
CONSUMER CREDIT & THE HOUSING MARKET: AN EXAMINATION OF TRENDS IN HOME EQUITY LINES OF CREDIT

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ABSTRACT

After dramatic home-price increases through the 1990's and early 2000's, U.S. home prices began a severe downturn during 2006. During this time period of significant price appreciation consumers used the increased equity in their homes to finance additional consumption. A main financing vehicle for these types of purchases has been the home equity line of credit (HELOC). During the last recession, it is likely that the HELOC served as one of the only sources of additional financing for many homeowners due to job loss and/or maxed out forms of unsecured credit. Given the continued downward trend in home prices since late 2006, though, it is at least plausible that banks have been exposing themselves to greater risk than in previous recessions by continuing to fund additional HELOC lending. It is also possible that some of this added risk has been passed on to other institutions through the securitization of HELOC loans (just as with first mortgages). This paper examines trends in the HELOC segment of U.S. banks' lending portfolios. Unlike most earlier research, this paper examines the issue of HELOC lending using bank-reported financial statement data rather than consumer surveys and/or consumption aggregates. The evidence suggests that much of the recent HELOC lending is, at best, no more secure than it was at the onset of the 2006 financial crisis. **JEL Classification:** G21

INTRODUCTION

Any conversation regarding the current financial crisis must include a discussion of home prices. After the meteoric rise in the 1990's and early 2000's, U.S. home prices began a severe decline in the middle of 2006 – hence the now commonly used term, housing bubble. As previous research has shown, consumers were financing

additional purchases during this period based on the equity in their homes. For instance, Michel, Lajaunie, & Lawrence (2011) showed that consumers were financing durable goods purchases with home equity lines of credit (HELOCs). Michel et al. provide evidence that for every one percentage increase in HELOC lending, durable goods consumption increased by between 17 percent and 25 percent (on average, from 1991 to 2008). Several other researchers have examined the more general relationship between home equity withdrawal and consumption and found wide-ranging estimates. (See, for example, Greenspan and Kennedy (2007), and Hatzius (2006).)¹

As noted in Canner, Durkin, and Luckett (1998) the HELOC lending facility may serve as the only access to funds for many borrowers that have experienced unexpected disruptions to their income (job loss) and/or unexpected claims on their income (large medical expenses). It could also be the case that these types of homeowners rely on HELOCs because they have difficulty gaining access to additional forms of unsecured credit. During recessionary periods, therefore, one may expect higher usage of HELOCs. Depending on the value of home equity during these periods, however, banks could be exposing themselves to greater risk than during “normal” periods. Because home values (in most markets) rapidly declined throughout the most recent U.S. recession, a vital research function is to examine the extent to which banks have relied on additional HELOC lending.

A bank provides HELOC lending by agreeing to make a certain amount of credit available to a homeowner for a given period of time on a revolving basis. Typically, banks set the consumer’s credit limit based on a percentage of the appraised value of the home (less any outstanding balance on the first mortgage).² Thus, any debt actually incurred against the line of credit (referred to as a “draw”) is secured by the equity in the borrower’s home. As a homeowner draws on their line of credit – i.e., actually borrows funds – that amount shows up on the bank’s balance sheet. The outstanding HELOC balance can only decline as the borrower makes payments and/or the bank sells the line of credit. Although HELOC securitization appears to be a small part of the overall mortgage securitization market, the recent declines in home prices suggest that many of these “asset-backed bonds” are, in reality, backed by nothing.³ To be sure, banks can protect themselves by reducing, freezing, or even cancelling HELOCs as equity declines and/or borrowers are deemed a poor risk. Yet, the extent to which banks are currently exposed to unsecured HELOC lending is, as far as we can tell, an unexplored question in the literature.⁴

The main purpose of this paper is to study trends in the home equity line of credit (HELOC) segment of banks’ lending portfolios. Unlike the previous research cited, this paper examines the issue of HELOC lending trends based solely on data reported by banks rather than the consumer side. If, as previous research suggests, HELOC lending increased as homeowner equity increased, it stands to reason that HELOC lending would have declined during the recent housing downturn. Surprisingly, the results suggest the opposite has occurred in many areas of the U.S. The data provides evidence that much of the recent lending is, at best, no more secure than it was at the onset of the 2006 financial crisis and quite possibly even riskier. Given that HELOC lending comprises approximately 20 percent of U.S. Banks’ total loans (as measured in aggregate), the seriousness of this issue cannot be understated. The remainder of this paper is structured as follows: section two describes our data and methodology, section three presents our results, and section four summarizes our conclusions.

