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## Origins of the Current Mortgage Problems

The current credit crisis has increased the anxiety level of policy-makers, investors, and financial markets. Before the crisis, there was a rise in mortgage credit, an increase in the homeownership rate, and a sharp increase in housing prices. But now, as defaults on recently issued mortgages continue to climb, many fear that the reversal in housing and mortgage markets might lead to a real downturn in the economy. For example, the Federal Open Market Committee statement of January 22, 2008 justified a 75-basis-point reduction in the federal funds rate, in part because “...information indicates a deepening of the housing contraction...”

In **The Consequences of Mortgage Credit Expansion: Evidence from the 2007 Mortgage Default Crisis** (NBER Working Paper No. 13936), authors **Atif Mian** and **Amir Sufi** investigate the causes of the sharp rise in mortgage credit and house prices followed by the subsequent spike in mortgage defaults. Based on their analysis, the authors conclude that, at the very minimum, 15 percent of total home purchase loans and 10 percent of aggregate house price appreciation in the United States can be attributed to a credit supply shift (to lower interest rates and increased securitization of mortgage loans.)

To answer the supply-versus-demand question that they pose about the mortgage crisis, the authors put

together a new, comprehensive dataset constructed from a number of proprietary and public sources. The data contain zip code-year level information from 1996 through 2007 on a number of key variables of interest including: outstanding consumer debt of different

types, defaults, house prices, mortgage loan application characteristics, mortgage terms, and demographic variables such as income and crime.

The authors conduct their analysis at the zip code level, while isolating variation only *within* counties. They show that zip codes that had high latent (unfulfilled) demand for mortgages in 1996 defined as the percentage of mortgage applications that are denied—continue to get rationed out of the credit market for a few years but then see a sharp reduction in their mortgage denial rates. Was the increase in mortgage acceptance rates in zip codes with high 1996 denial rates driven by an improvement in demand-side factors, such as income and economic growth? According to the authors, such a demand-side explanation is highly unlikely: zip codes with high 1996 denial rates subsequently saw (relatively)

declining growth in income, wages, and business creation until 2005.

The authors go on to show that a rapid expansion in the *supply* of credit to zip codes with high 1996 latent demand for mortgages—namely sub-prime customers who were traditionally marginal

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borrowers unable to access the mortgage market—led to both greater house price appreciation and the subsequent sharp increase in defaults from 2005 to 2007. The expansion in the supply of credit was accompanied by a shift in the mortgage industry towards “disintermediation,” which the authors define as the process by which originators sell mortgages in the secondary market shortly after origination. Zip codes that saw the largest increase in mortgage credit, house price appreciation, and subsequent defaults also saw the largest increase in rates of disintermediation. Moreover, the increase in sales to the secondary market is related to a subsequent increase in default rates *only* when the secondary sale is to a “non-affiliated” entity, they find, thus signaling possible moral hazard concerns.

—Les Picker

## Is a Listing on the NYSE Less Attractive?

Since 2000, the major New York stock exchanges have been losing foreign listings while the London Stock Exchange has seen its share of foreign listings rise. What's behind the decline in the United States?

One common explanation—and worry—is that Wall Street has become less competitive in attracting foreign companies to cross-list their shares because of the 2002 Sarbanes-Oxley Act. The costs of complying with the act, and the resulting potential legal liabilities for companies and executives, have made the U.S. regulatory environment just too onerous for many foreign firms to consider listing their shares here, according to this argument.

But in **Has New York Become Less Competitive in Global Markets? Evaluating Foreign Listing Choices Over Time** (NBER Working Paper No. 13079), authors **Craig Doidge, G. Andrew Karolyi, and Rene Stulz** find that the decline in listings is not related to Sarbanes-Oxley. “[A]fter controlling for firm characteristics, there is no deficit in cross-listing counts on U.S. exchanges related to [Sarbanes-Oxley],” they write. Instead, using what the authors call “the most complete analysis of the relative valuation of U.S. listed firms to date,” they find that foreign companies continue to enjoy a substantial premium by listing their shares in the United States, that that premium has persisted from 1990 to 2005, and that it has not declined in recent years.

Of course, listing on a U.S. exchange does involve a tradeoff. Typically, foreign companies attracted to the United States have a controlling shareholder and are based in countries where he or she can draw private benefits from their company, even if it hurts the interests of the rest of the shareholders. American securities laws and rules, oversight and enforcement by the Securities and Exchange Commission (SEC), and monitoring by outside analysts and institutional investors make such moves far more difficult. Nevertheless, some controlling share-

holders do list their companies in the United States and agree to abide by such good-governance standards because of the benefits it brings. The main benefit is the ability to raise more capital more cheaply than companies that don't list in

To test that theory, the authors calculate the premium for a U.S. listing using various estimation techniques. Using U.S. exchange coefficients, they compute that foreign firms listed in New York were worth an average 17.5 percent more than

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the United States. Simply put, American good-governance standards increase the value of companies that abide by them.

