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# An Examination of the Residential Mortgage Systems in the United States and Canada during the Great Recession

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**An Examination of the Residential Mortgage Systems in the  
United States and Canada during the Great Recession**

Thesis Submitted In Partial Fulfillment of Honors

by

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## Introduction

In 2007, the United States faced a grim outlook in its mortgage situation. Known now as the “Subprime Mortgage Crisis”, several factors combined to galvanize an effect which nearly crippled the U.S. mortgage infrastructure.<sup>1</sup> Despite such an obvious domestic disaster, nearby sister country, Canada, feared no such collapse due to borrower education, borrower penalties, and mortgage term. With such a close proximity and similar economic structure, why would the United States be in a functional state of emergency, while Canada’s mortgage system remained strong? The answer is simple – the Canadian mortgage system is fundamentally different from that of the United States.<sup>2</sup> Such differences as a lack of 30-year fixed mortgages and a more robust and defined payment system have proven to be critical in the stability of the Canadian mortgage system.

In order to further quantify the differences in resilience of the Canadian and U.S. systems, a quick look at residential housing statistics is warranted. In January 2006, the benchmark price<sup>3</sup> of a Canadian home hovered at CA\$ 306,700, which is an equivalent of US\$ 234,327. From November 2006 to December 2006, the benchmark price of a Canadian home decreased by a paltry CA\$ 500. As of January 2007, the home price index (HPI) value was CA\$ 347,400. In January 2008, the HPI reached CA\$ 381,700– an increase of CA\$ 75,000 over the course of two years. Conversely, the U.S. had a much different outcome during this same time.<sup>4</sup>

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<sup>1</sup> Investopedia, “The Fuel That Fed The Subprime Meltdown”, p 1.

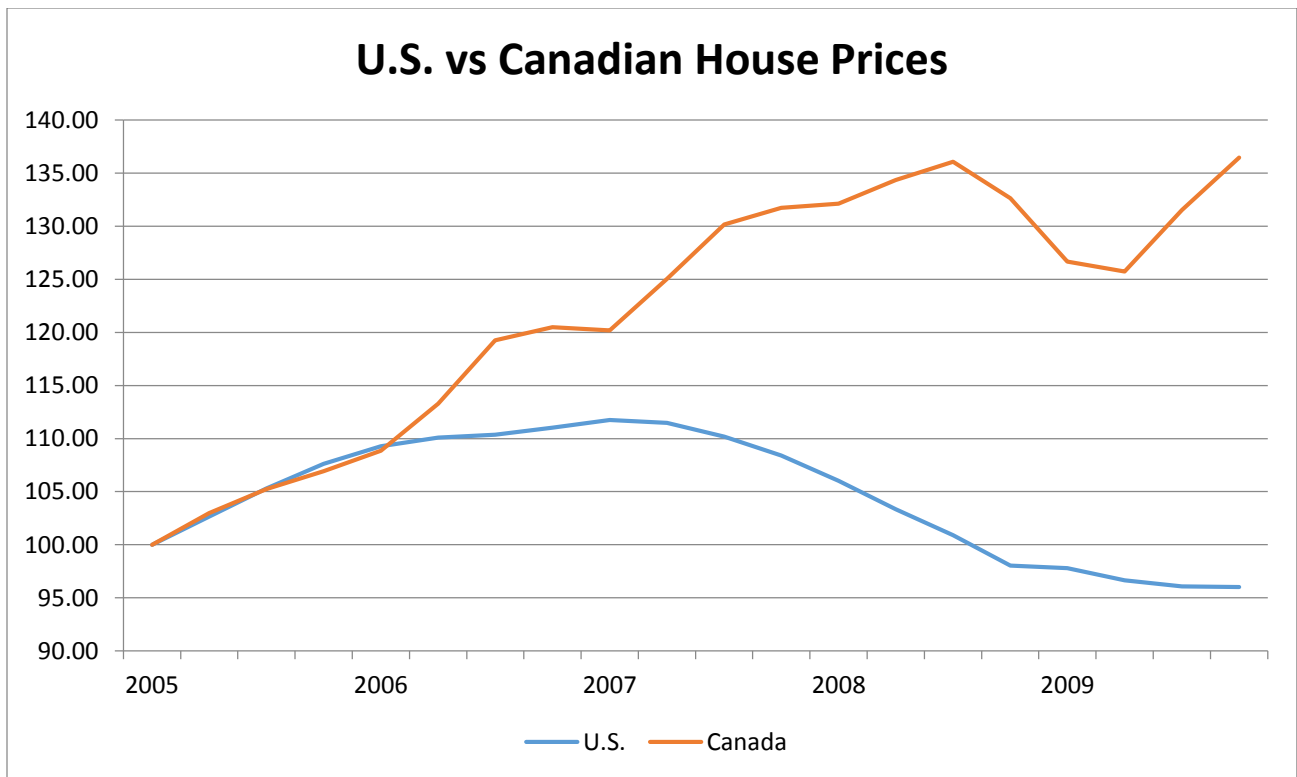
<sup>2</sup> Los Angeles Times, “How Canada Is Not Like The United States: Mortgage Edition”, p 1.

