From Financial Exploitation to Global Banking Instability: Two Overlooked Roots of the Subprime Crisis

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1. Introduction

The current meltdown in global banking and credit markets, which bears the unlikely name of the “sub-prime lending crisis,” threatens to destroy asset values, financial markets, and national economies across the globe. The proximate cause of this situation was the end of the US housing bubble, which precipitated a rapid increase in mortgage delinquencies, especially among subprime mortgages issued in overheated markets. Since these mortgages were held in securitized form in portfolios around the world, these payments difficulties at the base of the financial food-chain led to seismic financial-market eruptions at the top.

In the U.S., thousands of households have already lost their homes. The economy as a whole now resembles the submarine in the movie Das Boot: it has dived well below its tolerance level: oxygen is running low, and one valve after another is exploding under the pressure. It is too soon to know the ultimate impacts of this crisis, but not too soon to explore its causes. Some analysts have already identified the moving force of this episode: greed and overreach by globe-spanning financial firms.¹ This diagnosis is correct. At the same time, it fingers a perennial feature of the Wall Street jungle. To point only to the long history of financial meltdowns, with the obligatory references to John Law and Kindleberger (1978), is to ignore unique characteristics of this crisis.

This essay argues that two intertwined aspects of US banking behavior, largely overlooked until now in discussions of causes of the subprime crisis, are among its root causes: the strategic transformation of banking at the onset of the neoliberal era; and long-established patterns of racial exclusion in the US markets for housing credit. Here we use the “balance-sheet approach” advocated by Hyman Minsky to understand why the strategic transformation of banking in the neoliberal age led step-by-step to practices that now are revealed as eminently risky. Banks transformed their revenue-generation strategies due to macro- and micro-distress at the onset of the neoliberal age. These changes also transformed the structural relationships between loan-making and risk-taking, on one hand, and between banks’ management and absorption of risks, on the other. That is, banks hit upon strategies that appeared to fundamentally reduce the risks associated with banking and financial intermediation activities.

However, in adopting these strategies, banks ceased to perform some of their key roles in the economy as a whole. When banks generate default risks and liquidity risks through loan-making, and absorb those risks on their balance sheets, there are built-in breaks in tendencies toward speculative and overly-risk lending. For as default risks build up in the latter stages of an expansion, banks must consider both that default risk might worsen on marginal loans, at the same time that the liquidity risks of funding their entire asset portfolio are increasing. When

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¹ See, for example, Tully (2007).
banks generate loans – and hence risks – but do not absorb risks, then their fundamental structural position in the economy is transformed: balance-sheet pressures no longer compel them to emphasize caution more in the latter stages of a lending cycle.

This strategic re-orientation of banks – in combination with reduced regulatory oversight, developments in financial technology, and the US’s unique geo-economic circumstances – then transformed the landscape of racial and social exclusion in US credit markets: what was a scenario of financial exclusion and loan denial because a scenario of financial exploitation and loan-making. Households previously denied mortgage credit were now awarded high-cost, high-risk loans. And when practices pioneered in predatory loan-making to socially excluded communities were generalized and introduced into the broader housing market, the conditions were created for the unsustainable explosion of prices in the US housing market, on one hand, and the unsustainable stretching of the limits of liquidity in financial markets, on the other. Banks were no longer control points, blocking credit flows to (and preventing capital accumulation by) minorities and inner-city residents on the basis that these flows would be too risky. Instead, banks became one of several sets of enablers for high-risk, high-cost loans.

In sum, the sub-prime crisis is in part a consequence of the perverse interaction between America’s legacy of racial discrimination and social inequality and its hyper-competitive, world-straddling financial sector. Chickens have come home to roost.

2. Fundamental Risks in Banking Behavior

By definition, banks are financial firms that emit liquid deposits and that create credit. In performing these two “functions” for the economy, banks take on two characteristic types of risk: default risk, the possibility that borrowers may not meet their contractual debt-servicing and principal-repayment obligations in a timely manner; and liquidity risk, which is assumed by any economic entity that finances a longer-term asset position with liabilities of shorter duration.

| Figure 1: Bank structural relationships in the liability-management era |
|---------------------------------|---------------------------------|
| **Small bank**                  | **Large bank**                  |
| Required reserves               | Required reserves               |
| Federal Funds lent              | Demand deposits                 |
| Securities                      | Time deposits                   |
| Loans                           | Loans                           |
| Equity                          | Fed Funds borrowed             |
|                                 | Other borrowed funds            |
|                                 | Equity                          |

Note: Light-grey shading indicates the extent of default risk; dark-grey shading, that of liquidity risk.

Banks can experience tension between their liquidity-provision and credit-creation functions, because these functions – and the risks to which they give rise – are interdependent. In downturns or periods of heightened uncertainty, being liquid commands a premium: it is preferable to hold assets that are readily convertible into money, than non-monetary assets that
may be impossible to sell readily except at a steep discount. Non-bank economic units will be more able to survive such periods if banks provide them with fresh infusions of credit at reasonable rates. But to provide such credit, banks must sacrifice their own liquidity (Dymski 1988).

A peculiarity of banking systems is that some of the very institutional mechanisms that enhance banks’ responsiveness to the economic growth impulses in an upturn also build up the level of systemic liquidity and default risk. For example, interbank (Federal Funds) and other contingent borrowing markets provide reserves to banks whose desired level of loan supply exceeds the capacity inherent in its deposit base – thus expanding the scale of economic activity; but the resulting enhanced credit supply enhances both liquidity and default risk. This shift is illustrated in Figure 1: the balance sheet of the small bank on the left contains only some default risk; that of the large bank on the right represents higher levels of default risk as well as liquidity risk. The more aggressively the large bank on the right side borrows reserves from the small bank on the left, the more risk – and potential return – it takes on.

Given this structural situation, it is important to take note of two special pressure points in banks’ management of risk through a business cycle. One moment arises later in the cycle. Banks will be called on more heavily in the later stages of an expansion to provide credit to facilitate non-bank units’ continued activity and growth. As uncertainty about the sustainability of ‘good times’ increases, banks generally (both small and large, in the context of Figure 1) will become more reluctant to increase their default risks. And the increasing likelihood of troubled times, in turn, suggests that markets for liquidity may be adversely affected. Thus liquidity risk also rises, leading banks (especially large ones) to consider reducing their dependence on borrowed funds.

The late expansion, of course, is followed by economic downturn. If the banking system is to diminish the economy’s downward momentum, it must absorb – not shed – risk in such periods. When it can perform this function depends on central-bank interventions to make liquidity plentiful and cheap. If the central bank does not ease liquidity markets, then banks can only lend (take on more default risk) by taking on even more liquidity risk. If the central bank eases, then in principle banks will be absorbing more default risk temporarily, even while their liquidity risk is reduced. In principal, if the borrowers requiring temporary help have solid longer-term prospects, then banks are not taking on unsustainable risks, but are absorbing and transforming risks so the non-financial economy can recover its momentum.

In practice, things may be more complicated. In periods of heightened uncertainty, it can be impossible to differentiate between an illiquid and an insolvent borrower. Further, when borrowers’ balance sheets are excessively leveraged, it may not be feasible to patiently provide credit until cash-flows turn positive again. Indeed, even if a longer-term bet is warranted, the lender providing a credit bridge may not itself survive the intervening period. All these complications, of course, are of special relevance in considering the current subprime crisis.

A final peculiarity of banking systems, as Alves, Dymski, and Paula (2007) discuss in a forthcoming paper, is that banking credit-expansion strategies are also interdependent. These authors show that if one portion of a population of banks is more aggressive in loan-making than

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2 Banks can attempt to reduce their net exposure to risk – for example, by matching maturities on assets and liabilities. But in a crisis, their exposure will be enhanced.
another, the more conservative banks – and the system as a whole – will be pulled toward a more aggressive credit posture – with higher levels of default and liquidity risk – than would result if all banks followed conservative behavioral rules. To paraphrase Keynes, banks would rather hang together than hang separately in part because they have no choice. This helps explain why banks and other financial firms so often appear to imitate one another.

3. The Transformation of the US Banking and Mortgage Markets

Prior to the 1980s, US banks operated with long-standing geographic and product-line prohibitions, which limited their capacity to respond flexibly to credit demand. While not so problematic for smaller banks, which were conservative in their lending, it did impinge on large banks. In the 1960s and 1970s, these banks evolved a strategy of “liability management,” wherein they supported more lending than their deposit bases would allow by borrowing systematically in the interbank (Federal Funds) market and tapping into other short-term borrowing sources. Housing credit was provided primarily by savings and loan companies and savings banks (“thrifts”), which attracted longer-term consumer savings.

