Assessment of Foreclosures in the City of Shakopee from 2005-2010

Erik D. Johnson
Department of Resource Analysis, Saint Mary's University of Minnesota, Minneapolis, MN 55404

Keywords: GIS, Foreclosure, Mortgage, Shakopee, Minnesota

Abstract

From 2005-2010, the city of Shakopee Minnesota saw a drastic increase in the number of foreclosures. Foreclosures were and continue to be a major concern for homeowners and lenders. This research reviews data in order to determine if a certain age group was more likely to face a foreclosure. Data was collected from the Scott County, Minnesota GIS department and 2010 Census Bureau data. Data from Scott County included property value, date of foreclosure, and address. Location of foreclosures were also taken into consideration to explore if certain portions of the city were more susceptible to foreclosures than others.

Introduction

National foreclosure rates began to rise dramatically in 2006 and continue to occur at a historically high rate. The time period leading up to these high rates of foreclosure is known as the "housing bubble," similar to what happened with the stock market in 2008. The "housing bubble" refers to the price of homes increasing in value to a point where those prices could no longer be sustained by potential buyers or owners (Definition of House Bubble, 2014).

Inflated increases in home values resulted in the "bubble bursting" term referenced across the nation. Home values fell drastically causing many home owners to be "underwater." When a borrower is "underwater" they owe more on their home than it is worth (Olick, 2013a). People in this situation may decide to stop making payments for many reasons including: 1) they could not afford continuing to make payments, 2) it did not make financial sense to continue paying for an asset which has lost value, or 3) by missing payments it was thought mortgage lenders would encourage their bank to renegotiate their loan (Yoder, 2012). Borrowers not making payments resulted in the lender taking ownership of the property and foreclosing.

Foreclosure allows a lender to claim legal rights to the amount owed on a defaulted loan by selling or taking ownership (repossession) of the property securing the loan (Immergluck and Smith, 2006). Foreclosed properties are likely to sell at a discount – both because they may have been physically damaged during the foreclosure process and because lenders have an incentive to sell them quickly to reduce their holding costs. However, there is a widespread concern that foreclosures may negatively affect neighborhoods by lowering the prices of nearby properties. In the event of foreclosure, properties may sit vacant, reducing the visual appeal and may be more likely to be attracting vandalism and crime (Immergluck and Smith). Even in crime-free, well maintained areas, vacant properties may depress nearby property values by adding to the local supply of available units. Foreclosures could also affect the price of ''comparables'' used to estimate neighboring property values (Immergluck and Smith).

Johnson, Erik D. 2014. Assessment of Foreclosures in the City of Shakopee. Volume 16, Papers in Resource Analysis. 10pp. Saint Mary's University of Minnesota. Minneapolis, MN. Retrieved (date) from http://www.gis.smumn.edu

Reduced property values resulted in the increase in foreclosures, crime, and vacant properties in many cities across America. Some cities were affected more than others. In 2013, Indianapolis had the highest percentage of vacated properties at 31.8% (Sauter, 2013). The downturn in the housing market also affected economic growth. Consumer spending in general and a dramatic decrease in new constructions led to an increase in unemployment. This cycle creates a large "multiplier effect" for the negative economic impacts of foreclosures (Anonymous, 2011a).

Shakopee, a suburb southwest of Minneapolis, is a community that experienced expansive growth in the early 2000's. Table 1 illustrates the total population of Shakopee in 2010. This was an 79.15% increase in population from 2000 when the population was 20,695 (Anonymous 2014b).

Table 1. Population change in Shakopee from 2000- 2010.

Shakopee, Overview	2010 Census	2000 Census	2000-2010 Change	
Total Population	37,076	20,695	16,381	79.15%

This study analyzes foreclosure trends and age groups affected by the collapse of the house lending bubble. To analyze who was most affected, this study focused on the age of the population in Shakopee area census tracts as well as the total number of foreclosures from 2005–2010.

The date range chosen for this study was based on the timeline of the foreclosure crisis. In 2006, home prices peaked nationally (Anonymous, 2011b) Using data from 2005 an example of market growth can be established. In 2009, the government began a mortgage modification program. By the end of 2010 this had resulted in 3.4 million loan alterations (Anonymous, 2011b).

