

# **A New Look at Second Liens<sup>1</sup>**

**by**

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<sup>1</sup> The opinions, analysis and conclusions of this paper are those of the authors and do not indicate concurrence by the Board of Governors of the Federal Reserve System, the Federal Reserve Bank of NY, or their staffs. The authors wish to thank Daniel Hubbard and James Witkin for excellent research assistance.

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## **1)Introduction**

- a. Second liens represent a large portion of the credit markets in the US, but are often controversial and poorly understood.

According to data from Equifax Credit Trends (August, 2011), consumers owe about \$11.3 trillion to various lenders. Of that total, first mortgages represent about \$8.16 trillion and second liens are another \$800 billion. Of the remaining \$2.36 trillion, revolving debt (credit lines such as bankcards and retail credit cards) represent \$589 billion and non-revolving debt (auto, student and various loans) represent the \$1.77 trillion.

If second liens are thought of junior mortgage debt, they appear to be a large risk to the banking system since most second liens are held on balance sheet by lenders. Total outstanding second liens represent more than one-half of all bank capital (\$1.4 trillion according to FFIEC Peer Group Average Report). However, lenders argue that second liens are more comparable to other types of consumer debt, rather than mortgages, and were originated according to the same or stricter standards that they offered other types of consumer debt.

Of the outstanding second liens, the bulk (\$595 billion) are home equity lines of credit (HELOCs), which are revolving credit lines. In total, HELOCs are about the same size as all other types of revolving credit (credit cards) and thus represent an important part of consumer credit. Closed end second liens (CES) are much smaller, representing about \$158 billion, less than 10% of all other non-revolving debt. A key question is how second liens perform relative to first liens and other consumer credit.

Investors also complain that conflicts of interest encourage servicers of second liens to prioritize payments to second liens over first liens. According to these concerns, the largest banks who hold many second liens on their balance sheets also serve as servicers on privately securitized first liens. These lenders face strong incentives to protect their second liens by easily modifying first liens (at great cost to mortgage

bond owners) or encouraging borrowers to miss first lien payments while remaining current on their second liens.

b. There is an appreciable debate about how public policy should treat second liens

Many analysts argue that second liens represent a serious public policy challenge, because second lien holders often get in the way of mortgage modifications by refusing to agree to “re-subordinate” to a newly issued first lien. As well, second liens are much more likely to be underwater than first liens, increasing the likelihood of a costly foreclosure. Martin Feldstein has proposed a program where the government would subsidize 50% of the cost of writing-down negative equity to 110% LTV, which might impact an appreciable portion of second liens that are the most junior position relative to the first lien. Adam Levitan and others have proposed that bankruptcy judges should have the right to “cramdown” debt, forcing lenders to accept losses on the underwater portion of the first and second lien.

Mortgage-holders often take an even stronger view, arguing that giving any rights to second lien holders violates basic prioritization of claims. They suggest that second liens should be forced to accept a total write-off before first liens reduce any principal or interest payments for borrowers.

On the other hand, banks argue that many (but not all) second liens, especially HELOCs, were given only to the best quality borrowers and were underwritten to a great extent based on the credit quality of the borrower, not just the home value. Such mortgages are the equivalent to high quality credit card loans, where the lender has a claim on both the borrower and on the home as collateral if the borrower does not pay. They suggest that no one would propose that a credit card be written down prior to pursuing a mortgage modification, even though credit cards are also unsecured debt and thus might have lower priority, so why should HELOCs be treated differently?

The law often supports the legal interpretation of second liens as personal recourse

debt with equivalent priority to credit cards or student loans. In states where borrowers face personal recourse if they default on a first mortgage, second liens also have personal recourse against the borrower and his/her other assets. Even in states where first liens have no personal recourse, borrowers still face personal liability for the second lien if they took out the second lien debt anytime after purchasing the home.

Government policies have attempted to address problems with outstanding second liens, without success. HAMP (Home Affordable Mortgage Program) offers to pay second lien holders a nominal amount to cover costs of modifying or writing off second liens, but has resulted in fewer than 40,000 such modifications as of July, 2011 (Housing Wire, 9/16/2011), with fewer than 3,000 of the second liens being written off entirely.

c. Previous Literature (definitely preliminary; many more citations coming)

This research is most similar to two recent papers on second liens:

Andersson, Fredrik, Souphala Chomsisengphet, Dennis Glennon, and Feng Li. 2011. "The Changing Pecking Order of Consumer Defaults," SSRN Working paper #1939507. The authors examine data on mortgage payments (Loan Performance) and credit files (OCC Credit Bureau Data) for borrowers with non-prime, privately securitized mortgages combined with credit files from 2001 to 2009. The authors find that consumers have adjusted the relative order in which they pay their debts, moving from an environment where a default on credit card is much more likely to occur before a mortgage default, to an environment where consumers are equally likely to miss mortgage or credit card payments. They attribute this finding to changes in the cost of servicing each type of debt, reduced or negative home equity and the increased penetration of non-standard mortgage products.

Jagtiani, Julapa and William Lang. 2010. "Strategic Default on First and Second Lien Mortgages During the Financial Crisis," Federal Reserve Bank of Philadelphia Working Paper no. 11-3, December. The authors merge together data on mortgage

performance (Lender Processing Services—McDash) with credit report files (Federal Reserve Bank of NY Consumer Credit Panel/Equifax) to examine the relative order of payments for first and second liens. The paper finds that a large portion of delinquent borrowers on first liens keep their second liens current. Such behavior is more prevalent for HELOCs, where the ability to maintain a credit line is quite valuable, is also quite common for closed end second liens. While such behavior is puzzling, one possible explanation is that borrowers miss first lien payments because first liens are more likely eligible for modifications under public and private programs. Our findings, below, suggest that such strategic behavior is less prevalent than is found in this working paper, although it still persists to some extent in our sample.

d. Our findings:

**I)** Second liens are composed of CES (closed end second liens) and HELOCs. CESs account for between 30%-40% of the total second lien balance between 1999 and 2011, and increased its share between 2005 and 2007 when credit standards had deteriorated the most. HELOCs are revolving loans, similar to credit cards, secured by homes.

**II)** Even though HELOCs and CESs are both classified as second liens, they are quite different. CESs have similar characteristics to non-prime first mortgages; they were often originated to borrowers with low credit scores and were more likely to be originated simultaneously with a first lien (so-called piggy-back mortgage) or with non-prime first mortgages. CES mortgage issuance peaked between 2005 and 2007, a time when deteriorating credit standards and peaking house prices led to very high subsequent default rates. On the other hand, HELOCs have similar characteristics to conforming/prime first mortgages; HELOCs were originated to people with high credit scores, were more likely to be originated to borrowers with no first lien or a prime first mortgage, and were often originated well after the first lien had been taken out. HELOC originations peaked in 2004, before the top of the housing boom.

**III)** At peak in 2006, as many as 40 to 45 percent of home purchases involved a piggyback second lien in coastal markets and bubble locations (Phoenix, Las Vegas, Miami). Slightly fewer piggybacks were used in more stable markets in the Midwest and south, but piggybacks were much less prevalent in declining markets like Cleveland and St. Louis. Second liens were strongly associated with the use of low down payments to purchase homes. 10-20 percent of home purchases with a single mortgage involved a down payment of 5 percent or less ( $LTV \geq 95\%$ ), whereas about two-thirds of all purchases with a piggyback second lien had a low down payment ( $CLTV \geq 95\%$ ). Second liens were somewhat more prevalent among owner-occupants than investors.

**IV)** Non-reporting of second liens to mortgage investors was a potentially serious issue at this time. About 12 percent of all privately securitized mortgages contained an unreported second lien. However, conditional on having such an unreported second lien, the first mortgages default at only a slightly higher rate than first liens without a second lien over our sample period.

**V)** CESs performed similarly to subprime/non-prime mortgages, especially for CES originated between 2005 and 2007 and/or piggybacked to first mortgages. HELOCs perform much closer to prime first liens. More than 25% of the piggybacked CES become 90+ days delinquent as of 2010-2011, but only 8% of HELOCs have similar serious delinquencies during the same period. Differences in the timing of origination and the credit quality of borrowers appear to explain most of these differences. In the last few months, however, second lien delinquencies are rising while delinquencies are falling for all most other types of consumer credit.

**F)** We find a high correlation between the delinquency of first mortgages and the second liens. Borrowers are more likely to become delinquent on the first mortgages before they become delinquent on their seconds, but as the duration of the first mortgage delinquency is prolonged, relatively few second liens remain current. For example, when a first mortgage reaches 90+/120+ DPD stage, only about 20% of CES remain current three quarters after the mortgage delinquency

(30% for HELOCs). By contrast, about 80% of auto loans and one-half of all credit cards remain current three quarters after a serious mortgage delinquency.