This structure proved unsustainable in the macroeconomic turmoil of the late 1970s. By the late 1970s, stagflation and interest rates well above banks’ regulatory maxima (under Regulation Q) led to systematic disintermediation – the loss of depositors to innovative savings outlets, such as money-market money instruments. Their credit supply threatened, large non-financial corporations created the modern commercial paper market and vastly expanded the scope of corporate bond markets. The combination of disintermediation and an inverted yield-curve, however, also decimated the balance sheets of the thrift industry, which had originated and held most US mortgage debt, as Figure 2 shows.
Figure 3: Thrift balance sheets before and after early-1980s competitive deregulation

<table>
<thead>
<tr>
<th>Pre-deregulation thrift</th>
<th>Post-deregulation thrift</th>
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<tr>
<td>Required reserves</td>
<td>Required reserves</td>
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<tr>
<td>Demand deposits</td>
<td>Demand deposits</td>
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<tr>
<td>Securities</td>
<td>Risky Investments</td>
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<tr>
<td>Time deposits</td>
<td>Time Deposits</td>
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<tr>
<td>Mortgage loans</td>
<td>Mortgage loans</td>
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<td></td>
<td>Borrowed funds</td>
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<tr>
<td>Equity</td>
<td>Equity</td>
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Note: Light-grey shading indicates default risk, and dark-grey shading, liquidity risk.

This led to the passage, in 1980 and 1982, of legislation designed to modernize, respectively, commercial-banking and thrift regulation. A period of competitive deregulation between the federal and state regulators of thrifts followed, leading some states’ thrifts to undertake ill-advised speculative investments in the mid-1980s. The result was that the problem of thrift illiquidity was transformed into a crisis of thrift insolvency. This shift in the circumstances of thrifts is illustrated in Figure 3. Pre-deregulation thrifts absorbed a substantial amount of liquidity risk. Note that mortgage loans are shown as being default-risk-free: a characterization that is too strong, while at the same time capturing the spirit of the pre-subprime era. Thrift deregulation permitted some thrifts, such as Silverado, to take on risky investments (such as equity participations in speculative housing developments). Such behavior actually created default risk and increased the extent of liquidity risk.

Consequently, some of the post-deregulation thrifts crashed, often spectacularly. Federal legislation in 1982 and in 1989 then provided the funding for cleaning up the savings-and-loan crisis. The size of the thrift industry was vastly reduced, and many insolvent thrifts merged into commercial banks. The early 1980s’ macro and interest-rate instability also triggered the August 1982 default by Mexico on its overseas loan obligations. In the resulting Latin American debt crisis, many large US commercial banks suffered losses, and several US money-center banks failed.

The next several years brought a bank merger wave and further institutional innovations, which reshaped the competitive and institutional terrain of US banking and mortgage markets. A new set of “superregional” banks emerged in the newly deregulated environment, which generated revenues by selling a range of credit and other financial services to stable consumer and business customers. This upscale retail banking strategy involved a shift in the focus of revenues from earnings based on interest margin to earnings based on fees from the provision of point-in-time or through-time financial services.

These shifts toward desirable up-market customers and toward fee-based services are mutually reinforcing: the customers most sought by banks are targeted for the receipt of standardized financial services – credit cards, specialized deposit and investment accounts, and mortgage loans. Both strategic shifts led to bank mergers aimed at market expansion: as a result, much of the US banking market is being served, over time, by an ever-smaller number of ever-larger banking firms.
Securitization and the Mortgage Market. As Figure 4 suggests, housing has always been cyclically volatile; but surprisingly, the mid-1980s thrift collapse had little sustained effect on housing finance. The reason was that U.S. housing finance was already in the midst of a transformation from an intermediary-based to a securities-market-based system. Previously, lenders held mortgages to maturity, and consequently were exposed (as noted above) to default and liquidity risks. In the new system, lenders made mortgages to sell them. Commercial banks interested in expanding their share of consumer-banking markets provided the mechanisms for implementing securitization. The process of originating, servicing, and holding mortgages was split into its constituent parts, with each part priced and performed separately.

A successful securities-based system housing finance required the commodification of risky mortgage assets. This required two steps. The first was the standardization of the instruments being bundled and sold, which required the adoption of standardized mortgage eligibility criteria. These criteria made ‘relationship’ lending unnecessary, and allowed both a new array of non-bank, non-thrift lenders to originate mortgage debt, and a new array of institutions to hold it. The second was the separation of loan-making from risk-bearing. The willingness of wealth-holding institutions to take on securitized mortgaged debt was accomplished by insuring the ready availability of government and private underwriting of mortgage debt. Two federally-chartered agencies, FNMA (the Federal National Mortgage Association) and FHLMC (the Federal Home Loan Mortgage Corporation) have long provided a secondary market for qualifying mortgages. A

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3 For elaboration of the arguments made in this section, see Dymski (2002).
third agency, the Government National Mortgage Association (GNMA or Ginnie Mae), provides a secondary market for FHA, VA, and FmHA mortgages. These agencies have continued to underwrite most mortgage credit; further, as Figure 2 shows, these agencies hold a significant share of US mortgage debt.

<table>
<thead>
<tr>
<th>Figure 5: Thrift / mortgage-investor balance sheets with securitization</th>
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<tbody>
<tr>
<td><strong>Thrift (mortgage originator)</strong></td>
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<tr>
<td>Reserves</td>
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<tr>
<td>Securities</td>
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<tr>
<td>Mortgage loans</td>
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<tr>
<td>Demand deposits</td>
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<tr>
<td>Time</td>
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<tr>
<td>Time deposits</td>
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<tr>
<td>Equity</td>
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</tbody>
</table>

Note: Light-grey shading indicates default risk, and dark-grey shading, liquidity risk.

In principle, as Figure 5 shows, the creation of a mortgage-investor unit through securitization radically transforms the apparent extent and distribution of risk in the mortgage system. Compared with the thrift shown in Figure 3, the mortgage-originating thrift shown in Figure 5 has substantially less liquidity risk. The reason is that a portion of its mortgage loans is continually being offloaded onto a mortgage-investor’s balance sheet. This mortgage-investor could be an insurance company, a pension fund, a sovereign bank, and so on. If the mortgage-investor unit can support its asset position with maturity-matched borrowed funds (such as pension obligations which will become due at different points in historical time), that unit should – in principle – have no liquidity risk. If we continue to assume that mortgage loans are made using standardized lending criteria, so that they are effectively riskless (or have a small and predictable default rate), then it seems in Figure 5 that the new system for mortgage-origination and mortgage-holding has virtually banished risk from the housing-finance process.

From the mid-1980s to the mid-1990s, most mortgages were conforming conventional loans, underwritten by these agencies, and then either held in agency portfolios or sold off. These agencies have accommodated the larger flow demand for securitized mortgages by increasing their proportion of pass-through securities – that is, securities whose share holders have claims on the underlying mortgage cash-flows. The activities of these agencies are supplemented by several private mortgage insurers that underwrite “non-conforming” loans -- “jumbo” loans larger than are allowed under FNMA. The current limit of $417,000 for FNMA has, as Figure 2 shows, led in the last several years to more mortgage paper moving into the “jumbo” loan category. In sum, the reconfiguration of U.S. housing finance did not require the invention of new institutions: instead, it required an expansion in the scope of participation in the secondary mortgage-debt market. The divorce of risk-bearing from loan-absorption was so complete that thrifts were able to maintain a large share of originations even as they lost deposit share.

What kept mortgage flows so resilient was the United States’ unique position within the global Neoliberal regime. The transition from the old housing-finance system to the new was accomplished at a time when the U.S. was both the principal global source of reserve currency and a preferred safe haven. Further, at that point in time, the U.S. had huge current-account deficits, which have necessitated systematic capital-account inflows. Mortgage-backed securities, like Treasury securities, responded to the needs of offshore investors: government-
agency underwritten securities denominated in the world’s reserve currency – an attractive option at a time of recurrent global financial disorganization.

Risks, once created in a borrower-lender relationship, must be borne – if not by the original issuer, then by some other agent that has underwritten the risk or that has sold an option on it. However, the new epoch of securitization involved ambiguity regarding the extent and bearing of risk. It was never clear that mortgage default risk shifted to the purchaser of mortgage-based securities. Lenders pretended this risk was eliminated, as did buyers of MBS’s. Liquidity risk, in turn, is generated by mortgage-based securities, especially those issued on a fixed-rate basis.

Implications for the Cyclical and Risk-Absorption Roles of Banks. Banks’ increasing adoption of upscale retail banking, emphasizing sales of standardized instruments – including loans – was in process as the mortgage market was itself in upheaval. Loans were increasingly regarded as quantifiable and as linked to the credit instruments emitted by lenders than to the lenders themselves. The transformation of the mortgage market also had profound implications for banking strategy. The virtual disappearance of thrift institutions opened up a new field of competition – mortgage-loan origination (see Figure 2). The risk “absorption” function of banks as lenders became ever more remote, while the competition to be risk originators grew ever more intense. This shift was reflected in the shift from interest-margin to fees as the primary sources of banks’ net income. Facing banks on this new competitive field were mortgage companies, which did not make loans to keep them on their books, as had the thrifts; they made loans only to sell them. Banks followed suit, initially selling “plain vanilla” mortgage-based securities. Things were about to change, however, due to developments in mortgage instruments pioneered in minority neighborhoods.

