s vector autoregression (VAR) model found evidence in support of so-called “animal spirits,” essentially meaning a “taste shock” (changes in consumer preferences). However, Blanchard admitted that such a taste shock could not rigorously be distinguished from a rational expectations based anticipation of future slower economic growth. But Blanchard’s conclusion was that the rational expectations cause was minor, and the major cause of the drop in aggregate consumer demand was a change in tastes largely reflecting consumers coming to the perception that they needed to de-lever after the unprecedented growth in consumer debt during the 1980s, with this change in taste crystalizing as a result of the traumatic international events of the summer of 1990.

Interestingly, none of the three 1993 *AER* papers ever even mentions commercial real estate as a major factor in the 1990-91 recession. However, a couple of the papers do suggest there may have been at least a secondary role for the credit crunch, which (though they don’t mention this) was partly attributable at least indirectly to problems in the CRE asset market in the mid to late-1980s.

An interesting earlier analysis of the 1990-91 recession had been published already in 1991 in the *Brookings Institution Press* by none other than current FRB Chairman Ben Bernanke (at that time at Princeton University) and Cara Lown (of the New York FRB). Their analysis foreshadowed some of the later *AER* articles in concluding that the credit crunch was not a significant cause of the recession and did not make it deeper than it otherwise would have been. They pointed out that the credit crunch was most severe in the northeast region of the country, yet the recession was not more severe in the northeast. They noted that bank lending was weak even before the recession began, and they suggested that the cutback in bank lending was more an effect than a cause of the recession, reflecting weak demand for loans on the part of potential borrowers. However, they did note that credit did drop more in 1990 than in any of the previous five recessions. (Although Bernanke and Lown could not have known it at the time, this was a reflection of the new breed of finance-based recessions of which we have now had two more.) Bernanke and Lown noted that weak borrower demand for loans reflected the need to de-lever from the historically high levels of debt that became widespread in the economy in the 1980s (including the corporate, consumer, and real estate sectors, among others).

Though beyond the scope of the Bernanke and Lown paper, it is worth noting here that the drive toward greater use of debt in the economy had been set off at least in part as a reaction against the high inflation, and the fear of inflation, that had characterized the 1970s and early 1980s. Inflation makes it seem rational to consume now rather than save to consume in the future at higher prices, and it similarly encourages borrowing nominally fixed dollars to finance current consumption.

Bernanke and Lown suggested that although monetary policy remained perhaps a bit too tight in the lead up to and early stages of the 1990-91 recession, it did not appear to be binding on the economy. Bernanke and Lown also noted that a real estate downturn in the northeast (in both housing and CRE) was an important cause of a localized banking crisis in that region which made it difficult for banks to support the regional economy there, though they minimize this as a factor in the larger context of the national recession.

Another interesting analysis of the causes of the 1990-91 recession was written by Carl Walsh of UC-Santa Cruz and the San Francisco FRB, published in 1993 in the *Economic Review of the FRB of San Francisco*. Similar to Blanchard, Walsh also constructed a VAR model which he used to analyze such proposed causes of the recession as: pessimistic consumers, the oil price jump (due to the Kuwait invasion), tight monetary policy (continuing for too long the fight against the inflation of earlier years), widespread de-leveraging from excess debt accumulated in the 1980s, and presumably “over-zealous” banking regulations (following from the S&L crisis, causing a “credit crunch”). Walsh uses what he describes as a “structural VAR model” to examine the relative importance of shocks in aggregate supply, aggregate spending, money demand, and money supply, as causes of the 1990-91 recession. The model suggests that the general slowing of the economy starting in 1989, prior to the onset of the recession, was due to restrictive monetary policy. However, aggregate spending turned negative in mid-1990 and accounted for most of the subsequent drop in GDP.

A much later analysis of the 1990-91 recession by Rob Kamery of Nova Southeastern University, published in 2004 in the *Proceedings of the Academy of Legal, Ethical, and Regulatory Issues*, is interesting because it views the 1990-91 recession from a larger distance in time and puts it in a broader perspective. Kamery notes that the economic expansion prior to the 1990-91 recession had been the second longest in U.S. history at that time, and that recessions are normal in a mature economy, expansions inevitably will run their course. He thinks it clear that the Iraq Kuwait invasion was the immediate trigger of the recession (through the resulting oil price spike and hit on consumer confidence), but he also notes that the economy had been weak since early 1989, in part due to demographics and income tax policy. The huge post-war baby boom demographic generation had matured in the 1980s, and this drove an historical demand for housing and to a lesser extent for some types of CRE construction (such as retail). But that demographic phenomenon (associated with baby boomers buying their first house and having children) had largely played out by the end of the 1980s, according to Kamery. In 1981 President Reagan led Congress to cut income taxes by 25 percent, and then in 1986 tax reform disincentivized business spending and investment in favor of consumption. The result was a substantial tax-based stimulus to consumption spending during the 1980s, but that stimulus also had run its course by the end of the decade. Consumer debt doubled during the 1980s, in part reflecting the baby boomer life cycle phase, and in part reflecting a reaction to the inflation of the 1970s and early 1980s. Population growth, household formation, and housing demand all peaked

before 1990 due to demographic factors. So consumption growth was bound to slow, even before the international events of 1990.

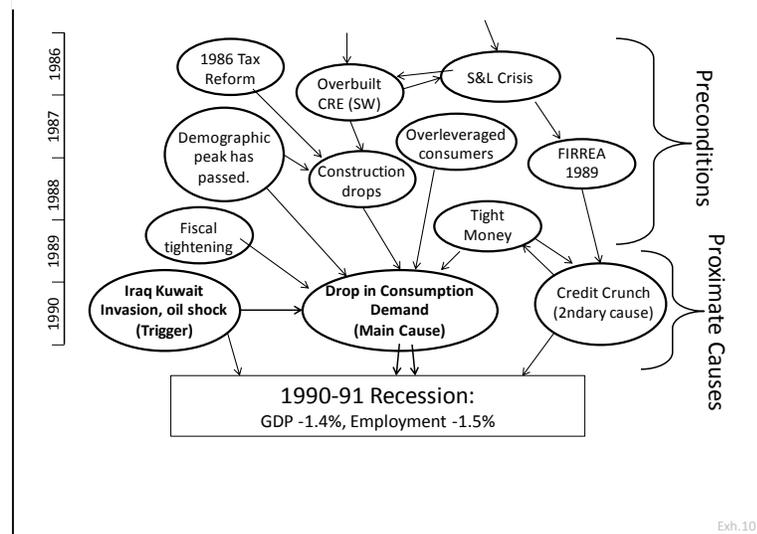
Kamery suggests that the CRE asset price collapse of the late 1980s partly caused the S&L crisis, which led to credit tightening among both bank and non-bank financial institutions (tight money in the private sector in addition to tight monetary policy at the central bank). And he argues that tight money was one cause of the recession. Nevertheless, Kamery concludes that the recession was primarily caused by a cutback in consumption (to a lesser degree also in investment) caused in part by de-leveraging and tax reform. In summary, a finance and aggregate demand induced recession.

Finally, it is interesting to note what Carmen Reinhart and Kenneth Rogoff have to say about the 1990-91 U.S. recession and the preceding credit crunch which grew out of the 1980s savings and loan crisis, in their much later (2009) and much broader and deeper survey of financial crises through history and throughout the world. They barely mention the 1980s U.S. S&L crisis or the subsequent recession, and they do not even include it in their list of the “five biggest banking crises” worldwide post-World War II and prior to the GFC. Among Reinhart and Rogoff’s basic points in their book is that banking crises often, but not always, cause recessions, and that housing price bubbles often cause banking crises. However, the 1990-91 U.S. recession was not associated with a major housing price bubble collapse, and the S&L crisis was apparently not considered by Reinhart and Rogoff as a major banking crisis.