- e. **WARNING:** We cannot distinguish between supply and demand for credit in this analysis. Thus it is impossible to know whether some of these patterns reflect demand for second liens by various types of purchasers or constraints on the type of mortgages that lenders might approve. Authors, discussants, or readers make causal statements at their own risk.

## **2) Data**

### **a. Equifax Credit Trends 4.0**

These data represent overall credit usage for all consumers whose credit records are reported to Equifax. It is based on 100% sample of all reported consumers. Data are available from 2005 to present.

### **b. NY Fed/Equifax Consumer Credit Panel**

We use the FRBNY Consumer Credit Panel (CCP), which comprises an anonymous and nationally representative 5% random sample of US individuals with credit files and all of their household members. In all, the data set includes files for more than 15% of the population, or approximately 37 million individuals in each quarter from 1999Q1-2011Q3. The panel allows us to track individual borrowers and their loan accounts including first mortgages, second liens, credit cards, auto loans and student loans over time. The FRBNY CCP panel is based on Equifax consumer credit reports. Lee and van der Klaauw (2010) provides further details on the data set.

The original sample is 5%, but due to its size, we use 0.1% of population (2% of the 5% sample) in our analysis. This includes about 240,000 individuals with credit reports in a given quarter. Joint accounts appear twice on the credit report, for example, one for a husband and a second for a wife, but we combine such records into a single record where appropriate to remove any duplicates. Our sample for

this paper runs from 1999:Q1 to 2011:Q3, thus covering a more stable period before the subprime run-up, the housing boom, and the subsequent bust.

We face a number of data issues, which are described below. Whether a loan is a first mortgage or a CES is not always obvious. We classify the loans with Freddie, Fannie, FHA, VA as first mortgages, and loans with narrative codes with home equity loan, home improvement loan, second mortgage as second liens. We believe at least 80% of Freddie and Fannie loans are narrated as such, and 100% of FHA and VA loans are narrated accurately.<sup>5</sup> HELOCs are easily identified since they are clear from a Revolving account type. There are some installment loans with no narrative codes indicating the type of loan. Among these unclassified installment loans, we currently drop those with less than \$40,000 origination amount from the sample as if they are neither firsts nor seconds (we can classify these as CES if we want alternatively, with little impact on the results). We treat mortgages with an origination balance of at least \$40,000 as nonprime first liens, but use care to interpret this class of loans. Non-prime first liens are likely on average riskier loans, but are a residual category, including not only subprime and alt-A mortgages, but also jumbo-prime mortgages, some GSE mortgages that are not properly narrated, and some private label conforming loans. We have no way to externally validate differences among the various types of mortgages at this time.

The origination date is defined by the quarter the loan appears on the credit report for the first time, and there can be some delays between when a loan is originated and when it is reported to Equifax. The results are quite similar if we use the reported quarter of origination instead. Due to the definition, the data on originations are more accurate starting 2000 rather than 1999.

### c. Dataquick Deeds records

Dataquick reports deeds records for all home purchase and mortgage transactions. For this analysis, we limit our sample to purchase transactions only (no

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<sup>5</sup> Some loans start containing the narrative codes of Freddie etc. only later of the life of the loan, but we classify them retroactively if we observe the appearance of the codes later.



refinancings) and examine the financing of that purchase, including whether the transaction had a second mortgage (we combined HELOCs and CES for this analysis) and whether the transaction involved an investor (defined as an owner whose property tax bill is sent to a different location than the purchase address). We include data from 2001-2011, although many figures are cut off after 2007 due to the very small number of transactions involving a second lien after that time period. Our sample is collected for the 40 largest metropolitan areas in the US outside of Texas, where sale prices are not reported in the public records. We use data from a subset of metropolitan areas as described below.

d. Matched sample of private label securitizations from BlackBox and credit records from Equifax

This dataset links two databases: (i) loan-level mortgage data collected by BlackBox Logic and (ii) borrower-level credit report information collected by Equifax.

BlackBox is a private company that provides a comprehensive, dynamic dataset with information about twenty-one million privately securitized Subprime, Alt-A, and Prime loans originated after 1999. These loans account for about ninety percent of all privately securitized mortgages from that period. The BlackBox data, which are obtained from mortgage servicers and securitization trustees, include static information taken at the time of origination, including mortgage date and amount, FICO credit score, servicer name, interest rate, term, and interest rate type. The BlackBox data also include dynamic data on monthly payments, mortgage balances, and delinquency status.

Equifax is a credit reporting agency that provides monthly data on borrowers' current credit scores, payments and balances on mortgage and installment debt, and balances and credit utilization for revolving debt (such as credit cards and HELOCs). Equifax reports Vantage as the credit score. Intended to be comparable to FICO, the Vantage score was designed by the three credit reporting bureaus (Equifax, Experian, and TransUnion) to measure overall borrower credit health. Vantage scores range from 501 to 990.

### **3) Origination and Growth in the Second Lien Market**

#### **a. Evidence from FRBNY Consumer Credit Panel (CCP)**

- i.** Figures 1 and 2 plots the number and dollar volume of second liens outstanding quarterly from 1999:Q1 to 2011:Q3. With over 20 million borrowers and more than \$800 billion of outstanding credit, second liens represent a large and important source of credit for US consumers. At its peak at the end of 2007, second liens represented over \$1.0 trillion of credit.
- ii.** Figure 3 shows quarterly originations of CES and HELOCs (Figures 8 and 9 plot originations of these two types of products separately). While overall dollar volume peaked at the end of 2005, this masks variation across the two types of credit. HELOC originations peaked in 2005:Q4, and fell about 30 percent over the next two years, while CES originations continued rising and stayed high, peaking in 2006:Q3 and remaining near their peak throughout 2007. Originations of new second liens fell off rapidly in 2008 and have remained at about 15-20 percent of their level during the boom years.
- iii.** Figures 4 and 5 show the share of various types of mortgages with an origination risk score above 700, an indication of loans given to high quality borrowers.
  - 1.** For all types of mortgages, the share of high quality borrowers declined from 2004 to 2007, although CES and HELOC shares declined less in 2006 and 2007 than other types of mortgages, consistent with balance sheet lenders pursuing slightly higher quality borrowers than securitized lenders. Today credit standards appear to have risen to the highest levels in our sample period.
  - 2.** Around 60 percent of CES went to such relatively high quality

borrowers in the boom, similar to the overall share of such borrowers for first liens and slightly higher than the share of high quality borrowers in non-prime originations.

3. HELOCs remained focused on the highest quality borrowers.

About 75 to 85 percent of HELOCs went to borrowers with high FICO scores in the boom, a greater share of such borrowers than even conforming mortgages.

4. We won't comment and FHA/VA loans!

iv. Figures 6 and 7 show the share of CES and HELOCs going to borrowers with various types of first liens as an alternative measure of credit quality.

1. The largest share of CES mortgages went to borrowers with relatively low quality non-prime or FHA/VA mortgages. The large growth of CES mortgages in 2006-2007 went to borrowers with non-prime first liens that would eventually default at very high rates.

2. By comparison, HELOCs were more likely to go to borrowers with higher quality conforming mortgages or borrowers without a first lien. HELOCs originations declined in 2006-2007, with much a smaller increase in loans going to borrowers with non-prime first liens.

v. Figures 8-11 track originations of second liens based on the type of first lien and how closely the second lien was originated relative to the date the first lien was taken out. We allow for a small reporting lag in second, so liens taken out within two are coded as simultaneous (piggyback) second liens, while loans originated 3 to 5 months after origination are coded as being lagged one quarter, etc...

1. Following a prime first lien, most CES originations were taken out well after the origination date of the first lien. However, most CES originations for non-prime first liens were taken out

as piggyback loans, the riskiest type of lending available.

2. As in earlier data, HELOCs were made in a safer manner.

Relatively few HELOCs were taken out as piggyback mortgages.