<sup>3</sup> Benchmark price and HPI are metrics reported by MLS in CA\$ and are used interchangeably.

<sup>4</sup> All Home Prices from: MLS, “Home Price Index”, p 1.

The Federal Housing Finance Agency reports U.S. HPI values as percentage changes from year to year. In order to accurately review these results, the U.S. will be analyzed independently from that of Canada and then results will be normalized. From January 2006, the year to year change to January 2007 was -0.91%. Moving forward to January 2008, the year to year change was a shocking -2.85%. This clearly indicates that the events of 2007 created a massive detriment to the U.S. housing system.<sup>5</sup>

Comparing the two systems' reactions to the 2007 financial crisis becomes paramount. The following chart converts the annual percent changes in U.S. housing prices and Canadian housing prices into indexes where the first quarter of 2005 is equal to 100.00. The difference between the two mortgage systems is stark.



<sup>5</sup> All Percent Changes from: Global Property Guide, "House Prices Worldwide – United States", p 3.

One can quickly see that the price of Canadian homes increased noticeably during the 2007 financial crisis; whereas, the price of U.S. homes decreased significantly. This single metric shows definitively that differences between the two systems contributed to a more resilient system in Canada. It now becomes critical to analyze the differences between the two systems and their specific impacts to isolate the factors fostering a more robust system.

To create a more concrete quantification of the differences between these systems, we will look at a sample case using standardized, average price values provided by Bankrate: US\$ 165,000, 30-year fixed-rate mortgage at 4.50% (current rate as of 02 April 2015).<sup>6</sup> The monthly payment on this sample case would be US\$ 836.03, with US\$ 165,000 (54.82% of payments) being on principal, and US\$ 135,971.07 (45.18% of payments) being on interest. In Canada, the sample case using standardized, average price values provided by TD Canada Trust would be: CA\$ 207,299.40, 10-year fixed-rate mortgage at 6.10% (current rate as of 02 April 2015).<sup>7</sup> The monthly payment on this sample case would be CA\$ 2303.94, with CA\$ 207,472.80 (75.04% of payments) being on principal, and CA\$ 69,227.34 (25.04% of payments) being on interest. Converting the Canadian dollar figures into U.S. dollars shows that the Canadian monthly payment is roughly US\$ 997.44 higher than the U.S. equivalent. In addition, the higher interest rate of the Canadian system (1.6% difference) would appear to be more detrimental to a borrower; however, after viewing the results, nearly 20% more payments are applied to principal in the Canadian system. This sample case goes to support the contention that the Canadian system's stability is due, in part, by its lack of 30-year mortgage.

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<sup>6</sup> Bankrate, "Mortgage Calculator", p 1.

<sup>7</sup> TD Canada Trust, "Mortgage Payment Calculator", p 1.

Another simple test case can also be done to substantiate the ancillary claim that the Canadian payment system is more robust and defined than that of the United States. To subdivide this contention into more manageable sections, the following will be addressed individually in regards to a payment system: down payment, repayment, and foreclosure. The down payment structure in the U.S. has several options ranging from 20% (for best rates) to 0% for FHA (Federal Housing Administration) loans.<sup>8</sup> Borrowers in the U.S. that provide less than 20% down payment are required to carry a supplemental insurance known as mortgage insurance to protect the lender in the event of non-payment or foreclosure.<sup>9</sup> This insurance is configured and valued, then added to the monthly mortgage payment – US\$ 836.03, from above, for instance. For demonstrative purposes, the average cost of mortgage insurance can be valued at US\$ 100.<sup>10</sup> For most U.S. borrowers, this would simply increase the mortgage amount to US\$ 936.03, and more stringent budgeting by the individual would be necessary. A Canadian borrower putting forth less than 20% would be required to have a mortgage insurance nearly identical to that of a U.S. borrower.<sup>11</sup> In Canada, this system differs in one key area: payment schedule. Canadian borrowers are required to pay the entire value of the mortgage insurance at once, up front, before the processes can continue.<sup>12</sup> This changes the entire system from a mere US\$ 100 budgeting issue to a US\$ 12,000 obstacle which deters many from attempting to obtain a mortgage.