The expansive growth in population resulted in a significant increase in the number of total housing units in the area. The mortgage environment was favorable for high risk mortgages such as subprime, adjustable rate, and government subsidized mortgages. These loans were given in record number to over-extended, under qualified borrowers (Issa, 2010). This increased demand for homes resulted in more available housing from 8,361 in 2000 to 13,962 in 2010, a 66.99% increase (Anonymous, 2014b).

The following statistics are derived from Amromin and Paulson, 2010. Subprime mortgages amounted to $35 billion or 5% of total originations in 1994, to $600 billion or 20% of total originations in 2006. Also, default rates on subprime mortgages were much higher than the default rates on traditional mortgages. For example, among prime loans made in 2005, 2.2% were 60 days or more overdue 12 months after the loan was made. For loans made in 2006, this percentage nearly doubled to 4.2%, and for loans made in 2007 it rose by another 20 percent, reaching 4.8%. By comparison, the percentage of subprime loans that had defaulted after 12 months was 14.% for loans made in 2005, 20.5% for loans made in 2006, and 21.9% for loans made in 2007 (Amromin and Paulson, 2010).

With wide-scale subprime mortgages during this time period, assumptions were made to include subprime types of financing. Borrowers who would not qualify for a conventional mortgage would have to apply for a subprime mortgage. Subprime borrowers are more likely to be over extended on their mortgage. If negative changes occurred, the borrower may not have the ability to continue making mortgage

payments. This would result in the bank foreclosing on the property.

Many papers have been written to discuss the reason for the collapse of the housing market and to assign blame to who is responsible. Darrel Issa, the US representative from California's 49th congressional district, contends the housing and financial meltdown were a result of government interaction into the private market (Issa, 2010). Eugene Robinson made the argument the "foreclosure mess" was a result of arrogant, greedy lenders (Robinson, 2010). This research does not focus on the cause of the collapse, but rather is intended to analyze the location and age of populations in census tracts most affected by foreclosures over the time period of 2005-2010.

Methods

Data Collection

Data used in this study was acquired from various sources. Foreclosure data was acquired from the Scott County, Minnesota GIS Department. Foreclosure data was collected by quarter so yearly totals could be used in the analysis. Census tract demographic age data were acquired from the 2010 Census Bureau. Environmental Systems Research Institute (ESRI) community analyst was used for 2000 and 2010 census data as well as average home value and average 2012 household income.

Data by Category

The date of foreclosures were used to show the increase or decrease in foreclosures between the years of 2005-2010. Data associated with foreclosures were input into an Excel spreadsheet. A .kml file was created based off of spreadsheet information and was mapped in Google Earth for identification and mapping purposes.

Census data were acquired from the federal census website. The age analysis for the study focuses on three age groups. The first group consisted of people aged 20-39, the 2nd group aged 40-59, and the 3rd group aged 60-85+.

The 1st age group was people in the 20-39 age range. An assumption was made they were living in their 1st or 2nd home. Also this age group is the youngest; hence they have not been in the work force as long as other age groups. It can be assumed this age group would also have a lower net worth than the people in the other age groups.

The 2nd age group was people in the 40-59 age range. This age group was used since these homeowners generally have their family established and likely to have a mortgage. This demographic is more likely to have a higher paying job than the 20-39 year olds since they have had more years in the workforce (Thomas, 2010).

The 3rd group was people aged 80-85+. This group is close to retirement or already retired (Langfield, 2012). They are the most likely to have their mortgage paid off (Olick, 2013b). However, there are statistics supporting older Americans in this age group are susceptible to foreclosure as well (Brown, 2012). This is due to many in this demographic being on a fixed income. If economic conditions change and they are put in a position where their mortgage payment increases or they do not have the resources or ability to pay more money each month to stay in their home.

It is important to note that not all of the people in these age ranges are homeowners. However, Table 2 shows the percentage of homeowners in the United States. Data from the 2010 census shows

the percentage of homeowners in Shakopee 78.3% (Anonymous, 2010). The percent of homeowners in Shakopee is significantly higher than the national average and was calculated by dividing the number of owner-occupied housing units by the number of occupied housing units (Anonymous, 2010a).