4. The Evolution of Financial Exploitation

Since its founding in the 1930s, the Federal Housing Administration had adopted guidelines that precluded homes in neighborhoods with significant minority populations from participation, leading to stagnating housing values and lower rates of homeownership in minority areas. This began to change in the 1960s due to legislation passed in response to the pressure exerted by innumerable inner-city grassroots organizations. Two pieces of legislation -- the 1968 Fair Housing Act and 1974 Equal Credit Opportunity Act -- extended the anti-discrimination principles of civil rights law to housing and credit markets, respectively. The Home Mortgage Disclosure Act (HMDA) of 1975 and the Community Reinvestment Act (CRA) of 1977, respectively, provided a mechanism for monitoring bank loan-making, and precluded “redlining” – the implicit or explicit refusal of lenders to make mortgage credit available to neighborhoods with large minority populations. The HMDA required all depository institutions to report annually on the distribution of their mortgage loans by census tract. HMDA data proved that bank home-ownership loans were made much less frequently in minority and lower-income areas. Community advocates demanded that banks, who receive important protections from government, meet credit needs throughout their market areas, as specified under the CRA.

Depository institutions responded that they did not redline; the problem was a lack of demand to purchase homes in such areas. Advocates took advantage of the political leverage provided by the 1989 savings-and-loan bailout bill to require more extensive HMDA reporting: specifically, an annual account of applications and loans made, with applicant race and gender reported.
These data provided the basis for many bargains increasing credit provision in minority and lower-income areas to be struck between lenders and community advocates.

Figure 6: “Rational” bank redlining in the pre-securitization era

<table>
<thead>
<tr>
<th>Banks A, B avoid inner-city</th>
<th>Bank A lends in inner-city (not B)</th>
</tr>
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<tbody>
<tr>
<td>Reserves</td>
<td>“Inner-city” and “Suburban” demand deposits</td>
</tr>
<tr>
<td>Securities</td>
<td>“Inner-city” and “suburban” demand deposits</td>
</tr>
<tr>
<td>“Suburban” mortgage loans</td>
<td>“Suburban” mortgage loans</td>
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<tr>
<td>“Suburban” time deposits</td>
<td>“Suburban” time deposits</td>
</tr>
<tr>
<td>Equity</td>
<td>Equity</td>
</tr>
</tbody>
</table>

Note: Light-grey shading indicates the extent of bank-perceived default risk; dark-grey shading indicates the extent of bank-perceived liquidity risk.

The advocates for minority and lower-income (“inner city”) communities were pushing banks and thrifts to make “mainstream” loans to households seeking to own homes and businesses in need of working capital. From banks’ viewpoint, externalities and coordination problems in the lending/deposit-taking process prevented their full and free participation in making inner-city credit markets. Figure 6 illustrates the problem, which takes the form of a prisoner’s dilemma. Suppose there are two banks, A and B, both with branches in inner-city and suburban (that is, upper-income, predominantly non-minority) portions of a city. For simplicity, the question is where they should make mortgage loans. If both banks A and B make mortgage loans in the same area, home prices there will be stable or increase, and the liquidity risk of owning a home there will fall (for potential homeowners). If only one bank lends in one area, price and liquidity spillovers will not be realized. The question is, where to lend? A redlining outcome readily emerges if residents of one area (the suburbs) have systematically higher levels of financial assets – and hence more time deposits – than residents of the other area (the inner-city). On the left-hand side of Figure 6, both lenders capture spillover gains (in greater price stability and reduced liquidity risk) from one another by lending in the suburbs and avoiding inner-city lending. If just one bank “bucks the trend” and lends in the inner city, the loans it makes will be risky, and its suburban loans may even be riskier than otherwise. Because of lower income levels in the inner city, residents there have fewer time deposits; banks lending there must compensate by relying more heavily on borrowed funds, ceteris paribus, increasing their liquidity risk. So the solution of the prisoner’s dilemma is clear – lenders avoid the stagnant inner city and compete for mortgage loans in the suburbs.

From the 1970s to the mid-1990s, advocates’ investigations of socially unfair outcomes in banking markets focused, first, on whether all bank customers were provided with equal access to credit, and second, on whether banking services were available uniformly through banks’ market areas. This first focal point implicitly investigated the treatment of individuals with the financial means and income to (say) own houses or start businesses; the second focused implicitly on those without such means. According to the General Accounting Office (2002), 28% of all individuals and 20% of all households lack bank accounts, and thus were “unbanked.” Minorities are overrepresented among the unbanked; but more than half of unbanked U.S. households are white.
For years, financial services were provided to unbanked and very low-income people by a plethora of check-cashing stores, finance companies, and pawn-brokers; in many cases, these were poorly capitalized, locally run, and only in some case operated on a multi-location basis. However, with the increasing number of lower-income households, and with the growth of the market for cross-border remittances, this market has been growing – thus attracting the attention of major financial companies. Banks had only a tiny share (as little as 3%) of the remittance market (Orozco, 2004), which is a rich source of fees. And according to Katkov, underbanked and unbanked households generate $6.2 billion in fees (Katkov, 2002) – an average of about $200 per household per year, even for the very poor.

Banks have recently increased their activities in lower-income markets: in particular, they have acquired subsidiaries and begun to design special instruments aimed at the lower-income and minority customers they have until now overlooked. Prominent among these new products have been have subprime and “predatory” loan instruments. Since the mid-1990s, these instruments have been growing at a frenetic pace in neighborhoods historically subject to financial exclusion. These loans often have led to excessive rates of household and firm non-payment, and thus to foreclosures and personal financial distress – well before the 2007 mortgage-market meltdown. Initially, these terms were used almost interchangeably. There are two principle categories of these loans: housing-based loans and payday loans.

**Housing-based subprime lending.** The starting point of these practices came when mortgage brokers and other lenders began to combine aggressive marketing and sale of second mortgages with demographic targeting. Predatory mortgages – with excessive fees, high penalties, and high interest rates – were sold to households that had traditionally been denied access to credit. Initially, these were primarily second mortgages. These were attractive to borrowers because they permitted owners of modest homes to gain access to money for whatever financial contingencies were being faced.

Soon, loans with these characteristics were being marketed to those seeking to acquire homes. From the viewpoint of community advocates, these loans’ terms and conditions were predatory; for bank apologists, they were legitimate responses to some home-seekers’ special risk characteristics. In effect, a new category of financial exclusion emerged: rather than denying loans to minority borrowers and those seeking homes in lower-income or minority areas, lenders and mortgage brokers could now offer them loans at exploitative terms.

Subprime loan practices have heavily impacted the elderly, people of color, and minority neighborhoods. Many low-income and minority borrowers are obtaining loans at high interest rates and with very unfavorable terms from housing-related and payday lenders (Williams (1999). For example, Canner et al. (1999, page 709) found that in 1998, subprime and manufactured housing lenders accounted for 34 percent of all home purchase mortgage applications and 14 percent of originations. These lenders’ impact on low-income and minority individuals is even more pronounced. According to Canner et al., in 1998, subprime and manufactured housing lenders made a fifth of all mortgages extended to lower-income and Latino borrowers, and a third of all those made to African American borrowers. According to ACORN (2000), subprime lending grew 900 percent in the period 1993-99, even while other

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4 The next two subsections draw on Dymski (2006).
5 See, for example, California Reinvestment Committee (2001).
mortgage lending activity actually declined. A nationwide study of 2000 HMDA data by Bradford (2002) found that African Americans were, on average, more than twice as likely as whites to receive subprime loans, and Latinos more than 40%-220% more likely.⁶

Available evidence suggests that lower-income and minority borrowers are targeted by these specialized – and often predatory – lenders. Community-reinvestment advocates and consumers are challenging business practices that sometimes victimize borrowers. As evidence of the aggressive business practices pursued in this market, Ameriquest Mortgage Company of Orange, California was forced to settle a consumer protection lawsuit for $325 million in January 2006. Tellingly, this was second in dollar value, in US history, only to Household Finance Corporation’s $484 million settlement in 2002 (after its sale to HSBC). The Washington Post story summarizing the settlement gives some indication of the practices that have plagued this industry:

“Under the agreement, Ameriquest loan officers will be required to tell borrowers such things as what a loan’s interest rate will be, how much it could rise and whether the loan includes a prepayment penalty. Loan officers who do not make that disclosure will be subject to discipline. The company would also be forbidden from giving sales agents financial incentives for pushing consumers into higher-interest loans or prepayment penalties.”⁷

The payday loan market. The payday loan – the practice of advancing workers a portion of the money they stand to earn from their paychecks – have become common in check-cashing stores. As with subprime loans, financing is often provided by large bank holding companies. This form of credit is also spreading very fast, as is the infrastructure of lenders disbursing it. Payday lenders were unheard of 15 years ago; but now it is estimated there are 22,000 store locations offering payday loans, with a market volume of $40 billion, in the 37 states that allow this practice.⁸ The average fee for payday loan providers for a $100 check is $18. In 2001 there were 15,000 stores in the US offering payday loans, with 70 million transactions and $2.6 billion in fees -- $37 per transaction, on average, with $173,310 in fees per store location. Fees from this market will reach $4.4 billion in 2005.