Even HELOCs associated with non-prime first liens tended to be taken out well after the date that the non-prime first mortgage was originated.

vi. Conclusion of this section: Second lien origination grew rapidly during the boom period, but was composed of two very different products. CESs represented a minority of all second liens, but appear riskier on all dimensions, including peaking later in the cycle, being originated to lower credit quality borrowers, including borrowers with riskier first liens, and being more likely to be taken out as a piggyback loan. HELOCs appear less risky on all of these dimensions.

b. Evidence from deeds records

i. We break our sample into four different groups of metropolitan areas:

1. *Coastal cyclical markets*: Boston, New York, Washington D.C., Los Angeles, San Francisco, and San Diego

2. *Midwest/South stable markets*: Charlotte, Atlanta, Chicago, Denver, and Minneapolis

3. *Midwest/Declining markets*: Detroit, Cleveland, and St. Louis

4. *Bubble Markets*: Las Vegas, Phoenix, Tampa, and Miami

ii. Figure 12 plots the share of home purchases financed by piggyback second liens. Second liens grew with the increase in home prices in all market, with the largest share of purchases being financed by second liens in Bubble and Coastal cyclical markets, followed by a slightly smaller share of purchases in Midwest/South stable markets where home prices grew much less rapidly. Midwest declining markets exhibited a much lower share of piggyback second lien originations. In all markets, piggyback purchased fell

off rapidly in 2008 and have not recovered since.

- iii. Figures 13-16 show the impact of second liens on overall loan-to-value ratios for purchase mortgages. Even for purchases financed by a single mortgage, average LTVs/CLTVs were quite high, averaging over 80% in almost all time periods.<sup>6</sup>

  - 1. Through much of the boom, purchases in Coastal cyclical and Midwest/South stable markets had slightly lower LTVs than purchases in Bubble and Midwest declining markets.
  - 2. The use of piggyback second liens were clearly tied to the lowest down payment purchases. Average LTV during the boom for mortgages with a second lien was at least 95 percent. About two-thirds of all such purchases involved a CLTV of 95% or more.
- iv. Figures 17 and 18 separate purchases between investors and owner-occupants. In all markets, second liens were more likely to be taken out by owner-occupants relative to investors, suggesting some additional screening (higher required down payments) by lenders on second liens.

  - 1. Among owner-occupants, second liens were most prevalent in Coastal cyclical and Bubble markets where prices increased the fastest during the boom, peaking at 50-55 percent of all purchases.
  - 2. Investors used second liens more equally in all markets but the declining markets, with usage peaking at 35-40 percent.
- v. Conclusion of this section: Piggyback second liens grew rapidly in Bubble, Coastal cyclical, and Midwest/South stable markets during the housing boom. Mortgages with a piggyback second lien have very high origination CLTVs, with almost two-thirds of borrowers

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<sup>6</sup> The high LTVs in the recent time period are surprising given the strong increase in LTVs for GSE mortgages. However, the FHA finances about one-half of all recent purchase money mortgages and such FHA mortgages can have as little as a 3% down payment.

having a down payment of 5 percent or less, much higher than LTVs for mortgages without a second lien. Piggyback second liens were more commonly used by owner-occupants than investors.

#### **4) Performance of first liens associated with reported and non-reported second liens**

We use linked data from private label securitizations and credit reports. Our initial analysis shows that an appreciable portion of piggyback second liens are not reported in BlackBox to investors. About one-third of mortgages do not appear to have a second lien in either dataset. About one-half of borrowers report having a second lien in both datasets. Strikingly, about 12 percent show a piggyback second lien in their credit report that is not reported to investors.<sup>7</sup> In other words, of the second liens outstanding in Equifax, about 80 percent report having a second lien to their first mortgage lender.

Of course, the next question is whether the performance of mortgages with an unreported second lien perform worse than those that report a second lien. Below we show delinquency rates in BlackBox for mortgages based on their second lien status. We separate out CES and HELOCs based on the classification of the second lien in the credit report in Table 1.

The results show that unreported second liens perform similarly to mortgages with first liens, but that if we condition on the type of second lien, unreported CES is a very bad sign, while having an unreported HELOCs results in better performance.

#### **5) Performance of second liens relative to first liens and other types of credit.** We now turn back to the NYFRB Consumer Credit Panel to examine the

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<sup>7</sup> About 5 percent of borrowers report having a second lien in BlackBox but we cannot find a record of a second lien in Equifax. Such misreporting might be due to the fact that not all servicers of second liens report their loans to the credit agencies.

performance of second liens.

- a. Figure 19 compares the performance of CES and HELOCs to various types of first liens.
  - i. The results suggest that CESs tend to be delinquent at a similar rate to non-prime first liens, which are also the most common type of mortgages that the CES are attached to as a piggyback.
  - ii. HELOCs tend to default at similar rate to GSE-backed mortgages.
  - iii. However, in the last year, delinquency rates for second liens are rising, while first mortgage delinquency rates are falling, suggesting a possible change in performance for senior and junior debt.
- b. In Figure 20, we compare delinquency rates for second liens to other types of consumer debt. The results show that the performance of HELOCs are comparable to auto loans, the highest quality consumer debt. However, as above, HELOCs and CES delinquency rates are rising even as other types of consumer debt are seeing declines in delinquency rates.
- c. Figures 21 and 22 compare the delinquency rate of second liens by the time taken out and cohort.
  - i. Piggyback second liens perform much worse than second liens taken out after purchase. In fact, the longer after purchase, the worse the rate of subsequent delinquency. This effect is more pronounced for CES that were more commonly originated with lower quality first liens.
  - ii. Like first liens, the origination date has a large effect on performance, with the worst loans originated in 2006 and 2007 at the height of the housing boom and also at a time that lending standards appear to have slipped (plummeted?). However, second liens originated prior to 2005 became delinquent at very low rates.
- d. Next we turn to the default rate of matched first and second liens in Figure 23. Many critics have complained that borrowers appear to

default on first liens while the second lien remains current (see also Jagtiani and Lang, 2010). Our results however, suggest that the performance of linked first and second liens tend to quite similar.

- i. The performance of both CES and the attached first lien tend to be very similar today. In earlier periods, especially 2008 and 2009, the first lien appears to have defaulted at higher rates than CES, but these rates have caught up more recently. We explore this pattern further, below.
  - ii. The difference in performance between first and second liens is more pronounced for HELOCs, where first liens default at a much lower rate. This result is consistent with the possibility that borrowers might continue to rely on a HELOC for credit even after facing problems on the first lien. This is consistent with the revolving nature of HELOC credit, but only if lenders were willing to continue to provide credit even with a default on the first lien.
- e. To further explore the relative performance of first and second liens, we examine the pattern of default on a second lien when the first lien becomes seriously delinquent in Table 2. The table shows that, conditional on a first lien delinquency, about 80 percent of homeowners stop paying their CES within 4 quarters. Most HELOCs also stop paying soon after a first lien delinquency, but about 30 percent of HELOCs remain current even a year later.
  - i. This calculation removes first liens that cure after a 60+ delinquency. In our sample about 40% of first lien delinquencies cure within a couple of quarters, consistent with the strong growth of mortgage modifications.<sup>8</sup>
  - ii. It is puzzling why some borrowers remain current on their second liens even a year beyond a continuing serious delinquency on their

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<sup>8</sup> These results differ appreciably from those in Jagtiani and Lang (2010), who find a much higher rate of current second liens conditional on an initial first lien delinquency. The major reason for the difference is that we condition on a first lien remaining delinquent in order to stay in our sample, whereas Jagtiani and Lang appear to continue to compute second lien delinquency rates even when the first lien has cured.



first lien, especially for CES where additional credit is not possible. We see several possible explanations.

1. Misplaced priorities: Some borrowers may not fully understand the priority structure and thus when facing a loss of income pay the mortgage with the lowest payment with the hope of becoming current in the future.
2. Strategic default: Borrowers may also be strategically defaulting on their first lien, since most mortgage modification programs were targeted to first liens. The fact that 40% of serious delinquencies cured in our sample suggests that such beliefs were rational. While some borrowers might have had resources to pay the first lien and strategically defaulted to obtain a modification<sup>9</sup>, others might have only been able to cover a single lien and chose the second lien to increase their chances of getting help.
3. Personal liability: As noted in the introduction, most borrowers who default on a second liens, with the exception of piggyback CES taken out in non recourse states for a purchase mortgage, still face personal liability on their debt, the same way they would if they defaulted on a credit card or student loan.

iii. Table 2 also shows the performance of credit card and auto debt. Our findings are consistent with the findings of Andersson et. al. (2010) that homeowners have a hierarchy of debt payments where the mortgage payment is no longer the most critical payment. Borrowers appear to make many debt payments a year or more after defaulting on their first lien.