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<sup>8</sup> U.S. Bank, “What Should Be My Down Payment On A New House?” p 1.

<sup>9</sup> Bankrate, “What Is Mortgage Insurance?”, pp 1-2.

<sup>10</sup> Based on findings from Bankrate and U.S. Bank involving the 80-10-10 plan and down payment values.

<sup>11</sup> Canada Mortgage & Housing Corporation, p1.

<sup>12</sup> Aol Real Estate, “Why Canada Doesn’t Have a Foreclosure Problem”, pp 1-3.

In addition to down payment, the repayment of a Canadian mortgage differs greatly from that of its U.S. counterpart. The U.S. system is designed around a monthly payment schedule with a single payment going toward the principal and interest every calendar month, with additional payments being applied directly to principal. The Canadian system offers several repayment options including weekly, rapid weekly, bi-weekly, rapid bi-weekly, and monthly.<sup>13</sup> Rapid payment plans take the monthly payment and divide it into two payments for rapid bi-weekly or divide it into four payments for rapid weekly. In turn, this allows the borrower to make one extra payment per year.<sup>14</sup> These payment frequencies will be elaborated upon in greater detail in the section titled *Mortgage Management*. For demonstrative purposes, the Canadian system allows for a greater payment flexibility in order to make additional payments against principal within a single calendar year without requiring additional payments in the sense of non-scheduled payments. This becomes a net benefit for borrowers as more of the capital becomes paid and a lower interest is incurred.

Foreclosure is the final component of the material necessary to substantiate the claim that the Canadian system is more robust and defined. In the United States, foreclosure effectively ends at the value of the property. For example, if a borrower owes US\$ 100,000 on a home, the foreclosure amount is US\$ 100,000, and any of this amount not regained through a secondary sale is typically considered a loss by the lender; the exception being in full-recourse states (such as Tennessee, Virginia and Florida) where lenders can continue to seek repayment.<sup>15</sup> In Canada, if a borrower owes US\$ 100,000 on a home, the foreclosure amount is

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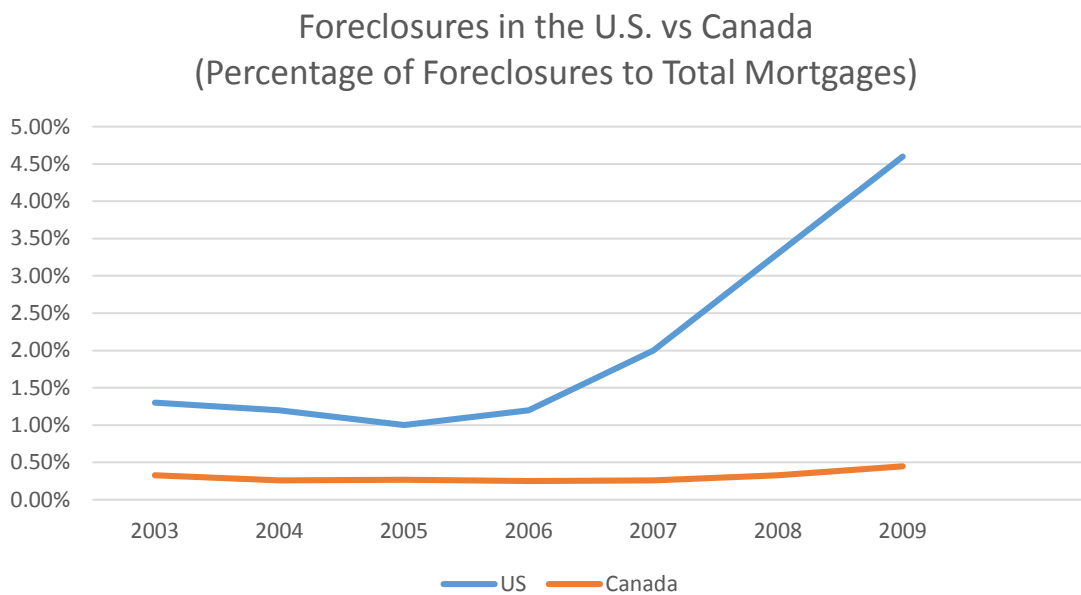
<sup>13</sup> TD Canada Trust, "Mortgage Payment Calculator", p 1.

<sup>14</sup> Invis, "Canada's Mortgage Experts", p.1

<sup>15</sup> Some states in the U.S. are full-recourse states that follow a more Canadian approach to foreclosure.