Why has the payday loan industry grown so rapidly? Participants in the payday industry point to the interaction of two factors. The first is banks’ increasingly high NSF fees – that is, to fees charged to customers when there are insufficient funds to make all payments for which checks have been written. The second factor is the increasingly high late fees that are charged for rent, credit-card, and utility payments. Some $22 billion in NSF fees and $57 billion in late fees were collected in 2003 (Bair 2005)

Interestingly, the customers for these loans are not the unbanked. Payday-loan customers must have checking accounts. Some 29% earn less than $25,000/year, and 52% earn $25-50,000/year.

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⁸ The statistics on payday lending in this subsection are drawn from a 2005 report by Sheila Bair, written while she was a visiting professor at the University of Massachusetts, Amherst. Bair, of course, is currently head of the Federal Deposit Insurance Corporation.
African Americans and military families are overrepresented. Some 41% are homeowners. There is recurrent use; most customers use payday loans 7-12 times per year.

Lower-income US households have much more volatile incomes than do other households, and hence need credit to close income-expenditure gaps more frequently than other households. But in obtaining credit, many such households lack the financial ‘track record’ that would make them ‘fundable’ for credit cards or loans (Information Policy Institute, 2005). So some financial firms are working on developing new sources of information which could qualify households for higher levels of credit, over longer time-frames. However, the absence of this information has not inhibited the growth of these credit markets. The reason it has not is the structural transformation of the markets for lower-income – and ultimately for lower-income and higher-risk – collateralized loans in the US economy.

**Forces shaping US lower-income credit markets.** Acquisitions and changing practices in consumer finance have led to ever more interpenetration between major banking corporations, finance companies, and subprime lenders. The subprime mortgage loans and payday loans already had some common structural features that later opened the door to the broader subprime markets of the 2004-06 period: (1) they were based on some collateral (homes and paychecks), which had value no matter the income-based cash-flows of the economic units to whom these loans were made; (2) they represented higher-risk assets, whose holders could anticipate higher returns in compensation for these risks; (3) the lenders originating these loans needed to move this paper systematically off their balance sheets. What was needed was a conveyor belt for taking credit originated by banks, their subsidiaries, or other lenders, converting it into instruments whose characteristics were readily understood by wealth-holding (or wealth-leveraging) units seeking out above-market – higher-risk – assets.

The subprime lending industry has grown so explosively in the past several years precisely because the links required for this chain were established between this industry’s instruments and the new technologies of securitization and risk-pooling. Many of the largest investment banks on Wall Street have channeled an ever-increasing amount of funds to subprime lenders; indeed, these securitizations already averaged $80 billion annually by 1998 and 1999; further, Wall Street insurers have backed the mortgage-backed securities that subprime lenders have sold off into the markets.

Not content to generate fees from securitizing non-prime loans, some bank holding companies purchased subprime lenders. Citicorp acquired Associates First Capital Corporation, which was then under investigation by the Federal Trade Commission and the Justice Department. Associates First represented a step toward Citi’s goal of establishing its Citifinancial subsidiary as the nation’s largest consumer finance company. In any event, this consumer-lending

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10 Henriques and Bergman (2000).
11 In another case, First Union Bancorp bought the Money Store in June 1998. First Union subsequently closed this unit in mid-2000 in the wake of massive losses (Berman et al. 2006). In 2003, HSBC bought Household International, parent of Household Finance Company, after the latter settled on charges that it had engaged in predatory lending.
12 Oppel and McGeehan (2000). This drew an immediate response from fair-lending advocates. For example, Martin Eakes, founder of the non-profit Self-Help Credit Union in Durham, N.C., commented,
subsidiary helped to stabilize Citi’s cash-flow during a period in which most megabanks’ earnings slumped.13

Linked to these forces was a new consumer-banking business model for lower-income households: riskier customers are provided access to credit in exchange for either fees paid upfront, or for loans made on the basis of attachable assets. Since homes are most households’ primary asset, especially after mortgage loans have been paid down later in homeowners’ lives, the growth of the subprime mortgage lending market is readily grasped. The logic of the payday loan industry is very similar – next month’s paycheck serves as a guarantee against loss for this new form of lending. Data for the period 1989-2004 from the Survey of Consumer Finances shows that households in the two lowest-income quintiles have had surging levels of debt, not paralleled by proportionate increases in asset levels.

Strategically, further key steps toward the creation of the broader subprime crisis had been taken. The initial premise of securitization was the homogenization of risks – the idea that bundling had to involve credits whose risk was readily calculable by potential buyers. The loans made were restricted to borrowers who were expected to pay; and the federal agencies were relied on heavily to insure the paper underlying the securities.

These premises were all systematically punctured with the emergence of the subprime and predatory loan markets, for several reasons: the heightened competition for returns in the financial markets; more relaxed attitudes about risk-taking and risk-holding; and increases in computability. Consequently, heterogeneous housing-based loans were increasingly originated and sold off by lenders. These loans were sometimes made to borrowers whose longer-term viability as payers was doubtful. To compensate for these risks, fees, penalties, and margins were made sufficiently high that these loans would turn a profit for their holders even if in the longer-term the relationship between lender and borrower broke down.

<table>
<thead>
<tr>
<th>Subprime lender (mortgage originator)</th>
<th>Structured investment vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reserves</strong></td>
<td><strong>Collateralized debt obligations (including mortgages) with certain risk, maturity characteristics</strong></td>
</tr>
<tr>
<td><strong>Mortgage loans</strong></td>
<td><strong>Short-term money-market borrowing</strong></td>
</tr>
<tr>
<td><strong>Shares</strong></td>
<td><strong>Private-equity or hedge-fund investors</strong></td>
</tr>
</tbody>
</table>

Note: Light-grey shading indicates default risk, and dark-grey shading, liquidity risk.

What emerged in the financial markets was a system for originating and then distributing risk. This is shown in Figure 7. A subprime lender makes mortgage loans, and sells them to banks that securitize them. This lender is most likely funded by money-market borrowing and by investors holding shares in its enterprise. Increasingly, the buyers of the loans thus originated were

“Those of us who have worked on the community level have seen the abuses outlined in the F.T.C. complaint, and many of us believe that Associates is a rogue company and may alone account for 20 percent of all abusive home loans in the nation” (Oppel, 2001).

structured investment vehicles (SIVs). SIVs had some important differences from the mortgage-securitization model shown in Figure 5. Whereas “plain vanilla” mortgages had formerly permitted the bundling of homogeneous risks in securitization processes, now many different forms of collateralized debt could be combined on the asset side of SIVs. This permitted diverse forms of paper to be moved off lenders’ balance sheets. The liabilities used to support SIVs also became more complex. Funds might be obtained from private-equity funds, from hedge funds, or from money markets (especially the commercial paper markets). The relative transparency associated with pass-through securities was eviscerated in most SIVs. Whether this meant that investors in SIVs were taking on the default and other risks implicit in such financial instruments (see Figure 7) was unclear. Credit risk derivatives were used in many cases to shift risks – or to apparently shift risks – onto third parties. In any case, SIVs quickly became a $400 billion industry. As the *Wall Street Journal* put it, SIVs “boomed because they allowed banks to reap profits from investments in newfangled securities, but without setting aside capital to mitigate the risk.”

In sum, as these new credit markets emerged, the previous solution to the prisoners’ dilemma regarding bank lending in inner-city areas was inverted. Before, banks would be reluctant to make any loans in inner-city areas, leading to credit starvation for their residents. Now, banks rushed in, sometimes directly and more often through intermediaries, to make and securitize subprime and payday loans in inner-city areas. Both lenders might choose to make exploitative loans in the same locales, while making prime loans in others. Both prime-heavy and subprime-heavy areas were awash with credit. The difference was that much of the debt in subprime-heavy areas was contracted at terms and conditions that threatened borrowers’ future financial sustainability. Indeed, banks and markets learned to regard aggressive and even expectationally unsustainable terms and conditions on borrowers as normal business practices. And these practices soon migrated from inner-city areas to the broader markets.