3.2. Summarizing the Causes of the 1990-91 Recession...

The remainder of this section will attempt to summarize the causes of the 1990-91 recession with a particular focus on identifying the role of CRE. We will do this by walking

Exhibit 10 Causal Flow Diagram of the 1990-91 Recession



through a series of “causal flow diagrams” which hopefully will facilitate viewing the “trees” while keeping our bearings within the overall “forest.” We will begin by focusing on the recession itself and its proximate causes or immediate triggers. Then we will walk back in time and through the causality web to examine the antecedents and factors that led to the proximate causes of the recession, including most notably the famous savings & loan crisis of the 1980s. Exhibit 10 begins our exploration with a causal flow diagram of the proximate causes of the 1990-91 recession and

their immediate preconditions.

The causal flow diagram in Exhibit 10 depicts causal elements and the flow of causality leading to the 1990-91 recession. The causal elements are divided into proximate causes and preconditions or antecedents. From the economic literature written about the 1990-91 recession it seems that the primary proximate cause of the recession was a sharp drop in aggregate

consumption demand. Indeed, the dominant characteristic of the recession was reduced consumption (though curtailed fixed investment was also a nearly equal element, and the drops in both those elements was only very slightly offset in the GDP by an increase in net exports). The immediate trigger of the sharp drop in consumption demand that occurred in the summer of 1990 was Iraq's invasion of Kuwait and the resulting oil price shock, including the impact of these events on consumer sentiment.

The credit crunch, that is, constraints on the banking sector making lending more difficult or expensive, may have been a secondary cause of the recession, although there is less consensus about this. However, it seems logical that lending constraints would have at least slightly curtailed some investments that might otherwise have been made, and perhaps more so if, as seems likely, there was synergy between lending constraints and investor sentiment related to the recession.¹⁰

These immediate and proximate causes of the recession beg us to explore the preconditions and antecedents that led up to or caused the proximate causes. Clearly the Iraq invasion of Kuwait was an exogenous event. But it was really just a trigger. It would by itself almost certainly not have had a sufficiently large or long-lasting effect on consumption demand to cause a recession. Exhibit 10 shows five other arrows leading into the drop in consumption demand. These five other events or actions or phenomena together made U.S. consumers "ripe" for a drop in consumption demand substantial enough to cause a recession.

One such action was fiscal tightening by the Federal Government. Reagan's Economic Recovery Tax Act of 1981 (ERTA) did not produce the touted and hoped-for "Laffer Curve" supply-side effect to negate its impact on the Federal budget, and by the mid-1980s the Government was running unprecedented deficits with a booming economy in no need of fiscal stimulus. The far-reaching and politically balanced Tax Reform Act of 1986 was a major step to redress the fiscal balance, but this meant a cutback in fiscal stimulus to the economy. Even though the brunt of the tax reform was felt by businesses and investors (through the closing of loopholes), ordinary consumers also felt directly or indirectly the reduction in fiscal stimulus.

Another important cause of the drop in consumer demand, which we have already mentioned, was that during the 1980s consumers had gotten badly over-leveraged. Consumer borrowing exploded to record levels during the 1980s, including credit card debt, home equity loans, car loans, and other forms of consumer debt.¹¹ Consumers needed to retrench, and the international events of the summer of 1990 probably heightened the realization of this fact among millions of households.

Another deep cause of the drop in consumption demand at the end of the 1980s, which we have also already mentioned, was the demographic evolution of the U.S. population. The baby boom generation demographic bulge was moving up the age ladder, out of their first

¹⁰ Difficulty or expense in obtaining debt financing might not have stopped a determined investor during normal times, but with falling consumer sentiment and the growing awareness of a possible recession in the offing investors may have decided to postpone or cancel projects that they would have continued to pursue if obtaining loans had been easier and cheaper. During the summer and fall of 1990 the Dow Jones Industrial Average of stock prices fell from a peak of almost 3000 to a bottom below 2400 (on a monthly basis), although it quickly rebounded the following spring after the Gulf War.

¹¹ Household and non-profit debt grew from \$1.4 trillion in 1980 to \$3.3 trillion in 1989.

household formation and early child-bearing years, a period in the life cycle when consumption needs are particularly compelling. Many a baby-boomer by 1989 had already bought their first house and furnished it. Of course they were still headed for their years of peak productivity (which would help to undergird the 1990s boom after the 1990-91 recession), but many were ready for a pause in spending at the end of the 1980s.

Related to this passing of a demographic peak as well as to other causes was a significant drop in housing construction during the latter half of the 1980s. From a peak rate of new housing starts of nearly 2 million per year in the middle of the decade, the rate had fallen to below 1.4 million annually by the end of the decade. Another cause of the housing construction drop was probably some effects of the 1986 tax reform (the previously-noted reduction in fiscal stimulus), as well as over-building in the southwest. That region of the country (which includes Texas) is an oil producing area and had experienced an oil price based boom in the 1970s and early '80s, only to catch the flip-side negative effect when world oil prices unexpectedly declined during the 1980s (due to growth in worldwide oil production and a reduction in the growth in oil consumption demand). The decline in housing construction meant fewer construction jobs, fewer new home furnishing purchases, etc.

Tight money is the fifth arrow leading to the drop in consumption demand in Exhibit 10. Tight money at the end of the 1980s was due to two sources. One was central bank policy, as the Federal Reserve continued to be very aggressive about controlling inflation in the aftermath of the terrible inflation episode of the 1970s. Even though the 1986 tax reform had improved the fiscal balance, the Federal Government was still running big budget deficits even by the late 1980s, which led the FRB to hew to a tight money policy, erring a bit too much to the too conservative side (in the opinion of several leading macro-economists of the time). The other source of tight money was in the private sector, in particular the traditional banking sector, which included both commercial banks and savings-&-loans (or "thrifts"). This was the sector that experienced the great S&L crisis of the 1980s, the aftermath of which included much more severe banking regulations (the FIRREA law of 1989) and a resulting "credit crunch" in which lending was curtailed or made more difficult.¹²

Some sort of credit crunch or reduced lending from the banking sector would have been inevitable in order to correct banks and thrifts' balance sheets. The FIRREA regulations, which were generally implemented gradually, helped to structure and facilitate the de-leveraging process and attempted to insure that the shortcomings that led to the S&L crisis would not happen again. In any case, the credit crunch played two causal roles in the 1990-91 recession, as suggested by the arrows in Exhibit 10. One was directly, as the credit crunch may have curtailed investment spending, though it seems that this role was only a minor or secondary cause of the recession.¹³ The other role of the credit crunch in the recession was indirect, as tight money also curtailed consumer borrowing (and may have had a knock-on effect on consumer sentiment),

¹² Some writers distinguish a "credit crunch" from a "capital crunch" in the banking sector, and claim that the problem in 1990 was the latter. A capital crunch curtails lending only because banks don't have enough equity capital, in part because stricter capital requirements required them to hold more reserves.

¹³ While Bernanke and Lown (1991) and the 1993 *AER* trio of Hall, Hansen & Prescott, and Blanchard all downplay the role of the credit crunch in causing the 1990-91 recession, other scholars seem to hold the question more open. In addition to Kamery (2004), earlier writers such as Peek & Rosengren (1995) suggest that the jury was still out, particularly regarding the possibility that capital availability may have been a problem in the New England region.