US\$ 100,000, but any amount not regained through a secondary sale is required in full from the borrower. Effectively, the borrower would continue paying the mortgage on the home as if it were still in his or her possession.<sup>16</sup> This alone is a shocking concept for those not accustomed to the Canadian methodology, and stands as a reason why the Canadian system does not encourage low-income households to seek obtaining a mortgage. The graph below shows that between 2003 and 2009, the number of foreclosures in the United States increased significantly, while the number of foreclosures in Canada remained relatively constant.<sup>17</sup>



Mortgage term and payment structure in the Canadian system have proven to be more steadfast and resilient than that of the U.S. system. Other factors such as overall mortgage process and foreclosure process are additionally integral to the understanding of the different outcomes of the 2007 mortgage crisis, and will be discussed in the following sections.

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<sup>16</sup> Aol Real Estate, “Why Canada Doesn’t Have a Foreclosure Problem”, p 1.

<sup>17</sup> Based on data from Core Logic, “National Foreclosure Report”, p 2. and Financial Crisis Inquiry Commission, “Full Report with Dissents (PDF)”, pp 1-4.

Ultimately, the key differences of the Canadian system to that of the U.S. system provided a substantial flexibility that reduced the volatility of the market as a whole and provided a lasting market despite the mortgage crisis in the nearby United States.

### Definition of Terms

Although several examples have been presented previously, it is critical to have a clear understanding of the terms used when analyzing mortgages. *Principal* is defined as the amount still owed on a loan, separate from interest.<sup>18</sup> *Interest* is the charge for the privilege of borrowing money.<sup>19</sup> *Fixed interest rate* is an interest rate on a mortgage that remains fixed either for the entire term of the loan or for part of the term.<sup>20</sup> *Variable interest rate* is an interest rate on a mortgage that fluctuates over time, because it is based on an underlying benchmark interest rate that changes periodically.<sup>21</sup> *Secondary mortgage markets* are the markets where mortgage loans are bought and sold between lenders.<sup>22</sup> *Mortgage insurance* is defined as an insurance policy that protects a mortgage lender in the event that the borrower defaults on payment, dies, or is otherwise unable to meet the contractual obligations of the mortgage.<sup>23</sup> Lastly, and possibly most importantly, is *foreclosure*, which is considered as a

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<sup>18</sup> Investopedia, "Principal", p 1.

<sup>19</sup> Investopedia, "Interest", p 1.

<sup>20</sup> Investopedia, "Fixed Interest Rate", p 1.

<sup>21</sup> Investopedia, "Variable Interest Rate", p 1.

<sup>22</sup> Investopedia, "Secondary Mortgage Market", p 1.

<sup>23</sup> Investopedia, "Mortgage Insurance", p 1.

situation in which a borrower is unable to make full principal and interest payments, which allows the lender to seize the property.<sup>24</sup>

The previously defined terms are independent of system – although some differ in implementation – and can be used similarly for analysis of both U.S. and Canadian mortgages. The easiest way to see each term in action is to refer back to the two functional examples previously mentioned in the introduction: (1) US\$ 165,000, 30-year fixed-rate mortgage at 4.50%, US\$ 165,000 on principal, US\$ 135,971 on interest, and (2) CA\$ 207,299, 10-year fixed-rate mortgage at 6.10%, CA\$ 207,473 on principal, CA\$ 69,227 on interest.

The *principal* – borrowed amount – for the U.S. and Canadian examples is US\$ 165,000 and CA\$ 207,299 respectively. The *interest* – the charge for borrowing – for the U.S. and Canadian examples is US\$ 135,971 and CA\$ 69,277 respectively. Both examples utilize a *fixed interest rate* meaning that the 4.50% and 6.10% interest rates, for the U.S. and Canadian mortgages respectively, will not change.

*Variable-rate mortgages*, not demonstrated above, are typically more advantageous for borrowers with shorter terms. This inherently lends a degree of benefit to the Canadian system as interest rates are known to increase over time; making variable rates undesirable with longer mortgage terms.<sup>25</sup> With 30-year mortgages in the U.S., *fixed-rate mortgages* tend to be the most advantageous, as the borrower has the potential to be locked into a lower interest rate than that of a future date, meaning a lower total payment overall. In the section titled

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<sup>24</sup> Investopedia, “Foreclosure – FCL”, p 1.

<sup>25</sup> Investopedia, “Mortgage Basics: Variable-Rate Mortgages”, p 1.

