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Inside this issue ...

On The Cover: 811 Portland Street, Calumnet 2
President's Message - President Denise Chalifoux 4
MAA - Spotlight Article - William Fowler 4
MAA - Meeting Minutes - April, 2012 5
MAA Calendar of Events 6
MAED - Meeting Minutes - March 2, 2012 7
MAED Calendar of Events 8
MAA - Proposed Slate of Officers for 2013 9
STC - Bulletin 2 - Millage Requests and Rollbacks 10
COA - Stephen Crane v Directors of Assessing for West Bloomfield Cht Twp, Bloomfield Cht Twp & Upper Lake Improvement Board . . 17
Article - By Joseph Turner: Using Foreclosure Deeds & Transaction Financing to Identify Market-Wide Impacts on Real Estate Values . . 20
STC - Bulletin 3 - Certified Interest Rates 31
STC - Bulletin 4 - 2012 County Multipliers 31
Article - State Cuts Tax Appeal Backlog by 65% 32
COA - James Roberts v West Bloomfield Township 32
MAA Annual Conference Registration & Information 35
MAED Annual Conference Registration & Information 39
Tech Bit #92 - BYOD 44
MAA - Membership Application 47

Using Foreclosure Deeds & Transaction Financing to Identify Market-Wide Impacts on Real Estate Values

By: Joseph M. Turner, MAAO

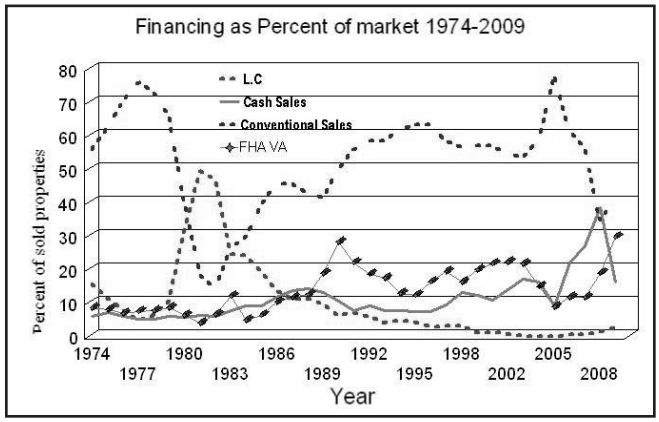
Introduction

This preliminary report was generated from a study of residential real estate transactions occurring between the years 1974 and 2010 in twenty markets located in three U.S. states. The intent was to find reliable indicators of market-wide changes in property values. The period studied included a market at equilibrium and times of exceptionally high mortgage rates and exceptionally high property foreclosure. More than 700,000 property transactions in Saginaw County, Michigan were studied for the years 1974 thru and including 2009. "Cross market" comparisons of financing patterns were made with Bay County, Michigan for calendar years 1985 through 2009 inclusive and in 1979 and 1980 with data from other markets in Michigan, North and South Dakota. Foreclosure (159,000 deeds) and sale data (692,000) from eighteen Michigan counties were compared for the years 2000 thru 2010 inclusive. The study found: (1) local choice of transaction financing correlates with local sale price; (2) a generalized change in property values occurs when formerly minor (cash and land contract) financing replaces commercial lender financing as the most used financing in a market ("threshold effect"); (3) when foreclosures are exceptionally high, a ratio (number of brokered sales to new foreclosure deeds) was found in each of eighteen counties, which correlated to a market- wide price change; (4) patterns of real estate financing were similar for markets in all three states; (5) use of conventional, government backed and seller backed financing correlated with the annually averaged Freddie Mac 30 year fixed mortgage rate; (6) based upon financing choice, a simple graphing method is shown to illustrate a real estate market at "equilibrium;" and (7) this research supports "cash equivalent" sale regulations issued by the Michigan State Tax Commission (STC). It is believed methods presented can easily be implemented and utilized to adjust assessments. The similarity in data across markets in three states suggests a widespread application for the processes developed.

Market patterns: financing and equilibrium

Figure 1 presents choice of financing data from residential real estate transactions in Saginaw County, Michigan. For clarity, only sales financed with cash, installment payments supported by the seller (land contracts), FHA/VA and conventional mortgage financing are shown. Distinct financing patterns emerge. Three time periods were defined for statistical analysis: the early period (1974 - 1984), the middle period (1985 - 2004), the last period (2005- 2009). Each period is defined by the dominant choice of financing. The first period begins in 1974 with conventional financing as the dominant choice and ends at the return of conventional financing from being a minor financing choice to dominance. The second period begins with conventional financing surpassing land contracts and ends with the rapid decline of conventional financing. The third period begins with that rapid decline; ending in 2009.

Figure 1



Overall, conventional mortgages are the most used financing method. Reversal of dominant financing occurs in 1980 at about thirty-five percent of market share, in 1985 at about twenty-five percent of market share and in 2008 at about thirty-five percent of market share. Those points identify transitions when economic forces changed market equilibrium. The transition is manifested by how real estate is most commonly financed.

Economic conditions during the time periods

In the beginning period, conventional mortgage rates rose above 16 percent, workforce unemployment climbed to more than ten percent and the U.S. underwent a recession. By 1980 various forms of "creative financing" arose as an alternative to fixed mortgage payments which at 16 percent were simply unaffordable for many potential buyers. The use of conventional loans plummeted. However, in this market, land contract financing was legally capped at 11 percent interest. Thus, they became the preferred financing choice. A small decline in the reported annual average selling price developed with the dominance of land contract financing.

Since buyers and sellers could not bargain without being affected by extraordinary costs of money, market equilibrium was lost. Disequilibrium presented itself in several metrics: as a generalized reduction of prices, significant changes in market time, reduced annual sale volume and importantly, the replacement of cash to the seller at closing, with land contract financing that deferred a cash payment to the seller for years. The annual average selling price reported by the board of Realtors was evidence of generalized price change. This period ended when conventional financing returned as the dominant choice for market transactions.

At the end period (2005 - 2009) personal debt, bankruptcy and an extraordinarily high number of foreclosures existed. Housing supply increased while com-

petition dropped as the number of potential buyers dwindled. This period illustrates financing preference during recessionary times with high unemployment and a plethora of lending sources offering extremely low interest rates. Housing became less affordable to many homeowners and potential buyers overburdened with debt. Foreclosures by lending institutions flooded the market with available, low priced housing stock. Disequilibrium presented itself in several metrics such as: a replacement of conventional financing by the cash sale as the dominant method of financing; significant declines in property value; high rates of personal bankruptcy, a change in the composition of the supply of homes available for purchase (far more foreclosures than historically normal) and changes in market time to sell properties. Note increased market times in 1982 and 2006.