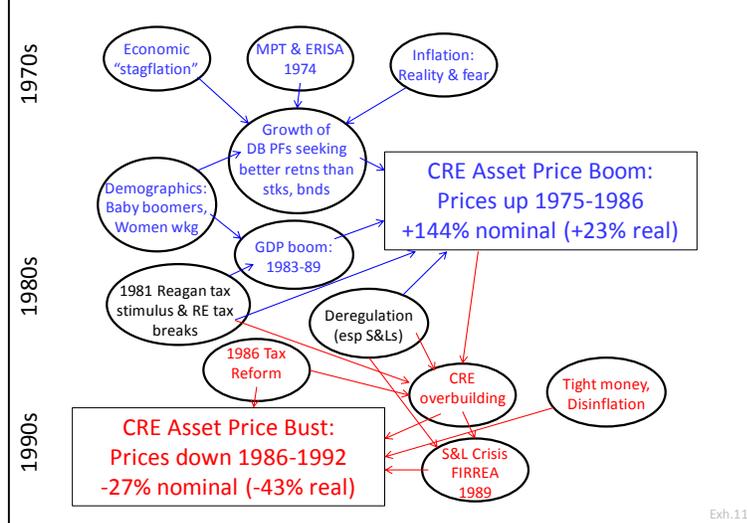
helping to cause the drop in consumption demand which is viewed as the primary cause of the recession.

It is through the credit crunch strand of causality that commercial real estate played its primary role in the causes of the 1990-91 recession, and it is to this strand, in particular the savings & loan crisis, that we turn next. We begin by delving a little more deeply than we did in Section 2 into the history of the CRE asset price boom and bust of the 1980s, as this price spike was intimately intertwined with the S&L crisis.

3.3. The S&L Crisis and the CRE Asset Price Bubble of the 1980s...

Exhibit 11 presents a causal flow diagram for the 1980s CRE asset price boom and bust. In the 11 years following the CRE market nadir in 1975 same-property prices of institutional commercial real estate soared some 144 percent in nominal terms, almost 9 percent per year while also providing income returns of typically similar magnitude.¹⁴ During this extremely

Exhibit 11 Causal Flow Diagram of the 1980s Commercial Real Estate Asset Price Boom and Bust



inflationary period, 144 percent nominal price growth actually equated to only 23 percent cumulative growth in real terms (inflation averaged over 6 percent during the period). Such a real increase would hardly seem like a major “bubble” given that this price climb is measured from a cyclical low point in 1975. However, the normal long-run trend for same-property asset pricing in CRE in the U.S. has been to decline in real terms, typically one to two percent per annum, due primarily to building obsolescence. Real growth of almost 2 percent per year thus

represented at least 300 to 400 basis-points above-normal price growth, maintained for 11 years. Furthermore, it is the nominal, not the real (net of inflation) price path that most affects financial institutions that provide debt capital for property finance, as loans are almost always denominated in nominal terms in the U.S. In any event, the CRE asset price boom and bust in the 1980s was sufficient to play a major role in the financial difficulties of the period, especially the S&L crisis.¹⁵

The root of the 1980s CRE price boom lies in the 1970s. As described previously, this was a period of unprecedented “stagflation” in the U.S. economy, in which two “evils” that

¹⁴ Total investment return (income plus capital gain) of 18 percent per year for 11 years (unlevered), even during a period of high inflation when Treasury Bills were sometimes yielding double digits, would seem to be far in excess of the rate of return required by the amount of investment risk normally contained in commercial property assets. With reinvestment of income a compound annual rate of return of 18 percent for 11 years will \$1 into \$6! This fact alone would suggest unsustainable price levels in CRE by the mid-1980s, unless the starting point in 1975 was very far below the long-run equilibrium price point at that time.

¹⁵ For an interesting early diagnosis of the 1980s CRE price boom and bust, see Browne & Case (1992).

normally were antithetic to each other, monetary inflation and high unemployment, were combined. The causes of the American stagflation went back to the 1960s and included irresponsible Government fiscal policy, evolution of the international petroleum industry and market, the post-war gold standard and Bretton Woods fixed exchange rates (and their undoing), and the rise of strong international manufacturing competition in western Europe and Japan.

One result of the economic troubles of the 1970s was very weak performance by both stocks and bonds, indeed, the worst period of extended low returns in both those asset classes since the 1930s.¹⁶ This occurred just as a major new source of financial capital was rising in the capital markets in the form of defined-benefit (DB) pension fund investment. In part, this was because the post-war baby boom generation came of working age during the 1970s, swelling the labor force. This was magnified by cultural and social changes that caused more women to enter the workforce, further swelling the number of employees and the pension contributions associated with their payrolls.

While U.S. corporations and state and local governments had long provided DB pension plans for their employees, in 1974 Congress passed a law, the Employee Retirement Income Security Act (ERISA), which required that such plans be fully funded, and in a manner that encouraged diversification of the investment funds, including consideration of new asset classes such as real estate. Prior to that time DB pension funds had been almost entirely invested in stocks and bonds. Even apart from the impetus and green light from ERISA, pension fund managers were becoming intrigued by real estate because of the poor performance of stocks and bonds. Also, new theories about investment strategy were coming from the academic world, in combination with new data sources and the new computational capabilities offered by computers. So-called Modern Portfolio Theory (including the Markowitz mean-variance model) was emphasizing the benefits of diversification in investment management. Practical new mechanisms and vehicles were developed by the investment industry during the 1970s to facilitate pension fund capital flowing into private CRE assets, such as comingled investment funds. Real estate was also a particularly appealing investment in the 1970s because it was widely viewed as an inflation hedge. CRE is a “real” asset that can relatively easily raise its rents in nominal terms when inflation increases.

Institutional investors weren't the only ones increasingly attracted to real estate. New mechanisms and vehicles were also developed to help smaller individual investors into CRE, such as “tax incentive syndications.” In the 1970s marginal income tax rates were very high, so individuals earning high incomes were strongly incentivized to find loopholes in the tax rules, in order to shelter income from taxation. Real estate investment provided such a possibility because it could be depreciated for tax purposes (expenses charged against taxable income) even though in the inflationary environment property was not really declining in value in nominal terms.

These forces that generated a huge increase in demand for investment in real estate during the 1970s continued into the first part of the 1980s. In addition, the 1981 ERTA income tax changes passed by Congress when Reagan entered the Presidency not only reduced overall tax rates thereby producing a fiscal stimulus for the economy, but also specifically added to the

¹⁶ Of course, one reason for poor performance, particularly among bonds, was the inflation part of the stagflation misery. As nominal interest rates rose in response to actual and anticipated inflation, the present value of existing bonds with fixed interest coupons declined accordingly. And of course the par values of the bonds were denominated in fixed nominal dollars whose purchasing power kept slipping.

tax shelter capabilities of commercial property, thus particularly stimulating the demand for CRE investment. The economic boom of the mid-1980s years then bolstered the demand in the space market for commercial property usage, driving up rents and occupancy levels, which of course also stimulates asset values (other things equal).

As if all of the above were not enough, another phenomenon going on in the financial sector was also feeding into the CRE boom. This was the gradual (and very complex process of) deregulation of the financial industry, which had been very strictly regulated in response to the financial crises of the 1930s. But by the 1970s the 1930s were a very distant memory, and economic and technological changes brought great pressure to loosen things up. This jived with the growing political sentiment in favor of deregulation broadly, not just in finance, a sentiment which though well reflected in the Carter Administration gained even greater impetus with the Regan Administration.