1. Borrowers that default on their first mortgage remain current

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<sup>9</sup> See Mayer, Christopher, Edward Morrison, Tomasz Piskorski, and Arpit Gupta. 2011. "Mortgage Modification and Strategic Default: Evidence from a Legal Settlement with Countrywide," May. In this paper, the authors show that the offer of a mortgage modification program can increase default rates on a first lien by about 20 percent, with the biggest increase among borrowers who apparently have the financial resources to pay.

on their auto loan 80 percent of the time for up to 3 quarters after a first mortgage delinquency, with on-time rates falling to 70 percent 4 quarters later. These results are consistent with a hierarchy of payments in which a car is the most critical payment to make, given that a default on a car loan can result in a quick repossession. Without a car, most households would have a hard time getting to work.

2. The results for credit cards are more mixed. About 40 percent of those who default on their first lien pay their credit card. As with HELOCs, credit cards can be a source of additional credit to an unemployed household, but credit card payments also fall off in a severe recession.

iv. Table 3 shows that the performance of second liens has improved since 2008 when the first lien becomes delinquent in recent periods. The improvement may be due to increased numbers of first lien borrowers seeking mortgage modifications while remaining current on their second lien.

f. Conclusion of this section: Most second liens perform similarly to the accompanying first liens. Conditional on a first lien default, the majority of second liens also default. HELOCs perform better than CES, which we hypothesize is due to the revolving nature of their credit—borrowers may turn to HELOCs to obtain credit in the future. Nonetheless, a minority of borrowers appear to continue paying their second lien even a year after defaulting on their first lien. One possible explanation is that such borrowers are looking for a modification of the first lien and do not want to lose their home in the interim. As well, second lien holders might be concerned about personal liability associated with the default on a second lien. Many borrowers also default on their first mortgage while paying their credit card, consistent with second liens having some payment characteristics associated with unsecured financing. Finally, second lien performance appears to be deteriorating relative to first

liens and other credit in recent periods, a potentially troubling sign for many lenders who hold such liens on their balance sheet.

## 6) Conclusion:

We use a variety of datasets including credit reports, deeds records, and private label MBS performance to better understand the role of second liens in contributing to the housing boom and subsequent foreclosure crisis. Overall, second liens appear to have allowed borrowers to take on additional leverage, although it is not possible to say whether borrowers might have turned to higher LTV first liens if attractively priced second liens were not available. However, part of the reason that second liens were attractively priced is that they were originated to higher quality borrowers than the average first lien borrowers. Within the category of second liens, HELOCs are the highest quality loans, with a smaller percent of piggyback originations, higher quality borrowers at origination, and a smaller percent originated near the peak of the housing boom. CES characteristics are worse on all these dimensions.

In terms of payoffs, the performance of second liens generally mirrors first liens, although about 20-30 percent of borrowers will pay the second lien for more than a year while remaining seriously delinquent on their first mortgage. This behavior can be due to a combination of several reasons, including strategic default on the first lien to obtain a modification, lower conditional default rates on revolving credit such as HELOCs and credit cards as homeowners might want access to additional borrowing capacity, personal recourse on second liens that might be less likely on first mortgages in many states, and behavioral explanations that depend in part of borrowers not understanding the priority structure of lending and the fact that defaults on second liens very rarely result in the loss of a home.

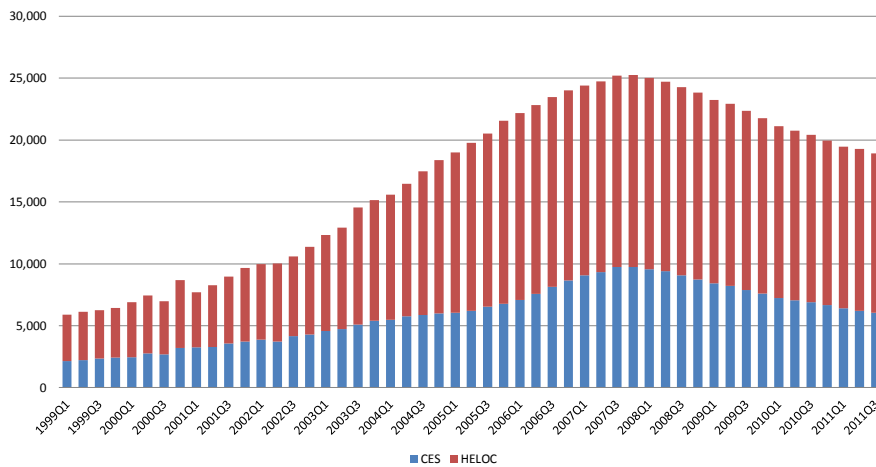
Finally, we show that the relatively good performance of second liens, especially HELOCs, is deteriorating in recent months. Given that the bulk of outstanding second liens are HELOCs, such performance could signal problems for some lenders with large portfolios of second liens on their balance sheet.

# A New Look at Second Liens:

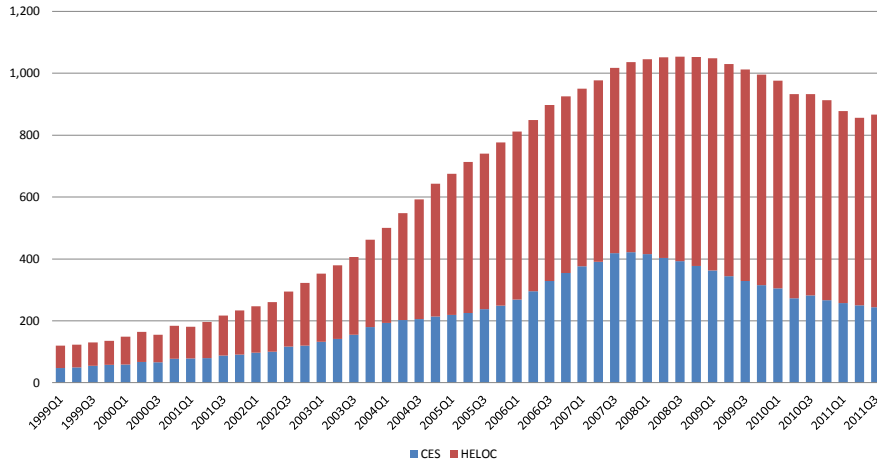
## Figures and Tables

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WITHOUT PERMISSION**

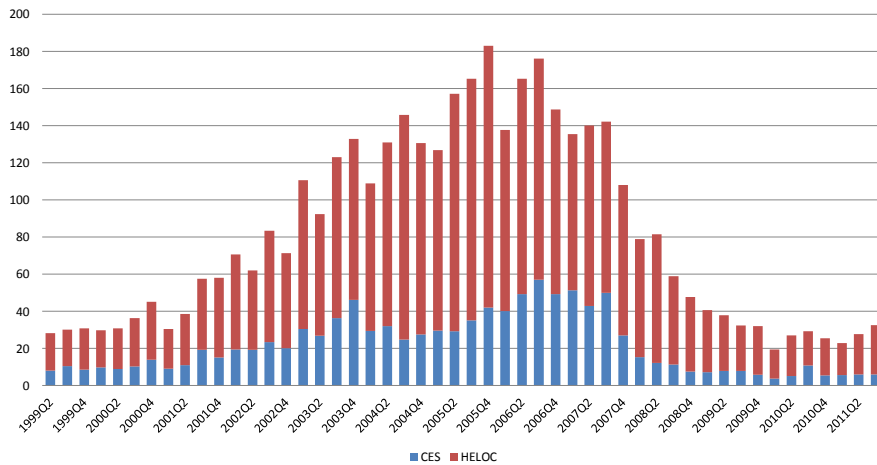
**Figure 1**  
Number of second liens quarterly  
1999-present (thousands of accounts)



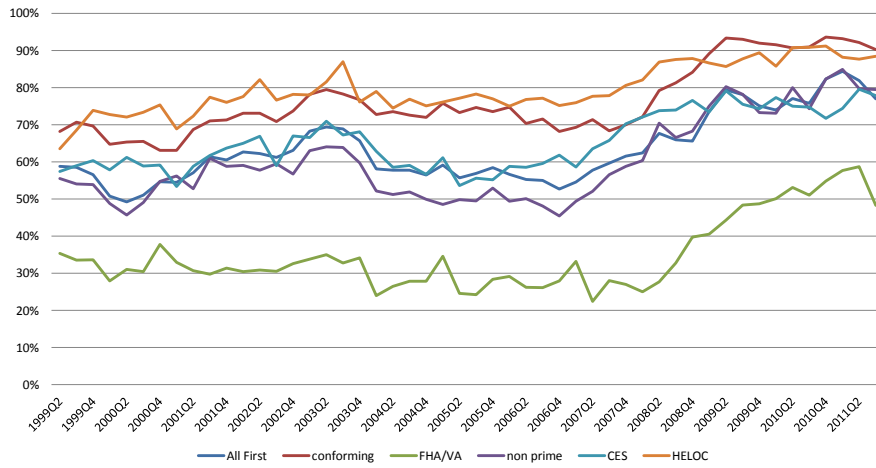
**Figure 2**  
 Second lien balance  
 1999-present (\$ Billion)