To establish the estimated homeownership rate for each age group the percentages which made up each age group in Table 2 were added together and then divided by 3. To compensate for the 12% higher homeownership rate in Shakopee the average was adjusted in the following manner. Three percent was added to the 20-39 group, 4.5% were added to the 40-59 group and 4.5% were added to the 60-85+ group. Since the homeownership average of the 40-59 and 60-85+ age group was almost twice as much as the 20-39 age group a higher percentage was added to the two older age groups. Therefore homeownership rates for each age group are as follows. 20-39 age group 46.2%, 40-59 age group 78.1% and the 60-85+ age group 83.1%

Table 2. United States homeowner rates.

	Homeownership Rate		
	2010	2000	1990
15-24		17.9%	17.1%
25-34		45.6%	45.3%
35-44		66.2%	66.2%
45-54		74.9%	75.3%
55-64		79.8%	79.7%
65-74		81.3%	78.8%
75+		74.7%	70.4%
US Total	65.1%	66.2%	64.2%

Analysis/ Discussion

Figure 1 shows the total value of real estate foreclosed on from 2005-2010. This graph shows that the highest accumulated value of foreclosures occurred in 2008.

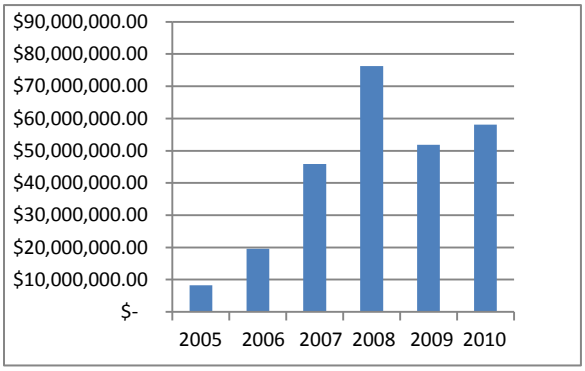

Figure 1. Total value of real estate foreclosed on per year.

Figure 2 shows the total number of housing units foreclosed between 2005-2010. Between 2005-2008, a dramatic increase in the total number of foreclosures was noted. Similar to Figure 1, 2008 had the highest number of foreclosures.

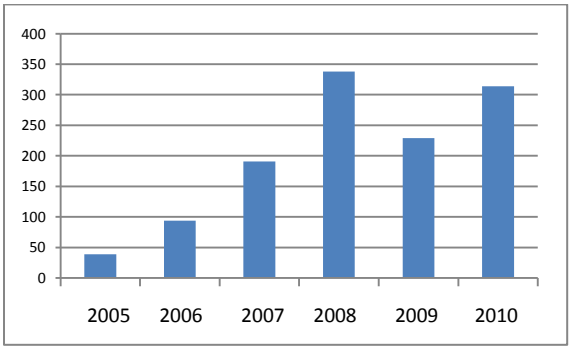

Figure 2. Total number of foreclosures per year.

In 2010, the total number of foreclosures spiked back up to 314 (Figure 2). During 2009 the total was 229, a 27% increase. In Figure 1, the total value of real estate foreclosed did not increase by the same percentage amount. The total value in 2009 was $51,825,000. There was an increase in 2010 to $58,130,700, a mere 11% increase. The difference in the number of foreclosures compared to the total amount of real estate foreclosed

corresponded to the decrease in home values from the height of the market values in 2007-2008 to when the market bottomed in 2010.

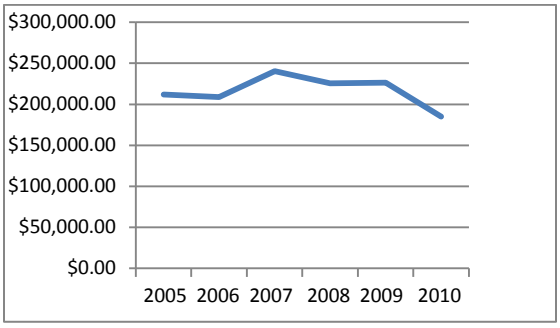

Figure 3. Average value of foreclosed home per year.