But the real pressure for deregulation came from the banking industry, because that branch of the financial industry was beginning to face a very serious crisis. Inflation inevitably puts banks into a difficult squeeze, because of banks' tendency to face a mismatch between the maturity of their assets and liabilities. Banks are depository institutions, which means they get most of their capital from depositors who can withdraw their money at any time ("demand deposits"). This gives banks very short maturity liabilities. But banks take this money and lend it longer term, in order to obtain the interest rate spread between long-term interest rates and short-term interest rates, as normally the yield curve is positively sloped (long-term yields higher than short-term yields). Banks make their profit, and cover their operating costs, from this spread. But if inflation drives up interest rates, then this drives up banks' cost of capital. They must either pay their depositors higher interest rates, or else risk losing the depositors. Yet the banks' assets, in the form of often medium or long-term loans, traditionally had fixed interest rates, and therefore the banks' income and asset values did not go up with inflation. In a more strictly regulated environment banks might be able to keep their depositors without raising the interest they paid them. But deregulation meant that those depositors could go elsewhere, to non-bank financial institutions to place their money. The advent of mutual funds and money market funds aimed at "retail" (small scale individual) investors in the 1970s, made possible by financial deregulation, put banks in a very tight competitive squeeze exacerbated by the newly inflationary environment. (This process was known as "disintermediation," the removal of banks as a "middle man" between individual investors and the financial instruments of the capital market.)

In this banking crisis that was brewing and building throughout the 1970s and rapidly getting worse in the 1980s, savings and loans were in the worst position. The U.S. commercial banking industry had historically been divided into two major branches. The commercial banks themselves made up the bulk of the industry, but the savings and loan companies, or thrifts, made up an important secondary part of the industry. S&Ls specialized in lending to homeowners, making residential mortgages, and since the 1930s had been restricted to essentially only that business (whereas commercial banks were less constrained in the types of loans they could make). S&Ls were regulated by a different agency of the Federal Government (the Federal Home Loan Bank Board – FHLBB, instead of the Federal Reserve Board – FRB which regulated commercial banks), and S&Ls therefore operated under different rules and regulations than commercial banks, more restrictive in what they could do. More constrained to invest in long-term fixed-rate assets than commercial banks, S&Ls were most exposed to the disintermediation problem and the inflation-caused profit squeeze.

But “fire” could be fought with “fire,” so to speak. If deregulation in the broader financial industry had unleashed disintermediation and the impossible squeeze on S&L profits, then more deregulation, of the S&Ls themselves, could help them cope with the problem, or so it seemed. One of the most tempting fruits was commercial real estate. If S&Ls could make commercial mortgages, lending to CRE, then that would open up a new more profitable line of business for them, it seemed. CRE mortgages tended to carry higher interest rates or greater up-front fees for the banks, and they tended to be shorter duration, than home mortgages. The process of deregulating the S&Ls to enable them to issue commercial mortgages (and also enter other lines of banking business) was a gradual one, partly occurring in the regulatory agencies and partly in Congress. But it was effectively accomplished by the early 1980s.¹⁷ This unleashed a new and very eager (sometimes almost desperate) source of financial capital into the CRE asset market, in the form of S&L institutions that had little experience or expertise about commercial property. The proportion of S&L assets in commercial mortgages and land loans grew from 7 percent in 1982 to 20 percent in 1989. The most aggressive S&Ls, the ones that expanded the fastest after deregulation, increased their CRE lending even more than the average. And this occurred just as the CRE asset pricing boom was developing a full head of steam.

The result of all of the above developments was a large flow of capital into the CRE asset market. Commercial and multi-family mortgages alone increased from \$315 billion outstanding in 1978 to \$1.1 trillion in 1990, and that does not include the equity capital from pension funds and tax syndications, and this at a time when the total value of all CRE assets in the country was initially well under \$2 trillion. The result, in addition to driving up asset prices, was a huge building boom in commercial building construction. Even the back-to-back recessions of the early 1980s could not stop the boom. The peak year of commercial building construction as a percent of GDP was 1982, in the midst of the recession. At first there was some justification for the construction, as structural shifts in the economy, away from traditional manufacturing and toward services and finance and technology, created a demand for new commercial space. The strong take-off in the economy after the 1982 recession also lifted demand in the space market. But the construction overshot the mark. There were severe regional imbalances, as the oil boom in the southwest turned abruptly into a bust in mid-decade while tech and defense driven booms in the northeast and California dominated in the latter years of the decade. Too much of the construction was not well conceived economically, as it was driven by the quest for tax shelter loopholes and fees for S&Ls that lacked specialized expertise in CRE.

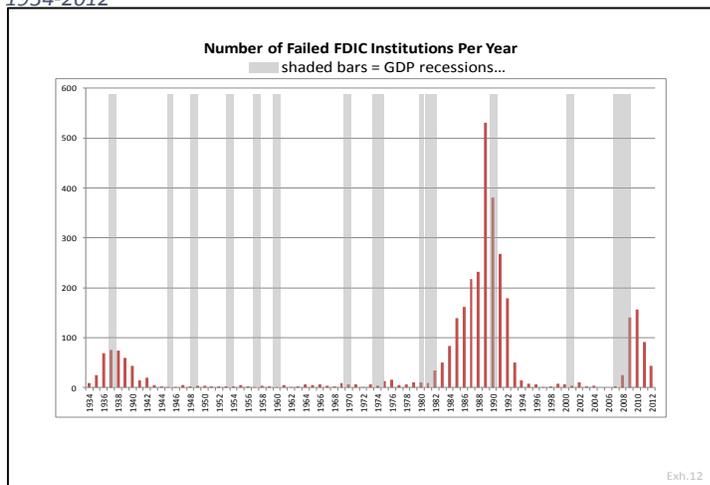
The problem of “zombie banks” arose, making the situation worse. A “zombie bank” (actually more were S&Ls than commercial banks) is a bank that is still in business but effectively has no realistic hope of recovering financial health. Its equity owners have virtually nothing more to lose, and its depositors are protected by Government deposit insurance agencies. The owners and managers of such banks are in a powerful moral hazard situation; they control the bank’s lending decisions and can gain from upside investment outcomes, but they are not exposed to the downside risk their lending decisions entail (since their equity value is already

¹⁷ The biggest milestone was the Garn-St.Germain Act of 1982, an initiative of the Reagan Administration which permitted S&Ls to hold as much as 40 percent of their assets in commercial real estate loans (and also to enter other types of lending to some extent, including consumer loans and commercial loans and leases). S&Ls were allowed to not only make mortgage loans to commercial projects but also to take equity positions. Accounting rules permitted them to record loan origination fees as income even though such fees were often advanced by the lenders as part of the loan principal.

virtually wiped out). Such banks have incentive to invest in risky loans, ones that may pay large fees up front and command high interest rates, but that also have large default risks that the banks are not well incentivized to scrutinize very carefully. It was a huge recipe for making bad loans, and many of them were made to CRE construction projects. This may have prolonged and exacerbated the CRE over-building in the latter half of the 1980s.

By 1987 it was clear that there was widespread physical oversupply in many commercial property space markets. The CRE downturn hit first in the southwest, and next in the northeast. California came later but was hit hard. In the 1986 Tax Reform Act the Government suddenly took away most of what it had previously so profligately given, the special tax breaks and shelters for investing in commercial real estate. By the late 1980s inflation was no longer so high, and disinflation was the new phenomenon, as the FRB's focus on the money supply and strict inflation fighting, maintained continuously since October 1979, had a deep and persistent effect. Capital markets began to be less concerned about inflation or even the risk of inflation. This removed one of the drivers of the investment demand for real estate. CRE asset prices began to slide in nominal terms as early as 1987 (worse in real terms net of inflation). The stock market decline of 1990, the subsequent recession, and to some extent the restrictions on lending resulting from the S&L crisis and the policy response to it, all pushed CRE prices to a nadir by around the end of 1992, at price levels some 27 percent in nominal terms and 43 percent in real terms below their mid-80s peak measured on a same-property basis.