Figure 2

Selected market data				
	Nat'l Rate	Avg Price	NBR	
YEAR	30 Yr Mtg	all Sold	Sold	Mkt Time
1974	9.19	$26,953	1139	88
1975	9.05	$28,332	1245	92
1976	8.87	$29,821	1524	88
1977	8.85	$32,369	1892	77
1978	9.64	$35,851	1906	76
1979	11.2	$40,331	1798	82
1980	13.74	$43,038	1309	96
1981	16.63	$44,489	978	65
1982	16.04	$43,378	715	104
1983	13.24	$46,150	1152	123
1984	13.88	$45,995	1315	125
1985	12.43	$47,353	1476	133
1986	10.19	$49,680	1623	130
1987	10.21	$50,652	1464	125
1988	10.34	$51,871	1610	112
1989	10.32	$56,043	1623	106
1990	10.13	$58,387	1520	107
1991	9.25	$62,627	1536	115
1992	8.39	$66,993	1623	122
1993	7.31	$69,632	1802	120
1994	8.38	$69,538	1914	116
1995	7.93	$74,689	1878	109
1996	7.81	$80,823	1846	109
1997	7.6	$84,341	1920	110
1998	6.94	$91,283	1527	107
2001	6.97	$102,799	2154	99
2002	6.54	$102,065	2205	101
2003	5.83	$105,082	2244	105
2004	5.84	$110,073	2200	107
2005	5.87	$113,295	2117	113
2006	6.41	$109,593	1912	120
2007	6.34	$97,115	1855	123
2008	6.03	$81,458	1830	115
2009	5.04	$75,973	1987	112

In regression tests, Days on Market (DOM p=.0118788) and Units sold (p=3.17666E-07) correlate with price. During the first and last periods of the study, DOM and units sold are inversely related. When DOM goes up, units sold goes down. This DOM/Units sold pattern is observable but not as nearly pronounced in the mid period. In between the first and last periods lay a period of relative stability with much different financing choices. During stable market conditions (1985-2004) the market appears to be at or near equilibrium, with consistent percentages of listings sold annually, affordable financing and approximately price efficient transactions. During this period conventional financing dominated all other financing choices; property values increased and market exposure (days on market) remained relatively stable. Recessionary activity occurred during the time period, but affordability does not appear disrupted by interest rates, bankruptcy nor household income rates.

Cash equivalent sales

Note the use of cash financing in Figure 1. Payment of the entire price in cash from the buyer is normally a small percentage of all transactions. This is interesting, because Michigan's courts, the State Tax Commission and professional appraisal organizations all cite a prime directive that, unless otherwise specified, a real estate valuation is to reflect the price of a property in terms of cash. Are purchases not financed, but instead paid as cash from the buyer, representative of the market or do they represent an anomalous transaction? What do cash sales represent in a market?

Alternatively, if cash sales are not indicative of the predominant market transaction in a market at equilibrium, there must be an alternative, *cash equivalent* form of transaction financing. There is. Besides the actual "cash sale," there exists a "cash equivalent" sale; defined by state officials in this manner: "A conventional (non-creatively financed) sale is a cash sale or a sale financed anew by a financial institution for the total amount of the mortgage after down payment."[1] This STC directive affects the determination of which sales are to be included within a sales ratio study and the process of valuing individual parcels of real property for assessment purposes. Therefore, the frequency of cash sales was explored in all markets studied. In Saginaw County, for most of the thirty-six years, more than 90 percent of all transactions were not cash sales. Figures 4, 5, and 6 show similar market patterns located in Michigan, North Dakota and South Dakota.

With the advent of extraordinary rates of personal bankruptcy and mortgage foreclosures (circa 2005) this changed. Then, as Figures 1 and 6 show, cash sales did ascend to become a common financing method. In 2008, cash became king - the dominant choice of buyers and sellers for transaction financing. Within Figure 1, except for periods of unusually high mortgage rates (1st period), or the presence of a large number of foreclosed properties in the market place (3rd Period), *cash equivalent* financing clearly is the dominant choice. This market was considered to be at equilibrium (equilibrium meaning no extraordinary circumstances affecting transaction price) during the middle period. During it, neither exceptionally high interest rates nor exceptional levels of property foreclosure were evident statistically. The STC defined cash equivalent sale dominated.

Is financing choice similar across markets?

To determine if the dominant choice of conventional financing was unique to the Saginaw market, other distinct markets were examined for the most used choice of financing. As part of early research on this topic, in 1981, the author sent letters to one Board of Realtor organization in each of the fifty U.S. states. The letters asked for the number of sales, average selling prices and method of financing.

At that time, not all Realtor associations had computers; many records were

Figure 3

Saginaw County Market Parameters						
	County residential	Parcels sold by	Sold properties as	County Market	Sold properties	Sold as percent of
YEAR	Parcel count	MLS participants	Percent of all properties	SEV times 2	Transaction $$	Total SEV Market
1975						
1980	66,644	1594	0.024%	$1,944,637,386	$30,699,467	1.579%
1985	67,892	1665	0.025%	$2,329,428,850	$77,747,428	3.338%
1990	69,071	1520	0.022%	$2,739,215,556	$88,748,547	3.240%
1995	71,306	1878	0.026%	$3,731,068,098	$140,265,234	3.759%
2000	74,155	2458	0.033%	$4,687,121,604	$221,455,968	4.725%
2005	77,973	2113	0.027%	$7,367,679,882	$238,587,282	3.238%
2010	78,646	3083	0.039%	$6,773,768,334	$246,624,585	3.641%

hand compiled. The result was a paucity of needed records and reluctance by some organizations to share data. The survey was a flop. To their credit, associations in Soux Falls, S.D. and Fargo, N.D. offered useful information. In addition, information was available for Michigan's Bay, Genesee and Saginaw Counties. Consequently, a "snapshot" of the dominant choice of financing residential real estate transactions in five markets could be created for calendar years 1979 and 1980.

Two bar charts (Figures 4 and 5) compare financing choice in those markets. Terms consistently used across markets were: 1) *cash sales*, 2) *Conventional financing*, 3) government backed financing (*FHA/VA* and in a very few cases Farmers Home Administration (FmHA) loans), (4) sales financed after a down payment by the seller (*land contract*).

The results for 1979 do show similarity in overall relative use of financing. The dominant choice for transaction financing in each market is the conventional loan. Purchases paid for in "cash" and those financed by the "seller" each were less than fifteen percent of the market. Utilization of government backed loans did vary from market to market, but in all cases they were not the dominant choice.

Figure 5 shows a similar pattern for 1980. Here, the use of government financing has diminished significantly from 1979, as have conventional loans. The movement from conventional financing to other choices begins across all markets in 1980. Seller financing clearly is replacing government and conventional financing.

Figure 4

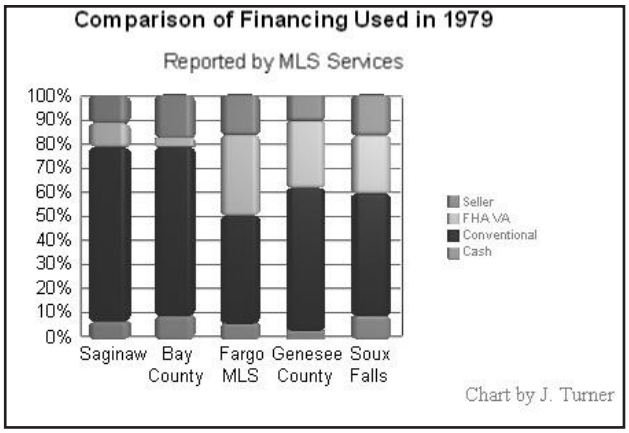
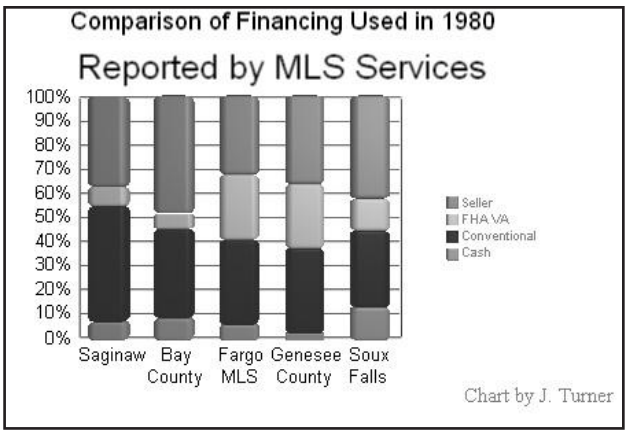


Figure 5



Some variation in the use of government (FHA, VA and FmHA) financing still exists between markets. Explaining the reasons for this variation might make a make a good follow up study. The overall use of cash, conventional, government backed and seller financed residential sales is similar in all five markets, but these markets are different from each other in many ways beside geographic location. The pattern of financing in Saginaw county is generally representative of other markets.