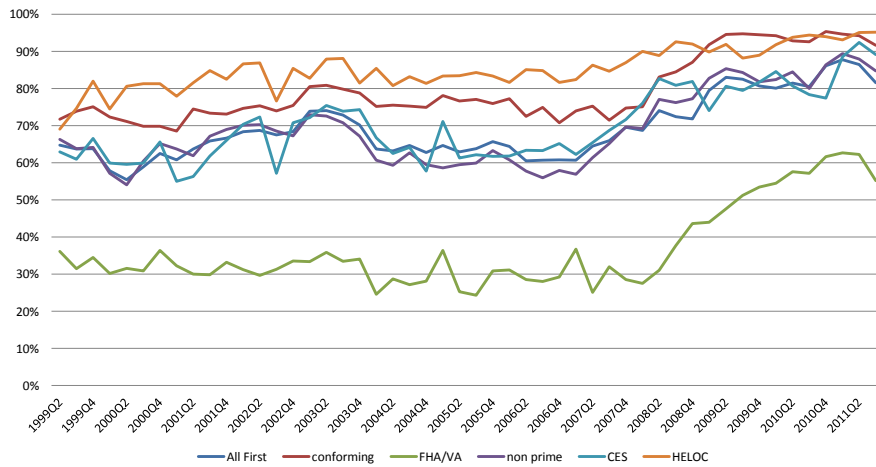
**Figure 3**  
 \$ of second liens originated quarterly  
 (\$ Billion)



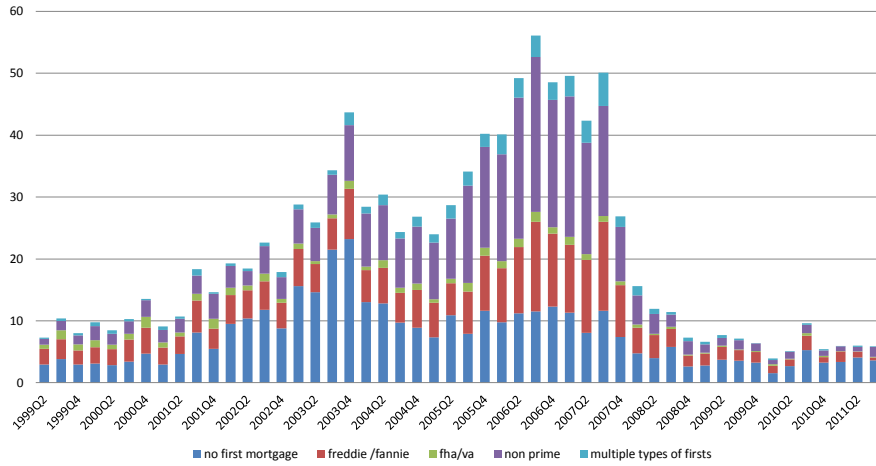
**Figure 4**  
Share of # accounts with Equifax risk score >700 at origination, by quarter, 1999-present



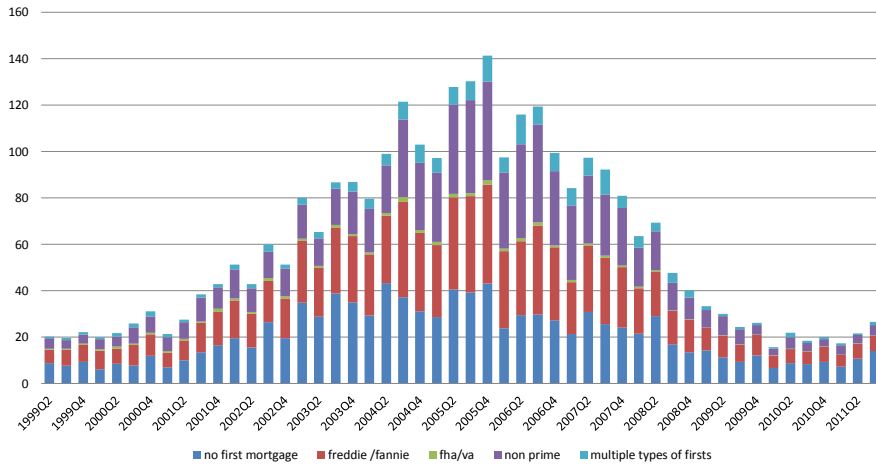
**Figure 5**  
Share of \$ with Equifax risk score >700 at origination, by quarter, 1999-present



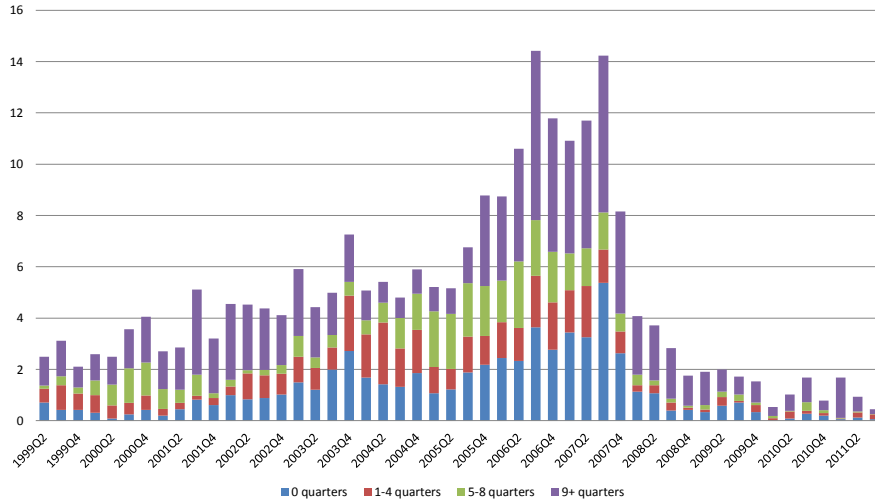
**Figure 6**  
 \$ CES originations with respect to the first, 1999-present



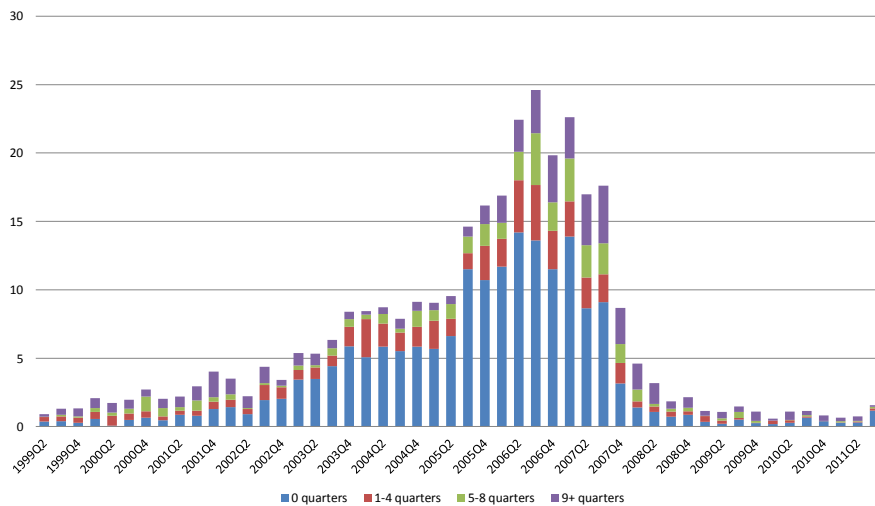
**Figure 7**  
 \$ HELOC originations with respect to the first, 1999-present



