UNDERWATER MORTGAGES: WHY HOMEOWNERS MAY CONTINUE TO PAY THE DEBT

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ABSTRACT

The ongoing decline in housing values has left a segment of homeowners with mortgage balances that are larger than the property's market value and many of these underwater owners continue to make mortgage payments on-time and in-full. This situation is not compatible with theories or teachings in finance and makes it no economic sense for the homeowner to continue making payments on the debt.

This paper introduces some realistic interpretations that may help to explain why timely payments continue to be made by a subset of the estimated 12-14 million people with underwater mortgages. Initial secondary data and evidence is provided by the National Housing Survey conducted monthly and compiled quarterly by Fannie Mae. The focus is on the attitudes and beliefs of underwater mortgage holders and how they may value the real property rights that are a central part of homeownership. It is suggested that this subset of homeowners value these intangible rights to such an extent that they are willing to continue making payments. Further, these rights are valued because many basic conscious and subconscious needs are met through having access to, and ownership of, consistent reliable shelter. The paper lays the groundwork for primary data collection that may further address both the value of real property rights and motivation theory to obtain those rights.

INTRODUCTION

When a homeowner purchases their primary residence using debt, the result is typically two documents. The first is a loan or promissory note and the second is the mortgage or deed of trust (Galaty, Allaway, & Kyle, 2003). The promissory note is the borrower's personal promise to repay and contains the terms of repayment. The mortgage is a security instrument that gives the lender the right to sue for foreclosure if the terms of the note are violated. The mortgage creates a lien on the property. Most lending institutions prefer to loan 80 percent or less of the value of the real property when issuing a primary, or first-in-line, note. Lenders assume that a homeowner with 20 percent equity in the property is highly motivated to adhere to the terms of the note so that the security document never has to be executed. In attempting to increase homeownership in the U.S., government agencies and government-sponsored enterprises have created many programs designed to protect lenders if they underwrite a loan for more than 80 percent of the value of the property. At least one program allows loans of up to 96.5 percent of the property's value if the borrower qualifies (FHA, n.d.).

Large loan-to-value ratios to purchase real property allows very little cushion if the value of the collateral declines; a situation that has become all too familiar in the U.S. since 2007. When the value of the home used as collateral falls below the amount of the secured debt, the loan is said to be "underwater," and recently there were approximately 12 million such loans in the U.S. (Bernanke, 2012). In the absence of other considerations, it makes no economic or financial sense for the borrower to continue to make payments on the debt, however, it is estimated that fully 90 percent of underwater homeowners are current on their mortgage and continue to make payments (Zillow, 2012).

This paper argues that, when other considerations are taken into account, underwater homeowners have other-than-financial reasons to continue making payments. It begins with a discussion of the current state of underwater mortgages in the U.S. followed by a summary of the National Housing Survey for the first quarter 2012 with specific attention to attitudes of underwater homeowners. Then the theoretical underpinnings for motivation and need satisfaction first described by A.H. Maslow (1943) are outlined. It is suggested that need satisfaction consciously or subconsciously motivates underwater homeowners to continue making payments on the mortgage debt. Finally, it is argued that the owner of real property rights may place such a premium on the value of the rights that they are justified in making on-time and in-full payments on an underwater mortgage.

UNDERWATER MORTGAGES IN THE U.S.

According to Bernanke (2012), "It is estimated that indeed, about 12 million homeowners – more than 1 out of 5 with a mortgage – are underwater, meaning they owe more on their mortgages than their homes are worth." Approximately 31.4 percent of homeowners in the U.S. are currently underwater in their mortgage and the typical amount that the debt exceeds the property value is $75,644 (Zillow, 2012). It is estimated that the cumulative value of underwater debt is $1.2 trillion (Humphries, 2012). The cause of this nationwide negative equity phenomenon is well documented to be (1) underestimation of borrower credit risk when underwriting questionable exotic loans, (2) lending standards that allowed individuals to borrow excessively against the equity in their homes, and (3) a collapse in real estate prices during the recent financial crisis.