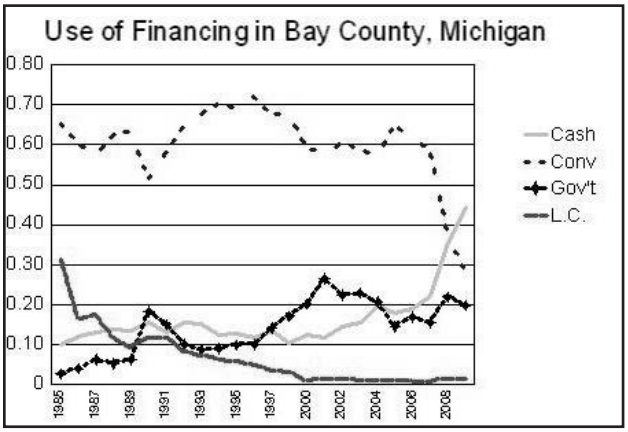
Correlation: local choice of financing to national financing index

The cross market similarities of choice of financing suggest a national influence. Therefore a statistical analysis was made of the extensive Saginaw data to search for a correlation between a national indicator of the cost of money and local choice of financing. A regression analysis was made using Saginaw data and the Freddie Mac annually reported, average, thirty year fixed rate mortgage found at www.freddiemac.com/pmms/pmms30.htm Using the methods of financing shown, all but "cash" financing statistically correlated with the Freddie Mac annually reported rate. The P value for cash sales was 0.30298 and not significant. Statistically significant "P" values were 8.095E-11 (conventional), 0.0386 (government) and 7.965E-21 (land contract). Multiple regression R square and adjusted R square values were .986 and .952 respectively. R square values indicate a high level of accountability in the data. Known as the coefficient of determination, it is the proportion of variation explained by the model. F scores support a chance correlation of far less than 1 percent. These scores indicate robust data and high confidence levels.

Bay County data

Sufficient data existed to compare the patterns of financing chosen for residential real estate transactions in Bay County, Michigan with the Saginaw choices. See Figure 6.

Figure 6



Bay County lies adjacent and north of Saginaw County. Its economic activity has long been reported at the federal level as part of the Saginaw-Bay-Midland metropolitan statistical area. Today, joint marketing campaigns by economic development agencies within the three counties are undertaken under the moniker of "Great Lakes Bay Region." However, there is a significant difference in each of the counties in terms of average market prices, market size, land use and public perception. Figure 6 illustrates the use of financing in

Bay County is similar to that shown in Figure 1. The Bay County market shows a clear peak in the late period, just as Saginaw did, when the use of cash to finance purchases replaced conventional financing as the dominant choice. The early years for which data are available in Bay County, suggest behavior similar to market activity in Saginaw County during the initial period of high interest rates. A high use of land contracts prior to 1985 in Bay County is suggested by the slope of the plot.

Metrics

Figures 1 and 4 thru 6, provide evidence that buyers and sellers react to changing market conditions with identifiable and unique changes in their choice of financing. Once conventional financing fell to between twenty-five and thirty-five percent of the Saginaw market, the dominant choice of financing changed. The transition in Bay County occurred at about thirty-five percent.

The Supreme Court of the State of Michigan and the State Tax Commission provide guidelines for valuing property under anomalous market conditions. However, there has been a paucity of market based research. The study from which this report was taken looked for economic forces that affected negotiated transaction prices across a market. *Within it, twenty metrics were found to correlate with the market's average annual selling price* at a statistically significant level. For analysis, those twenty metrics were each assigned to one of four categories: Demand, Supply, choice of Financing and Affordability to the purchaser.

As has been seen, the dominant choice of financing does not seem to negatively affect the average market price until some circumstance causes usually minor forms of transaction financing to replace "conventional" financing. In Figure 7, one can see a general trend of rising average prices (unadjusted for inflation), except when land contracts and cash sales became the dominant financing choice. Then prices fell. For illustration, three years are selected from each of four decades (1970s, 1980s, 1990s and 2000s) and shown in Figures 7 and 8.

Figure 7

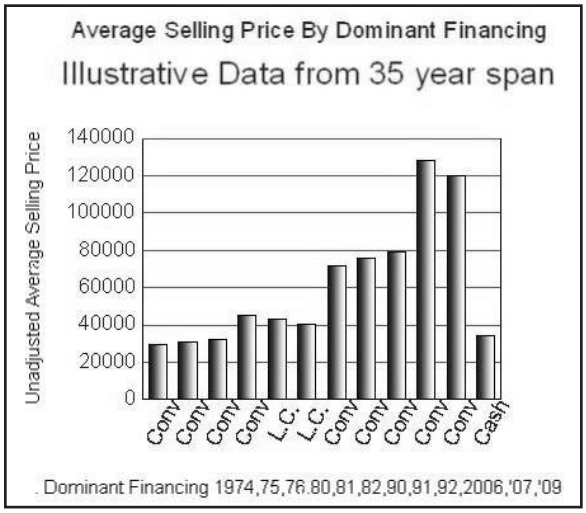


Figure 8

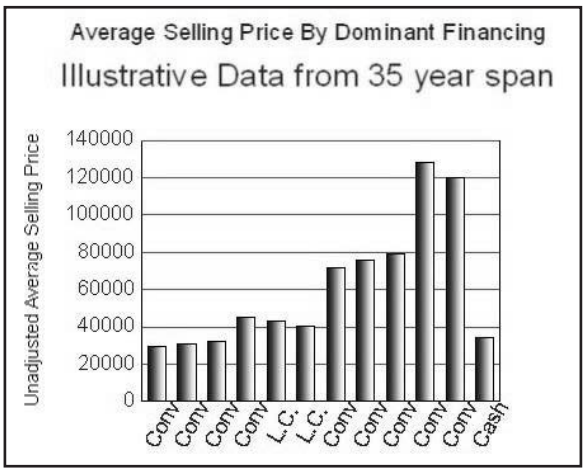


Figure 8 shows the average price for all properties sold in the market annually (white column) compared to the average price of transactions financed by the dominant choice of financing (striped column). During years when conventional loans dominate, average price for all properties is less than the average price of properties financed with the most used choice of financing (conventional financing). When usually minor choices dominate, the average price for all sales is higher than the average price of the dominant method. The comparison of average price of all sales to the average price of sales financed by the dominant financing choice is used to interpret if the market is at equilibrium or not. When the most used financing produces a lower price than the average price of all sales in the market, the market is judged to be out of equilibrium.

If lessor used forms of financing don't generate the highest prices, they may have a special application. Maybe they are used to finance more difficult to market properties, or only inexpensive properties or in situations where buyers or the property may not qualify for a conventional loan. One might predict non-commercial lender financing would be used most frequently in blighted neighborhoods or that cash sales are consistently used to acquire lower priced properties or properties where the seller is under pressure to sell. One might also predict that loans requiring zero, or very low down payments, are restricted to certain price segments of the market.

More study is needed, but some speculation is borne out in Table 1. The left two columns present the dominant market financing. The first column is the percent of all sales financed by the dominant financing stated in the second column. Columns three and four (white columns) show average annual price of all sales and the year of the transactions. The right five columns show the average price by specific financing choice as a percentage of the price reported in column three. "Comm" means commercial lender backed financing.

For example, in 1974 conventional loans financed 52% of all sales. The average price of all sold properties was $26,053. The average price of a sale financed by cash was 77.97% of the average price for all properties or $20,314. The average price for transactions financed by commercial lenders was 114.05 percent of

the average price for all properties sold ($29,700). This process continues for all financing types.