Exhibit 12 Number of Failed Commercial Banks in the U.S. Per Year, 1934-2012



The CRE asset price rise and fall of the 1980s was part cause and part effect of the S&L crisis. By the late 1980s the crisis in the banking sector was coming to a head, especially for the S&Ls. Each year in the second half of the 1980s brought new historical records in the number of failed banking institutions, very bad in the commercial bank sector, disastrous in the S&L sector. In 1985 there were 3,246 S&Ls altogether, with a total of \$1 trillion in assets, and during that year 54 S&Ls failed, holding \$22.6 billion in assets and causing \$7.4 billion in losses. By

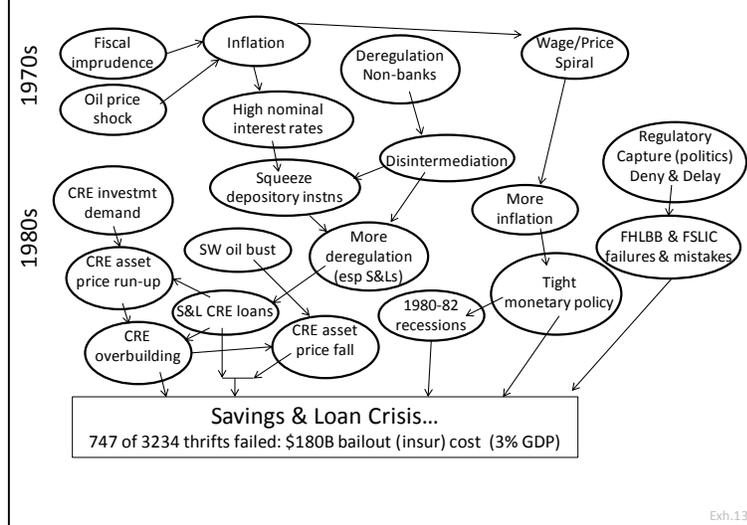
1988 with 2,949 S&Ls remaining (after much consolidation, with \$1.3 trillion in assets) there were 190 failures in that year alone, of institutions holding \$98 billion in assets, causing \$47 billion in losses. Exhibit 12 shows the long-term history of FDIC-insured bank failures in the U.S. The enormity of the 1980s crisis stands out, even in comparison to the recent GFC. But Exhibit 12 does not include the S&Ls. Relatively speaking S&Ls suffered much worse than the commercial banks. By the time the dust had settled in the early 1990s 747 out of 3,246 S&Ls had failed, and Government deposit insurance funds had had to provide \$180 billion in bail-out funds

(to cover losses) in order to rescue depositors in banks and S&Ls, equal to three percent of the GDP at the time.¹⁸

3.4. Summarizing the Causes of the S&L Crisis...

Exhibit 13 attempts to summarize the causes of the S&L crisis with a causal flow diagram. We have already discussed much of this tangled web, but perhaps the diagram can help us to step back and see the forest through the trees. There are three major historical strands that

Exhibit 13 Causal Flow Diagram for the 1980s Savings & Loan Crisis



ultimately intertwined to cause the S&L crisis. Perhaps the main strand is represented by the central elements in the causal flow diagram, starting with the inflation and the non-bank financial deregulation of the 1970s. This led to high nominal interest rates and disintermediation which squeezed the depository institutions (including S&Ls) and led them to require and demand (and receive) more deregulation in their part of the financial sector. This led to S&Ls entering the CRE loan market which further stoked, and then exposed the S&Ls to, the CRE asset

price boom and its subsequent downturn. CRE loans weren't the only cause of S&L failures, to be sure. As noted, CRE loans never exceeded 20 percent of S&L assets, and the share of mortgage lending in S&L assets dropped from over 80 percent in 1982 to less than 60 percent by 1989. But CRE lending was a major component of S&L expansion during the 1980s, and it was the scene of some of the most egregious investment mistakes and failures. It is fair to say that CRE lending was a major cause, but not the only cause, of the S&L failures of the late 1980s.

The second major strand of causality for the S&L crisis is on the far right side of the causal diagram in Exhibit 13, and it is political in nature. The financial deregulation that began in the 1970s was not in itself necessarily bad policy by any stretch of reasoning. But such a process was unimaginably complex in its ramifications, and perhaps inevitably, it was managed poorly, lacking in balance and coordination across sectors, too gradual in some respects, to sudden or too late in others. Regarding the S&L situation in particular, there existed the classical problem of "regulatory capture," whereby the government regulatory agency and its staff become effectively "captured" by the regulated industry, unable to exert effective control or difficult leadership over the industry even when the industry could have benefitted in the long run from better regulation for its own good overall. This problem was much more severe in the smaller, less well staffed and less politically scrutinized agencies regulating the S&L industry, the FHLBB and the deposit insurance agency the FSLIC, than in the corresponding agencies regulating the larger commercial banking sector, the FRB and FDIC. The FHLBB did a particularly poor job of

¹⁸ This would equate to almost \$500 billion relative to today's GDP, comparable in relative magnitude to the financial bailouts of the GFC almost 20 years later.

managing the spiraling crisis during the 1980s. For too long it aided and abetted the industry in denying and hiding the magnitude and gravity of the fundamental problems facing the industry in the deregulated environment. For example, it allowed “creative accounting” to permit S&Ls to avoid official insolvency or closure (thereby creating zombie banks), and it was always behind the curve on the need to close institutions and bail out depositors. This allowed a problem that might have been solved much less painfully earlier in the decade to get out of hand by the late 1980s. Ultimately, however, it was the U.S. Congress and the Executive Branch (including the Office of the President, and the Treasury Secretary), that bore the most blame and responsibility for allowing the crisis to build up, because they had the ultimate authority. Fortunately, those two branches of the Government did ultimately step up and solve the crisis with the new G.H.W. Bush Administration and the FIRREA law of 1989, which will be the subject of Section 4 of this paper.

The third major strand of causality for the S&L crisis is in the lower left corner of Exhibit 13, and it is through this strand that CRE plays its most important role. This is the asset price run-up and subsequent downturn, and the associated physical over-building, which we analyzed in the preceding section. Of course S&L deregulation was not the only, perhaps not even the major, cause of the CRE asset price run-up. And the CRE over-building and asset price slide was not the only cause of S&L failures, though it was a major cause.

To summarize this discussion of Exhibit 13, perhaps its main implication for the subject of this paper is that, while CRE was an important element in the causal web that led to the S&L crisis, it was certainly not the only cause and indeed probably not even the major or most fundamental cause. Even without the CRE price spike and over-building, it seems likely there would have anyway occurred a substantial S&L crisis during or shortly after the 1980s.

3.5. Summary: The Role of CRE...

Finally, let us step back and return to our original and main focus, real estate cycle contagion, and the role of CRE in the recession of 1990-91. Perhaps we can encapsulate the big picture implication of the analysis in this paper as follows. First, the 1990-91 recession was of only modest severity and the U.S. economy was “due” for a recession around that time. Second, the main cause of the recession was a drop in aggregate consumption demand triggered by international events, things that CRE had little to do with. Third, the major way in which CRE entered into the causation of the 1990-91 recession was through a perceived credit crunch which resulted from the 1980s S&L crisis and related financial problems and policy responses, but any such credit crunch was probably only a minor or secondary cause of the recession. Fourth, CRE was only one cause of the 1980s S&L and banking crisis that led to the credit crunch, a crisis which had other more fundamental and long-standing causes, although CRE ultimately played a major role in the latter stages of the crisis at the end of the decade. In short, the 1980s CRE asset price spike and subsequent 1990-91 recession probably do not present a very strong case of real estate cycle contagion seriously affecting the real economy. There was some CRE causality indirectly in the recession, but it was not major. On the other hand, the role of CRE in the S&L crisis itself was more central, particularly in that crisis’ latter stage when it came to a head and was ultimately addressed.