A myriad of assistance programs have been implemented by both the public and private sector to assist homeowners cope with the loss in property value. These programs have primarily focused on homeowners whose mortgage payments are delinquent and those who may be facing foreclosure (e.g. Johnson, 2011). Fewer methods of assistance are available to underwater homeowners whose mortgage is current. One solution for these homeowners is to purposefully stop making further payments, so that they would eventually qualify for assistance. Known as a "strategic default," it is performed by persons who have the financial resources to continue making payments, but choose to stop (Strategic default, n.d.). However, 59 percent of all homeowners surveyed would not choose this option if they were underwater on their mortgage by 40 percent (Riefflin, 2012). Indeed, a housing research company survey recently found that 90 percent of underwater homeowners continue to make payments on their mortgage debt (Zillow, 2012).

RECENT SURVEY EVIDENCE FROM U.S. HOMEOWNERS

FannieMae conducts a telephone survey of the general population each month that compiles an array of attitudes and behaviors of both those that rent and those that own their residence. The data from three monthly reports is combined to provide a quarterly report. The most recent Quarterly National Housing Survey is the first quarter 2012, which indicated that 30 percent of respondents rent, 5 percent are boarders, and 65 percent own their primary residence. Of those that own, 41 percent own outright and 59 percent have a mortgage on the property. Twenty five percent of mortgaged property was reported to be underwater, while 59 percent are above water. The remaining 16 percent believe that the debt and the properties' value are even.

When asked how far they are underwater, 63 percent indicated that the home is worth at least 20 percent less than all debt secured by the property, with the other 37 percent estimating that the debt exceeds the property's value between 5-20 percent. It is interesting that 47 percent of underwater homeowners believe that the current value of the home is *greater* than the purchase price, and yet they find themselves underwater. This would indicate that the property was subsequently used to secure debt beyond the initial mortgage and, in aggregate, the total debt now outweighs current value of the home. If a home becomes worth less than what is owed, it is not acceptable to discontinue making payments according to 88 percent of both underwater and above water homeowners. The strategic default option is viewed negatively by both groups. An economist quoted in Riefflin (2012) states, "Of course, strategic default is not just a mathematical decision. The most common reason for avoiding strategic default cited by homeowners was that it is a moral issue."

Exhibit 1 contains the attitudinal questions of the National Housing Survey from the first quarter of 2012, along with the percentages of respondents that believe owning rather than renting their primary residence is the way to achieve the stated goal or objective. Of note is that these objectives are not outwardly financial or economic in nature.

Exhibit 1: Achieving Goals by Owning versus Renting: National Housing Survey results				
Percentage that selected owning as opposed to renting as the way to achieve stated objective				
	General Population N=3,048	**Those with mortgages N=1,166**	**Above water N=654**	**Under Water N=280**
Have control over what you do with your living space	93	98	98	97
Have a sense of privacy and security	90	96	96	94
Have a good place for your family or to raise children	88	90	90	91
Live in a place where you and your family feel safe	83	89	90	90
Feel engaged in your community	80	88	88	89
Live in a nicer home	82	86	88	82
Live in your preferred school district	69	77	78	75
Live in a convenient location	62	66	66	67
Have flexibility in future decisions	61	60	59	60
Have less stress	50	48	48	48
More likely to buy rather than rent at some point in the future	58	59	50	79

Regardless of mortgage status, control of the property, happiness and safety of the family, school district and location, and having flexibility in the future are all perceived to be better obtained by owning a primary residence rather than renting, but at a cost of perhaps increased stress.

Interestingly, homeowners with underwater mortgages are substantially more likely to purchase another home sometime in the future versus those with above water mortgages (79 percent versus 50 percent, respectively). The anomaly does not appear to be a result of the age of the mortgage or phase in life of the homeowner. As the data in Exhibit 2 indicates, 81 percent of the underwater homeowners purchased their home in 2001 or after, and nearly half (49 percent) received the original mortgage since 2007. Over 90 percent of mortgaged properties have had their last refinance in the years since 2002 and two-thirds (66 percent) have refinanced since 2007. There is no substantive difference between underwater and above water mortgage holders in the timing of refinancing.