DATA AND METHODOLOGY

The starting point for this paper is to isolate average home price movements during the last five years on a state-by-state basis because we want to investigate the recent relationship between housing prices – which vary a great deal across states – and outstanding balances on home equity lines of credit. Table 1 provides a state-by-state ranking of five-year home-price percentage changes as measured by the Federal Housing Finance Agency state home price index.⁵ As illustrated in Table 1, there is a great deal of variation in home-price changes across the states even though all but 9 states experienced a five-year decline from first quarter 2006 to first quarter 2011. The most severe decline was in the state of Nevada (approximately 56%) while the mildest drop was in Kentucky (less than 1%). Among those states that experienced a five-year increase in home prices, the largest jump was in North Dakota (approximately 17%) and the smallest increase was in Vermont (0.02%). The paper first uses these five-year percent-change rankings as a basis for sorting states according to home price changes, and then uses the quarterly Federal Housing Finance Agency state home price index to compare to quarterly bank data.⁶

The home equity line of credit (HELOC) data for this paper is taken from the financial statements (Call Reports: Reports of Condition and Income) filed quarterly by all U.S. banks with the Federal Financial Institution Examination Council (FFIEC). The FFIEC bank data is used to compile state aggregates of quarterly outstanding HELOC balances. Although banks may have agreed to make additional credit available through HELOCs, the outstanding balance represents the actual amount in use (i.e., “drawn”) and, therefore, is the main focus of this paper. In other words, instead of relying on surveys of bank managers, the paper uses actual financial statement data to examine trends in HELOC lending.

The basic methodology employed to study changes in the HELOC portion of banks’ lending portfolios is to check for a difference in the average outstanding HELOC totals after housing prices started their downward trend. These tests are conducted by aggregating quarterly bank data at the state level and testing for an average difference before and after housing prices started their (state-specific) downward trend. On a state-by-state basis, the FHFA quarterly housing price index is used to determine when a state’s housing prices began their downward trend. Using the appropriate state-specific date, a dummy variable is created and then included in an OLS regression. The basic regression model, run on a state-by-state basis, is as follows:

$$\text{HELOC} = a + b_1(\text{Bubble}) \quad (1)$$

The Bubble variable is simply an indicator set to one for any quarter that “starts” the decline in the state’s housing price index (these dates vary from, approximately, 2006 to 2008, depending on the state). Therefore, the Bubble indicator measures the mean difference in HELOC lending activity after the housing market decline. Two versions of the HELOC variable are used to measure lending activity. The first version is the ratio of outstanding HELOC to total loans, and the second version is simply the level of outstanding HELOC balances. The regressions are run on a state-by-state basis using quarterly data from 2000 through 2010. A statistically significant negative coefficient on the Bubble indicator suggests that average outstanding HELOC balances – either as a percentage of total loans or in levels – declined when home values and, subsequently, home equity declined. The regressions are run for the ten “worst” ranked states (those

Table 1 - Five-Year Percentage Changes in FHFA Home Price Index

5 Year rank	State	5 Year % Change
1	NV	-55.9
2	AZ	-46.23
3	CA	-45.16
4	FL	-44.96
5	MI	-29.23
6	MT	-27.45
7	ID	-24.46
8	HI	-22.51
9	GA	-21.97
10	MD	-21.15
11	MN	-20.54
12	RI	-20.45
13	OR	-19.54
14	NH	-18.65
15	NJ	-16.66
16	CT	-14.88
17	OH	-14.71
18	IL	-14.67
19	NE	-14.04
20	VA	-14.02
21	WA	-13.42
22	DE	-11.15
23	MO	-10.81
24	UT	-10.03
25	WI	-9.75
26	ME	-8.76
27	SC	-8.11
28	MA	-7.79
29	AL	-7.05
30	CO	-5.79
31	NY	-5.54
32	NM	-5.54
33	TN	-5.45
34	IN	-4.96
35	AR	-4.94
36	PA	-4.51
37	MS	-4.41
38	NC	-4.28
39	DC	-2.82
40	KS	-2.75
41	IA	-2.32
42	KY	-0.79
43	VT	0.02
44	LA	3.31
45	OK	3.33
46	WV	5.04
47	WY	5.05
48	SD	5.41
49	AK	5.92
50	TX	6.95
51	ND	17.27