There are some interesting relationships. As the old saying goes, it appears "cash talks," but maybe not in the expected way. View the last row of the table (labeled "average"). In this example, on average, a sale financed with "cash" receives 66.14 percent of the average selling price for all properties in the market over the years considered. Properties sold for cash usually are the lowest priced properties. Seller financed sales also appear to consistently sell well below the average market price. At 78.27% land contract sales sell for more than cash sales, but less than real estate financed by other means. This prima facie evidence offers an area of further study. For some reason, cash and land contract financing are usually limited to a unique part of the market. While a "segmented market" concept wasn't specifically tested in the initial study, the research found evidence of market segmentation by financing type in the difference between a list and sold price.

Segmentation of financing by discount from list price

Figure 10 (generated before personal computers were available) reveals market segmentation as three unique bands of "discount." Discount means the difference between the average list price and average selling price. For the Saginaw market, xix reported types of financing: "government" backed (VA and FHA); "conventional" (commercial lender/PMI - private mortgage insurance loans); and either seller (L.C.) or buyer($) financed transactions (land contract and cash sales) were plotted.

Table 1

Choice of financing as percent of market and as percentage of avg sale price for all properties

%of Mkt	Choice	Price	YEAR	CASH	COMM	GOVT	LC	OTHER
52.00%	Conv	$26,053	1974	77.97%	114.05%	66.95%	78.94%	116.89%
60.37%	Conv	$27,746	1975	74.29%	111.60%	73.03%	72.83%	119.08%
68.69%	Conv	$29,028	1976	77.16%	111.20%	66.29%	72.48%	102.83%
38.21%	Conv	$41,862	1980	71.47%	108.25%	81.64%	99.96%	104.34%
49.77%	LC	$44,330	1981	75.47%	116.80%	64.08%	96.63%	109.74%
48.09%	LC	$42,613	1982	58.89%	114.17%	76.37%	95.33%	124.17%
43.08%	Conv	$56,508	1990	74.98%	127.05%	79.77%	61.01%	71.99%
54.34%	Conv	$60,459	1991	71.56%	125.02%	75.78%	48.96%	81.89%
55.24%	Conv	$64,538	1992	67.82%	122.89%	75.13%	57.30%	91.09%
62.07%	Conv	$106,450	2006	54.26%	120.34%	87.24%	55.68%	98.23%
56.94%	Conv	$94,090	2007	44.30%	127.37%	100.22%	112.59%	87.58%
40.88%	Cash	$75,038	2009	45.60%	173.46%	127.67%	87.62%	85.26%
			Average	66.14%	122.68%	81.18%	78.27%	99.42%

The first band consists of government financed loans. The observer may note this type of financing exhibits a selling price frequently close to listing price. Based upon experience as a real estate broker and appraiser in that market during this time period, my belief is the higher average sale price was often due to negotiations between buyers and sellers over FHA and VA mandates regarding the property's physical condition. An agreed upon price close to, or even above the list price, encouraged the seller to pay for repairs required by federal financing. The higher price effectively reimbursed the seller for the financing mandated repairs.

The middle band is much narrower than the other bands. It consists of the discounts associated with loans financed by commercial lenders. Where the percentage of list price received as a sale price hovers near 100 percent for government financed sales, *commercial lender financed* purchases are negotiated down about 2.5 to 5 percent. My participation in the market leads me to believe conventional financing (requiring 20 percent or more as a down payment) and PMI financing (requiring either 5 or 10 percent down) were viewed by participants as one type of financing - commercial lender financing - available at levels of down payment between 5 and 20 percent. The very narrow spread exhibited in the second band is taken to support that belief.

The third band (lowest of the three) consists of seller financed and buyer financed (cash) sales. Once again, these results suggest that cash and land contract sales represent a unique, and less frequently used spectrum of the market. Cash and land contract sales consistently produce the lowest price and the greatest negotiated difference between the listed price and the selling price.

Market pricing, foreclosures and equilibrium

There are distinct ways to look at the impact of real estate foreclosures. When the number of foreclosure in a specific geographic area is relatively small compared to the supply of housing being marketed, the impact is strictly one of proximity. That is, if the foreclosed property is not well maintained or somehow perceived as a negative economic force, studies show a "proximate" effect: the value of nearby properties will be affected.[2] The affect extends to properties located between two hundred fifty feet and one eighth of a mile (660 feet)... not market wide.

Sometimes there are so many foreclosed properties that they alter the supply of available properties in such a way that the average price of all sales in the market is effected. That affect has been reported across the U.S. by many researchers in many markets since the year 2008. In a well executed study, researchers at the Massachusetts Institute of Technology (MIT) examined 1.75 million transactions across the state. They reported in 2009 that the abundance of foreclosures had depressed average prices by twenty-eight percent.[3] In 2011 Realty

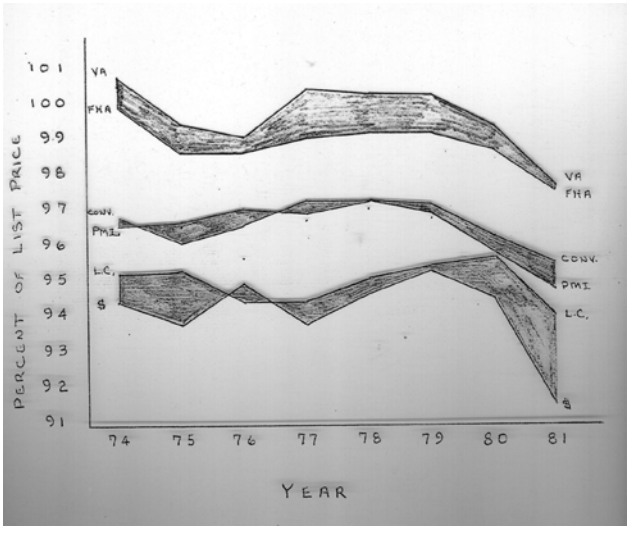


Figure 10

TRAC reported foreclosures prices averaged thirty-two percent less than non-foreclosure sales.[4] In Februrary 2012, the Case Shiller index for national composite housing prices illustrated that the national composite index was down 33.8 percent from its Q2 2006 peak. Research distinguishing between the nearby (proximate) effect and the market-wide effect of foreclosures can be found in the endnotes.[5]

When a market is in equilibrium, buyers and sellers generally conduct negotiations where neither feels an extraordinary pressure to buy or sell, there is adequate time to expose a property on the market and adequate competition to assure a fair market offer. Under these conditions, the relatively small number of foreclosed properties can be sold quickly and usually are regarded as not representative of market conditions.

Since data and metrics are available to study the impact of foreclosures in Michigan, an eleven year period (2000 - 2010) was examined. Eighteen counties within the state of Michigan were analyzed. Annual average selling price, number of MLS sales and the number of Sheriff's deeds were acquired for the years 2000 thru 2010 inclusive. There were two exceptions: Emmet County had only six years of available data and Macomb County had seven years. In both cases, data was available for the time period in which transaction prices fell from their peak. Therefore, that truncated county data was used.

For statistical analysis, it was hypothesized that their would be no meaningful relationship between the number of foreclosure deeds and average market price for properties sold each year in a market (null hypothesis). If there was a correlation, and it could have been produced by chance only five percent or less of the time, then the null hypothesis would be rejected and an alternative hypothesis adopted. The alternative hypothesis was there is a valid correlation between the ratio of Sheriff's Deeds and average selling price. Data from shown in Table 2 as the "first year of decline" was tested for correlation between county scores and the ratio of foreclosures to total units sold. A statistical process (T test) showed a definite correlation with a probability of it happening by chance being far less than one percent (p= 2.135E-09). A measure of the strength of the correlation was made (Pearson Coefficient .399133).

