**HSBC’s Mortgage Lending Decisions and the Big Melt**

It isn’t often that the American financial system, and its world counterpart, has a near- death experience. The last time was the 1930s. Beginning in 2007 and extending through 2009, American and global financial systems failed, melted down, and were rescued only by concerted central bank interventions in all the major industrial countries. The United States directly invested about 1 trillion dollars in U. S. financial institutions, and guaran-teed an estimated $ 14 trillion dollars in private debt. The complete history of this period has not been written. Many causes, involving many different actors, have been identified. Some have likened the big melt to a “ perfect storm” where a number of storm systems just happened to combine to form a much larger, lethal storm. But one cause was the failure of decision- making models, both the model builders and the financial man-agers who relied on those models. One of the major players in this crisis was HSBC Holdings PLC, the third largest bank in the world based on market value, and the largest bank in Europe. In the financial meltdown of 2008— 2009, HSBC joined the other major money center banks in a collective failure. HSBC weathered the turmoil in the financial markets better than most of its rivals, mainly because it had profited from continuing growth in Asia, where it generates about 65 percent of its pretax profit. But the company’s stock prices have fallen by half from their pre- crisis high, and HSBC had to shed over 6,000 employees, close over a thousand branches worldwide, and write off its mortgage generating unit in the United States called Household International. Senior managers at HSBC had observed the incredible rise in U. S. home prices in the period 1990— 2000, and closely followed the subprime mortgage market which drove home sales ever higher in the United States. In order to participate in this frothy market, HSBC bought Household International in 2002 for $ 15 billion. Household was one of the largest originators of consumer credit and subprime mortgages in the United States. Subprime mortgages are targeted toward low- income borrowers who represent a higher risk of default when compared to prime borrowers. Some subprime mort-gages were “ stated- income” mortgages where applicants did not have to prove their incomes but simply stated them on an application. Sixty percent of these applicants were found to have inflated their incomes by 50 percent or more. Many also exaggerated their employment positions to coincide with the inflated income. As a result, they received approval for loans that were much larger than they could actually afford. Adding risk, most subprime loans were variable rate loans where interest rates rose steeply after a few years. Why on earth would banks and credit lenders like Household lend money to people who were unlikely to pay it back? The answer lies in modern tools of “ risk management” and financial innovation. The risk management part involved selling the risk to other institutions and individuals who did not understand the risks they were taking. The financial innovation part was a relatively new instrument invented in the 1990s called a “ collateralized debt obligation” or CDO. Lenders would originate mortgages, bundle thousands of them together, create a new financial instrument that offered high interest based on the cash flow of the subprime mortgages in the bundle, and then sell this instrument around the world as a “ safe investment” in the rising U. S. home market. There seemed to be an insatiable market for CDOs, which offered slightly higher rates than safer government bonds. Similar lending practices were adopted in the United Kingdom, including Ireland, less so on the European continent, and in Asia. Reckless practices were extended to other forms of credit includ-ing credit cards ( even prisoners were offered credit cards), and personal loans. Welcome to the new world of risk management and the distribution of risk over millions of investors! The risk finally was passed onto whoever wound up with the debt instrument in their hands, a kind of financial musi-cal chairs. When the music stopped, those left holding the bag included pension funds, municipal governments, and millions of individuals throughout the world all looking for slightly higher returns. Ultimately, govern-ments around the world ended up guaranteeing much of this debt estimated to be well over $ 15 trillion in mort-gages alone. Unfortunately, the banks’ practices were based on models using rosy assumptions that home price values would rise over long periods of time, and that collapse in one credit market would not spread across the globe to all financial markets because the developed markets of the West were now “ de- coupled” from the emerging markets. The really fundamental assumptions in these models were that home prices in the United States had not experienced a long- term secular decline in prices since the 1930s, that the prices of homes historically were normally distributed, and that therefore, the risks could be estimated, understood, and priced into the instruments. As it turned out, all of these assumptions were wrong. The assumption on the stability of home portfolio segmentation. It also prices over many decades was like saying the average wind in New Orleans over the last 50 years was 8 miles per hour from the southeast, without explaining that sometimes the wind goes over 100 miles per hour ( which occurred during Hurricane Katrina). With the purchase of Household International, HSBC began aggressively growing its mortgage and credit business in the United States. Household’s CEO William Aldinger had touted his company’s ability to assess credit risk using modeling techniques designed by 150 PhDs. The system, called the Worldwide Household International Revolving Lending System, or Whirl, helped Household underwrite credit card debt and support collection services in the United States, Mexico, the United Kingdom, and the Middle East. Lenders such as HSBC who are analyzing applicants for credit cards, car loans, and fixed- rate mortgages use a credit rating from Fair Isaac Corp. of Minneapolis called a FICO score. However, FICO scores had not yet been proven reliable tools for predicting the performance, during a weakening housing market, of second- lien loans or of adjustable rate mortgages ( ARMs) taken out by subprime borrowers. Data on subprime borrowers who made small or no down payments were scarce, and the FICO scores did not adequately distinguish between loans where borrowers had put their own money down and loans with no down