Source: Federal Housing Finance Agency (<http://www.fhfa.gov/Default.aspx?Page=215>)

with the most severe declines in home prices) and for the ten “best” ranked states (those with the mildest price declines and/or increases) as shown on Table 1.⁷ Given that housing prices have been on a three-to-four year downward trend in the “worst” states, the expected result from running model (1) on those states is a statistically significant negative coefficient on the Bubble indicator. In other words, we would expect banks to have cut back on HELOC lending as home prices fell, especially in those areas where prices fell the most. From a bank-safety point of view, this finding would suggest that banks have been diligent with their lending post financial crisis by decreasing (increasing) loans as the level of security decreased (increased).

One mitigating factor is that both the level and ratio of aggregate outstanding HELOC to total loans (HELOC ratio) can be severely impacted by large banks entering/exiting a market. Entry and exit can occur due to merger and acquisition activity, but it can also occur when a bank moves its headquarters to a different state. Naturally, if one component of the HELOC ratio changes at a faster rate than the other due to any of these factors, the final results from model (1) may not accurately describe what has happened to banks’ overall HELOC lending. This type of problem is actually compounded by banks entering/exiting any given market because these actions “cause” large changes in the state-level bank aggregates. For all of these reasons, we mainly focus on the results using the HELOC levels rather than the HELOC ratio.⁸ Another possible concern is that all bank lending is not purely local. In other words, banks headquartered in any given state may lend to homeowners in other states.

Three methods are used to control for these issues. First, the twenty largest banks (by asset size) are eliminated from the data prior to aggregating at the state level because they are the most likely to have lent to homeowners in multiple states. Although this procedure may be viewed as a limitation to the paper, it is completely necessary for isolating the relationship between any state’s housing prices and HELOC lending. Bank of America, for instance, operates in all 50 U.S. states, whereas the smallest banks tend to operate in only one state. Although it is very easy to compare the national-level aggregates for these banks to changes in the national-level home price index, that process does not capture the (large) state-level variation in home price movements.⁹

Second, only those banks that report financials in every quarter of the sample period in the same state are used to create aggregates (to eliminate the financial statement effect of “moving” the reported assets from one state to another). Finally, model (1) is run on aggregate bank data for only those banks most likely to be focused on local/regional lending (i.e., community banks, defined as those with assets of \$500 million or less). Regression results are presented using each of these variations, and robust standard errors are used in all cases.

RESULTS

This section of the paper discusses test results of historical data that describe changes in the HELOC portion of banks’ lending portfolios. The results shown on Table 2 can be thought of as the “base” results. As discussed in section II, these results are found after aggregating on all banks within a state exclusive of the 20 largest U.S. banks (due to their nation-wide lending practices). The results in Table 2 summarize findings for the ten states with the most severe home price declines. (The complete regression results are available from the authors upon request.)

Table 2 – Baseline Results for States With Ten Most Severe Home Price Declines

State	<i>HELOC Ratio</i>		<i>HELOC Level</i>	
	<u>Significance</u>	<u>Direction</u>	<u>Significance</u>	<u>Direction</u>
Nevada	~	N/A	**	Decreased
Arizona	***	Increased	***	Decreased
California	***	Increased	***	Increased
Florida	~	N/A	***	Increased
Michigan	~	N/A	**	Decreased
Montana	~	N/A	***	Increased
Idaho	***	Increased	***	Increased
Georgia	***	Decreased	***	Decreased
Maryland	~	N/A	***	Decreased
Minnesota	~	N/A	~	N/A

Note: The “HELOC Ratio” columns provide the level of statistical significance and whether the average ratio increased or decreased after the state’s housing price index declined; the “HELOC Level” columns provide the level of statistical significance and whether the average level of HELOC lending increased or decreased after the state’s housing price index declined. The “~” symbol denotes statistically insignificant results, while the asterisks denote one of the following *p*-values: *** *p*<0.01, ** *p*<0.05, * *p*<0.1.