TABLE 2

Comparison: Average transaction price; Ratio Sales to Foreclosures; Change in price

	Year prior to decline			Year of first decline			Year following first decline		
	Avg Price	Ratio	Price Change	Avg Price	Ratio	Price Change	Avg Price	Ratio	Price Change
Allegan	$167,663	12.22	0.34	$161,533	10.4	-3.66%	$144,465	7.89	-10.57%
Bay	$106,963	6.34	1.12%	$102,828	3.46	-3.87%	$92,641	3.47	-9.91%
Branch	$122,141	3.34	2.67%	$110,041	2.84	-9.91%	$96,274	1.94	-12.51%
Calhoun	$125,543	3.23	0.63%	$121,175	1.97	-3.48%	$118,783	1.17	-1.97%
Emmet	$324,532	6.45	14.79%	$300,546	3.14	-7.39%	$271,448	2.65	-9.68%
Genesee	$135,662	3.43	3.29%	$122,135	1.77	-9.97%	$108,796	1.51	-10.92%
Hillsdale	$107,490	2.51	1.30%	$99,782	1.72	-7.17%	$81,329	1.44	-18.49%
Ingham	$152,805	8.84	3.86%	$149,691	4.22	-2.04%	$143,074	2.86	-4.42%
Jackson	$142,447	3.37	6.16%	$133,432	1.97	-6.33%	$112,246	1.25	-15.88%
Kalamazoo	$159,327	5.71	1.91%	$152,335	4.00	-4.39%	$137,145	3.72	-9.97%
Kent	$161,840	4.67	1.30%	$145,584	3.24	-10.04%	$122,837	2.40	-15.62%
Lenawee	$145,151	5.54	5.38%	$144,388	5.09	-0.53%	$140,504	2.90	-2.69%
Livingston	$285,404	11.46	14.01%	$241,876	10.63	-8.86%	$230,329	3.61	-4.77%
Macomb	$176,363	16.00	2.71%	$174,924	12.12	-0.82%	$159,135	2.44	-9.03%
Saginaw	$113,610	4.02	3.31%	$107,998	2.14	-4.94%	$96,521	1.68	-10.63%
St. Joseph	$122,140	4.55	13.75%	$120,784	3.76	-1.11%	$114,140	3.21	-5.50%
Shiawassee	$122,460	4.53	13.58%	$118,186	3.78	-3.50%	$114,570	1.93	-3.04%
Washtenaw	$296,633	8.34	0.97%	$258,934	4.76	-2.89%	$251,090	2.67	-3.03%
Dare Gladwin									
Monroe									
Mean		6.36			4.50			2.71	
Median		5.10			3.61			2.55	

In Figures 1, 7 and 8, one can see an impact on transaction pricing and on choice of financing when there is a dramatic rise in foreclosures. The impact on average selling price for the eighteen counties is illustrated in Table 2. In order for data to be included in the statistical analysis, the maximum average price had to be followed by at least two consecutive years of decline. Consequently, the table identifies a specific county then presents data for three consecutive years. The first year is the year that precedes two years of steady decline. Each year's data contains the average selling price for that market as reported by the local multiple listing service (MLS), the ratio of total sales annually in the market as reported by the MLS to the number of Sheriff's Deeds recorded at each Register of Deeds office and the change in average annual selling price from the preceding year to the current year as a percentage of the prior year's price.

From the last two lines of the table, one can see that in the year immediately preceding the first drop in prices, *the average number* of sold properties was six for every one foreclosure. When the ratio of all sold properties to foreclosures dropped to approximately 4:1, price drops were evident. Corresponding rounded median values were 5 and 4 respectively. As the plunge continued the ratio in some jurisdictions dropped to below 2 MLS sales for every Sheriff's deed. A T-test was run again using the price and ratio as shown above, but consisting of 190 scores for each variable aggregated from all years and all counties. Based upon a two tailed T-test, with unequal variances and zero difference between the means, the correlation (-0.387679613) between ratios and prices having had happened by chance was far less than 1 in a hundred (p= 3.69E-87).

Table 3 provides more data for the entire eleven years with shaded areas highlighting the three years shown in Table 2. Five counties had prices peaking in calendar year 2004, five counties had prices peaking in 2006 and in eight counties prices peaked in 2005. Interestingly, every county but Jackson County had the lowest average annual transaction price in 2009. Jackson County is the only county to show a dip in prices in 2010. All other counties saw some growth in the average annual selling price reported by the Board of Realtors. No county exhibited declines of fewer than two consecutive years. At maximum, prices ranged from a low of $106,963 to a high of $324,532.

A "maximum loss" was calculated for each county. This calculation appears in the right- most column. Maximum loss is the difference between the maximum average annual price for the eleven year period and the lowest average annual price. 2009 was the year of the lowest annual average price for every county but Jackson County. Jackson County dipped to its lowest value in 2010. Mean and median prices were calculated for each individual year. They demonstrate average price peaked for all counties in calendar year 2006. According to both the mean and median, prices bottomed out in calendar year 2009 for this group. The mean and median maximum drop in average annual price is about thirty-eight percent.

Comparison of prices												Maximum
YEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Loss
Price												
Allegan	$133,148	$140,720	$148,723	$156,162	$152,097	$167,098	$167,663	$161,533	$144,465	$128,340	$136,921	23.45%
Bay	$97,963	$98,580	$97,817	$99,664	$105,776	$106,963	$102,828	$92,641	$75,370	$64,210	$70,923	39.97%
Branch	$94,480	$100,452	$104,320	$109,883	$118,959	$122,141	$110,041	$96,274	$91,586	$82,260	$79,013	35.31%
Calhoun	$102,968	$109,461	$111,880	$117,703	$124,754	$125,543	$121,175	$118,783	$94,494	$77,244	$90,747	38.47%
Emmet						$282,722	$324,532	$300,546	$271,448	$210,142	$237,549	35.25%
Genesee	$117,439	$124,967	$127,926	$132,857	$131,339	$135,662	$122,135	$108,796	$85,297	$70,431	$74,910	48.08%
Hillsdale	$91,776	$96,131	$99,351	$106,545	$101,639	$106,114	$107,490	$99,782	$81,329	$66,084	$74,695	38.52%
Ingham	$131,158	$135,032	$139,344	$146,401	$147,126	$152,805	$149,691	$143,074	$116,678	$95,341	$101,979	37.61%
Jackson	$118,407	$128,516	$122,012	$128,201	$134,182	$142,447	$133,432	$112,246	$80,529	$82,542	$81,629	43.47%
Kalamazoo	$127,422	$133,865	$135,780	$146,776	$154,287	$156,347	$159,327	$152,335	$137,145	$124,206	$133,171	22.04%
Kent	$131,591	$135,997	$146,319	$146,601	$153,024	$159,762	$161,840	$145,584	$122,837	$108,047	$118,632	33.24%
Lenawee	$125,274	$132,931	$134,900	$137,735	$145,151	$144,388	$140,504	$133,121	$103,887	$83,027	$83,585	42.80%
Livingston	$215,039	$245,478	$247,027	$232,786	$265,404	$241,876	$230,329	$206,688	$180,215	$148,853	$151,409	43.91%
Macomb	$152,971	$162,522	$164,748	$171,709	$176,363	$174,924	$159,135	$136,868	$125,692	$88,663	$95,144	49.73%
Saginaw	$90,096	$98,352	$99,291	$106,000	$109,967	$113,610	$107,998	$96,521	$81,222	$75,053	$80,079	33.94%
St. Joseph	$93,173	$97,052	$102,135	$107,380	$122,140	$120,784	$114,140	$121,881	$107,380	$79,316	$96,062	35.06%
Shiawassee	$101,841	$105,617	$112,662	$107,805	$122,450	$118,166	$114,570	$96,209	$82,630	$66,793	$96,062	45.45%
Washtenaw	$228,343	$237,449	$247,216	$258,926	$264,080	$266,633	$258,934	$251,090	$213,205	$183,473	$185,626	31.19%
Median	$118,407	$128,516	$127,926	$132,857	$134,182	$143,418	$136,968	$127,501	$105,634	$82,785	$95,603	38.04%
Mean	$126,652	$134,301	$137,732	$141,949	$148,749	$157,666	$154,765	$142,998	$121,967	$101,890	$110,452	37.64%