payment. Nor did the models take into account what would happen if housing prices fell to the point where the amount owed on some mortgages exceeded the value of the homes they cov-ered. By 2007, 12 percent of the total $ 8.4 trillion U. S. mortgage market consisted of subprime mortgages, up from just 7.5 percent near the end of 2001. As the U. S. real estate market slowed in 2006, and then collapsed in 2008, home values fell drastically, by 30 percent in some hot markets. Subprime mortgages were all adjustable rate mortgages that started out with below- market rates, usually 4 percent, but then rose to 8 percent and even 10 percent within a few years. When interest rates rose, many borrowers were unable to make their mortgage payments and defaulted on their loans. HSBC anticipated seeing the number of delinquent and defaulted accounts grow, but not to the level that actually occurred. In its quest for higher revenue, HSBC began buying up subprime loans from other sources. In 2005 and 2006, with the housing boom in its final stages, HSBC bought billions of dollars of subprime loans ( including nearly $ 4 billion in second- lien loans) from as many as 250 whole-sale mortgage companies, that had acquired the loans from independent brokers and banks. Second- lien loans are piggyback loans which allow home owners unable to make a down payment for a house to qualify for a mort-gage by borrowing the down payment amount. The surge increased the bank’s second- lien to a total of $ 10.24 billion. HSBC even accepted pools that included stated-income loans. These are loans for which the borrower simply states his or her income with providing any documentation to verify it. According to Martin Eakes, CEO of the Center for Responsible Lending, 90 percent of stated- income loan applicants declare their incomes to be higher than they are in IRS records. Sixty percent of these people inflate their incomes by 50 percent or more. Many also exaggerate their employment positions to coincide with the inflated income. As a result, they receive approval for loans that are much larger than they can actually afford. In 2005, Bobby Mehta, the top HSBC executive in the United States, described the development of the bank’s mortgage portfolio as disciplined. He reported to investors, “ We’ve done them conservatively based on analytics and based on our ability to earn a good return for the risks that we undertake.” HSBC stated it had a process for forecasting how many of the loans it pur-chased from wholesalers were likely to default. First, the bank would tell the wholesaler what types of loans it was interested in, based on the income and credit scores of the borrowers. Once the wholesaler offered a pool of mortgages, HSBC analysts evaluated the lot to determine whether it met HSBC standards. In early 2007, HSBC shook up Wall Street when it announced a much higher percentage of its subprime loans defaulted than it had anticipated. It would have to make provisions for $ 10.6 billion in bad debt stemming from loan delinquencies in 2006. The percentage of all HSBC Mortgage Services loans that were overdue by 60 days or more jumped from 2.95 to over 4 percent in 2009. In short, the subprime mortgage market was in distress, and profits from the high- risk loans were disap-pearing. By 2009, HSBC had taken a cumulative bad loan charge of $ 53 billion. It wrote off the entire $ 15 bil-lion purchase price of Household, and still retained on its books over $ 62 billion in home mortgages, some of which surely will default. HSBC was one of the fortunate banks that did not have to take a government bailout. But with so many mortgages originated in 2005 and 2006 and interest rate hikes in 2008 and 2009, HSBC is facing another onslaught of delinquencies and defaults over the next two years. The Center for Responsible Lending predicted that 20 percent of subprime mortgages sold during those two years will result in foreclosure. HSBC adopted business analytics software from Experian- Scorex to help support the decision making of its credit application processing staff. The software provides users with the ability to consistently deploy scoring models and portfolio segmentation. It also includes tools for managing customer relationships and improving risk management decisions. By using these tools, HSBC hopes to be able to create strategies for individual applicants, assess the value of each applicant, and then customize a loan offer that suits the customer’s needs as well as the bank’s business. HSBC also made changes in both personnel and pol-icy. The company ceased originating and purchasing stated- income loans and boosted the required FICO score for some loans. Tom Detelich, who had led the transition from Household to HSBC’s consumer lending business, was appointed head of HSBC Mortgage Services. HSBC doubled the number of customer repre-sentatives who call on borrowers who have missed pay-ments and discuss payment plans that are more manage-able. Those operations now run seven days a week. HSBC is also utilizing information technology to pin-point ahead of time which customers are most in danger of failing to meet their monthly payments once their ARMs jump from their initial teaser interest rates to higher rates. In some cases, the adjustment can increase a monthly payment by $ 500. Major investment banks like Bear Stearns and Lehman Brothers failed in the fall of 2008 because they were holding massive amounts of unsold CDOs and other derivative products, as did AIG, the single largest insurer of these instruments. Critical attention turned to the models used to support what turned out to be a very risky activity. While most blamed the models, and mod-eling in general, others pointed a finger not at modeling as an activity, but at the faulty application of the model-ing, poor assumptions encouraged by senior executives who did not want to understand the “ real” risks they were taking as long as they made money, and the failure to take into account human behavioral issues. These human behavioral factors included bankers around the world acting like herds rather independent decision mak-ers, all relying on the same convenient models and assumptions, which predicted incredible profits and a rosy future. The models also failed to understand that when one multitrillion dollar credit market collapsed in a global banking system, other credit markets would shut down, and major financial institutions and millions of ordinary citizens would panic, run for the exits, and just stop borrowing, lending, and spending. In fact, there is no model for inter- market risk or for the behavioral factors that drive correlation across markets.