Nevertheless, something has happened to cause the decline in foreign listings for the New York Stock Exchange, the American Stock Exchange, and the NASDAQ. The three major exchanges have seen their share stagnate and, in terms of actual numbers, fall from 960 in 2000 to 866 by 2005. Interestingly, such listings have also fallen since 1998 for the Deutsche Börse, the Swiss Exchange, and Euronext (the consolidated entity, which had a smaller share of foreign listings in 2005 than its component bourses in Paris, Amsterdam, Brussels, and Lisbon had in 1998).

The exception is the London Stock Exchange, which saw its share of foreign listings climb from 16 to 19 percent during that same period. However, the exchange's traditional Main Market saw foreign listings drop even more than in New York, the authors point out. What grew dramatically is the exchange's far more loosely regulated Alternative Investment Market (AIM), where foreign listings climbed from 4 firms in 1998 to 220 in 2005. And the typical listing on the AIM is a small firm that would not have listed on a U.S. exchange, they point out. “Consequently, it is simply wrong to interpret the success of AIM and the resulting growth in market share of London as evidence of a decline in the attractiveness of U.S. exchanges.”

If London hasn't stolen New York's thunder, then perhaps New York itself has become less attractive to foreign firms since the 2002 passage of Sarbanes-Oxley.

firms that were not listed between 1990 and 2001. Take out 1999, when valuations were sky-high because of the dot.com boom, and the premium fell to 15.4 percent. Those numbers are not significantly different from the 14.3 percent premium U.S.-listed foreign firms enjoyed between 2002 and 2005, the authors conclude. Strikingly, they find no premium for listing in London throughout the period.

So, why have companies delisted in New York? Most did so because of changes or problems within the company itself: mergers and acquisitions, distress, restructuring, or failure to live up to the exchange's standards, the study finds. Voluntary delistings accounted for only 13 percent of the total delistings in New York and 33 percent of the total in London. Interestingly, the increase in delisting since 2000 has been mostly voluntary. But again, that doesn't suggest an effect from Sarbanes-Oxley, the authors argue, because the rise in voluntary delistings has been somewhat greater in London than in New York.

Instead, the decline in New York (and London's Main Market) appears to come from a decline in the number of foreign firms worldwide that have the characteristics that would make a U.S. listing attractive, the authors conclude. “There is little evidence that firms have been making listing decisions differently in recent years from how they made them from 1990 to 2001. If anything has changed in the aftermath of [Sarbanes-Oxley], it is that the non-listed firms have become smaller and are therefore less likely to list on the U.S. exchanges or the Main Market in London.”

—Laurent Belsie

## The Impact of Childhood Lead Exposure on Adult Crime

Exposure to lead in childhood has been associated with increases in aggression, decreases in impulse control, and decreases in IQ. In **Environmental Policy as Social Policy? The Impact of Childhood Lead Exposure on Crime** (NBER Working Paper No. 13097), **Jessica Wolpaw Reyes** tests the hypothesis that higher childhood lead exposure is associated with adult criminality. Her estimates suggest not only that childhood lead exposure may lead to higher violent crime rates, but that a large portion of the decline in the U.S. violent crime rate between 1992 and 2002 may be attributable to reductions in gasoline lead exposure.

In the late 1970s, lead was phased out of gasoline under the Clean Air Act. Sizeable reductions in childhood blood lead levels followed: according to the U.S. Centers for Disease Control and Prevention, between 1976–80 and 1998–2002 average blood lead levels in children aged 1 to 5 decreased from 15.0 to 1.9 micrograms per decileter.

The EPA specifically targeted reductions of grams of lead per gallon, and imposed this regulation on petroleum companies, not states. Reyes takes advantage of the resulting state-level variation in the phaseout to identify a link between childhood lead exposure and adult crime. Joining measures of lead exposure from 1955 to 1990 with crime rates twenty years later (from 1985 to 2002), Reyes concludes that lead exposure may have been an important factor

in the rise and fall of violent crime over the last thirty years. The net social value of the lead phaseout and the associated crime reductions is large, she writes: the cost of removing the lead from gasoline is “approximately twenty times smaller

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than the full value (including quality of life) of the crime reductions.”

In her state-by-state analysis, Reyes controls for other possible determinants of crime rates, including the unemployment rate and per capita income, the number of prisoners and police, gun laws, beer consumption, welfare generosity, the teen pregnancy rate, the population age distribution, and the effective abortion rate. The results suggest that a 10 percent increase in the grams of lead per gallon of gasoline leads to a 7.9 percent increase in violent crime. These results are subjected to a number of sensitivity tests, with particular attention paid to the importance of certain states, the possibility of a non-linear relationship, and the role of alternate lead measures.