Figure 3 shows the average value of homes that were foreclosed. This graph shows the average value of a foreclosed home in 2005 was slightly over $200,000.00 (Anonymous 2014c). The value of the foreclosed properties remained steady through 2006 with a spike in values in 2007. Figure 3 shows the value in foreclosed homes peaking in 2007 around the time of the housing "bubble burst." Following this, home values decreased dramatically from 2007-2008. The decrease in foreclosed home values continued through 2010 when the lowest value per foreclosed home used in this study was noted. The average value of homes which were foreclosed decreased from $226,310.04 in 2007 to $185,129.62 in 2010, an 18% decrease.

This decrease in home values and the increase in the number of foreclosures from 2009-2010 supports the earlier statement regarding people abandoning their homes and mortgages. At this time there likely was a high probability they owed more on their homes than the homes were worth.

This environment of paying more for a commodity – in this case a borrower's house – than it is worth, gave borrowers the option of simply "walking away from their home." Borrowers who chose to walk away from their house rather than continue to make payments may have found that renting an apartment or home was more economical than continuing to make payments on the home they had purchased. Certain scenarios existed where a married couple may have only had one borrower on the loan even though both people worked. If there was only one person listed on a loan document, the couple could have walked away from the house and the person that was not on the mortgage could have applied for, and purchased a different home. Since there was only one person on the original mortgage, the original mortgagee would be the only one affected by the foreclosure. The other person, as long as they had sufficient credit and income to support a mortgage payment could have purchased another house.

One reason the decrease in home values had such an impact on people walking away from their home could be tied to the large number of subprime mortgages. Often times these mortgages included an adjustable rate mortgage (ARM) that offers the homeowners a lower interest rate which meant a lower payment. This allowed potential borrowers to purchase homes they may not have been able to purchase with a conventional mortgage. The interest rate on an ARM mortgage will adjust at a certain point depending on what type of ARM was chosen. Typically the lower interest rate will be fixed for a period of 3, 5, 7, or 10 years and will adjust to a new interest rate based on terms of the loan and what index the rate of the mortgage was tied to. Frequently, people would purchase homes with the assumption that the value of the home would increase and they would be able to refinance out of the subprime ARM

into a more conventional mortgage. Subprime loans could be approved – in some cases for over 100% of the property's value. If this type of mortgage was obtained prior to 2007 the property would have lost a significant amount of value after 2007. These borrowers would be further "underwater" compared to borrowers who had made a down payment and had some equity in the property.

The conventional mortgage would generally have a fixed interest rate as well as a fixed payment. These types of mortgage also require a certain down payment to be made. This could be as low as 5% (Christie, 2013). Two important assumptions were: home values would continue to increase and interest rates would continue to stay low.

As Figure 4 illustrates, mortgage rates continued to decrease from 2008-2010, largely due to the federal government's monetary policy (Heakal, 2013).

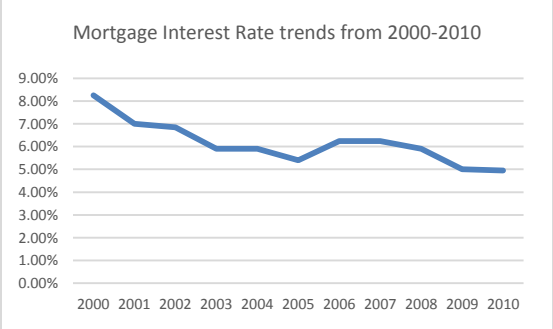

Figure 4. Mortgage rates from 2000- 2010 and declining from 8.75% to 4.475%. Chart adapted from www.escapesomewhere.com/rates.html.

The decrease in rates from 2008-2010 could have been a reason for the significant decrease in foreclosures from 2008 – 2009 (Figure 2). However, by 2010 foreclosure rates almost equaled the number in 2009. The fact home values decreased by such a large portion in such a short time meant many of these homeowners would not qualify for a refinance regardless if they had a subprime or conventional mortgage. Mortgage lenders would not fund loans for properties where the value of the collateral, the house, was so much less than the money they would be borrowing to the homeowner.

The federal government offered refinance assistance programs, such as the Home Affordable Refinance Program (HARP). These programs helped a number of people that were willing to refinance and stay in their home. The down-side was borrowers were making payments based on the amount of the outstanding previous mortgage. This previous mortgage, in many cases, was considerably more than their home was worth. For most people, even though they may qualify for HARP it did not make financial sense.

Figure 5 shows the census tracts which make up the city of Shakopee.