Exhibit 2: Cumulative Percentages Year of initial mortgage and Year of last refinance							
	Year of original mortgage				Year of last refinance		
	Those with Mortgages	Above water	Under water		Those with Mortgages	Above water	Under water
2012	0	0	0		6	7	7
2011	11	10	9		24	25	19
2010	21	21	14		39	39	36
2009	33	34	25		52	53	49
2008	41	41	36		59	61	57

Exhibit 2: Cumulative Percentages Year of initial mortgage and Year of last refinance							
	Year of original mortgage				Year of last refinance		
	Those with Mortgages	Above water	Under water		Those with Mortgages	Above water	Under water
2007	47	45	48		66	67	66
2006	56	52	59		71	72	71
2005	62	59	66		78	78	82
2004	70	67	73		82	82	87
2003	74	71	77		86	87	89
2002	78	76	78		88	89	91
2001	81	80	81		89	90	91
2000	85	86	84		91	92	93

Many entities echo the attitudinal findings in the National Housing Survey when comparing homeownership with renting. Carr (2011) notes four important reasons to buy a home:

1) It means having a good place to raise children and provide them with a good education.
2) You have a physical structure where you and your family feel safe.
3) It allows you to have more space for your family.
4) It gives you control of what you do with your living space (renovations and updates).

Creating stability, fostering community, being proud to own property, and having the ability to change the property to suit the homeowner's needs are four reasons to purchase rather than rent a primary residence according to Pinnacle Capital Mortgage Corp. (2012). It is also implied that buying real estate for other than investment purposes is often more of an emotional commitment than a financial decision.

Homeownership continues to be marketed as a positive experience by both public and private entities to such an extent that it is "bound up with our personal psychologies," and over 90 percent of people in the U.S. hope to own a home sometime during their lives (Pinnacle Capital Mortgage Corp., 2012). Further, most Americans were born and raised in a homeownership environment and have experienced the positive benefits long before understanding any of the financial implications. Given this experience and promotion, once a home is purchased there may be conscious or subconscious reasons why a property owner is highly motivated to keep and protect their home even at a substantial personal cost.

MOTIVATION TO OBTAIN OWNERSHIP OF A SECURE SHELTER

A well-known theory of human motivation was proposed A.H. Maslow in 1943. The theory assumes that human needs lead to motivation which may result in behavior to satisfy the unfulfilled needs. He proposes that human needs are arranged in a purposeful order ranging from basic physiological needs up to self-actualization needs or "being everything that one is capable of becoming." Once a need arises, it may eventually become so intense that it demands satisfaction (motivated behavior) in order to lessen the intensity or to eliminate it completely. Once a need is satisfied, the person is free to address additional higher-level needs as they arise. Exhibit 3 outlines Maslow's need hierarchy.

Exhibit 3: A. H. Maslow's Need Hierarchy	
NEED LEVEL	**EXAMPLE / MOTIVATOR**
Physiological	Breathing (Air), Food, Water, Sex, Sleep, Homeostasis (Warmth), Shelter, Excretion
Safety and Security	OF: Resources, Property, Employment, Family, Health, Physical well-being
Social / Belonging	Friendship, Group involvement, Family, Intimacy
Esteem	Self-esteem, Recognition, Attention, Status, Confidence, Achievement, Self-respect, Respect by others
Self-actualization	Morality, Justice, Creativity, Spontaneity, Problem solving, Lack of Prejudice, Wisdom, Acceptance of Facts

The fundamental primitive level of humans' physiological needs are essentially those that maintain life. For the purposes of this paper, the focus is the need for shelter and how satisfaction of this need leads one to higher level needs tied to that shelter once it is obtained. Virtually all humans need protection from the elements that shelter provides. Renting or owning that shelter satisfies this need and the safety and security needs can then be pursued.

Shelter can serve to protect our physical well-being, health, family, and other property, satisfying to various degrees, safety and security needs. Both renters and owners can keep themselves safe, warm, and healthy and the National Housing Survey indicates that "having a sense of privacy and security" is the second most important goal or objective. However, a person that rents shelter only has the ability to store or house other property, their family, and perhaps some resources. An owner of shelter accomplishes these needs and more. They provide future shelter and security for their family, and a home may be viewed as a financial resource providing some financial security. Owners control the shelter and have ability to alter and affix other property. If the family becomes larger (or smaller) owners can continue to add value and usefulness through expansions, renovations, or demolitions. In sum and in comparison to transient renters, ownership can meet not only basic safety and security needs, but the stability and confidence to suspect these needs will be satisfied in the future.

