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“Securitization and Mortgage Backed Securities”

Mortgage backed securities (MBS) played a central role in the financial crisis of 2007-09. What are they and where do they come from? MBS are a derivative based on mortgages. Securitization bundles the individual mortgage loans that banks have made into a bond or bond-like asset that can be sold to other investors. Banks want to create MBS in order to limit their maturity mismatches and remove much interest rate risk from their balance sheet. MBS buyers want long-dated assets. Securitization of mortgages took three different forms in the US, and is now reverting to a blend of the first two forms. In phase one, a publicly owned entity, Fannie Mae, bought and held mortgages. In phase two, new privatized Fannie Mae and Freddie Mac bought mortgages, bundled them together, and sold these pools to investors as MBS. In phase three, private investment and commercial banks sold MBS to investors, including their own speculative operations.

Mortgage backed securities exist to solve an economic problem – pervasive mismatched maturities in the banking system – that is also a political problem. Banks take in liquid, short term deposits but then turn around and re-lend part of the money as mortgages, which are inherently illiquid, long term loans. The maturity mismatch arises from the fact that short term depositors can withdraw their money at any time. But it is much more difficult for the bank to extract the whole loan from a borrower. Liquidating a house (or farm) can take a considerable amount of time. Banks can resolve this risk by making mortgages for shorter terms. Most pre-1930s US mortgages were five year “balloon” mortgages in which the borrower had to pay off the entire principal at the end of the five year term.

Banks’ maturity mismatch can create political problems if large numbers of banks fail. This creates incentives for the state to authorize vehicles shifting mortgages to buyers who want a long term stream of income. For example, insurance firms and pension plans face predictable, long term commitments to make payments to their clients. They need equally predictable long term income flows to match those commitments. But pension funds and insurance companies don’t want to assess and manage each individual mortgage loan. Securitization – creating a legal right to the income from a large group of mortgages – resolves this problem, matching maturities. Putting about 1000 similar mortgages together into one asset averages out the risks and peculiarities associated with any single mortgage. It creates a statistically predictable flow of income that can be capitalized at the prevailing rate of interest. MBS buyers can pay someone else to service the loans (take payments and foreclose on defaulters) and thus

concentrate on their core insurance or pension business. Securitization removes the maturity mismatch from the banks' balance sheets, and allows them to issue new mortgages.

Before widespread securitization, pension funds and insurance firms had to create long term assets directly by building and operating large real estate complexes. In the 1940s, for example, Metropolitan Life Insurance built over 20,000 apartments in two complexes in New York City. This not only matched maturities but also created a walled garden in which beneficiaries' mortgage payments funded their own insurance and pension receipts.

The clear economic logic for promoting securitization was not sufficient to bring it into being. Instead, political logics made widespread securitization possible in the United States. First, the state intervened to recapitalize banks during the Great Depression. Second, the state created off-budget entities to homogenize and stabilize the national mortgage market. Finally, as part of the general trend towards deregulation, the state deregulated finance in the 1990s and allowed commercial banks to create MBS.

During the Great Depression many US mortgages went into default, contributing to the general collapse of the banking system. The US federal government created the Home Owners Loan Corporation (HOLC) in 1933 to help resolve this problem. HOLC refinanced maturing five year balloon loans into 25 and 30 year amortizing loans. In 1938 the Federal National Mortgage Agency (FNMA or Fannie Mae) supplemented HOLC and created a national market for long term mortgage funding. Eventually Fannie Mae was privatized in 1968-70 (and then effectively renationalized in the 2008). Savings and loan banks got Freddie Mac (FHLMC – Federal Home Loan Mortgage Corporation), their own version of Fannie Mae, in 1970; it was fully privatized in 1989 and renationalized in 2008. While privatized, both were tightly regulated by the state and thus considered government sponsored enterprises (GSEs) with an implicit government guarantee.