**Figure 8**  
 \$ CES originations following prime firsts (\$billion)

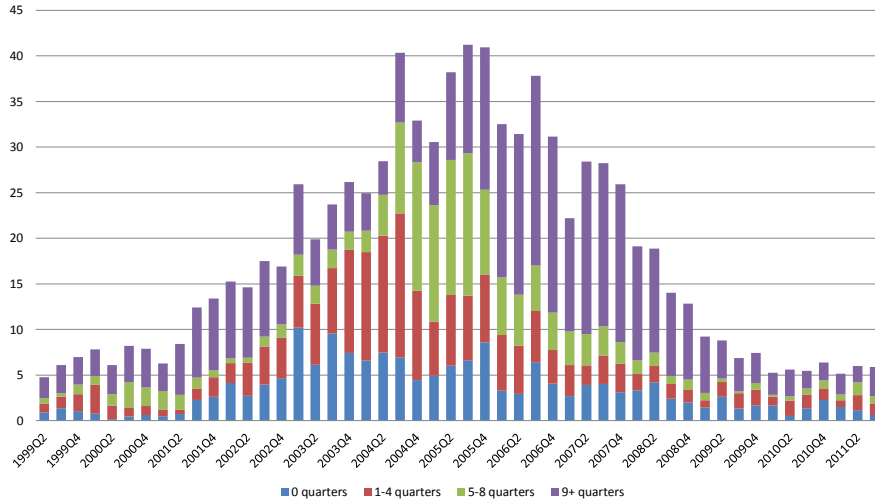


**Figure 9**  
 \$ CES originations following non prime firsts (\$billion)

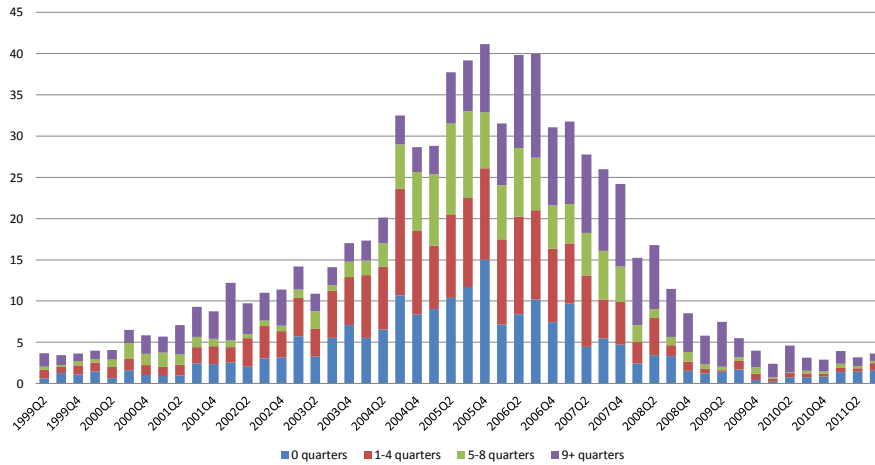




**Figure 10**  
 \$ HELOC originations following prime firsts (\$billion)

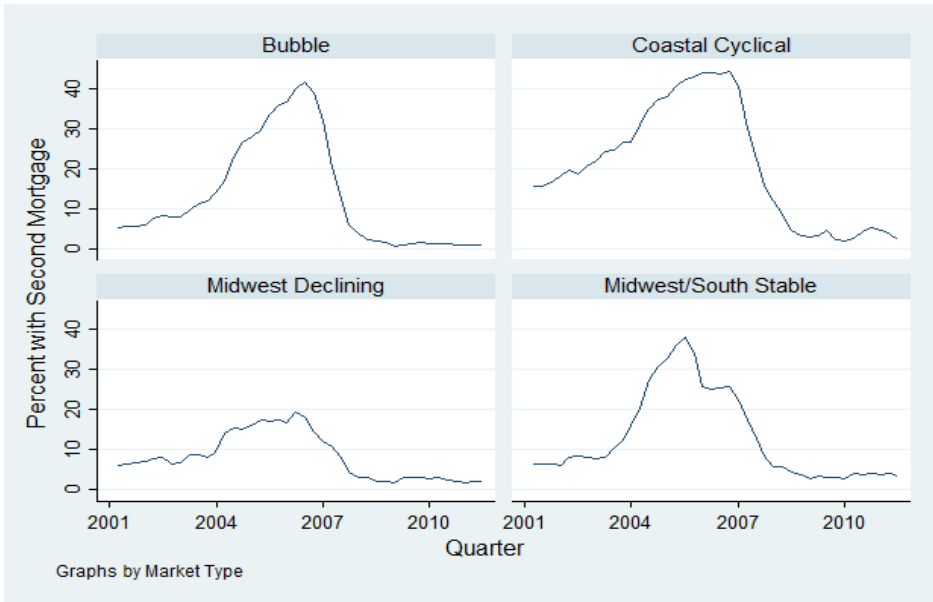


**Figure 11**  
 \$ HELOC originations following non prime firsts (\$billion)



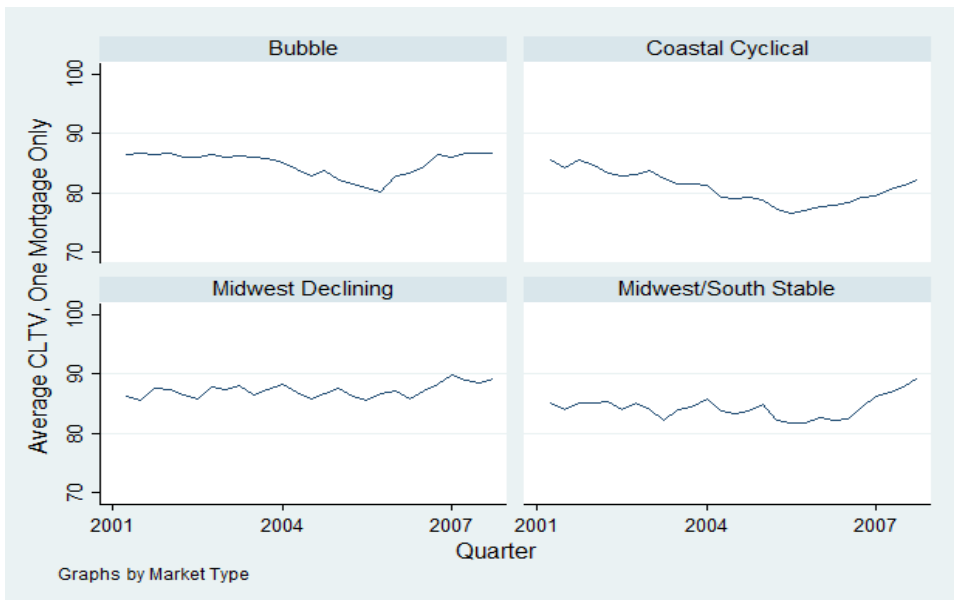
**Figure 12**

Share of purchases with a first mortgage and piggyback second lien