> "As a tenant on someone else's property, you cannot control the timing or frequency of major disruptions, such as landlord changes, rent increases, and

property renovations. You could even pay your monthly rent diligently, only to find out that your rental property is facing foreclosure. The possibility of being forced to move may always linger in the back of your mind, and renters do move more often than owners – five times as often, according to one study by the National Association of Realtors." Pinnacle Capital Mortgage Corp. (2012)

The third level of needs is social in nature as humans are social animals and have a need to feel part of a group and have friends and family. At a basic level, both owners and renters may feel a part of a neighborhood even if there is little interaction between neighbors. One becomes accustomed to and familiar with local surroundings and nearby conveniences. In addition, people may meet these needs through their place of work, place of worship, or by volunteering. An attachment develops between the individual and the local community because of where they locate and live. Indeed, "feeling engaged in the community" and "have a good place for your family" both rank highly in the National Housing Survey.

A difference in the satisfaction of social needs between owners and renters may exist because ownership means permanence. An owner can be confident that these needs will continue to be satisfied for as long as they desire to maintain contact or participation in a particular social group. In short, it is an owner that can decide to dispose of the property and move, who is to be excluded from the property and how to change the property to satisfy social needs.

While renters share many of the same legal rights to a shelter and may intend to remain indefinitely, ultimately it is the owner of the rental property that decides how long they may stay. Further, they may not have the right to alter or change the property to enhance need satisfaction. If a renter moves (for whatever reason), the lower level needs are likely to arise and take precedence once again and these social needs will be suppressed or ignored for a time. So renters' ability to maintain future social need satisfaction is uncertain.

As lower-level needs are satisfied or become less intense, esteem needs will emerge and take precedence. These include self-esteem and self-respect, garnering attention, confidence, achievement and accomplishment, and gaining social status. Purchasing one's primary residence and qualifying for a mortgage can lead to a certain sense of achievement and accomplishment as well as self-respect and confidence. Where one chooses to live may indicate the need for social status and attention which can be achieved either by owning or renting.

The highest level of Maslow's need hierarchy are self-actualization needs which includes morality, problem solving, justice, acceptance of facts, and wisdom. With regard to underwater homeowners, continuing to make mortgage payments satisfies a moral need while abiding to a contract (the mortgage note) may be interpreted as keeping with justice. Non-delinquent underwater homeowners that resign themselves to continued payments is consistent with acceptance of facts and should they search for solutions to their dilemma it would involve problem solving.

Given that the need for shelter and all it can provide related to motivation theory, ownership preferable to renting. In the Unites States, ownership of real property has its base in English common law, which dictates the legal implications of ownership. Renting a shelter does not provide the same legal rights as ownership and may differ from state to state based on landlord-tenant laws. Ownership of real property is more universal in regard to legal rights and also implies a more complete set of these rights.

REAL PROPERTY RIGHTS ROLE IN THE PROBLEM

In the U.S., ownership of real property includes both ownership of the land and physical structures on the land and certain intangible rights afforded by law. Most would agree that land and naturally occurring attachments as well as any man made improvements to or on the land have some value and would be included in the purchase price of real property. The intangible assets are less apparent and value may depend on the purchaser's circumstances and motivations. For the purpose of this paper, the circumstances and motivations of a potential owner is to satisfy some needs that may be conscious or subconscious. Ownership of these rights is an attempt to secure permanence of need satisfaction so that higher-level needs may be pursued.

The intangible rights most often associated with real property according to Galaty, Allaway, & Kyle, 2003 are the right to:

Possession: the property is owned by whomever holds title.
Control: within the laws, the owner controls the use of the property.
Enjoyment: the owner can enjoy the use of the property in any legal manner.
Exclusion: others can be excluded from using or entering the property,
Disposition: the title holder can sell, rent or transfer ownership or use of the property at will.

It is beyond the scope of this paper to address various forms of possessory interests or estates in which these rights may be held. It is assumed that the rights are held as a fee simple absolute estate meaning that the owner possesses all of the rights: the most complete form of ownership. Exhibit 4 provides some examples of the differences between owners and renters as holders of intangible legal rights.