*Mortgage Process*, a more definitive example of the benefits and detriments of both variable and fixed rates is analyzed in-depth for both the U.S. and Canadian systems.

The role of *secondary mortgage markets* are very different in the United States and Canada. In the U.S. system, secondary mortgage markets serve as a method by which lenders can reduce losses on unpaid mortgages by reselling the mortgages at a decreased value.<sup>26</sup> This loss reduction is paramount in ensuring that lenders are able to fund future mortgages and facilitate future investments. Without a secondary market in the United States, many lenders would have exorbitant rates or radical terms which would significantly preclude lending. The Canadian system differs significantly in that secondary mortgage markets are not used as a method to reduce losses, but only in the event of a foreclosure. In Canada, the entire value of the foreclosure is borne by the borrower and is not limited solely to the value of the mortgaged property.<sup>27</sup>

Foreclosures in Canada provide one of the most distinct and polarizing differences to that of the U.S. system. Typically, foreclosures occur when borrowers are unable to make their contractually obligated payments on the principal and interest of the mortgaged property. In the U.S., when a borrower defaults on a mortgage, the lender reclaims ownership of the property and gains the right to sell the mortgage alongside others in a secondary mortgage market. Many U.S. states (e.g. Alaska, California, North Carolina, and Texas) limit the amount of the mortgage that lenders can seek directly from the borrower and many mortgages are sold secondarily at a mild loss. In Canada, when a borrower forecloses on a mortgage, the lender

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<sup>26</sup> Smart Asset, "Everything You Need to Know About The Secondary Mortgage Market", pp 1-2.

<sup>27</sup> Aol Real Estate, "Why Canada Doesn't Have a Foreclosure Problem", p 2.

reclaims ownership of the property and gains the right to seek the remaining balance of the mortgage directly from the borrower. The differences in these systems can most easily be seen through a comparative example: consider a \$100,000 mortgage that is going to foreclose. In the U.S., once the US\$ 100,000 mortgage forecloses, the lender can modify terms on a secondary market to regain as much of the US\$ 100,000 owed as possible. The borrower simply earns a few negative marks on his or her credit report, and continues with business as normal – sans a monthly mortgage payment. In Canada, once the CA\$ 100,000 mortgage forecloses, the lender holds the borrower to the full value of the mortgage in order to regain the entirety of the financed amount. The borrower can be sued for deficiency judgments, have liens attached to assets, and have future wages garnished.<sup>28</sup> This galvanizes Canadian borrowers in their resolve to repay a mortgage and eliminates “mortgage jugglers” who jump from lender to lender without consequence.

With these terms in mind, it is now feasible to continue with an analysis of the mortgage process for both countries in order to further reveal the benefits of the Canadian system and the resilience it afforded during the 2007 mortgage crisis.

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<sup>28</sup> Aol Real Estate, “Why Canada Doesn’t Have a Foreclosure Problem”, p 2.

## Mortgage Processes

While several paramount differences have materialized in previous sections, it is crucial to understand the step-by-step process of obtaining a mortgage in both the United States and Canada in order to highlight key differences which play roles in later analyses.

In the U.S. system, borrowers preliminarily meet with housing counselors in order to gain a rudimentary understanding of the mortgage processes. Once a basic understanding has been reached, borrowers meet with lenders to evaluate options, and complete mortgage applications. Borrowers are scrutinized by loan officers to determine creditworthiness and value to the lender. After applications are finalized, loan processors submit the applications and await a final decision by the lender in question. If accepted, a closing procedure will be completed to legally complete the mortgage process.

In the Canadian system, borrowers preemptively select their desired type of interest rate – fixed or variable. Once an interest rate type has been selected, mortgage applications are completed, and loan officers determine creditworthiness and value to the lender. Similarly to the U.S. system, loan processors await a lender's final decision and, if accepted, a closing procedure is completed to legally complete the mortgage process.<sup>29</sup>

One simple, yet important difference between the U.S. and Canadian system has now been uncovered. The U.S. system assumes little understanding of the entire process by the borrower and relies upon the financial institution involved to explain the basic details required for a mortgage. The Canadian system is less forgiving and requires potential borrowers to

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<sup>29</sup> U.S.A Mortgage, "Loan Process", p 1.

research and decide on several important factors before beginning the application process.<sup>30</sup> This is not to imply that the Canadian system is less helpful or malicious, but rather to focus on the fact that borrowers need to have a basic understanding before entering any form of mortgage in the Canadian system. Without a basic understanding of mortgage mechanics, involved terms, and procedures, it would be nearly impossible to assume that the average borrower would be able to consolidate the requisite materials in order to make an educated decision.