Table 3

Table 4 compares the ratio of MLS sales reported annually to the number of Sheriff's Deeds issued and expresses that ratio as a percentage. For example, in a county where there were four MLS sales for every one Sheriff's Deed, the ratio would be 4:1. Since there are five transactions in total (four sales and one deed) the decimal equivalent of one Sheriff's Deed in every five transactions is 0.20. The shaded years of the table illustrate the three year period beginning with the maximum price and the two consecutive years of decline in average annual transaction price. The dotted background illustrates the year in which new foreclosures occupied the greatest market share (ratio of MLS sales to Sheriff's Deeds). In this way one can view how the ratio of Sheriff's Deeds to annual sales reported by the multiple list service changes with changing price. This does not consider any prior foreclosures which may have remained unsold and were still available in the market. For three counties new Sheriff's deeds reached their maximum ratio to sales in calendar year 2010.

A mean and median is calculated based upon what percent of market Sheriff's Deeds occupy. The last column presents the change from the year with the greatest number of sales to Sheriff's Deeds and the year with the fewest. Large ratios mean few foreclosures. It was expected that as the number of foreclosed properties increased, there would be some point where prices would drop. It happened at about between 3:1 and 4:1. The supply of housing contained so many foreclosures that the foreclosed properties become competitive with owner occupied and other houses that historically constituted market supply. Thus, supply is materially altered and buyers choose a foreclosed property as a substitute for traditional listings.

Note the high change in the ratio of MLS sales to newly recorded Sheriff's Deeds from the year 2000, (mean =16.50/1) to the point at which there is the smallest ratio (mean=2.25/1). The "High to Low" column contains a mean ratio reduction of 83.25% and a median of 83.63%. In 2006, when all counties were experiencing a generalized change in prices, the ratio of annually sold properties reported by the MLS to new Sheriff's Deeds had dropped to a mean value of 3.05 and the median value was 3.83. Considering one Sheriff's Deed and 4 MLS sales, price drops when Sheriff's Deeds represent (1 in 5) or (1 in 4) ownership changes.

Relevant Legal Considerations

In order to properly determine factors external to a property which affect fair market value, one must consider legal, economic and scientific facts specifically related to the fair market or *true cash value* of real estate. This section begins with U.S. and Michigan court declarations, moves on to guidelines from the STC and Attorney General (A.G.) and ends with statements about the assessor's manual.

Comparison of Ratios												Change	Change
YEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	High to Low	Peak Price
Ratio													
Allegan	46.08	26.41	24.29	24.15	21.44	16.21	12.33	10.40	7.89	6.19	7.03	86.58%	73.24%
Bay	11.05	8.75	6.57	6.79	7.68	6.34	3.46	3.47	2.63	3.44	2.68	76.17%	42.64%
Branch	7.10	5.01	4.08	4.03	4.07	3.34	2.84	1.94	1.76	2.21	1.83	75.24%	52.97%
Calhoun	6.84	4.00	4.31	3.19	3.18	3.23	1.97	1.17	1.44	1.68	1.51	78.94%	52.74%
Emmet						12.22	6.45	3.14	2.65	2.24	2.33	81.70%	47.19%
Genesee	5.15	4.45	4.15	3.77	4.37	3.43	1.77	1.51	1.48	2.28	1.74	71.17%	33.39%
Hillsdale	7.24	4.88	3.85	3.16	3.18	3.29	2.51	1.72	1.44	1.96	1.62	80.08%	65.33%
Ingham	16.88	16.50	14.40	24.02	12.39	8.84	4.22	2.86	2.79	3.25	2.91	83.49%	47.65%
Jackson	7.71	6.54	3.79	3.49	3.72	3.37	1.97	1.25	1.50	2.06	1.75	83.79%	56.37%
Kalamazoo	18.33	13.65	17.13	9.72	10.79	7.58	5.71	4.00	3.72	3.70	3.11	83.02%	68.83%
Kent	18.06	14.85	11.53	11.52	10.83	9.40	4.67	3.24	2.40	3.51	2.84	86.69%	74.16%
Lenawee	14.69	7.12	6.10	5.14	5.54	5.09	2.90	2.07	1.68	2.46	1.51	88.56%	62.28%
Livingston	28.07	21.79	11.96	13.62	11.46	10.63	3.61	1.95	1.53	2.03	1.97	94.53%	59.19%
Macomb	36.06	24.72	16.18	12.88	16.00	12.12	2.44	1.43	1.00	1.56	1.16	97.22%	55.62%
Saginaw	8.65	7.01	5.82	5.02	4.42	4.02	2.14	1.68	1.62	2.67	1.82	81.25%	53.50%
St. Joseph	7.70	3.52	3.48	4.07	4.55	3.76	3.21	2.40	1.64	2.14	1.93	78.65%	40.98%
Shiawassee	7.36	6.59	4.87	4.31	4.53	3.78	1.93	1.59	1.20	1.73	1.14	84.53%	38.40%
Washtenaw	33.59	24.81	16.07	13.72	12.98	8.34	4.76	2.67	2.10	2.50	2.20	93.73%	75.18%
Median	11.05	7.12	6.10	5.14	5.54	5.71	3.05	2.01	1.66	2.26	1.88	83.25%	54.56%
Mean	16.50	11.80	9.33	8.98	8.30	6.94	3.83	2.69	2.25	2.64	2.28	83.63%	55.54%

Table 4

The U.S. Supreme Court urged a fact based approach consistent with the idea of relevant legal, economic and scientific facts in a 2007 decision[6]. The court, quoting an earlier decision said, "Valuation of property, though admittedly complex, is at bottom just 'an issue of fact about possible market prices,' *Suitum v. Tahoe Regional Planning Agency*, 520 U. S. 725, 741 (1997)" Michigan's Supreme Court connected the interpretation of constitutional language regarding a determination of true cash value to understanding by the citizen. True determinants of market value are not restricted to definitions used to create a law, but are found within the understanding of citizen participants - presumably, buyers and sellers. The entire passage from which the following quote was extracted contains excellent links to early court cases and expert interpretation.

> A constitution is made for the people and by the people. The interpretation that should be given to it is that which reasonable minds, the great mass of the people themselves, would give it. 'For as the Constitution does not derive its force from the convention which framed, but from the people who ratified it, the intent to be arrived at is that of the people, and it is not supposed to be that they have looked for any dark or abstruse meaning in the words employed, but rather that they have accepted them in the sense most obvious to the common understanding. *Washtenaw, supra* 371

The phrase "obvious to the common understanding" is important. Tension between citizens and a tax administrator lie within their respective understanding of when values are affected by market conditions such as: the abundance of tax reverted and loan foreclosed properties; or choice of financing utilized to consummate a real estate transaction in an affordable way. Fortunately, a series of legal guides, which proceeds from the state's constitution to agency rules, has been promulgated on this troublesome predicament.