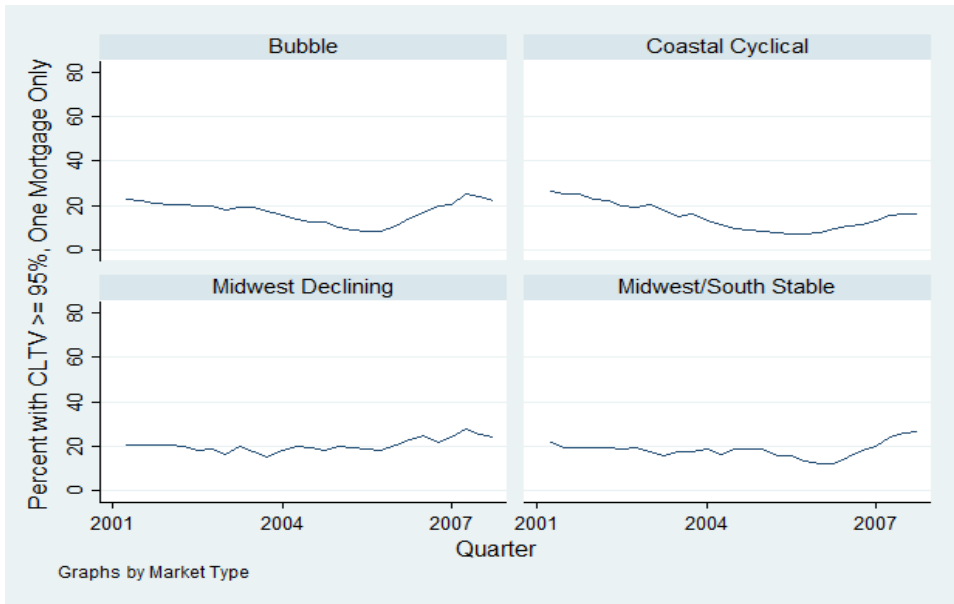
**Figure 13**

Average LTV, Purchases with a single mortgage



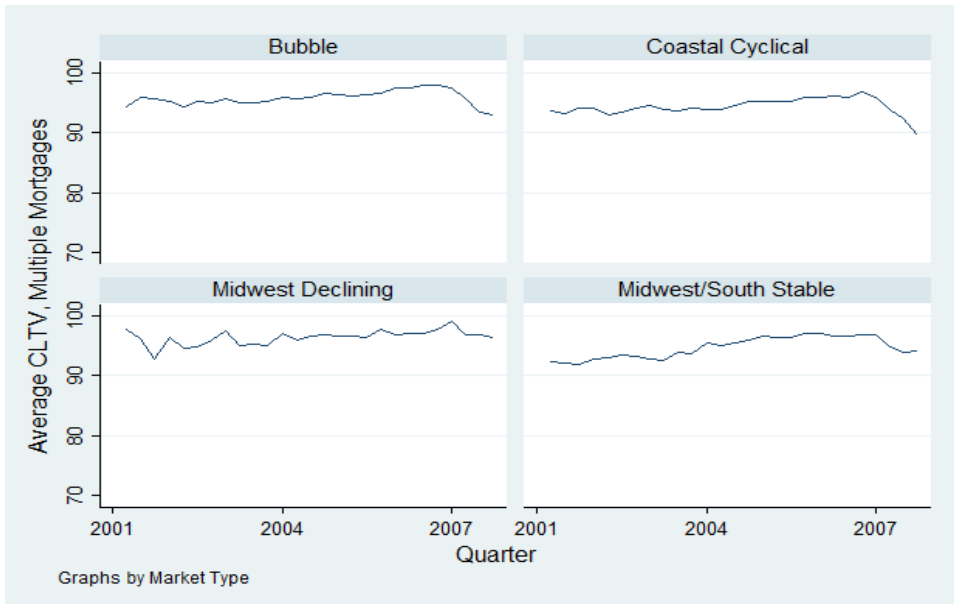
**Figure 14**

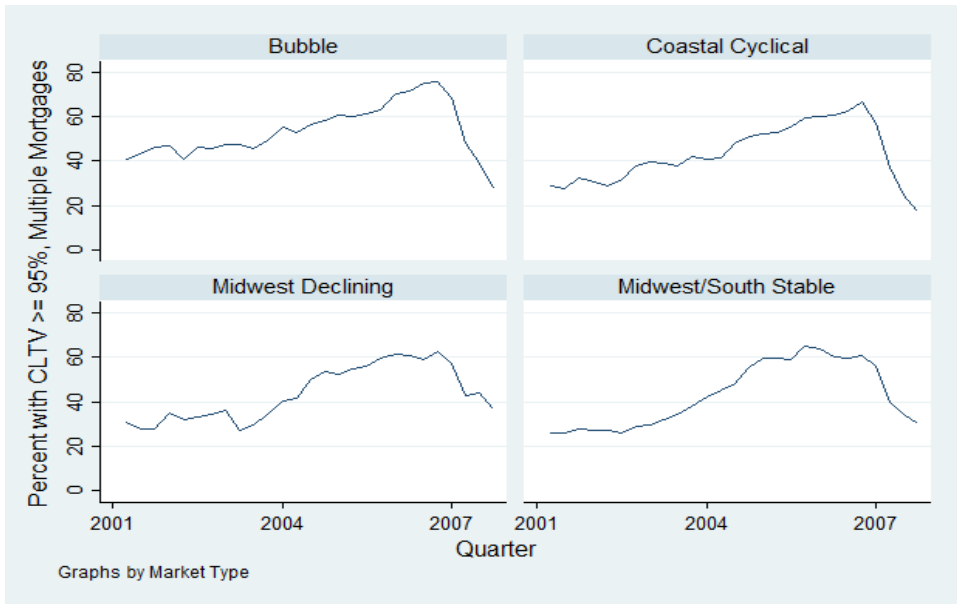
Share of purchases with one mortgage with an LTV >= 95%



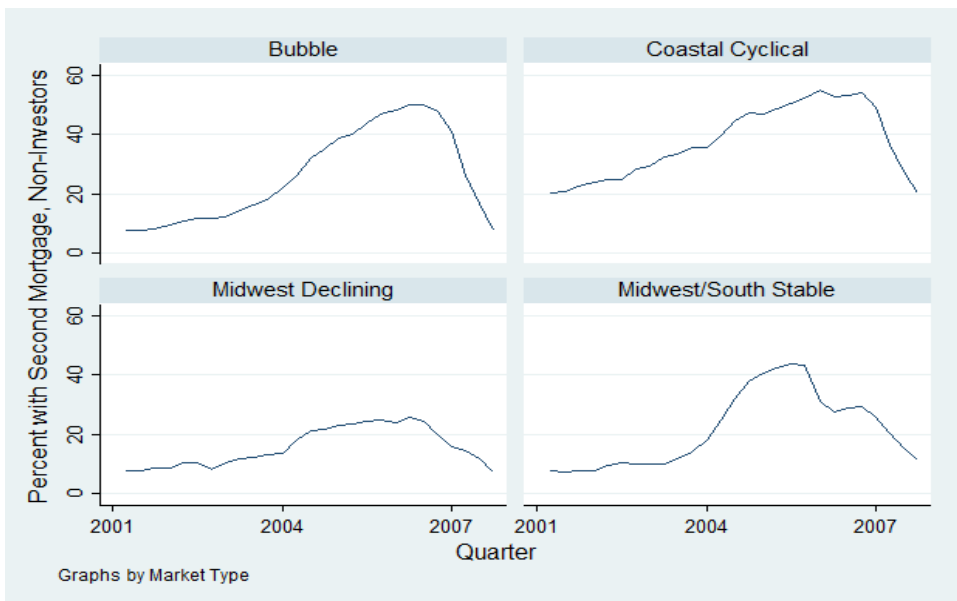
**Figure 15**

Average CLTV, Purchases with multiple mortgages



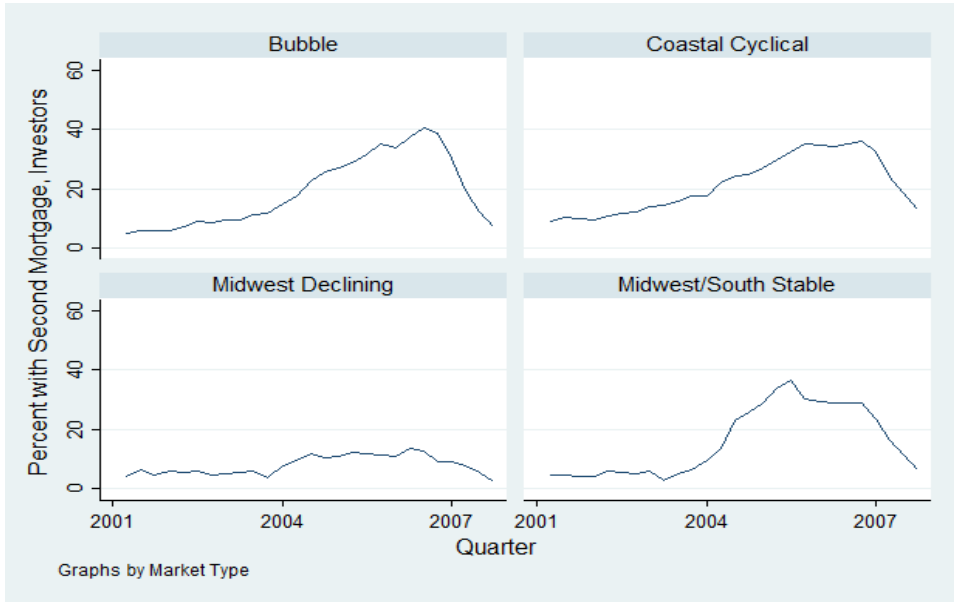
**Figure 16**Share of purchases with multiple mortgages with a CLTV  $\geq$  95%**Figure 17**