While there was a statistically significant decline in the average quarterly level of HELOCs outstanding for banks in five of these states, there was a statistically significant increase in four of the states – a somewhat unexpected result. The average level of HELOC lending on the banks’ balance sheets for these four states increased by varying amounts. Specifically, after home prices declined, the average level of HELOC lending on banks’ balance sheets (at the aggregate state level) increased as follows: California = \$29.8 billion, Florida = \$5.8 billion, Montana = \$443 million, and Idaho = \$242 million. There was a statistically significant change in the average quarterly ratio of outstanding HELOC to total loans in only two states – an increase in Idaho, and a decrease in Georgia.

For the states with the ten “best” home price rankings, a modified version of model (1) is required because there is no pronounced downward trend in home prices in these states.¹⁰ As shown on Table 1, all but one of these states (Kentucky) show an average home price increase from 2006 Q1 to 2011 Q1. Because the downward trend in the other states (those with the ten most severe declines) started somewhere between 2006 and 2008 and continued through 2010, a new “bubble” indicator variable – set to one for all quarters from 2007 to 2010 – is used here. As best as possible, therefore, the results are comparable for the two groups (banks in states with the most severe price declines and those with the mildest price declines) across roughly the same time period.¹¹ Table 3 summarizes the results for these states with the best home-price rankings. Again, these can be thought of as “base” results in that they are found after aggregating on all banks within a given state exclusive of the 20 largest U.S. banks.

Table 3 – Baseline Results for States With Ten “Best” Ranked Home Price Changes

State	<i>HELOC Ratio</i>		<i>HELOC Level</i>	
	<u>Significance</u>	<u>Direction</u>	<u>Significance</u>	<u>Direction</u>
Kentucky	***	Increased	***	Increased
Vermont	***	Increased	***	Decreased
Louisiana	***	Increased	***	Decreased
Oklahoma	~	N/A	***	Increased
W. Virginia	***	Increased	***	Increased
Wyoming	~	N/A	***	Increased
S. Dakota	*	Increased	***	Increased
Alaska	***	Increased	***	Increased
Texas	~	N/A	***	Increased
N. Dakota	***	Increased	***	Increased

Note: The “HELOC Ratio” columns provide the level of statistical significance and whether the average ratio increased or decreased between 2007 and 2010; the “HELOC Level” columns provide the level of statistical significance and whether the average level of HELOC lending increased or decreased between 2007 and 2010. The “~” symbol denotes statistically insignificant results, while the asterisks denote one of the following *p*-values: *** *p*<0.01, ** *p*<0.05, * *p*<0.1.

These results indicate that there was a statistically significant increase in the average quarterly level of outstanding HELOCs in 8 out of 10 states. Although banks in two states (Vermont and Louisiana) reported a statistically significant decline, the overall results are consistent with a general increase in home prices in these states. (As seen in Table 1, all but one of the states with the ten “best” rankings showed a five-year average increase in home prices.) The banks in only one of these states (West Virginia) reported a statistically significant decline in the HELOC ratio. In other words, these results are, in general, as expected.

As discussed in the previous section, banks entering and/or exiting a state can severely impact both the aggregate level and ratio reported in the data. To guard against this problem, the next set of results reported is found using only data from banks that reported financials in the same state for every quarter. In other words, prior to aggregating the bank data, any bank that did not report financial data for each quarter in the same state (from 2000 to 2010) was dropped. Table 4 summarizes these findings for the ten states with the most severe home price declines.

Table 4 –Results for States With Ten Most Severe Home Price Declines; Only Banks That Reported Financials In All Quarters

State	<i>HELOC Ratio</i>		<i>HELOC Level</i>	
	<u>Significance</u>	<u>Direction</u>	<u>Significance</u>	<u>Direction</u>
Nevada	~	N/A	***	Increased
Arizona	**	Decreased	***	Increased
California	***	Increased	***	Increased
Florida	*	Increased	***	Increased
Michigan	***	Increased	***	Increased
Montana	~	N/A	***	Increased
Idaho	**	Increased	***	Increased
Georgia	***	Decreased	***	Increased
Maryland	***	Decreased	***	Increased
Minnesota	~	N/A	*	Increased

Note: The “HELOC Ratio” columns provide the level of statistical significance and whether the average ratio increased or decreased after the state’s housing price index declined; the “HELOC Level” columns provide the level of statistical significance and whether the average level of HELOC lending increased or decreased after the state’s housing price index declined. The “~” symbol denotes statistically insignificant results, while the asterisks denote one of the following *p*-values: *** *p*<0.01, ** *p*<0.05, * *p*<0.1.