5. From the Margins of the City to the Core of Global Finance

Once securitization markets learned to accept asset heterogeneity not backed by iron-clad underwriting, the door was open for the further evolution both of mortgages and of securities. The financial markets were no strangers to non-homogeneous risks in securitized mortgage debt: since the 1970s, REITs (real-estate investment trusts) had been marketed and sold off to investors. There was already an experience of crisis: incautious investment by the Franklin National Bank in REITs had led to its failure in 1974 (Sinkey 1981). In many cities, residential real estate began to take off in value in the late 1990s. An asset-boom mania began to emerge among homeowners and potential homeowners. Those who had homes wanted bigger ones; those who didn’t wanted to get into the housing market. While there had been periods of sustained housing-price increases before in the U.S., and while the US market’s appreciation was actually less than that experienced in several other countries, a special feeling of desperation around – especially in markets subject to the fastest rates of price appreciation.

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14 According to Mollenkamp et al. (2007), the first SIVs were created for Citigroup in 1988 and 1989. When SIVs are wholly owned by banks, they are often termed “conduits” (Reilly and Mollenkamp 2007).
16 Mollenkamp, Solomon, Sidel, and Bauerlein (2007).
The fact that many potential buyers had neither the income nor the savings to support “plain vanilla mortgages” within prescribed parameters (no more than 30% of income spent on housing, and 20% down on any mortgage loan) created a special challenge. Lenders’ and brokers’ successful experience in creating loans for borrowers with very risky parameters suggested the required solution: to create loans tailored to the special risks of those whose income and down-payment profiles had not kept pace with many cities’ white-hot housing markets. Since housing prices were rocketing upward, buyers could be given loans for amounts more than 80% of their new homes’ prices; or they could be given two loans, one for the 80% -- making the loan potentially sellable to FNMA -- and another for the other 20% of the sales price.

In effect, the concept of subprime was stretched along a different dimension of the mortgage instrument. Previously, subprime loans went only to borrowers whose terms and conditions were less than optimal. From the early 2000s onward, however, subprime came to mean something more: specifically, it referred to loans made to homeowners who were unable to support “plain vanilla” mortgage packages. These borrowers might be permitted to take on loans at special discount rates for limited periods of time. To get potential buyers “into” a home, a loan could be made at a below-market “teaser” rate for the first year or two of the mortgage. Any gap between market and “teaser” rates could be amortized, and the entire mortgage refinanced at a risk-adjusted market rate after the “teaser” rate expired. Housing-price appreciation would eventually negate the risks of a 100%-financed housing purchase; and anticipated income growth and/or anticipated housing-price growth could, in turn, offset overly burdensome home payments. Fees and penalty clauses could be attached as warranted to such paper.

As housing prices and as euphoria about housing-price increases intensified, especially in some regional hot-spots, buyers were more and more forced into “teaser” rates, hybrid ARMs, and so on (Wray 2007, p. 9). But housing-price appreciation so dominated the consciousness of buyers and sellers that the high fees and high expected payments associated with getting into a loan seemed merely what was necessary to get in while the window of opportunity remained cracked open. For certainly, future price increases would allow the renegotiation of non-viable terms and conditions in two years, when that 2/28 mortgage loan “flipped” from below-market entry-level rate to fixed market rate. But while the rising housing-price/income ratio explains some of the growing demand for subprime mortgage loans, it does not explain all. Some of this demand was, in effect, manufactured by mortgage brokers themselves. Brooks and Simon (2007), in a survey of those acquiring subprime mortgages in 2005 and 2006, found that 55% and 61% of these mortgagees, respectively, had credit scores high enough to obtain conventional loans. These authors go on to point out that the fees earned by the mortgage brokers involved in those subprime loans were substantially higher than those they would have otherwise earned.

And if demand for funds was robust, on the supply side of the housing-finance market, funds were plentiful. For one thing, macro circumstances remained favorable – the US’s current-account remained strongly negative, so that funds continued to funnel into the US through its capital accounts. Foreign fund-holders were familiar with the market for mortgage-backed securities, which after all had represented the largest financial securities market in the world for two decades. Many European banks rushed into subprime paper.17 And while East Asian

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17 See, for example, Mollenkamp, Taylor and McDonald (2007).
sovereign wealth funds invested little in subprime mortgages per se,\textsuperscript{18} their marginal demand for more Treasuries kept rates low and permitted other portfolios to buy subprime paper.

Two micro-reasons also worked to maintain a strong supply of funds to support subprime loan commitments. The first is the adoption of banking strategies that prioritized risk-shedding and fee-based income – a topic we have discussed above. The second was hyper-competition among lenders. This hypercompetition was recently dissected by Anderson and Bajaj (2007). These authors describe the “once-lucrative partnership” between Wall Street and subprime lenders. These authors quote a Wall Street insider, Ronald Greenspan, as follows: “There was fierce competition for these loans. .. They were a major source of revenues and perceived profits for both the investors and the investment banks.” While some banks slowed their involvement as the market heated up to its peak in mid-2005 (Credit Suisse reduced its underwriting 22\% in 2006 compared with 2004), others plunged ahead. For example, Morgan Stanley increased its subprime underwriting by 25\% between 2004 and 2006, developing a special relationship with New Century Financial, a large subprime lender. According to these reporters, Morgan paid above-market in order to lock a monthly flow of $2 billion from this firm alone. New Century, whose subprime loans’ delinquency rate is twice that of other lenders such as Wells Fargo, filed for bankruptcy in March 2007. They quote Jeffrey Kirch, president of a firm that buys home loans, as follows, “The easiest way to grab market share was by paying more than your competitors.” These arrangements were highly lucrative, with managing directors in investment banks averaging total compensation in 2006 of $2.5 million.

Subprime loan volumes exploded in 2004-2006, even as the housing boom peaked. Data from the Mortgage Market Statistical Annual, reproduced as Table 1 of Wray (2007, p. 30), tells a dramatic story (especially in light of the Brooks and Simon data noted above): in the 2001-03 period, mortgage originations totalled $9.04 trillion, of which 8.4\% were subprime loans; and 55\% of subprime originations, or $418 billion, were securitized. In the 2004-06 period, total mortgage originations were the same in nominal terms, $9.02 trillion. However, 19.6\% of all originations consisted of subprime loans, of which 78.8\% - some $1,391 billion – were securitized.

It should be noted that the inherently flexible and non-transparent nature of SIVs soon opened the door for more types of credit to be included on their asset-side balance-sheets.\textsuperscript{19} For example, private-equity funds required a huge volume of bridge loans to support their efforts to undertake leveraged buyouts of ever-larger target firms; these loans could be dropped into SIVs. So too could be other types of commercial loans, for projects ranging from real-estate acquisition to construction finance.

The conceptual basis for structured finance. For one shining moment lasting several years, then, participants in and analysts of subprime markets imagined that they were reinventing banking by creating and refining the mechanisms of structured finance. In structured finance, both assets and liabilities were “tranched,” that is, assets were assembled by recombining underlying loans and debt instruments, and the financing that backed this synthetic paper was

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\textsuperscript{19} As Hyman Minsky put it in a 1987 memo on securitization that Randy Wray unearthed at the Levy Institute, “That which can be securitized will be securitized” (see Wray 2007, p. 5).
similarly assembled by pulling in funds of different durations from different markets. What wasn’t needed or wanted was sold off. Fender and Mitchell (2005a, p. 2) argued that structured finance overcomes “adverse selection and segmentation.” Jobst (2003) asserted that collateralized loan obligations (one form of structured finance) reduce risk for investors and make investment less costly. He went on to write:

“The implementation of these core aspects of active credit portfolio management lead to a radical redesign of business processes in bank lending, provided that risk control routines take into account credit volume. As the origination of loans and portfolio investment is unbundled, the risk-oriented determination of credit conditions and increased efficiency in the lending process through standardized credit terms are essential components of a new organizational model of bank lending.” (Jobst, 2003, p. 79-80)

What was the conceptual basis of this new basis for bank lending? Different interpretations emerge from contemporary economic theory. Both rely on different interpretations of the information set available to investors in the markets. Diamond’s (1984) model of banks as “delegated monitors” is one inspiration. The idea behind this model is that there are economies of scale in information acquisition about borrowers (agents); so banks emerge as centralized lenders because, as information specialists, they can more efficiently make appropriate allocations of available credit than could wealth-owning units operating independently. The need for information about borrowers is combined in Diamond’s model (drawing on Diamond and Dybvig 1983) with the occasional need of bank depositors for liquidity. So banks emerge as providers of liquidity and monitors of creditworthiness.