Furthermore, also of interest is not just the cause of recessions, but how the recessions behave and in particular how quick and strong is the economic recovery from them. The recovery from the 1990-91 recession was slower than had previously been the norm. A major

reason for this may have been the financial excesses of the 1980s. But the excessive leverage of the 1980s was not confined to CRE or to real estate in general. Indeed, excess consumer debt may have been more responsible for the sluggish nature of the early 1990s recovery, although ultimately consumers were able to be a powerful engine for the boom that took off in the mid-1990s.

4. The Policy Response and its Aftermath.

The policy responses to the 1990-91 recession were primarily the standard macro-economic fare consisting of the politically palatable twins, looser monetary policy and stimulative fiscal policy, and were not particularly oriented toward real estate. While the recovery from the 1990-91 recession was more sluggish than most prior recessions, particularly in the employment aspect, the economy did indeed recover, ultimately quite strongly, and housing construction played its customary post-war major role in the recovery. The mid and latter 1990s proved to be one of the most robust periods in U.S. economic history.

One policy that did focus on CRE and that may have been partly in response to the financial crisis and recession (and in particular to the distress in the CRE market) was the institution of the “look-through” provision in REIT tax law in 1993. This greatly facilitated institutional investment in REITs by enabling investment funds such as pension funds to avoid violating the “five & fewer rule” intended to keep ownership of REIT shares broadly held. This helped to stimulate an unprecedented initial public offering (IPO) boom in the REIT sector of the stock market, which brought a large amount of equity capital into CRE from the stock market, viewed at the time as a revolutionary development that helped to propel the CRE market out of its pricing depression.

Perhaps of greater interest to readers of this paper are the policy responses to the financial crisis of the 1980s, including in particular the responses to the S&L crisis, rather than policies responding to the 1990-91 recession *per se*. As hopefully Section 3 made clear, the financial crisis of the 1980s formed and built up gradually, and so policy responses to it also began to form well before the climactic actions at the end of the decade. For example, deposit insurance agencies began to run out of funds as more and more financial institutions became insolvent, and both regulatory and Congressional action had to deal with that. In 1987 Congress passed the Competitive Equality Banking Act, which established a financing corporation to issue bonds to recapitalize the Federal Deposit Insurance Corporation (FDIC), which had responsibility for insuring deposits in commercial banks. Another important arena of policy development during this time was the Basel international banking accord. The increasing ease of international monetary flows motivated the very first of what would be a continuing series of “Basel Accords,” agreements among the world’s central bankers and bank regulators to standardize banking regulations. The 1988 Basel I Accord instituted risk based capital requirements (RBCR) for commercial banks.

4.1. Risk Based Capital Requirements

RBCR are a regulatory response to the tendency of banks to act under moral hazard motivation to invest in assets that are too risky. The moral hazard situation is created when bank owners (equity investors) have limited liability personally and government deposit insurance

agencies remove from the bank's depositors (the banks' primary source of capital) exposure to the bank's asset risk. If a bank gets into trouble, as by the value of its assets falling relative to that of its debts and deposits thereby shrinking equity to a very low value, then the bank's equity owners have little to lose from the downside of risky investments, while potentially gaining fully from any upside. The decision makers with authority to control the bank's risk (its owners) are different from the parties who will suffer from the negative consequences of such risky investment (the government deposit insurers directly, but indirectly the tax-payers).

On the face of it, RBCR would seem to be a reasonable way to address this moral hazard problem. Capital requirements in general mandate banks to maintain certain minimum ratios of equity to assets, and RBCR adjust those minimum requirements to reflect the types of assets the bank invests in, in effect requiring more equity to back investments in more risky types of assets. In practice, however, RBCR can be a difficult policy instrument. For one thing, they tend to have contrary effects if an economy is headed into a recession or a liquidity crisis, as RBCR can exacerbate the crisis by forcing banks to cut back on lending just when the economy needs to preserve such facility. This often requires regulators to adjust or ease RBCR when the economy is exposed to such liquidity threats, and managing such adjustment is difficult in practice. There was a widespread sentiment, though perhaps less hard evidence, that RBCR instituted by the FIRREA law of 1989 responding to the S&L crisis induced or exacerbated the "credit crunch" that may have partly caused the 1990-91 recession. Furthermore, RBCR are typically a blunt instrument, not able to account for all aspects of investment risk. They often don't consider underwriting standards, portfolio diversification implications, the difference between market versus book values, or interest rate risk (as opposed to default risk). To the extent RBCR steer banks into low-risk investments, they can cause a squeeze on bank profits, as such investments typically provide low returns. Alternatively, there is always the risk of RBCR "leakage" as banks seek to find off-balance-sheet ways of making risky investments. Nevertheless, RBCR have been a permanent feature of the financial regulatory landscape since 1988, though their usefulness and effectiveness is still controversial.

4.2. FIRREA

By far the most sweeping and prominent policy response to the S&L crisis was the Financial Institutions Reform, Recovery, & Enforcement Act of 1989 (FIRREA). This law was proposed by the incoming G.H.W. Bush Administration as one of its first priorities in February, 1989, just after Bush's inauguration. By that time the S&L crisis was at the level of a national emergency, and there was bipartisan agreement that major responses and corrections had to be taken quickly. Even though both houses of Congress were controlled by the opposition Democratic Party (Bush was a Republican), the law was dealt with generally very expeditiously and conscientiously with relatively little partisan bickering, and it was passed by the House of Representatives in April, by the Senate in June, and after modifications in the House-Senate Conference Committee and re-passage it was signed by the President on August 9, 1989. The biggest partisan dispute had to do with how to handle the very large bail-out funding that the Act envisioned. Democrats tended to favor on-budget Governmental funding, while Republicans wanted to try to employ innovative off-budget and private sector (or public/private partnership) funding. The final result compromised on that point, though ultimately the bailout came more from the Government and through the official budget.

The main provisions of FIRREA are summarized below:

1. Abolished the S&L regulatory body, the Federal Home Loan Bank Board (FHLBB), and also the S&L deposit insurance agency, the FSLIC, and these functions were moved into the Treasury Department (in a new Office of Thrift Supervision – OTS) and the pre-existing commercial bank deposit insurance agency, the FDIC (which would set up a separate fund for S&Ls called the SAIF).
2. Increased the independence and authority and funding of the FDIC and strengthened the enforcement powers of all the Federal depository institutions regulatory agencies.
3. Strengthened accounting and appraisal standards applicable to S&Ls and banks (including provisions relating to CRE appraisal).
4. Established stricter capital requirements for S&Ls, including RBCR at least as strict as the Basel requirements for commercial banks, with the new OTS charged with promulgating the rules.
5. Established the Resolution Trust Corporation (RTC) as a new, temporary, mixed-ownership Government corporation funded largely from the Treasury Department, charged with containing, managing and resolving or liquidating the failed S&Ls and their assets.

The restructuring of the Federal regulatory and insurance agencies was motivated primarily by the dismal performance the FHLBB and FSLIC had exhibited during the 1980s. The idea was that by “cleaning house” and placing the regulatory authority directly under the Treasury Secretary it would be more in the spotlight and more attentively managed, less subject to “regulatory capture” (described in Section 3.4). The idea was similar in the consolidation of S&L and bank deposit insurance together in the larger and better managed FDIC (subsuming the FSLIC), beefed up with added independence (now to be run by a board of directors independent of its insured wards), added enforcement powers, and added funding.