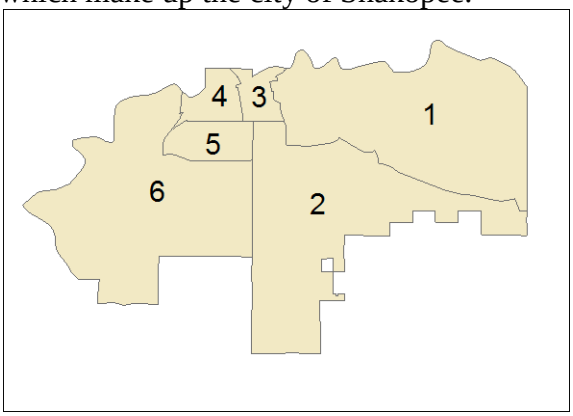

Figure 5. Census tracts in Shakopee.

Census tracts 1, 2, and 6 are the largest and newest portions of the city. Tracts 3, 4, and 5 are made up primarily of historic Shakopee.

Since 1990, tracts 1 and 2 experienced the greatest number of new housing units. Tracts 3-6 experienced a larger building phase during the 1960's-1980's (Table 3). Tracts 3, 4, and 5 which represent the historic city were largely built prior to this time.

Tract 6, although quite large, did not experience the same amount of growth. This could be due to the location of businesses and shopping in relation to this tract. The majority of commercial construction occurred in tracts 1 and 2.

Table 3. Number of homes build per census tract.

Census Tract	Built 1960 to 1969	Built 1970 to 1979	Built 1980 to 1989	Built 1990 to 1999	Built 2000 to 2004	Built 2005 or later
1	116	333	311	1113	1467	260
2	52	173	311	1066	2063	532
3	176	242	228	141	111	24
4	242	85	124	7	96	29
5	187	246	214	714	147	57
6	67	252	96	174	120	47

Figures 6, 7, and 8 illustrate the comparison of age groups from the 2000 census to the 2010 census. In the 20-39 age group, tract 3 and 5 saw a decline in the population. In general, tract 3 did not experience a large increase or decrease in any of the age groups. Tract 5 remained even in the 40-59 age group and saw a large increase in the 60-85+ group. This could be due to older people moving into the area. It could also be evidence the people included in the 2000 census had aged 10 more years by the 2010 census and were now included in the 60-85+ group. Data were not available to show how long people had been in their homes.

The largest increases occurred in tracts 1 and 2 where large numbers of housing units were built from 2000-2005 with thousands of new houses constructed. Other tracts saw building less than 200 per tract for the same time frame.

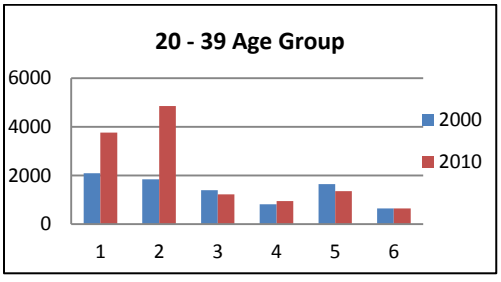

Figure 6. Population of 20-39 year olds per census tract.

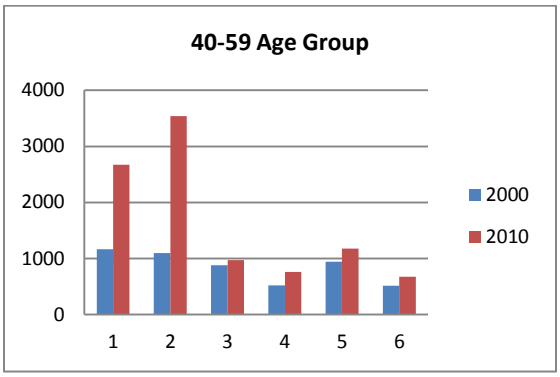

Figure 7. Population of 40-59 year olds per census tract.