It might seem that this explanation shows precisely the lack of any need for SIVs and CLOs. This would be so – but only if banks were the most efficient evaluators of credit risk in the financial markets. Suppose credit-rating agencies emerge that can evaluate risk even more efficiently than can banks. Then banks would offload their credit-evaluation function and instead distribute and acquire packages of securities that allowed them to maximize return while providing liquidity. Diamond’s model drew renewed attention just as the subprime era was emerging; for example, he published a new version of his 1984 model in 1996 (Diamond 1996a).

Another conceptual basis for structured finance emerges under the complete-information assumptions utilized in efficient markets theory. Oldfield provides the clue when he writes, “Briefly, an underwriter must defeat arbitrage between pass-throughs and derivatives” (2000, p. 445). If information were complete, transactions costless, assets infinitely scaleable, and a complete set of contingent (derivatives) markets existed, then no structured finance could arise: any agent seeking the particular combination of risk-return characteristics available through the acquisition of a given set of securities could efficiently acquire those securities him/herself – no intermediary (that is, no seller of a structured investment vehicle) would be needed by any wealth-owning agent. The SIV can efficiently exist only if s/he can create a fund that embodies a set of contingent and underlying claims that a wealth-owner cannot access directly. The reason for the efficiency of the SIV can be either transaction costs or the imperfect scaleability of assets, or both. In effect, in this approach, structured finance vehicles help to make markets more complete. Oldfield writes:
“A structured finance transaction transforms a pool of more or less similar loans into a set of derivative instruments collateralized by the pool. An underwriter who structures a transaction has a simple purpose: to sell the set of derivatives for more money than a direct sale of the pool or a pass-through instrument alone would fetch. The underwriter accomplishes a transaction by establishing an independent entity, usually a trust, which becomes the mechanism for structuring the derivatives. This entity represents a passive financial intermediary” (2000, p. 446).

Partnoy and Skeel (2007) describe it as a question of using “financial engineering to complete markets. They write:

“Because synthetic CDOs .. essentially create new instruments, instead of using assets already on bank balance sheets .. complete markets by providing new financial instruments at lower prices. Synthetic CDOs are regarded as “pure” arbitrage opportunities, because their tranches typically are priced at higher yields relative to other similarly rated fixed income investments. Indeed, synthetic CDO tranches are popular because they offer investors a less expensive way of participating in the bond market, particularly the market for high yield debt.” (11-12)

Both approaches carry implicit warnings. Going in reverse order, first consider Oldfield’s approach. Given the extraordinary dexterity of the “wealth-holding agents” that inhabit the world of high finance, completing financial markets through offering hitherto-unavailable risk-return combinations requires Oldfield’s “passive intermediary” to assemble what may be a dizzying array of derivative and stripped assets. Indeed, he goes on to observe, “If the underwriter has accurate information about investors' particular demands, the proceeds from selling derivative instruments exceed the underwriter's costs of buying the collateral, structuring the trust's claims, and selling the derivative instruments” (2000, p. 446). This “if” proved to be quite significant.

Further, Diamond’s work always ponders the problem of banking instability. The classic paper by Diamond and Dybvig (1983) itself is an exploration of the conditions under which a bank run may occur. And Diamond published an article exploring the limits of liquidity-provision by banks in the same year his new account of the Diamond (1984) model was circulated. 20

The slim analytical literature on the emerging synthetic credit instruments reflects this ambivalent view: on one hand, faith that hyper-rational behavior exploiting opportunities to reduce informational costs or following efficient-markets logic; on the other, lingering skepticism. Note that in Oldfield’s argument, the only way that an SIV can offer unique risk-return combinations to the market is by creating opaque combinations of the risk-return.

20 The World Bank summary of Diamond (1996b) efficiently summarizes his cautionary point of view in this paper: “Banks create liquidity by offering claims with a higher short-term return than exist without a banking system. The amount of liquidity that banks offer depends on the degree of direct participation in financial markets - that is, on the liquidity of financial markets. Conversely, banks influence the amount of liquidity offered by financial markets.

As more investors participate in financial markets, allowing markets to provide more liquidity, banks shrink and banks make fewer long-term loans. Moreover, the banking sector's ability to subsidize those with immediate liquidity need is reduced.”
characteristics of the underlying securities. Leaving aside economies of bundling, there is something wrong in this calculus, even in efficient-market terms.

And regarding the delegation of credit ratings by the economy’s delegated monitors of creditworthiness, there was recognition early on of the extraordinary reliance on rating agencies:

> “Yet, the rating agencies’ activities have the potential of being particularly significant in situations where investors face relatively high costs in assessing the structure and risk profile of a given instrument - that is, in structured finance.” (page 3 in Committee on the Global Financial System 2005).

An especially interesting example of the ambivalent embrace of the new instruments is the 2005 paper by Engo Fender of the Bank for International Settlements and Janet Mitchell of the National Bank of Belgium. This paper, which explores risk and the use of ratings in structured finance, was published in the June 2005 issue of the *BIS Quarterly Review* (2005b). A working paper version of this research was circulated in March 2005 (Fender and Mitchell 2005a). The working paper is longer than the journal article, as is often the case. But what is especially interesting is that the following two passages from the working-paper version do not appear in the journal article:

> “This paper … argues that certain structural features of structured finance products raise special governance issues and create important risks that are not directly related to the default risk of the assets comprising the underlying portfolios, but which may ultimately be as important to the performance of structured finance products as are the default properties of the asset pool.” (1)

> “… structured finance instruments also transform risk in unique ways via the tranching of claims, generating exposures to different, transactionspecific "slices" of the underlying asset pool's loss distribution. As a result of this “slicing” and the contractual structures needed to achieve it, tranche risk-return characteristics can be quite difficult to assess.” (2)

This is not to suggest a conspiracy against full disclosure of large banks’ risks; rather, I am arguing here that analysts of these new instruments, relying on efficient-market and information-theoretic models, were onto something troubling about the new instruments, but this “something” was difficult or even impossible to identify under the tight logical restrictions that bind thinking done in frameworks that assume fully rational and fully informed agents. Fender and Mitchell (2005a) go on to write:

> “‘non-default’ risks – i.e. risks that are unrelated to defaults in the collateral pool but which nevertheless affect the credit risk of the issued tranches. To a certain extent, such risks, often arising from incomplete contracting problems, also exist for other instruments of credit risk transfer such as credit default swaps. Yet, the tranching involved in SF instruments multiplies these risks, in addition to introducing standard adverse selection and moral hazard problems resulting from the conflicting interests of differing participants and noteholders.”
As already suggested, one important source of ‘non-default’ risk arises from the conflicts of interest among junior and senior tranche holders, particularly when junior tranche investors are involved in initial portfolio selection and deal structuring” (7-8)

Ratings, though important, are argued to be inappropriate for gauging the risk of structured securities, despite the fact that the complexity of structured finance transactions gives investors incentives to rely more heavily on ratings than for other types of rated securities.”

This passage too does not appear in Fender and Mitchell (2005b); the skepticism shown here is softened. For example, the statement in these authors’ BIS Quarterly Review article that most closely resembles the last sentence is the following:

“It is argued that structured finance ratings, though useful, have intrinsic limitations in fully gauging the risk of these products, even as their complexity creates incentives to rely more heavily on ratings than for other rated securities. Market participants and public authorities need to take account of this in their assessments of structured finance instruments and their markets.”

Perhaps the editors considered the authors’ 2005a musings as likely to discomfit the markets, reasoning that the sober advice to “market participants and public authorities” in the 2005b article would be sufficient to avoid unwanted outcomes. In any event, this softer approach of admonishing market participants to move within limits set by prudence did not work. More official or quasi-official institutions than the BIS have reason to look back with regret now. Indeed, the Wall Street Journal reporter has reported that federal and state authorities missed a chance to intervene forcefully into the unfolding dynamics: “In 2005, the Securities and Exchange Commission and New York state's attorney general's office launched separate investigations into whether Wall Street securities firm Bear Stearns Cos. harmed investors by improperly valuing complex mortgage securities. Determining the prices of these securities, often based on mathematical models, involves some guesswork, particularly in distressed markets” (Siconolfi, 2007).

An Institutionalist Minsky Balance-Sheet Approach. The argument developed here was not considered; it unfolds on a terrain far removed from efficient markets. We have emphasized Minsky’s balance-sheet approach. Other elements of Minsky’s financial-fragility framework have been less evident here: the uncertainty that surrounds time-intensive processes in and out of the financial markets; the problem of developing and sustaining confidence; the boom-bust tendencies rooted in the interaction between varying balance-sheet exposures and varying lender/borrower motivations. Here we can view banks’ strategies as implicitly unfolding in terrains that contain fuzzy and incomplete information, in part because no clean separation can be made between the realms of social and economic dynamics. That is to say, here we have grounded our analysis in the analytically imprecise but historically-informed framework of institutionalist economics.