One part of the financial debacle of the 1980s, particularly with the S&Ls, was the use of “accounting gimmicks” (generally aided and abetted by the FHLBB and FSLIC), to avoid recognition of the actual solvency situations in the institutions and to get around the limitations of capital requirements.¹⁹ For example, capital requirements were allowed to be applied to “Regulatory Accounting Principal” (RAP) instead of to Generally Accepted Accounting Principles (GAAP) based asset measurements. The difference between RAP and GAAP net worth of S&Ls grew from \$9 billion in 1984 to nearly \$15 billion in 1988. FIRREA abolished this practice, mandating GAAP as the standard for all S&Ls. FIRREA also specifically addressed the problem of upward-biased real estate appraisals that weakened mortgage underwriting standards by mandating procedures and practices in the qualification and hiring of appraisers.

¹⁹ Capital requirements had been promulgated by regulators and Congress during the early 1980s, though not risk-based.

The establishment of the RTC was one of the most prominent aspects of the FIRREA. The RTC was set up within the FDIC, administered directly by the (newly independent) Board of Directors of the FDIC, with the guidance of a Strategic Plan promulgated by an Oversight Board consisting of the Secretary of the Treasury, the Chairman of the FRB, the Secretary of Housing & Urban Development (HUD), and two independent members appointed by the President. The purpose of the RTC was to manage and resolve all of the S&Ls that failed from the beginning of 1989 onward. The RTC was to do this while maximizing the return on the failed institutions and assets and minimizing the impact on the real estate markets.

The RTC was funded initially with \$50 billion, including \$19 billion from the Treasury (on budget, but avoiding the budget deficit constraining limits of the 1987 Gramm-Rudman Deficit Control Act by applying to the FY1989 budget), \$1 billion from the thrift industry, and \$30 billion from a new public/private partnership entity called “RefCorp” which could issue bonds not guaranteed by the Government (though the Treasury Department would pay RefCorp’s interest obligations). RefCorp was to assuage Republican desire for private sector off-budget funding of the bail-out represented by the RTC activities, but it was not very successful. Ultimately the RTC had to fund \$90 billion of losses on the S&L assets that it took over and resolved, with the additional funding (beyond the initial \$50 billion authorized in the FIRREA) appropriated by Congress in subsequent years and coming from the Treasury Department as part of the Federal budget. The RTC was set up with a 5-year lifetime, and it succeeded in resolving all of its subject S&L assets within that period, and disbanded in 1995. Altogether the RTC took over approximately \$400 billion worth of S&Ls and assets by book value (almost one-third of all the S&Ls by value) and it sold or resolved them with a total loss of \$90 billion, with almost all of the resolutions completed by the end of 1993.

4.3 The RTC and the Birth of the CMBS Industry

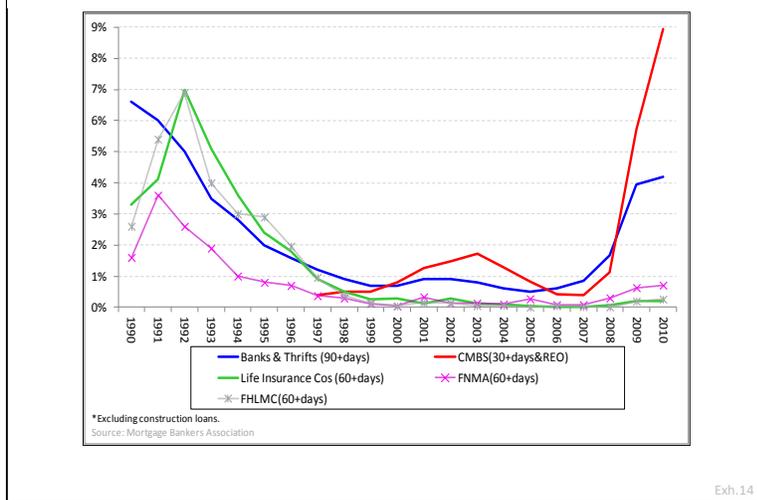
The RTC was faced with the need to, in effect, conduct a “fire sale” of unprecedented magnitude. While it was not supposed to put downward pressure on the CRE market, in effect the RTC was under considerable political pressure to get the Government out of the business of the ownership and sale of private assets and institutions as soon as possible. The RTC had to sell in volume, and quickly, and many of the assets it had to sell were distressed. Many of them were CRE assets, largely commercial mortgages. The RTC came up with some innovative methods to sell its assets quickly and efficiently. One vehicle was the RTC “N-series” mortgage trust program, launched in 1992. This vehicle effectively jump-started the modern CMBS industry by the RTC working with private investment banks to issue bonds backed by specified pools of non-performing commercial mortgages and requiring bond rating agency credit ratings for the bonds. Six N-series transactions were completed by the RTC including altogether 2800 commercial mortgages with an aggregate book value of \$2.8 billion and a Derived Investment Value (DIV – an RTC formula for current value of non-performing loans) of \$1.3 billion. The CMBS issues raised \$965 million for the RTC. The formula and techniques developed for the N-series were the foundation of the private CMBS industry which took off on its own rapidly starting in the mid-1990s.

CMBS was a new source of debt capital for the CRE market, a source based largely in the public bond market. Like the REITs on the equity side (which were also greatly stimulated by the aftermath of the 1980s financial crisis), CMBS brought the public capital markets into CRE in a big way for the first time (at least since the early 20th century). Both REITs and CMBS

provided liquidity and some elements of enhanced informational efficiency into the CRE market which had traditionally been purely private capital and private search markets. By 1996, with the RTC disbanded, \$26 billion worth of CMBS were issued that year, mostly by investment banks and mostly based on the new “conduit” model whereby the loans were originated in the primary mortgage market with the intention from the outset of securitizing them largely into the public capital market through CMBS pools. By 1998, \$74 billion CMBS were issued in the year. But the rapidly growing industry suffered a major correction during that year with the financial crisis that started with Russian debt default, the “Asian Flu,” and the debacle at Long Term Capital Management. The quick response of the CMBS market to the financial and economic threats of 1998, with the resulting quick pull-back in the flow of money to CRE, seemed to suggest that the public bond market was improving the information efficiency of CRE financing. The 1998 CMBS bear market effectively cut back the flow of capital to CRE in response to economic and financial danger signals much more rapidly and sharply than traditional private sources of capital did. CMBS was helping to integrate CRE into the modern capital markets.

In fact, CRE pricing was still relatively conservative in the late 1990s, and the CMBS industry would recover strongly after the 2001 recession. By the mid-2000s decade the CMBS and associated conduit lending industry was getting very aggressive. By the peak year of 2007 CMBS issuance was \$230 billion (most of that in the first half of the year) and was providing close to half of all new CRE debt (more than half of the non-construction loan “permanent”

Exhibit 14 Default Rate in Outstanding Commercial Mortgages by Type of Lender, 1990-2010



financing). CMBS truly had been a revolution in the CRE financing industry. But CMBS had become the most aggressive sector financing the CRE price bubble. CRE asset prices crashed in 2008-09 along with the rest of the capital market (other than Treasury bonds), and the CMBS industry was decimated by a lack of liquidity and lack of investors, who became extremely risk averse and unsure about CMBS bonds. The credibility of the bond ratings was called into question as series after series of CMBS bonds were

downgraded and began to suffer credit losses. As indicated in Exhibit 14, by 2010 CMBS conduit loans were experiencing extremely high default rates, well above those suffered by other sources of commercial mortgages such as commercial banks and life insurance companies. With default rates approaching 10 percent of all conduit loans outstanding, CMBS loans were performing as poorly in the aftermath of the GFC and Great Recession as had the earlier traditional whole loans held in the portfolios of life insurance companies in the aftermath of the 1980s CRE crash and 1990-91 recession. Interestingly, life insurance company whole loans, which in the traditional real estate manner were kept by the issuer in their own portfolios rather than sold into CMBS pools, experienced much lower default rates after the Great Recession than they had in the early 1990s. It was as though the life insurance companies had learned their

lesson in the previous CRE crash, while CMBS, the “new kid on the block,” had to learn it the hard way this time around.