The Constitution of the United States allows people to own, outright, both personal and real property. Ownership of real property is accomplished by obtaining title to the land and all improvements on the land. Further, the tangible assets of the subsurface and, theoretically, the airspace above the land are included in ownership. The title contains is a very detailed description of the location of the owned parcel and is recorded in local government records. The recording of real property transfers dates to 1677 when the English Parliament passed the Statute for the Prevention of Frauds and Perjuries (Ling & Archer, 2008).

Ownership of real property and particularly shelter cannot be accomplished by renting, as a renter does not obtain a title to the residence that they occupy. Ownership is held by another person or entity which entitles that person or entity to the other intangible legal rights.

Control of the real property describes the ability to change the property to suit the owner. One may add to or remove from the property without prior approval of another person or entity. A renter's ability to change the real property that they occupy is highly likely to be restricted by the owner. For example, a renter may not have the ability to remove trees or landscaping or install new lighting, while an owner would have total control over those activities. Further, the right of control allows the owner to encumber (borrow against) the property. Obviously, a renter would not be allowed to borrow against their place or space of residence. The National Housing Survey confirms that this right to control the property is of primary importance to homeowners.

The right of enjoyment allows one to profit from the use of the property and to use the property in any legal manner so long as the use does not unduly interfere with the rights of others. This right is most likely to be very similar for both owners and renters. It is essentially this right that renters are providing compensation (rental payments) to the owners to obtain.

The right of excluding others from entering and using the property will also be similar for owners and renters. However, it is likely that an owner of rental property will desire to protect the property and retain the ability to enter in order to perform inspections, maintenance, and repair. So a renter may be unable to exclude the owner or an agent of the owner.

The right of disposal is the ability to transfer title to some or all of the property. This can be accomplished by selling, donating (give away), or passing the property to an heir or heirs upon death of the owner. Since a renter cannot possess title to the real property, they also cannot dispose of the property.

Exhibit 4: Examples of Intangible Rights; Owner versus Renter

Right	Owner	Renter
Possession	Holds title to the property.	Cannot hold title.
Control	Remove trees. Install ceiling fans. Change lock on the door.	Limited, if any, control over changes to the property.
Enjoyment	Essentially same as Renter. Have pets. Unlimited persons per room. Celebrate anytime.	Essentially same as owner, likely many lease provisions. Pets possible, likely extra cost. Possible limits on persons per apartment. Celebration times may be limited.
Exclusion	Can exclude anyone from the property.	Likely owner and/or owner's agent cannot be excluded.
Disposal	Sell, Donate, Will or give away	No right of disposal

When a renter occupies a property, the compensation paid to the owner is to secure some of the property rights from the owner. Typically, this includes the right to occupy, to enjoy, and at least some level of control and exclusion. To a certain extent, the rental payments represent the value to the individual of securing limited legal rights to shelter.

Rental payments received by an owner may be viewed as a measure of the value of temporarily providing a subset of legal rights to a renter. This implies that the owner can place a value on the legal rights that are not transferred. Ergo, a value can be attached to the complete set of legal rights separate from the value of the tangible assets of the land, subsurface, air and any improvements. It is the possession of the complete set of legal rights and tangible assets that makes ownership of a shelter preferable to renting.

Arguably, it is not just shelter that is sought, but permanent shelter and the method used to obtain permanent shelter in our system is to own the complete set of real property rights to that shelter. By doing so, a person obtains much more than just land and a home. The home provides safety and security and aids in the satisfaction of social and higher level needs as described by Maslow (1943).

Once a person becomes a homeowner, there may be strong non-financial motivations to keep the home and all the property rights, even at significant cost and when there is no economic reason to do so. Such is the case with underwater homeowners. Although the land and structure of real property may have declined in value, there exists no evidence that the value of legal property rights has similarly declined. The debt that is secured by the tangible assets of the property is also a means to secure the legal rights to the property. With no knowledge of the value a homeowner places on the set of legal rights and solely focusing on the value of the tangible structure, one is left with an incomplete assessment of the total value of ownership relative to the level of debt used to obtain ownership.