21 Other authors have developed preliminary analyses of the subprime crisis using these more familiar aspects of Minsky’s financial fragility hypothesis; see Pollock (2007) and Wray (2007).
The very notion that banks have strategies and can sometimes perform very different roles in the economy is itself, of course, very different from the information-theoretic approaches just discussed. So is the notion that outcomes like exploitation or exclusion are possible not only because of transaction or information costs, but because of historical legacies of inequality and racial oppression. Also unexplored in analyses rooted in efficient markets is the possibility that agents interacting in markets may make contracts that maximize short-term profits and short-term benefits for the two sides of the market, respectively, but which may create longer-term default risk (due to unnoticed underwriting commitments) and foreclosure risk (due to unrealizable future combinations of income and/or housing-price appreciation). But these possibilities arise very naturally when Minskyian and institutionalist ideas are brought jointly into play.

To reiterate, in the story developed here, the separation of risk-origination from risk-bearing led to the transformation of banks, from prudential stewards of systemic risk to turnstiles for ever-higher levels of credit, whether those levels are sustainable for borrowers or not. Figure 7 represents the sectoral shifts in the locus of risk generation and risk absorption that occurred in

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**Figure 7: Shifts in Sectoral Risk Generation and Absorption in US Housing Finance**

<table>
<thead>
<tr>
<th>Participating Sector:</th>
<th>Housing finance revenues</th>
<th>Distribution of real and financial risks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Before the 1980s</td>
</tr>
<tr>
<td><strong>Financial Intermediation Sector</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homeowners and other Households</td>
<td>Fees, interest payments</td>
<td>Foreclosure risk</td>
</tr>
<tr>
<td>Commercial Banks and Thrifts</td>
<td>Interest margin until 1990s; fees</td>
<td>Default risk, liquidity risk</td>
</tr>
<tr>
<td>Structured Finance, SIVs</td>
<td>Interest margin</td>
<td></td>
</tr>
<tr>
<td><strong>Capital (Longer-Term Investment) Markets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mortgage &amp; Loan Companies, Brokers</td>
<td>Fees</td>
<td>Default risk</td>
</tr>
<tr>
<td>Insurance &amp; Pension Funds</td>
<td>Interest margin</td>
<td>Default risk</td>
</tr>
<tr>
<td>Offshore investors, private equity funds</td>
<td>Interest margin</td>
<td>Default risk</td>
</tr>
<tr>
<td><strong>Money (Short-Term) Markets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Money Markets (incl. com paper)</td>
<td>Interest margin</td>
<td></td>
</tr>
<tr>
<td><strong>Government – fiscal authority, monetary and Central Bank policies</strong></td>
<td>FNMA, GNMA underwriting</td>
<td>Liquidity risk</td>
</tr>
</tbody>
</table>

Note: Risks are written in block letters (risk) when they are originated in one sector but absorbed in another. Risks are written in *italics* in the sectors that absorb them.
US housing finance in the past 30 years. In the pre-1980 period, housing finance typically involved a relationship between a homeowner and a bank or thrift. The household took on foreclosure risk; the lender took on – and absorbed – default and liquidity risk. In the savings and loan crisis, homeowners’ foreclosure risks rose higher. Central-bank high-interest-rate monetary policies generated unprecedented levels of liquidity risk, which was absorbed by banks and thrifts. They unburdened themselves of excessive risk by offloading mortgage loans they had originated onto insurance and pension funds, and onto offshore investors.

Figure 7 goes on to show that in the 1990s, low interest rates and a strong dollar kept liquidity risk away. Default risk was generated by both banks and by non-bank lenders as they made principally “prime” loans, and sold these loans off to pension and insurance funds, and to offshore investors. Then in the subprime lending of the 2000s, not only was more default risk generated, but banks’ use of SIVs generated more liquidity risk, which was absorbed in money markets, especially in the commercial paper markets. Liquidity risk was realized as rates rose; this pattern of rising rates also induced the realization of more default risk.

The two roots of the crisis identified here played their part in creating the conditions for the subprime meltdown. Banks, having shed their traditional roles as risk absorbers, were seeking out ever more ways to generate net income. They created products designed to provide services to different segments of their customer base in different ways, generating substantial fee-based income along the way. Their successful direct and indirect forays into higher-risk loan products for lower-income and minority markets, together with the emergence (and in some cases, creation) of new outlets for higher-risk debt, opened up the subprime mortgage markets. The boom market in housing in some US regions then created opportunities to structure subprime instruments for new homeowners, not just retirees in inner-city neighborhoods. SIVs emerged as means of using leverage (with lax oversight) to generate off-balance-sheet net interest income. An apparently endless supply of liquidity provided the fuel for this fire.22

There were two historical ironies embedded in this scenario, ready to flash trickster smiles at the credit markets once trouble hit. One Achilles heel for SIVs was the optimistic assumptions that had been made regarding the growth of the price of housing. Alex Pollock (2007) recounts the following scenario: “According to one report of an investment manager, his firm asked a rating agency, ‘What if HPA were to [be a negative] 1% to 2% for an extended period of time? They responded that their models would break down completely’. However, until early 2007, it was difficult or impossible for most participants in credit and housing markets to perceive the possibility that something other than positive housing-price growth would continue indefinitely.” The irony here is that much of the housing on which subprime loans were made, in the era that wanted to believe housing prices can only go up, was located in or in close proximity to areas that had historically been subject to mortgage-market redlining.

22 Regarding this point, the comments of Robert Rubin (2007) at a Brookings Institution symposium are of interest. Rubin observed, “The current disruptions are the product of a greater and greater underweighting of risk across almost all active classes during recent years. … In recent years, many people felt liquidity would sustain an environment of low risk weightings for a long, long time. My own view is that liquidity is not primarily a monetary phenomenon, but rather a psychological phenomenon. … Thus, when the psychology changes, creditors and investors withdraw from riskier assets, reduce leverage, reduce exposure, and then as the prices fall and credit tightens, and commentators say the liquidity has shrunk.”
The second irony was that liquidity appeared to be infinite during a period in which the Federal Reserve was making a sustained effort to tighten credit. The Fed’s efforts were, of course, overwhelmed by floods of liquidity rooted, in part, in capital-account inflows so strong (linked to profoundly negative trade balances) that it seemed US policy-makers could ignore economic dynamics elsewhere in the world. US consumers had a Midas touch – everything they bought (from abroad) turned into more fuel for the credit supply that permitted them to buy the big-box houses to store their consumer durables. But once the Fed began to ease credit, with a sense of desperation, liquidity dried up. Modest shifts in the consumption and investment decisions of wealth-holders in the rest of the world suddenly echoed loudly throughout Wall Street. Indeed, lower interest rates that might ease liquidity and default risk in the markets would have to be navigated in the context of a falling dollar.\(^{23}\)

### 6. The Onset of the Subprime Crises: Have We Been Here Before?

**The slide into crisis.** Like the coming of the Asian crisis in 1997, the momentum of the subprime credit crisis has built up through a series of related events spread over a large geographic area. Some 80 subprime mortgage companies failed in the first seven months of 2007. The big credit-ratings agencies came under pressure to overhaul their methods of assessing default risk in the US subprime market. (Pittman 2007) As they did so, banking firms in the US and abroad were affected.

And then, suddenly, the fear that Martin Wolf recently suggested was missing in the run-up to the crisis emerged with gathering force in the markets.\(^{24}\) On June 20, 2007, Bear, Stearns was forced to shut down two subprime funds it operated for its investors (Kelly, Ng, and Reilly 2007). Six weeks later, American Home Mortgage closed its doors (Dash 2007a). Meanwhile, reports of more and more lenders’ involvement in the US proliferated. Throughout this period, Countrywide Financial, which had originated about one-sixth of all mortgage loans in the US in recent years, descended more and more visibly into crisis (Hagerty and Richardson 2007).

Alarm bells were sounded ever louder by prominent economists such as Robert Shiller. Nouriel Roubini, who had risen to prominence through his Asian financial crisis webpage, speculated in his July 30, 2007 blog entry, “Are We at The Peak of a Minsky Credit Cycle?”:

“It is always risky to call an equity market peak and the beginning of a bear market in equities; so I will not try to do that. But leaving aside equity valuations, it increasingly looks like we are at the peak of a credit/debt cycle, in the US and globally.

Specifically, the crucial macro question that we should ask ourselves today is whether we are at the peak of a Minsky Credit Cycle. Or as the UBS economist George Magnus – an expert of financial instability - put it: ‘Have we reached a Minsky moment?’”

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\(^{23}\) This suggests a modification to Rubin’s characterization of liquidity as a psychological phenomenon. It is also a structural phenomenon – a property of markets. The mistake made in the build-up to the subprime meltdown – a mistake perennially observed in financial crises – is to assume liquidity is a property of an asset. It is a property of a market, and resides in the psychologies and capacities of the participants in that market.