Fannie Mae helped to resolve the maturity mismatch problem around mortgages. As a government agency, Fannie Mae could issue long dated bonds with virtually no credit risk to securities markets (the pension funds and insurance firms), turn those funds around to buy mortgages from banks, and then hold those mortgages to maturity on its own books. Meanwhile, banks now had new funds to issue more mortgages. Fannie Mae thus indirectly matched long term investors with long term borrowers.

Fannie Mae also homogenized the mortgage market through its underwriting criteria. Fannie Mae invented, enabled, and popularized the modern US small down payment, 30 year amortization, fixed interest rate mortgage that eventually became the raw material for its MBS. This enabled the US mortgage market to expand to roughly \$11 trillion in debt, of which \$6.6 trillion was securitized, by 2008. Fannie, and later Freddie, would only buy mortgages that conformed to its underwriting standards. These standards required a potential home-buyer to possess a good credit rating, to document that their total post-mortgage debt payments would consume no more than 34 % of their gross household income, to make a significant down payment, and to borrow no more than 125 % of the median US home value. By limiting homebuyers to the cohort of people with well-paying and stable jobs, these criteria reduced the default rate on conforming mortgages to less than 0.5 %. This

homogenization and risk reduction then enabled a shift from the indirect securitization before 1981 to the direct securitization that occurred afterward.

Fannie Mae essentially invented the modern US MBS market and the pass through MBS in 1981. Freddie Mac invented the CMO, collateralized mortgage obligation, a derivative that slices up principal and interest payments so that investors can buy bonds with maturities and returns that vary from the underlying individual mortgages. Fannie Mae and Freddie Mac packaged mortgages with somewhat similar interest rates, maturities and credit risk into a huge pool with an average interest rate payout, maturity and credit risk. Long term investors could buy a percentage of that MBS pool to get a *pro rata* share of principal and interest payments from the pool. Fannie and Freddie, acting as loan servicers, would 'pass through' these payments to investors. If the pool experienced a 1 % default rate, then all buyers of that pool experienced a *pro rata* 1 % loss on their share of the pool. Unlike more complicated derivatives, the mortgages in a pass through MBS stayed intact, allowing the MBS bond holders or the servicer to identify and foreclose on the defaulter without affecting other MBS pools.

Financial deregulation in the 1990s allowed new players to create new forms of MBS. Investment banks could not profitably compete with Fannie and Freddie, given their size and implicit government guarantee. Commercial banks were barred from selling securities. Deregulation in the 1990s allowed commercial banks to enter the market and permitted both commercial and investment banks to build pure derivatives out of mortgages and MBS. These were the collateralized debt obligations (CDOs) at the heart of the 2007-2009 financial crisis. The CDO is a generic version of the CMO, produced by bundling Parts of the income and/or principal payments from a given mortgage can be bundled into different CDOs, unlike the pass through MBS where mortgages stayed intact. CDOs did not offer investors a *pro rata* share of payments from a given pool of mortgages. Instead, bankers assigned each CDO a specific legal priority (seniority) over the underlying flow of payments from the underlying pool of mortgages. Regardless of which mortgages made interest payments or principal prepayments, those payments were assigned first to the CDO with the highest legal priority (so-called 'super senior' tranches). Most buyers financed CDO purchases with money borrowed on a 90-180 day basis. CDOs thus recreated the maturity mismatch which securitization was intended to avoid, by bundling non-conforming mortgages into a long term asset sold to buyers using short term finance.

Deregulation led to an explosion of MBS and especially private MBS. In 1988, \$165 billion in new MBS were created, of which 91 % were from the GSEs. 1999, the year in which Glass-Steagall was repealed, \$833 billion in new MBS were issued, 82 % by GSEs. By 2006, \$2047 billion in MBS were created, but only 44 % by GSEs. By 2007, private label MBS and CDOs accounted for a quarter of the outstanding \$11 trillion US residential mortgage debt. These proved highly destabilizing because they recreated the maturity mismatch that securitization was supposed to prevent.

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