### **Mortgage Management**

Now that the process by which a mortgage is obtained is clear, the management of a mortgage can be analyzed and the differences between the United States and Canadian systems will become evident and crucial once again. For analytical purposes, *mortgage management* will be defined as the necessary procedures to avoid delinquent status and continue to pay on the principal and interest owed on a mortgage.

In the U.S. system, mortgages are paid on a monthly schedule with additional payments made within a calendar month going toward the principal of the loan directly. Several examples have been given showing the amount that will be repaid on a fixed-rate mortgage, but it is important to evaluate every avenue to see how the management of similar mortgages can vary wildly. To illustrate how much the management of a mortgage can change depending

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<sup>30</sup> TD Canada Trust, "First Time Homebuyers", pp 1-4.

on interest rate, consider the following example: US\$ 250,000 30-year mortgage, with 6.5% fixed-rate or 5.5% variable-rate. With other factors unchanging, the fixed-rate mortgage would save US\$ 172 over the variable-rate mortgage due mainly to interest rates as reported by CalcXML, an online financial calculator.<sup>31</sup> One important area where the variable-rate mortgage surpasses the fixed-rate mortgage is the initial monthly payment savings of US\$ 161.

In the Canadian system, mortgages are paid on a number of schedules, including: weekly, rapid weekly, bi-weekly, rapid bi-weekly, and monthly. “Rapid” schedules are designed to increase payment volume in order to have payments applied directly to principal in lieu of principal and interest. This is done by splitting the monthly payment into two or four (for rapid bi-weekly and rapid weekly, respectively) so that the borrower makes one extra monthly payment per year. Borrowers that can budget accordingly stand to save considerable amounts of money. As done previously, variable-rate mortgages will be considered for the following examples in order to contrast the number of fixed-rate mortgage examples provided previously. Consider a CA\$ 250,000 5-year mortgage with 3.85% interest.<sup>32</sup> A weekly payment schedule will yield a payment of CA\$ 1,053 with an interest of CA\$ 24,895 over the course of five years. A rapid weekly payment schedule will yield a payment of CA\$ 1,147 with an interest of CA\$ 22,622 over the course of five years. A bi-weekly payment schedule will yield a payment of CA\$ 2,115 with an interest of CA\$ 24,915 over the course of five years. A rapid bi-weekly payment schedule will yield a payment of CA\$ 2,294 with an interest of CA\$ 22,732 over the course of five years. Lastly, a monthly payment schedule will yield a payment of CA\$ 4,587 with an interest of CA\$ 25,262 over the course of five years. Comparing each of these shows that

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<sup>31</sup> CalcXML, “Which is Better: Fixed or Adjustable-Rate Mortgage?”, p 1.

<sup>32</sup> TD Canada Trust, “Mortgage Payment Calculator”, p 1.



the rapid weekly plan is the most financially prohibitive, while providing the lowest interest possible.

Comparing the U.S. and Canadian systems shows an interesting feature that is most often unaccounted for in financial analysis. For U.S. borrowers, the mortgage system fluctuates primarily due to interest rates, as evidenced in the preceding example. The U.S. system essentially rewards longer mortgages as a 30-year term was shown to have considerable savings. For Canadian borrowers, the mortgage system fluctuates primarily due to payment frequency. With such short mortgage terms (the longest of which is 10 years at a fixed-rate), any additional payments, that can be made solely on principal, heavily reduce interest accrued. Conversely, the Canadian system essentially rewards faster repayment as a rapid weekly frequency was shown to have the most considerable savings. Mapping the differences in payment structures becomes paramount and has been recreated in the following data tables for the United States and Canada. The tables show the first ten monthly payments in the mortgage.<sup>33</sup>

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<sup>33</sup> First ten monthly payments are sufficient to show the power of snowballing interest and overall cost.

**U.S. Payment Allocations (30-Year Fixed-Rate Mortgage at 4.50% Interest | 0% Down)**

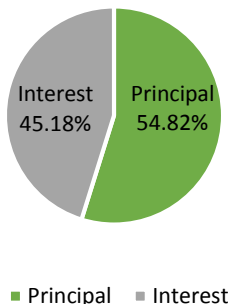
<b>Payment (U.S.D)</b>	<b>Amount Paid (Principal)</b>	<b>Amount Paid (Interest)</b>	<b>Insurance Paid</b>	<b>Total Interest</b>	<b>Total Balance</b>
936.03	217.28	618.75	100.00	618.75	164782.72
936.03	218.10	617.94	100.00	1236.39	164564.62
936.03	218.91	617.12	100.00	1853.80	164345.71
936.03	219.73	616.30	100.00	2470.10	164125.98
936.03	220.56	615.47	100.00	3085.57	163905.42
936.03	221.39	614.65	100.00	3700.22	163684.03
936.03	222.22	613.82	100.00	4314.03	163461.82
936.03	223.05	612.98	100.00	4927.01	163238.77
936.03	223.89	612.15	100.00	5539.16	163014.88
936.03	224.72	611.31	100.00	6150.46	162790.16