Using these data, seven of the 10 states show a statistically significant change in the average ratio, and three of these seven show an increase (indicating a higher percentage of total loans were in HELOCs after home prices had fallen). Although these results are dramatically different from the baseline results reported on Table 2, the differences are even more dramatic when the level of outstanding HELOCs is used as the dependent variable in model (1). Under this scenario, the results show that the average quarterly level of outstanding HELOCs significantly increased in all ten states after home prices started their downward trend. That is, after housing prices started their downward trend, banks in these states typically reported a higher level of outstanding HELOC debt even though equity values had almost certainly fallen. As previously mentioned, the amounts by which the average levels changed vary widely, from a low of \$239 million in Nevada to a high of \$36 billion in California.

Table 5 presents results from running model (1) on the “best” ranked ten states using only data from banks that reported financials in the same state for every quarter. The results in Table 5 are nearly identical to those reported on its corresponding baseline, Table 3. In other words, as expected, banks in nearly all of these states reported, in aggregate, an increase in HELOC level and, in only three cases, a decrease in their HELOC ratio. Again, these results are as expected because home prices typically rose in these states (even through 2010).

Table 5 – Results for States With Ten “Best” Ranked Home Price Changes; Only Banks That Reported Financials In All Quarters

<u>State</u>	<u>HELOC Ratio</u>		<u>HELOC Level</u>	
	<u>Significance</u>	<u>Direction</u>	<u>Significance</u>	<u>Direction</u>
Kentucky	***	Decreased	***	Increased
Vermont	~	N/A	***	Increased
Louisiana	***	Decreased	***	Decreased
Oklahoma	~	N/A	***	Increased
W. Virginia	***	Decreased	***	Increased
Wyoming	*	Increased	***	Increased
S. Dakota	***	Increased	***	Increased
Alaska	***	Increased	***	Increased
Texas	~	N/A	***	Increased
N. Dakota	***	Increased	***	Increased

Note: The “HELOC Ratio” columns provide the level of statistical significance and whether the average ratio increased or decreased between 2007 and 2010; the “HELOC Level” columns provide the level of statistical significance and whether the average level of HELOC lending increased or decreased between 2007 and 2010. The “~” symbol denotes statistically insignificant results, while the asterisks denote one of the following *p*-values: *** *p*<0.01, ** *p*<0.05, * *p*<0.1.

As discussed in the previous section of this paper, another potential data problem for this type of study is that all banking is not necessarily local. Specifically, banks in any given state may loan to homeowners in other states. To control for this issue, the tests were re-run using only those banks most likely to focus on local banking. Specifically, bank data was aggregated only for those banks considered small-to-mid-sized community banks (defined as those with total assets of no more than \$500 million). Tests were run for these banks on both the raw aggregates, as well as only these smaller banks that reported in every quarter of the sample period.

Results for all banks with total assets of no more than \$500 million, in the states with the ten most severe home price declines, are presented on Table 6. The results for only these (smaller) banks that reported in every quarter of the sample period, for those states with the ten most severe price declines, are provided on Table 7. Complete regression results are available upon request.

Table 6 – Baseline Results for Community Banks in States With Ten Most Severe Home Price Declines (Total Assets <= \$500 Million)

State	<i>HELOC Ratio</i>		<i>HELOC Level</i>	
	<u>Significance</u>	<u>Direction</u>	<u>Significance</u>	<u>Direction</u>
Nevada	*	Increased	~	N/A
Arizona	**	Decreased	***	Increased
California	***	Decreased	~	N/A
Florida	***	Decreased	***	Increased
Michigan	***	Decreased	***	Decreased
Montana	***	Decreased	~	N/A
Idaho	~	N/A	~	N/A
Georgia	~	N/A	~	N/A
Maryland	***	Decreased	***	Decreased
Minnesota	**	Decreased	***	Increased

Note: The “HELOC Ratio” columns provide the level of statistical significance and whether the average ratio increased or decreased after the state’s housing price index declined; the “HELOC Level” columns provide the level of statistical significance and whether the average level of HELOC lending increased or decreased after the state’s housing price index declined. The “~” symbol denotes statistically insignificant results, while the asterisks denote one of the following *p*-values: *** *p*<0.01, ** *p*<0.05, * *p*<0.1.