The CMS industry was decimated by the GFC, with new issuance literally drying up to virtually nothing in 2009. It is ironic that a vehicle which grew out of the resolution of the 1980s CRE financial crisis, and which was hailed as a new model of capital market informational efficiency and efficient risk allocation, ended up playing a major role in the next (and larger) financial crisis, the GFC. However, as noted in Section 1, CRE was really more a victim than a cause of the GFC and Great Recession. Housing was the principal real estate sector to blame this time. The Great Recession was the first one preceded by, and triggered by, a fall in housing prices (not just in housing construction). And there is reason to believe, and by 2012 some strong evidence to support the argument, that the CMBS industry will recover and ultimately play a major role again in financing a healthy CRE market, hopefully after some improvements in business practices and some stricter regulation. (CMBS issuance was back up to over \$40 billion in 2012.)

5. Conclusion

This concludes our commercial real estate focused review of real estate cycle contagion, centered especially on our tour in Sections 3 and 4 of the 1980s U.S. financial crisis, the 1990-91 recession, and some of the interesting policy responses and their aftermath. Overall, the bulk of the historical evidence reviewed in this paper suggests that CRE was probably not a major culprit in any sort of contagion that played a major causal role in the 1990-91 recession. CRE was important in the financial crisis of the 1980s that may have been a secondary cause of the recession, and CRE’s role in lending institutions’ need to de-lever after the 1980s may have helped to make the recovery from the 1990-91 recession more sluggish than it otherwise would have been (though even this is not certain). The very severe in the banking industry and especially in the savings and loan sector, the 1980s financial crisis was not terribly “systemic” in that it remained largely confined to the banking industry. In any case, CRE would not seem to be the main culprit in the 1990-91 recession, which was relatively mild and arguably overdue in the normal course of cyclicity in a mature economy. And CRE would seem to have been more of a victim than a cause of the later GFC-triggered “Great Recession” of 2007-09 (unlike the housing sector in this regard). Nor do any of the other nine post-war recessions seem to owe much causality from the CRE sector, although this paper has not attempted an in-depth analysis of each one. (We started from the premise that 1990-91 was the most likely recession to have owed much causality to CRE.) In general, the historical review in this paper would suggest that commercial real estate probably carries much less danger to the overall real economy than does the housing sector. Still, CRE’s role in the financial industry is important, and the policies implemented in response to the S&L crisis of the 1980s are of continuing interest and concern.

In this concluding section we might well ask, how successful were the policy responses to the S&L crisis? The U.S. financial system functioned very well for a decade after 1989. But it is relatively easy for a financial system to function well just after a major crisis because all the players are chastened and the system reverts to more conservative behavior. What is clear is that the policy responses to the 1980s did not prevent the Global Financial Crisis of 2008 (the GFC), which started in the U.S. and with real estate (in the form of housing) playing a major role; and that financial crisis was very systemic and brought on the Great Recession. Perhaps the policy

responses to the S&L crisis delayed that later crisis? But if they did delay it, then did that delay cause the later crisis to actually be more severe than it otherwise would have been when it did occur? Both the financial turbulence of the 1980s itself, as well as the policy responses to it, probably helped to stimulate considerable financial innovation in the 1990s and early 2000s. Some of this innovation was no doubt good and will prove of lasting value, including some affecting CRE (perhaps most obviously and most commendably the advancement of the REIT industry). Some of the innovation went too far or too fast and helped to cause or exacerbate the GFC (perhaps the CMBS industry falls in this category, though ultimately CMBS also will no doubt be seen as more beneficial than problematical). In general, policy makers seem to have been more successful in responding to the inflation crisis of the 1970s than to the financial crisis of the 1980s. The tendency toward excess leverage unleashed in part by the earlier inflation crisis seems to be more difficult to effectively and permanently control than the inflation that in part stimulated the initial excess leverage in the first place back in the 1980s.

But from a broader perspective, we should note a fundamental characteristic of history. Each cause typically has more than one prior cause. And each prior cause has more than one before it. And so on. History weaves a complex and fascinating web of causal flow, with more and more strands branching out as we explore back in time. It is for the historian to sort through the threads and try to claim that some are more important than others. And this historical analysis exercise feels like a learning experience. But let us always be humble. We can never fully know “*what if?...*”.

Bibliography

- Bernanke,B. & C.Lown. "The Credit Crunch," *Brookings Papers on Economic Activity* 1991(2):205-247 (1991).
- Blanchard,O. "Consumption and the Recession of 1990-91," *American Economic Review* 83(2):270-274 (1993).
- Browne,L. & K.Case. "How the Commercial Real Estate Boom Undid the Banks," in *Real Estate & the Credit Crunch*, L.Browne & E.Rosengren, Ed., Federal Reserve Bank of Boston (1992).
- Calem,P. & R.Rob. "The Impact of Capital-Based Regulation on Bank Risk-Taking," *Journal of Financial Intermediation* 8:317-352 (1999).
- Conroy,W. "Risk Based Capital Adequacy Guidelines: A Sound Regulatory Policy or a Symptom of Regulatory Inadequacy?" *Fordham Law Review* 63(6): 2395-2443 (1995).
- Davison,L. "Politics and Policy: The Creation of the Resolution Trust Corporation," *FDIC Banking Review* 17(2):17-44 (2005).
- Fintzen,D. & H.Stekler. "Why Did Forecasters Fail to Predict the 1990s Recession?" *International Journal of Forecasting* 15:309-323 (1999).
- Garner,A. "Is Commercial Real Estate Reliving the 1980s and Early 1990s?" *Federal Reserve Bank of Kansas City Economic Review* 3rd Quarter: 89-115 (2008).
- Hall,R. "Macro Theory and the 1990-91 Recession," *American Economic Review* 83(2):275-279 (1993).
- Hancock,D. & J.Wilcox. "Bank Capital, Loan Delinquencies, & Real Estate Lending," *Journal of Housing Economics* 3:121-146 (1994).
- Hansen,G. & E.Prescott. "Did Technology Shocks Cause the 1990-91 Recession?" *American Economic Review* 83(2):280-286 (1993).
- Kamery,R. "A Brief Review of the 1990-91 Recession," *Proceedings of the Academy of Legal, Ethical, & Regulatory Issues* 8(2):61-65 (2004).
- McNees,S. "The 1990-91 Recession in Historical Perspective," *New England Economic Review* January/February: 3-22 (1992).
- Peek,J. & E.Rosengren. "The Capital Crunch: Neither a Borrower Nor a Lender Be," *Journal of Money, Credit, & Banking* 27(3): 625-638 (1995).
- Providenti,A. "Playing with FIRREA, Not Getting Burned," *Fordham Law Review* 59(6):323-338 (1991).
- Shrieves,R. & D.Dahl. "Regulation, Recession, & Bank Lending Behavior: The 1990 Credit Crunch," *Journal of Financial Services Research* 9:5-30 (1995).
- Walsh,C. "What Caused the 1990-91 Recession?" *Economic Review of the Federal Reserve Bank of San Francisco* 2:33-48 (1993).