**Canada Payment Allocations (10-Year Fixed-Rate Mortgage at 6.10% Interest | 0% Down)**

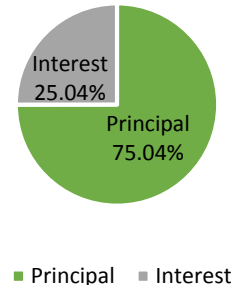
<b>Payment (US\$)</b>	<b>Amount Paid (Principal)</b>	<b>Amount Paid (Interest)</b>	<b>Insurance Paid</b>	<b>Total Interest</b>	<b>Principal Balance</b>
1840.14	1001.39	838.75	12000.00	838.75	163998.61
1840.14	1006.48	833.66	0.00	1672.41	162992.14
1840.14	1011.59	828.54	0.00	2500.95	161980.55
1840.14	1016.73	823.40	0.00	3324.35	160963.91
1840.14	1021.90	818.23	0.00	4142.59	159941.91
1840.14	1027.10	813.04	0.00	4955.62	158914.81
1840.14	1032.32	807.82	0.00	5763.44	157882.50
1840.14	1042.84	802.57	0.00	6566.01	156882.50
1840.14	1048.14	797.30	0.00	7363.31	155802.09
1840.14	1053.47	791.99	0.00	8155.30	154753.95

The differences in amount paid on principal – illustrated in the pie charts below -- in the United States and Canada are due, in part, to the factors surrounding the mortgage systems of both countries.<sup>34</sup> U.S. borrowers pay 54.82% of total mortgage on principal, while Canadian borrowers pay 75.04% of total mortgage on principal. For U.S. lenders, longer terms have the potential to reap greater rewards, but also carry the risk of non-payment or foreclosure. For U.S. borrowers, longer terms have the potential of lower interest rates (when paired with an appropriate rate plan).<sup>35</sup> For Canadian lenders, shorter terms have the potential to more likely ensure payment with a shorter term carrying less risk for the lender, but carry the risk of higher payments. For Canadian borrowers, shorter terms lend the potential to utilize home equity in order to consolidate debt.<sup>36</sup> Each system suffers from the risk of non-payment, but for diametrically opposed reasons: long duration and short duration. Once again, the Canadian system is inherently more beneficial than its U.S. counterpart for the simple fact that it pressures borrowers to repay debts and rewards them naturally through lower interest rates.

**U.S. Payment Allocations  
(30-Year Fixed-Rate  
Mortgage at 4.50% Interest)**



**Canadian Payment Allocations  
(10-Year Fixed-Rate Mortgage at  
6.10% Interest)**



<sup>34</sup> Based on data from Aol Real Estate, “Why Canada Doesn’t Have a Foreclosure Problem”, p 3. and U.S. Mortgage Calculator, “U.S. Mortgage Calculator with Taxes, Insurance and PMI”, p 1.

<sup>35</sup> Calculated Risk, “30 Year Mortgage Rates Decline to March Lows”, pp 1-2.

<sup>36</sup> Rate Hub, “5 Things You Didn’t Know About The Canadian Mortgage Market”, p 1.

## Mortgage Foreclosure

With the benefits and detriments of management schedules evaluated, it is now possible to examine the foreclosure processes for both the United States and Canada. Without understanding the recourse available to lenders if their loans are not repaid satisfactorily, a full picture of the factors aiding in the Canadian mortgage system's resiliency would be impossible. As previously defined, foreclosure is most simply the event of non-satisfactory payment as outlined by the contractual obligation between the lender and borrower. Both systems have the capacity to handle foreclosures identically, but each system takes a different approach in order to allow lenders to regain as much as possible from borrowers.