Lead exposure does not appear to affect the murder rate though, a result the author finds “not entirely surprising” given that her analysis omitted the effects of gangs and crack and that it is possible that only substantial exposure to lead would lead to an extreme out-

come like murder. Nor does lead exposure appear to affect non-violent property crime.

Putting the pieces together, the data suggest that when violent crime rose 83 percent from 1972 to 1992, increases in

lead exposure could have been responsible for anywhere from a 28 to 91 percent increase. The growth of prisons is estimated to have produced a 35 percent decrease in violent crime, while a 24 to 87 percent increase remains unexplained. From 1992 to 2002, violent crime dropped 34 percent. Reyes estimates that declining lead exposure was responsible for a 56 percent decrease in this time period, legalized abortion for another 29 percent decrease, while other factors combined to produce a 23 percent decrease. The remaining 74 percent increase, a sustained rise of about 3 to 5 percent annually, remains unexplained.

The author concludes that lead’s effect on violent crime may be “just the tip of the iceberg. Increases in impulsivity, aggression, and ADHD can affect many other behaviors such as substance abuse, suicide, teenage pregnancy, poor academic performance, poor labor market performance, and divorce,” suggesting that environmental policy can have far reaching effects on social outcomes.

—Linda Gorman

## Do Professional Currency Managers Beat the Benchmark?

Over the last twenty years, the notion of currency as an asset class has gained a wider following. Inspired, perhaps, by numerous studies reporting profitability in various types of currency trading strategies, investment consultants have promoted currency products

as a potential source of alpha, or returns above a certain benchmark. This interest is reflected in the fact that the number of funds in the Barclay Currency Trader Index (BCTI) has grown from 44 in 1993 to 106 in 2006. While returns on the BCTI (an equally-weighted

composite of managed programs that trade in currency futures and forwards) were initially in the healthy double-digit range, those returns have tended to diminish over time, especially over the last few years.

In **Do Professional Currency**

## Managers Beat the Benchmark?

(NBER Working Paper No. 13714), authors **Momtchil Pojarliev** and **Richard Levich** investigate which factors help to explain currency traders' returns and the returns for individual currency managers. They show that four factors, representing four styles of currency investing, explain a significant part of these returns. The average excess return of the BCTI index was positive at 25 basis points (bps) per month between 1990 and 2006. However, once the authors account for these four factors, the alpha is actually negative at -9 bps per month and not statistically different from zero. As the authors point out, this is not encouraging news for currency managers.

There are some interesting differences between the 1990s and the post-2000 period. First, volatility was not a significant factor in the 1990s, but it is significant after 2000. This may be related to the increase in options turnover in the most recent years. Second, the average excess return in the 1990s was 36 bps per month, but after 2000 the average excess return declined to only 8 bps per month. However, in both periods currency managers were not able to generate a positive alpha on average. Despite all the talk that the recent years have been more challenging for currency management, the authors have witnessed a decline only in the beta returns. The average alpha has remained

almost the same: -16 bps per month in the 1990 and -11 bps per month after 2000.

“... 24 percent of the managers were able to generate positive and significant alpha between 2001 and 2006. The average alpha of these ‘star’ managers has been quite high and significant at 104 bps per month or 12.48 percent per year.”

This is not all bad news for currency managers. The authors show that 24 percent of the managers were able to generate positive and significant alpha between 2001 and 2006. The average alpha of these “star” managers has been quite high and significant at 104 bps per month or 12.48 percent per year. Importantly, this 104 bps alpha is measured after taking into account the four explanatory factors—carry, trend, value, and volatility—the first three of which reflect returns on naïve currency trading strategies. According to the authors, this demonstrates that currencies have similarities with other asset classes whose returns can be related to risk factors. Although the average manager might under-perform, there are some skilled managers who are able to deliver significant alpha.

The results of this research support the notion that the foreign exchange market offers opportunity for alpha generation. However, the authors suggest that greater emphasis should be put on active currency management. Their model makes clear that all returns gen-

erated by currency managers are not pure alpha. A significant part of currency returns comes from exposure to

a small set of factors that proxy the returns from well-known and easily implemented trading styles. This realization may lead to some re-pricing for “active” currency products. It will be difficult to justify a 2 percent management fee and 20 percent performance fee for exposure to currency style betas when exposure to equity style betas might be gained for 3 to 10 bps.

The authors also suggest that the recent lackluster returns from currency managers are the result of declining beta returns stemming mainly from the declining profitability of trend-following rules and not the result of declining alpha generation. Their research shows that alpha generation has not declined after 2000 in comparison to the 1990s. Delivering alpha has never been an easy task, which may explain why investors might be willing to pay high fees for true alpha performance. An index of currency managers tended to under-perform in the 1990s and post 2000. However, some skillful managers have been able to deliver positive and significant alphas.

—Les Picker

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