True Cash Value required by the Constitutional

Michigan's Constitution of 1963 at Article 9, § 3 states in part: The legislature shall provide for the uniform general ad valorem taxation of real and tangible personal property ... *The legislature shall provide for the determination of true cash value of such property ... and for a system of equalized assessments.* Constitutions of 1850 and 1908 both required assessments at cash value. Today's tax administrators must make a determination of a property's "True Cash Value."

True cash value and Michigan statutes

The statutory definition of "true cash value" is found in Michigan's Compiled Laws at the General Property Tax Act (MCL 211.27(1) as:" *the usual selling price at the place where the property to which the term is applied is at the time of the assessment, being the price that could be obtained for the property at a private sale*, as opposed to an auction or forced sale."[7] Thus a study must consider all important determinants of the usual selling price of a property as a private sale, negotiated at arms length; not auctioned off or sold as the result of some unique obligation.

Judicial Decisions

Michigan's Supreme Court determined that "true cash value" is synonymous with "fair market value" in *CAF Investment Co. v State Tax Comm*, 392 Mich 442, 450; 221 NW2d 588 (1974). Importantly, the assessment must reflect the probable price a willing buyer and a willing seller would arrive at through arm's length negotiation. *Safran Printing Co v Detroit*, 88 Mich App 376, 382; 276 NW2d 602 (1979)[8].

In *County of Washtenaw v State Tax Commission*, 422 Mich 346; 373 NW2d 697(1985) the Supreme Court held that the impact of creative financing must be considered in the state equalization process. Emphasizing that the assessment administrator is to utilize market facts rather than an administrative definition in reaching a determination of property value, the court noted the constitution requires an assessment at fifty percent of true cash value and that the constitutional mandate usually trumps any legislative mandate: "to hold that true cash value can be defined by the Legislature would, for all practical purposes, make the fifty percent limitation meaningless." "The general meaning of true cash value predated the Constitution of 1963, and it is not likely that the drafters would incorporate that phrase, with its long history of interpretation and settled meaning, only to have its future left to the whim of the Legislature." (Ibid. Washtenaw, pg 708). Within forty- five days, the STC issued Bulletin No. 11, which prescribed methods for implementing the court order to consider creative financing in the valuation procedure.

A.G. Opinions

Of the many forms of real estate purchase financing, only the land contract sale raises ownership issues. The state Attorney General has opined that land contracts convey ownership and a land contract buyer is the owner of the property. The Attorney General Opinion 6107 of 1982 states the following:

> The term 'taxpayer' is not defined within 1893 PA 206, supra. However, it is clear that in connection with the taxation of real property, the terms 'taxpayer" and 'owner' are synonymous." Furthermore, the opinion states: "It is to be noted that a recorded affidavit or memorandum of land contract is evidence that a transfer of an interest in real property has taken place. As indicated earlier, a land contract purchaser is viewed as the 'owner' and the 'taxpayer' of real property for assessment and taxation purposes ...

Like the Washtenaw Court, the A.G. considered the supply of money necessary for transactions and discussed connections between national money lending policies and local financing. The A.G. looked at variable financing rates, deciding adjustable rate mortgages (ARMS) are allowed if conditionally linked to a predetermined index *such as a nationally average mortgage rate.* The link between local financing and national monetary rates discussed in A.G. Opinion Number 6000 (1981) is appropriate if:

> interest rate adjustments are linked to changes in a predetermined index which may include any criteria which is verifiable by the borrower and beyond the lender's control, such as the national average of mortgage rates, the average cost of funds to insured lenders, or the average treasury bill rate." ..."By using variable rate mortgages, lenders may maintain the return on their loan portfolios in a current market condition.

Rates used for land contract sale financing was preempted from the state control in the following way ac-

cording to A.G. Opinion 6000:

> ... the state's usury laws relating to first lien residential real property loans have been preempted by the federal depository Institutions Deregulation and Monetary Control Act of 1980, supra. This federal regulation applies to lenders who are either federally regulated or otherwise federally approved, although a recent amendment to the act authorizes individuals who finance the sale of unencumbered residential real property in which they live to also take advantage of the federal usury preemption. 94 Stat 1648 (October 8, 1980); 12 USC § 1735f-7 note.
>
> PL 96-221 also preempts state usury ceilings by allowing any rate of interest for virtually all first lien mortgages and mobile home loans as well as first lien mobile home installment contracts. Moreover, under PL 96-221, an individual selling his or her home and taking a first lien on the title or a land contract given in exchange for the sale of unencumbered property could be at any rate of interest. The states had the authority to override the federal preemption of the first lien mortgages and mobile home loans but had to take action before April 1, 1983. The state of Michigan did not take action before the deadline. With regard to other loans, states can override the preemption at any time.[9] Prior to federal preemption, land contracts were limited to eleven percent annual interest.[10]

In part, these rulings and decisions, drove this study's quest for statistically valid correlations between the Freddie Mac annually reported, average 30 year fixed rate mortgage. That residential real estate transactions financed by commercial lenders fulfill the mandate of being a "cash equivalent sale" and land contracts do constitute a sale for property valuation purposes is important to the validity of correlations between those financing choices and average price.

Currently effective Michigan State Tax Commission Bulletins

STC Bulletin No. 11, October 14, 1985 announced "the State Tax Commission developed a method to account for creative financing" pursuant to the court's directive: The bulletin defines a conventional sale and a creatively financed sale and describes procedures for adjusting creatively financed sales. The bulletin specifically refers to seller financed sales.

STC Bulletin No. 5, August 15, 2007 announced criteria for use of a single year sales ratio study and described a "declining" real estate market in part as ...when there are a reduced number of market sales without a reduction in the number of listings and an increase in the number of foreclosure sales.

STC Bulletin No. 6, August 15, 2007 is a "guideline for foreclosure sales."It states the proper selection of sales for inclusion in sales ratio studies "is critically important to the development of uniform and accurate assessments." The bulletin acknowledges "[T]he recent increase in foreclosures has caused those transactions to have an impact on the real estate market in some parts of the state." Bulletin No. 6 declared: "If it is determined that sales from financial institutions are open market transactions the sales may be used if they have been verified." Verification includes but is not limited to: (1) the type of sale being reviewed is a measurable portion of the market; (2) the sale was properly exposed to the market; and (3) adequate statistical procedures can be utilized as an alternative to real property statements "to ensure the sales are an adequate part of the market."

Use of assessing manual and approachs to value

The Supreme Court addressed the various approaches utilized in property valuation:

> There are three traditional methods of determining true cash value, or fair market value, which have been found acceptable and reliable by the Tax Tribunal and the courts. They are: (1) the cost-less-depreciation approach, (2) the sales-comparison or market approach, and (3) the capitalization-of-income approach. Variations of these approaches and entirely new methods may be useful if found to be accurate and reasonably related to the fair market value of the subject property. It is the Tax Tribunal's duty to determine which approaches are useful in providing the most accurate valuation under the individual circumstances of each case. Regardless of the valuation approach employed, the final value determination must represent the usual price for which the subject property would sell.[11]

MCL 211.10e states that "[a]ll assessing officials . . . shall use only the official assessor's manual or any manual approved by the state tax commission . . . as a *guide* in preparing assessments" (emphasis added). If evidence of a different true cash value is apparent, a party may obtain a deviation from the manual. See, e.g., *Jones & Laughlin Steel Corp v City of Warren*, 193 Mich App 348, 353, 356; 483 NW2d 416 (1992). Ultimately, the true cash value of the property controls. See generally *Washtenaw County v State Tax Commission*, 422 Mich 346, 364-365; 373 NW2d 697 (1985). Accordingly, the Assessor's Manual does not constitute a binding rule of law that definitively establishes the true cash value of taxable property.[12]

Conclusions

This study found that buyers and sellers react to economic forces within a local real estate market by negotiating specific choices in financing and by varying individual transaction prices to an extent that the average annual selling price for all properties within the market changes. This is consistent with the Michigan Supreme Court which said:

> There is no dispute that the cost of borrowing in 1981, with mortgage rates in excess of fifteen percent, contributed to the depressed value of property that was reflected in the sales-ratio studies of the plaintiffs. It is also a safe assumption that the disparity between the prevailing cost of a mortgage and a land contract, limited by law to an interest rate of eleven percent, explained the prevalent use of that most common form of creative financing in 1981. *Washtenaw County supra* at 365.