\(^{24}\) Martin Wolf wrote, “Financial markets, and particularly the big players within them, need fear. Without it, they go crazy.” The passage is quoted on p. 15 of Wray (2007)).
Roubini proceeded to familiarize his readers with Minsky’s biography and with basic elements of his model. His blogs continued to probe the contours of the crisis, warning that the worst was to come and that the economy as a whole was threatened. Uncertainty prevailed, particularly among experts. Alex Pollock of the American Enterprise Institute reflected in an August 2007 essay:

“[W]e know these risky securities are being sold and moved around the financial market, but where did they go? Who’s got them? Now some of the answers have been revealed. … two large hedge funds specializing in subprime investments, operated by Bear Stearns, … have ceased trading and entered bankruptcy with virtually total losses to their investors. Other hedge funds in the United States, England and Australia have announced large losses tied to subprime mortgage investments. Such investment losses have also required the bailout of the German bank IKB, which cost the president of the bank his job, and the bailout of a French mutual fund. Now everybody is asking, who else took these risks?”

Whoever had taken these risks, risks were being realized. Between 16% and 24% of the subprime loans packaged into securities by leading global banks in 2006 are at least 60 days in arrears as of September 2007.25

As August wore on, the crisis veered overseas. A small German bank IKB failed. IKB had created an offshore entity, Rhineland Funding, which it funded through short-term commercial paper, building up a portfolio of $17.5 billion of collateralized debt obligations (CDOs) that included some higher-risk US subprime mortgage paper. When the CDOs were downgraded, IKB could not access the money markets, and drew on a line of credit with Deutschebank and other German banks. These banks exercised their option to cancel their commitment and a bailout of IKB ensued.26

This does not mean that banks abandoned the field of subprime lending en masse. To the contrary. Some of the largest banks, such as Goldman Sachs, continued to package and sell securities backed by subprime mortgages, even while they were reducing their exposure to subprime debt on their own balance sheets (Anderson and Bajaj 2007). Goldman’s case, these new originations amounted to $6 billion worth in the first 9 months of 2007; by December, 15 percent of these loans were already delinquent by more than 60 days.

One by one, more and more big banks have been dragged into the crisis. The latest is Washington Mutual, a giant thrift (Bauerlein and Edwards 2007). A forced rewinding of risks that they appeared to offload is underway.

25 The specifics are as follows: Deutsche Bank, $28.6 billion underwritten in 2006, 23.8% delinquent; Morgan Stanley, $36.1b and 23.3%; Barclays, $21.1b and 23.3%; Merrill Lynch, $34.3b and 22.5%; Bear Stearns, $22.9b and 21.7%; Lehman Brothers, $51.8b and 20.0%; Goldman Sachs, $29.3b and 19.7%; Credit Suisse, $28.0b and 18.8%; RBS, $47.6b and 18.2%; Countrywide, $34.2b and 18.0%; JPMorgan, $26.2b and 17.6%; Citigroup, $22.6b and 16.2%. This works out to $73.7 billion of 60-day-delinquent loans in these securities alone.

Blaming victims, blaming history, or re-examining victims and history? At this writing, debate continues over the extent of the damage that the subprime meltdown will cause. Downs (2007) and Calomiris (2007) have questioned whether this meltdown will have profound effects on either the economy as a whole or on the housing and housing-finance markets. Among those drawing the opposite conclusion are Dean Baker, who asks rhetorically, “Housing: Why is it Hard to See a Bubble?” (2007, p. 10), and Henry Kaufman (2007).27

While that debate churns on, banks are already attempting to find escape routes from their fixes. One strategy, implemented by HSBC in November 2007, is to bring apparently off-balance-sheet paper back onto their balance sheets, thus admitting that the risks associated with that paper (and offloaded to SIVs) did implicitly remain their responsibility (Goldstein 2007). A second strategy is to seek out capital injections. Also in November 2007, Citibank got a $7.5 billion capital injection from the Abu Dhabi government, while UBS sold an 11% stack to Singapore (Bauerlein and Edwards 2007). A third strategy is to create an off-shore fund that can sell shares to investors willing to absorb risk-laden assets. This last approach, first proposed in mid-October, has not attracted much industry or political support (Dash 2007b).

Another possibility is government intervention. Several proposals to provide assistance to impacted consumers and homeowners have been put forward; Wray (2007) presents a good overview of the proposals made to date. One category of relief proposal for homeowners has been made most frequently: several states and the Bush administration, have proposed moratoria on mortgage loan-rate increases for some classes of homeowners with subprime loans. The Bush plan attempts to restrict relief to those homeowners who are current on payments but who would sink into foreclosure were the higher rates to which their lenders are contractually entitled to “kick in.” In principle, keeping people in their homes will reduce the supply of homes hitting already depressed markets, as well as the number of homeowners who lose their pieces of the American dream. But as Tom Petruno (2007) pointed out:

“The success of the Bush administration's plan to stem home foreclosures will hinge in large part on whether the investors who own sub-prime mortgages will play along and accept lower interest payments to keep people in their houses. That may be asking a lot -- and not just because of many investors' visceral negative reaction to government strong-arming on the issue of home-loan modifications.

Thanks to the alchemy of modern finance, investors who put up funds for the same "pool" of thousands of sub-prime mortgages can face very different levels of risk, depending on the section of the pool they own. Those whose sections would be well-protected from loss, even if loan defaults soared, may have little incentive to agree to changes in the terms of the underlying mortgages. That could invite a torrent of investor lawsuits challenging moves to ease loan terms.”

At this writing, nothing like a solution has emerged. One reason is the deep partisan rifts between the White House and Congress. While they are rooted in other conflicts, they make consensus

27 There is a further irony in this juxtaposition, since Charles Calomiris is the Henry Kaufman Professor of Financial Institutions at Columbia University, while Henry Kaufman is Henry Kaufman.
difficult on this issue. Another reason for the lack of one agreed pathway out of the crisis is the inability to assign responsibility.

One essential step in the process of resolving any financial crisis rooted in bad debt is to find the sector responsible and reform it – whether through tighter regulation, through eliminating or selling off especially weak institutions, or through some support while asset prices recover. All these steps were taken in the savings and loan crisis of the 1980s. The debate is about whether to punish wrong-doers, and on whether to rescue losers among the borrowers, as duped innocents, or to let loses suffer so as to discourage future outbreaks of such breakdowns in market discipline. The same debate has arisen now regarding the subprime crisis.

Alex Pollock (2007) has pointed out that the subprime crisis is only, from one point of view, the latest example of a boom-bust pattern in financial markets. The embedded notion that history repeats itself, and yet people with access to financial markets learn nothing from it, suggests that it is useless and even counterproductive to intervene to offset losses. Allen Meltzer expressed this view clearly in the pages of the Wall Street Journal, writing, “Capitalism without failure is like religion without sin. The answer to excessive risk-taking is ‘let 'em fail’ … Bailouts encourage excessive risk-taking; failures encourage prudent risk taking.” (Meltzer 2007).

Two New York Times columnists have weighed in on the other side of the equation. Bob Herbert (2007) has reminded readers of the roots of the current subprime crisis in racial exclusion and in unfair, inadequately regulated lending practices. Krugman (2007a, 2007b, 2007c) has also continually emphasized the culpability and bad faith shown by lenders, and the need to focus on wronged homeowners as well as a dangerously insolvent banking system. He writes (2007c):

“There are, in fact, three distinct concerns associated with the rising tide of foreclosures in America. One is financial stability: as banks and other institutions take huge losses on their mortgage-related investments, the financial system as a whole is getting wobbly. Another is human suffering: hundreds of thousands, and probably millions, of American families will lose their homes. Finally, there’s injustice: the subprime boom involved predatory lending — high-interest loans foisted on borrowers who qualified for lower rates — on an epic scale.”

As the political calculus on different intervention scenarios is weighed, other roots of the subprime crisis, which have thus far escaped attention, should be considered as well: historical patterns of racial redlining and discrimination in credit markets; banks’ strategic transformation at the dawn of the neoliberal era; and the interaction between these two factors. In the run-up to the mortgage meltdown, banks created credit without playing their historical role of risk absorption, permitting them to fan – instead of dousing - the fires of the housing bubble. At the same time, banks’ continuation of their historical – if contested – legacy of denying equal credit-market access led to the creation of new instruments of financial exploitation that, once generalized and transported into a raging home-purchase market, have led the banking system and the US economy to the edge of a very high cliff. While the destruction of billions of dollars’ worth of bank equity may be some kind of retribution for banks’ failure to turn away from historical patterns of exclusion and injustice, the question now is how to rebuild an institutional framework in which all people can find affordable housing and in which banks again play a productive economic role.
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