VALUE OF PROPERTY RIGHTS USING AVERAGE UNDERWATER MORTGAGE

Thus far, it has been argued that there exist non-financial reasons that justify why nearly 90 percent of underwater homeowners continue to make payments on their mortgage. They do so to maintain the legal rights that are an integral part of real estate ownership. They were motivated to obtain those rights by physiological and psychological needs which shelter can provide, and ownership provides a sense of permanence of satisfying these needs. The following is perhaps one method to estimate the value that underwater homeowners place on the legal rights of ownership.

In the U.S. the average amount that the mortgage debt exceeds the value of the property is $75,644 (Zillow, 2012). It can be shown that the average current market value of an underwater home in the U.S. is $169,986 and the average debt secured by these properties is $245,630. Assuming the value of the property does not change from current levels over the remaining life of the mortgages, the difference of $75,644 represents the value of the intangible real property rights to the average underwater homeowner. It is the amount of “goodwill” that the homeowner will pay over and above the value of the tangible asset.

Eighty-seven percent of underwater mortgages were refinanced during or after 2004 and have an age of 8 years or less (FannieMae, 2012b). It is assumed that the refinanced mortgages are fully amortizing, fixed interest rate, 30-year loans with monthly payments, and that the average loan has been outstanding four years. With these assumptions, the monthly dollar cost of financing the $75,644 value placed on real property rights over the remaining life of the debt can be computed. Exhibit 5 contains the monthly payment required at varying interest rates of the refinanced mortgage.

Exhibit 5 Underwater Mortgage Payment Schedule				
Assumptions	Amount underwater: $75,644 Remaining term = 26 years or 312 months Original loan = fully amortizing 30-year fixed rate Marginal income tax rate = 25 percent			
Current Interest Rate	**Monthly Payment**	**Approximate After-tax Payment first 5 years**	**Total amount of Amortization over 5 years**	**Remaining Underwater Balance**
4.0 %	$ 390.36	$ 330.95	$ 7,182	$ 68,462
4.5 %	$ 411.73	$ 344.63	$ 6,722	$ 68,922
5.0 %	$ 433.70	$ 358.86	$ 6,283	$ 69,361
5.5 %	$ 456.24	$ 373.62	$ 5,866	$ 69,778
6.0 %	$ 479.34	$ 388.90	$ 5,470	$ 70,174
6.5 %	$ 502.97	$ 404.68	$ 5,095	$ 70,549
7.0 %	$ 527.12	$ 420.95	$ 4,740	$ 70,904

If it is assumed that the average underwater homeowner itemizes expenses for federal income tax purposes, a tax deduction for annual mortgage interest paid on their primary residence is appropriate. Exhibit 5 contains an approximation of an after-tax monthly mortgage payment during the next five years assuming a marginal tax rate of 25 percent. If the underwater amount of $75,644 is amortized over the next 26 years at an interest rate of 5 percent, it will cost the homeowner approximately $358.86 per month or approximately $4,300 per year. This amount is an estimate of the value to the average underwater homeowner of maintaining the real property rights to their home.

SUMMARY

The recent financial crisis and downturn in the housing market has left many homeowners with debt secured by the home larger than the current value of the property. Some face financial hardships and default on the debt because they are unable to maintain the payments. Others with the financial wherewithal continue to make debt payments and keep the mortgage current, even though if they were forced to sell, they would face an average loss of over $75,000.

It is argued in this paper that underwater homeowners are motivated to continue to service their debts in order to keep and maintain the shelter that satisfies a variety of basic human needs and desires. Some of these needs and desires can be accomplished by renting shelter but ownership provides a wider range of need satisfaction and also allows for future stability in this regard. So it is permanent shelter that is preferable which implies the legal right to that shelter.

Ownership of real property encompasses the purchase of both tangible and intangible assets. The tangible assets such as a home and land are relatively easily valued because markets exist where ownership is exchanged. It is the tangible assets that are basis for secured debts that allow individuals to purchase the property. The intangible assets encompass the set of legal rights that transfer with ownership. There is no separate market for these rights and the value attached to them will vary by individual. It has been argued that underwater homeowners value these legal rights of ownership to such a degree that, in combination with the tangible land and improvements, they are justified in continuing to make payments on the mortgage debt.

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