This study finds that dominant choice of real estate financing is a critical metric in a real estate market. Changes in the dominant choice of financing identify when a market is in equilibrium and when it is in transition. A market in equilibrium is identified by the predominant use of commercial lender backed residential financing commonly known as the "conventional" loan. At that condition, number of units sold is maximized, market time is minimized and average annual price is

maximized. Sales using conventional loans exceed the average price of all other financing methods within the market. Cash equivalent transactions as defined in STC bulletin 11 of 1985 comprise the majority of transaction financing in a real estate market at equilibrium.

When the use of alternate financing replaces the conventional loan, the average price for all properties falls. The average price of transactions financed by the dominant alternative financing does not exceed the average price obtained for all transactions.

Of the four most used financing methods (cash, conventional loan, government backed loan and land contract) all but "cash" correlated at a statistically significantly level with average transaction price in a local market and with the nationally reported Freddie Mac annual average 30 year fixed rate mortgage. The study concluded that national lending policies are a fundamental influence on transaction financing at the local level. The conclusion recognizes that local idiosyncratic conditions could mitigate the national affect. An example from this study was the impact of Michigan's statutes which limited seller financed interest rates (land contracts) to eleven percent when national rates were greater than 16 percent (federal preemption later negated this law). Legal support for the importance of referencing a national index was found in A.G. Opinion 6000 (1981).

Table Summary

Summary Table: conditions defining a real estate market and generalized change

Data name	Statistic indicating change	Comments
Ratio of market transactions to new annual foreclosures	Between (4:1) and (3:1)	When there is one sheriff's deed recorded for every four or fewer sale transactions reported by the local multiple listing service, the average sale price for all properties in the market declines
Replacement of dominant form of financing	At a market share of 25% to 35%	Any time conventional financing is replaced by an alternative form, such as cash or seller financing there is a generalized change in the average selling price for all properties in the market
Demand - Percent of market inventory sold annually	2.2% to 3 .9% of all residential parcels	Divide number of parcels sold annually by total of all residential parcels within market
Competition: Kinnard/Dickey, estimate of maximum market exposure needed to generate competitive bidding	If 10-15% of potential buyers are aware of property, competition is assured included to provoke thought.	Negotiation begins with a single offer. Competition begins with two bidders. When Foreclosures are listed with an MLS, market exposure is often greater than with other lender marketing methods.

The study from which this report is taken, focused on real estate transaction data for a thirty- seven year period (1974-2010) and transactions in twenty real estate markets drawn from three U.S. states. Conventional, cash and land contract sale financing were used similarly. It is suggested, conclusions found herein may be applicable to other U.S. markets. More research is encouraged.

The STC defined a "declining" market, stated that foreclosures had diminished prices in some parts of the state and articulated three parameters to be considered when determining if a real estate transaction could be included within sales ratio studies or as an indicator of market value: adequate market exposure time; activity that constitutes a measurable percentage of the market and the use of appropriate statistical techniques for analysis. This research examined those parameters and used three common statistical techniques to arrive at conclusions: the t-Test, Pearson coefficient and multiple regression analysis. Relevant statistics extracted from this research and referenced work shown in the Summary Table (except the Kinnard/Dickey estimate) have been confirmed for Michigan markets only.

Whether a real estate market is at equilibrium or not can be determined graphically by plotting the relative percent of market for the most frequently used financing methods in a market. From anomalies in the following patterns, one can conclude economic forces are acting within the market to disrupt equilibrium: (1) the dominant choice of transaction financing; (2) the average annual selling price; (3) the ratio of distressed properties available for sale in the market (measured as Sheriff's deed) to the annual number of brokered sales; (4) the average discount from list price to final selling price; (5) the historical relationship between the average selling price for all properties, (6) the relationship between the number of annual listings and annual sales and (7) the average selling price of properties in each transaction financing category. For a market in equilibrium, the dominant choice of transaction financing is the cash equivalent sale; defined as a new mortgage having between 20 percent and 5 percent as a down payment (includes loans that require Private Mortgage Insurance (PMI)). These sales were reported as "conventional" loans in the multiple list service reports.

Earlier research affirmed at least two impacts of the presence of a vacant, foreclosed residential property. One effect is a reduction of nearby property values. The other is that when a sufficient number of foreclosures are introduced into a real estate market a generalized reduction in all property values occurs. This study found a market-wide decline in property values following widespread foreclosures. It concludes there is a supply side threshold point at which the abundance of foreclosed properties creates a new market dynamic. The threshold lies between one new foreclosure deed for every three or four sales reported by the multiple listing service in a year. Up to the threshold, the effect of a foreclosure is limited to nearby properties. After that point a market wide reduction in residential property values became evident. This effect was present in all eighteen markets for which data was available and similar effects have been reported across the U.S. in academic studies and in popular media reports. It is expected that other valid ratios can developed.

Evidence from this study supports a similar threshold effect in the 1980s when extraordinarily high mortgage rates developed. However, the study's demonstration of declining average property values seems to be at odds with the then prevailing economic theory. The widely used premise seems to have been that a land contract would inflate property values; presumably because the seller would demand a higher price because payment in cash was deferred. The study found lower prices. The contradictory expectations of land contract financing can be explained by a threshold effect. That is, when a

sale is financed with a land contract and the market is in equilibrium, a seller may well demand more compensation. However, when the market is in disequilibrium, the seller loses the ability to demand payment in cash or via a conventional loan.

More work should be done on the concept of "segmentation;" specifically, the use of specific forms of financing for specific types of residential properties when a market is at equilibrium. This study provides clear evidence that land contract and cash sales historically represent a limited portion of the market and the properties routinely financed with these methods have an average selling price that is substantially lower than the average transaction price for all properties within the market. It is significant that the cross market comparison showed similar uses of land contract and cash sales in each of the three U.S. states surveyed.

In summary, average transaction price in a residential real estate market is statistically related to the choice of financing. As would be expected by the Michigan State Tax Commission's definition of a cash equivalent sale, the convention loan does consistently provide the highest average transaction price in a market at equilibrium. Whether or not a market is at equilibrium can be determined by an examination of the dominant choice of financing within a specific market over time, the average transaction price of all properties and the average transaction price of for each of the most used methods of transaction financing. While not detailed in this report, the source study found twenty economic influences external to individual properties which could be placed into one of four categories: Affordability, Demand, Supply and Financing. Using a reiterative technique, a formula generating the "best fit" combination of the components within the four categories was created from statistically significant correlations, a Pearson score and multiple regression analysis. This report focused on choice of financing only. It did not formally take into account areas where there are large numbers of tax reverted properties present. Tax reverted properties invoke a separate generalized reduction of property values; probably due to blight. Further research is needed.

Markets compared for this analysis were serviced by one dominant multiple listing service and analyzed using state, federal or other data at the county level. Within any sufficiently large geographic area, there will be sub-markets such as cities, school districts et cetera. These unique areas may have sufficient sales to develop unique ratios or other useful metrics. The working paper used as this report's source may be found at: www.michiganpropertytax.com/marketrpt.pdf .

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Endnotes

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