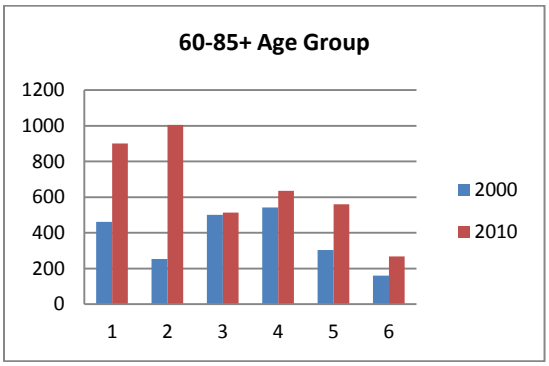

Figure 8. Population of 60-85+ year olds per census tract.

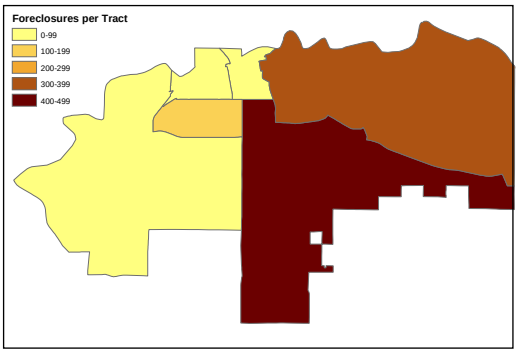

Figure 9. Number of foreclosures per census tract.

Figures 9 shows the range of foreclosures per census tract from 2005-2010. Tracts 1 and 2 include the largest population and population increase from 2000- 2010. They also account for the highest number of foreclosures. However, proportionally speaking, the one tract that had the most unusual scenario was tract 5. In tract 5, 182 foreclosures occurred. This

tract accounts for 8.36% of the population of the city but accounted for 15.1% of the foreclosures. By comparison tract 1 had 19.78% of the population as well as 30.37% of the foreclosures. Tract 2 had over 400 foreclosures and accounted for 25% of the population along with 39.17% of the foreclosures. Tract 1or tract 2 did not have the same high ratio of foreclosures to total population as tract 5 did. This could be due to the older homes located in tract 5. This tract is in the middle of the city has been established for many more decades. The majority of the building in this tract took place from 1970-2000. Land size of this tract is much smaller than tracts 1 and 2, so it is realistic the total number of housing units would be less. The building surge occurred in tract 1 and 2 from 2000-2004. These new homes would likely have higher values than the existing home in tract 5. The lower home values in tract 5 may attract a different clientele than the new constructions occurring in tracts 1 and 2. The borrowers in tract 5 may not have the same financial resources as compared to borrowers in other tracts which is why they may be looking at less expensive homes. If this is the case, it could account for the higher foreclosure rate in tract 5.

Table 4 outlines the breakdown of population per census tract as well as the approximate number of homeowners per age group based on the percentages outlined earlier and lastly, the foreclosure rate experienced by each of the age groups. To complete this table, the number of foreclosures per age group had to be estimated. The 20-39 age group was estimated at 50%, the 40-59 age group at 30% and the 60-85+ at 20%. These percentages were established by taking into the account the generalities of each age group, outlined prior, and believing the younger age group was more susceptible to foreclosure than the older age groups.

In 2010, there was 314 foreclosures in Shakopee. Using the estimated foreclosure rates it was determined the 20-39 age group had the highest percentage of foreclosures; this was then followed by the 60-85+ age group, and lastly the 40-59 age group.

Table 4. Age breakdown and foreclosure rate in 2010.

Age Group	20-39	40-59	60-85+
Total population per age group	12809	9791	3882
Percent of Homeowners	46.2%	78.1%	83.1%
Number of Homeowners	5918	7647	3226
Estimated Foreclosures	157 (50%)	94 (30%)	63 (20%)
Estimated Foreclosure Rate	2.65%	1.23%	1.95%

Conclusion

The purpose of this paper was to analyze the foreclosure environment in Shakopee Minnesota from 2005-2010. From the data collected, it is clear there were certain areas of the city that were more affected by the economic slowdown and the housing bubble than others. No tract in Shakopee went unscathed from foreclosures. In total, there were 1205 foreclosures from 2005-2010. Based on the age data, it can be concluded the 20-39 age group had the highest foreclosure rates of the groups examined. Further examination revealed the 20-39 age group found in tract 5 the highest foreclosure rate compared to other tracts and age groups. The 20-39 age group also declined in tract 5 during this time. The reason for the decline could have happened for various reasons. It is likely foreclosures played a part in the decrease of the 20-39 age group from tract 5. Tract 5 had the highest percentage of foreclosures per housing units in the city during this time.