Table 7 – Results for Community Banks in States With Ten Most Severe Home Price Declines (Total Assets <= \$500 Million) – Only Banks That Reported Financials In All Quarters

State	<i>HELOC Ratio</i>		<i>HELOC Level</i>	
	<u>Significance</u>	<u>Direction</u>	<u>Significance</u>	<u>Direction</u>
Nevada	~	N/A	***	Increased
Arizona	***	Decreased	~	N/A
California	**	Decreased	~	N/A
Florida	***	Decreased	***	Increased
Michigan	*	Increased	~	N/A
Montana	***	Increased	~	N/A
Idaho	***	Increased	***	Increased
Georgia	~	N/A	***	Increased
Maryland	**	Increased	~	N/A
Minnesota	***	Increased	~	N/A

Note: The “HELOC Ratio” columns provide the level of statistical significance and whether the average ratio increased or decreased after the state’s housing price index declined; the “HELOC Level” columns provide the level of statistical significance and whether the average level of HELOC lending increased or decreased after the state’s housing price index declined. The “~” symbol denotes statistically insignificant results, while the asterisks denote one of the following *p*-values: *** *p*<0.01, ** *p*<0.05, * *p*<0.1.

Although the results vary, as many as four of these states have banks that, on average, report higher levels of HELOC rather than lower. Furthermore, Florida, Nevada and Idaho banks fall into this category – lending more even though home prices were falling – regardless of how the various confounding factors are controlled for. Given that Nevada is the state with the most severe home price declines over the last five years, and is in a region with at least two of the other “worst” ten states, the fact that these banks have increased HELOC lending is surprising. Even the results in Table 6 for Nevada community banks are somewhat disturbing from a banking-system safety standpoint. These results show no significant change in the level of outstanding HELOCs even though home prices fell by the largest percentage compared to all other states. Even with no additional HELOC lending, there is little doubt that these loan balances are far less secure than previously believed.

Tables 8 and 9 provide community bank results for states with the ten “best” home-price rankings for all banks (within the state) with assets of no greater than \$500 million. Table 8 provides results for all community banks, and Table 9 gives results for only the smaller banks reporting in every quarter. As previously reported, the results for the banks in these states more consistently show average HELOC balances moving with, rather than against, home prices. From a banking system safety standpoint, the banks in these states (in aggregate)

appear to have lent more appropriately through HELOC facilities than the banks in those states with drastic home price declines. In fact, community banks in Kentucky, the one state in this group that did show a five-year average home price decline, reported a drop in average HELOC balances of more than \$400 million.

Table 8 – Baseline Results for Community Banks in States With Ten “Best” Ranked Home Price Changes (Total Assets <= \$500 Million)

State	<i>HELOC Ratio</i>		<i>HELOC Level</i>	
	<u>Significance</u>	<u>Direction</u>	<u>Significance</u>	<u>Direction</u>
Kentucky	***	Decreased	***	Decreased
Vermont	**	Increased	~	N/A
Louisiana	~	N/A	***	Increased
Oklahoma	***	Decreased	***	Increased
W. Virginia	***	Decreased	***	Increased
Wyoming	~	N/A	***	Increased
S. Dakota	***	Decreased	***	Decreased
Alaska	***	Increased	***	Increased
Texas	~	N/A	***	Increased
N. Dakota	~	N/A	***	Increased

Note: The “HELOC Ratio” columns provide the level of statistical significance and whether the average ratio increased or decreased between 2007 and 2010; the “HELOC Level” columns provide the level of statistical significance and whether the average level of HELOC lending increased or decreased between 2007 and 2010. The “~” symbol denotes statistically insignificant results, while the asterisks denote one of the following *p*-values: *** *p*<0.01, ** *p*<0.05, * *p*<0.1.