Share of non-investor purchases financed by multiple mortgages



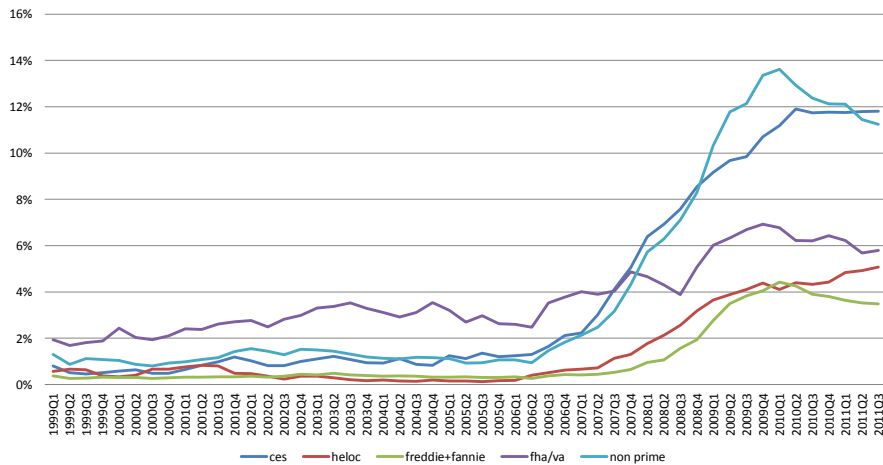
**Figure 18**

Share of investor purchases financed by multiple mortgages

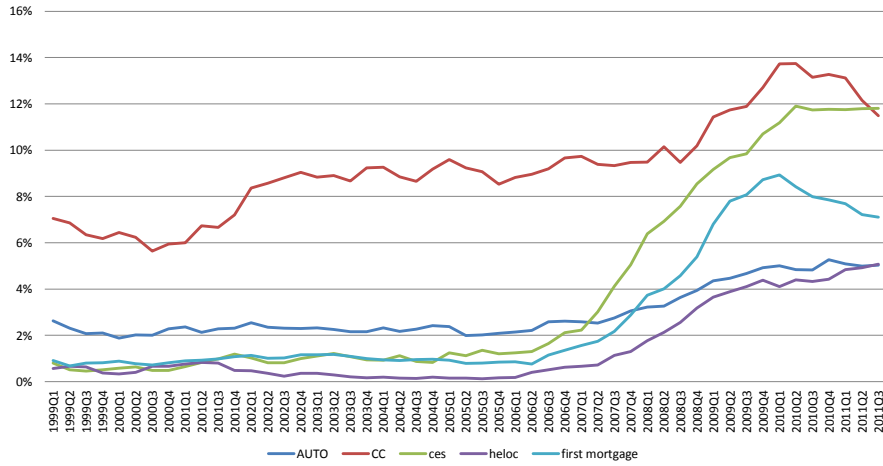


**Figure 19**

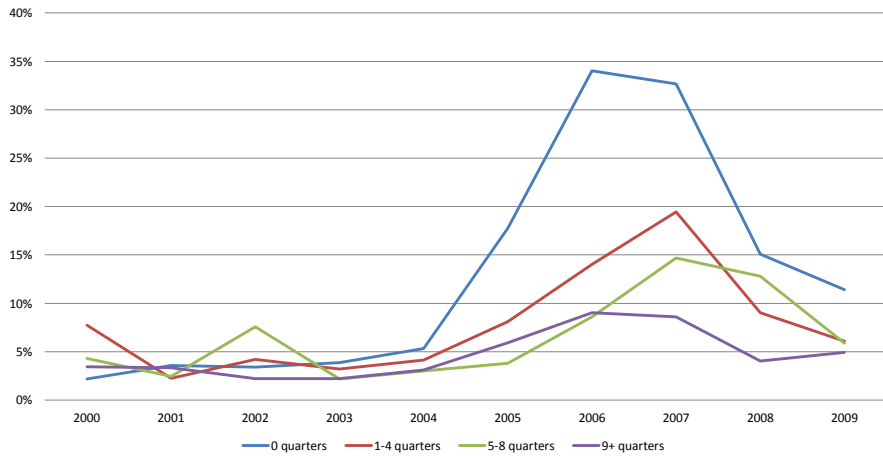
Delinquency rates for CES, HELOCs, FHA/VA, Prime mortgages, nonprime mortgages



**Figure 20**  
90+ Delinquency rates for CES, HELOCs, Credit Cards, Auto loans

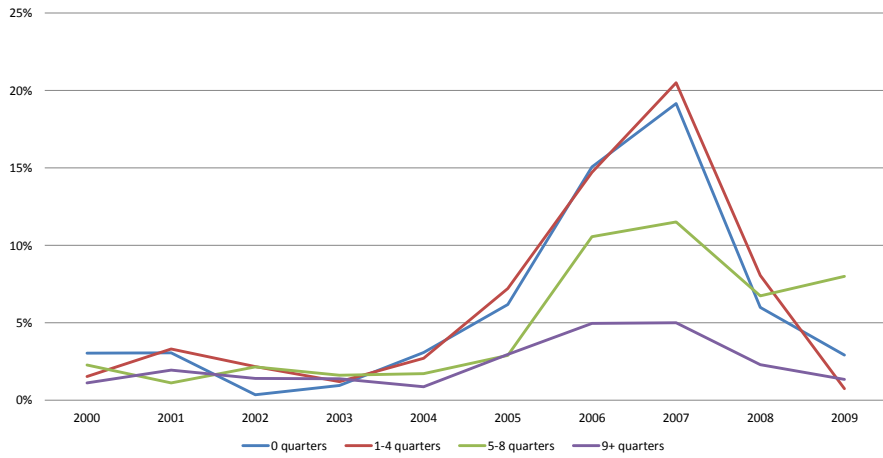


**Figure 21**  
Delinquency rates for CES originations with respect to the firsts for each origination year  
(Delinquency defined by the last observation of the life of the loan)



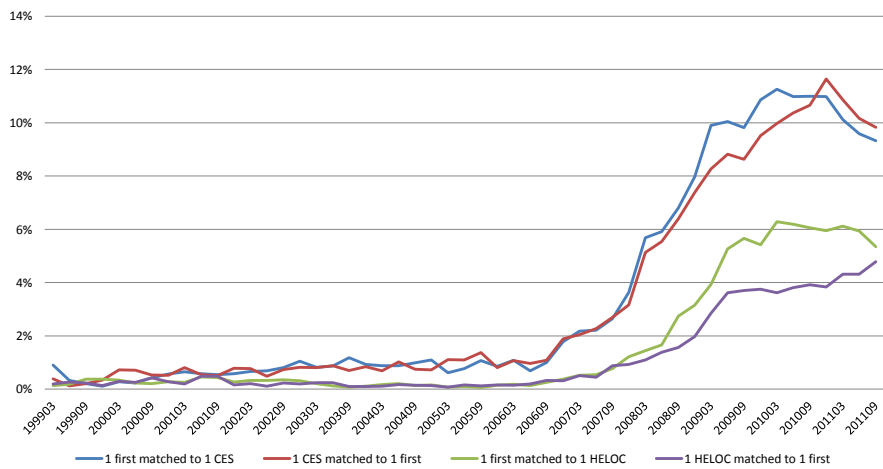
**Figure 22**

Delinquency rates for HELOC originations with respect to the firsts for each origination year  
(Delinquency defined by the last observation of the life of the loan)



**Figure 23**

First mortgage, CES, HELOC 90+ DPD delinquency rate  
(conditional on matching a first and a second)



**Table 1**

Comparison of 90+ delinquency rate on first liens based on reporting of second liens in BlackBox

	90 DPD Within 2 Years	90 DPD Within 3 Years	90 DPD Within 4 Years
No Second in Either	14.4%	23.5%	29.7%
Second in BB, No Second in EFX	14.2%	22.3%	27.7%
No Second in BB, CES in EFX	19.9%	31.8%	39.7%
No Second in BB, HELOC in EFX	7.5%	17.0%	24.6%
No Second in BB, CES and HELOC in EFX	19.6%	35.2%	44.4%
Second in BB, CES in EFX	22.8%	37.0%	44.2%
Second in BB, HELOC in EFX	9.7%	19.9%	27.6%
Second in BB, CES and HELOC in EFX	27.3%	43.8%	52.2%
<b>Total</b>	<b>16.3%</b>	<b>27.4%</b>	<b>34.2%</b>

**Table 2**

Percent of balances remaining current after first lien delinquency

<b>Current payment percent by credit type after first lien delinquency</b>	1 Quarter	2 Quarters	3 Quarters	4 Quarters
CES	26.5%	30.6%	27.1%	20.7%
HELOC	40.9%	35.3%	39.5%	30.9%
Auto Loan	79.2%	78.0%	78.4%	70.0%
Credit Card	46.8%	41.8%	43.8%	40.2%

Note: Sample includes all first liens that remain delinquent over the relevant period. About 40 percent of delinquent first liens "cure" within 4 quarters of first becoming delinquent.



**Table 3**

Change over time in payments on second liens when the first lien is seriously delinquent

<b>% Current if First Lien is 60+ Days Delinquent</b>	<b>CES</b>	<b>HELOC</b>
<b>2008Q2</b>	<b>16.19%</b>	<b>29.24%</b>
<b>2010Q2</b>	<b>21.98%</b>	<b>42.19%</b>
<b>2011Q2</b>	<b>25.70%</b>	<b>37.81%</b>