Acknowledgements

I would like to thank Dr David McConville and John Ebert for their guidance through this final project, as well as the entire Department of Resource Analysis staff at Saint Mary's University of Minnesota.

References

Amromin, G., Paulson, A. 2010. Default Rates on Prime and Subprime Mortgages: Differences & Similarities. Retrieved November 11, 2011 from http://www.chicagofed.org/webpages/publications/profitwise_news_and_views/2010/pnv_september2010.cfm.

Anonymous. 2010. State & County Quickfacts. Retrieved August 9, 2014 from http://quickfacts.census.gov/qfd/states/27/2759350.html.

Anonymous. 2010a. State & County Quickfacts: Defination of homeownership rate. Retrieved on August 9, 2014 from http://quickfacts.census.gov/qfd/meta/long_HSG445212.htm.

Anonymous. 2011a. We All Pay A Price For The Foreclosure Crisis. Retrieved August 9, 2014 from http://ourfinancial security. .org/2011/02/we-all-pay-a-price-for-the-foreclosure-crisis/.

Anonymous. 2011b. Timeline of events in the financial crisis. Retrieved on August 9, 2014 from http://usatoday30.usatoday.com/money/economy/2011-01-28-financial-crisis-timeline_N.htm.

Anonymous. 2014a. Retrieved July 17, 2014 from http://censusviewer.com/city/MN/Shakopee.

Anonymous. 2014b. Retrieved July 17, 2014 from http://www.zip-codes.com/zip-code/55379/zip-code55379-censuscomparison.asp.

Anonymous. 2014c. Retrieved September 17, 2014 from http://gis.co.scott.mn.us/scottforeclosures.

Brown, R. 2012. Facing Foreclosure After 50. Retrieved on February 16, 2013 from http://www.nytimes.com/2012/07/19/us/foreclosure-rates-surge-for-older-americans-aarp-says.html?_r=0.

Christie, L. 2013. Banks offering mortgages with only 5% down payments. Retrieved on September 9, 2014 from http://money.cnn.com/2013/11/05/real_estate/down-payment-mortgages/.

Definition of Housing Bubble. 2014. Retrieved July 17, 2014 from http://www.businessdictionary.com/definition/housing-bubble.html.

Heakal, R. 2013. Forces Behind Interest Rates. Retrieved on November 9, 2013 from http://www.investopedia.com/articles/03/ 1 11203.asp.

Immergluck, D., and Smith, G. 2006. The External Costs of Foreclosure: The Impact of Single Family Mortgage Foreclosures on Property Values. Housing Policy Debate 17, 57–79.

Issa, D. 2010. Unaffordable Housing and Political Kickbacks Rocked the American Economy. Harvard Journal of Law & Public Policy 2010, 407-419.

Langfield, A. 2012. Average US Retirement Age Is 61-And Rising. Retrieved June 8, 2013 from http://www.cnbc.com/id/100744474.

Olick, D. 2013a. Underwater Mortgage: CNBC Explains. Retrieved on June 8, 2013 from http://www.cnbc.com/id/100543831.

Olick, D. 2013b. Homeowners with No Mortgage Offer Clues to Recovery. Retrieved on June 8, 2013 from http://www.cnbc.com/id/100370046.

Robinson, E. 2010. Lawyers got it right on the foreclosure mess. Retrieved on August 9, 2014 from http://www.washingtonpost.com/wp-dyn/content/article/2010/10/21/AR2010102104846.html.

Sauter, M. 2013. Cities with the most abandoned homes. Retrieved on August 9, 2014 from http://www.usatoday.com /story/money/business/2013/06/22/cities-with-most-abandoned-homes/2447613/.

Thomas, S. 2010. The Age - Earnings Relationship Is Not What You Think. Retrieved on February 16, 2013 from http://www.compensationcafe.com/2010/0.9/the-age-earnings-Relationship-is-not-what-you-think.html.

Yoder, S. 2012. More Americans Walk Away from Their Mortgages. Retrieved on August 9, 2014 from http://www.thefiscal times.com/Articles/2012/10/24/More-Americans-Walk-Away-from-Their-Mortgages.