Table 9 – Results for Community Banks in States With Ten “Best” Ranked Home Price Changes (Total Assets <= \$500 Million) – Only Banks That Reported Financials In All Quarters

State	<i>HELOC Ratio</i>		<i>HELOC Level</i>	
	<u>Significance</u>	<u>Direction</u>	<u>Significance</u>	<u>Direction</u>
Kentucky	~	N/A	~	N/A
Vermont	~	N/A	*	Decreased
Louisiana	***	Increased	~	N/A
Oklahoma	***	Increased	~	N/A
W. Virginia	***	Increased	~	N/A
Wyoming	***	Increased	~	N/A
S. Dakota	***	Increased	***	Increased
Alaska	***	Increased	***	Increased
Texas	***	Increased	***	Increased
N. Dakota	***	Increased	***	Increased

Note: The “HELOC Ratio” columns provide the level of statistical significance and whether the average ratio increased or decreased between 2007 and 2010; the “HELOC Level” columns provide the level of statistical significance and whether the average level of HELOC lending increased or decreased between 2007 and 2010. The “~” symbol denotes statistically insignificant results, while the asterisks denote one of the following *p*-values: *** *p*<0.01, ** *p*<0.05, * *p*<0.1.

CONCLUSION

The results of this study support three main findings. First, contrary to expectations, the results for the different model specifications indicate HELOC lending increased in the ten (10) states with the largest price declines in housing. Second, the same model results for the ten (10) states with the smallest price declines indicate that HELOC lending tended to increase/decrease with home prices in those states (as one might expect). Finally, even when controlling for bank size and possible multistate activity, the above results appear robust.

The implications of these findings are clear: the U.S. Banking system faces the very real possibility of increased community bank exposure to loan losses without any reasonable level of collateral from which to offset (or recover) such losses because home prices have plummeted. In fact, this increase in the use of HELOC lending in the states with large price declines essentially represents an increase in “unsecured” lending with a risk similar to that of credit card loans for these community banks. While the

loans were originally secured by 1-4 family residential real estate, current home price levels make this security nothing more than an illusion. An additional issue to consider is the potential impact on bank losses in these loans as the banking industry attempts to accelerate the number of short-sale transactions and principal reduction schemes (as per the recently announced settlement).¹² The end result may be another round of problem banks as the housing market continues to flounder. Future research in this area should focus on other macro/regional factors that have magnified or contributed to this problem.

ENDNOTES

¹For additional references, see Michel, Lajaunie, and Lawrence (2011).

²For additional details, see “What You Should Know About Home Equity Lines of Credit, Federal Reserve Board of Governors,” April 6, 2011; available at http://www.federalreserve.gov/pubs/equity/equity_english.htm.

³In the fourth quarter of 2007, for instance, Countrywide Mortgage took an \$831 million write-down, of which \$704 million was related to HELOC securitizations. (See Jackson, 2008.)

⁴Several professional publications have discussed this issue. For instance, in May 2011, American Banker reported that 38% of Wells Fargo’s HELOCs and closed-end loans were backed by underwater homes. (See Ulam, 2011.) Also, two recent Federal Reserve Working Papers discuss the riskier pool of borrowers using HELOCs and the high risk of default on second liens. (See Calem et al. (2011) and Jagtiani and Lang (2010).)

⁵<http://www.fhfa.gov/Default.aspx?Page=215>

⁶<http://www.fhfa.gov/Default.aspx?Page=87>

⁷Hawaii was in the top ten, but was excluded from the analysis. As a result, Minnesota was moved into the top ten.

⁸The rates at which the aggregate quarterly HELOC and total asset balances change vary widely both within and across states.

⁹For the sake of completeness, aggregate HELOC lending by all U.S. commercial banks was on a steady increasing trend from the year 2000 to 2010.

¹⁰Most of these states exhibit price index declines in a sporadic fashion, typically only lasting one or two quarters during the sample period.

¹¹Using this same “bubble” indicator for those states with the ten most severe price declines has virtually no impact on the results presented on Table 3. In fact, our initial tests were run using this variable for banks in both groups of states. Because the results were counterintuitive, a state-specific dummy variable was calculated for the states with the most severe price declines.

¹²See Isidore and Liberto (2012).

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