The U.S. mortgage system has the capacity to react similarly to the Canadian system and seek damages from the borrower for the full value of the mortgaged amount. This rarely happens, and several states have passed laws expressly preventing such measures. A more standard approach is for a lender to regain control of the property and bundle it with other similar properties to sell on a secondary mortgage market such as the Federal National Mortgage Association or the Federal Home Loan Mortgage Corporation, more commonly referred to as Fannie Mae or Freddie Mac.<sup>37</sup> Similar properties are more enticing to buyers and can be purchased for a fraction of their typical prices. This secondary market, as previously mentioned, allows lenders to minimize – if not, eliminate – losses incurred by regaining a property before the full principal and interest amounts have been satisfied by the borrower. Based on the most current statistics available, U.S. homeownership rate from 2009-2013 is set

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<sup>37</sup> About News, "Secondary Mortgage Markets", p 1.

at 64.9%, or 81.5 million households.<sup>38</sup> The most current foreclosure overview places serious delinquency at 5.0%, which can be seen in the previous “Foreclosures in the U.S. vs Canada” graph.<sup>39</sup>

The Canadian mortgage system has the capacity – through inaction – to behave similarly to the U.S. system and not seek damages beyond the value of the property on a secondary market. Most typically, the Canadian system seeks damages for the full value of the property directly from the borrower. Once a foreclosure has been completed, a borrower is taken to court where wages can be garnished, liens can be placed on assets, and additional resources may be seized by the court. This actionability reduces foreclosures as borrowers typically do not seek mortgages without a serious financial responsibility and stability. With such policies in place, the Canadian system stands to regain 100% of any mortgage as long as seeking the full value of the mortgage remains actionable by lenders. Based on the most current statistics available, Canadian homeownership rate has increased from 68.4% in 2008 to 69% in 2011, or 9.7 million households in 2011.<sup>40</sup> The most current foreclosure rate is set at “fewer than 1 percent”.<sup>41</sup> Such a low foreclosure rate and the ability to avoid secondary markets without losing capital provides a level of freedom to lenders that has clearly enhanced the durability of the Canadian system.

Both the U.S. and Canadian systems share a single goal: reduce losses through actions that lead to foreclosure. The U.S. system relies on a secondary market to recoup losses, while

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<sup>38</sup> United States Census Bureau, “State & County QuickFacts”, p 1.

<sup>39</sup> Core Logic, “National Foreclosure Report”, p 2.

<sup>40</sup> Statistics Canada, “2011 National Household Survey: Homeownership and Shelter Costs in Canada”, p 2.

<sup>41</sup> Aol Real Estate, “Why Canada Doesn’t Have a Foreclosure Problem”, p 3.

the Canadian system relies on the court system to eliminate losses. This simple fact has created a stability in the Canadian mortgage system that cannot be ignored without negligence.

### **2007 Financial Crisis**

Leading up to the events of 2007, the U.S. saw a surge in the mortgage market that led a large number of lenders to make assumptions which would cement their inevitable downturn. With housing prices increasing steadily, lenders began reducing down payment and collateral requirements in an effort to increase revenue through interest gained on properties.<sup>42</sup> If successful, lenders stood to gain several times the value of the property in the interest alone. Before moving further into the topic of the financial crisis, it is important to narrow the focus of the entire event to a single, quantifiable component: subprime mortgages. *Subprime mortgages* are defined as a type of mortgage that is normally made out to borrowers with lower credit scores.<sup>43</sup> Inherently, providing mortgages to borrowers with lower credit scores implies a preclusion from standard mortgages which require specific terms. In the U.S. system, *subprime mortgages* have historically hovered around 8% of all mortgages.<sup>44</sup> Within a two year span from 2004 to 2006, this percentage increased to a staggering 20% percent of all mortgages.

This rapid increase, by its very nature, led to nearly one-fifth of all mortgages in the U.S. to be held by potentially non-reliable borrowers. Traditionally, in the U.S., subprime mortgages are provided to borrowers with a credit score of 620 or less (from a scale to 850, or 900).<sup>45</sup> In

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<sup>42</sup> Financial Crisis Inquiry Commission, "Full Report with Dissents (PDF)", pp 1-4.

<sup>43</sup> Investopedia, "Subprime Mortgage", p 1.

<sup>44</sup> Michael Simkovic, "Competition and Crisis in Mortgage Securitization", p 3.

<sup>45</sup> Bankrate, "Subprime Mortgages", p 1.

order to place a credit score of 620 into perspective, a brief analysis of credit scores is necessary. With most systems, a good credit score of over 680 is considered “good”, with 620 bottoming out the “average” credit score.<sup>46</sup> If an individual carries a suitable amount of debt, makes regular payments, and can be considered able to repay any loan, he or she should have a credit score of 680 or higher – other factors notwithstanding. A credit score below 680 implies that an individual has one or more “flags” on their credit that have led lenders to consider higher interest rates or altered lending terms. A credit score below 620 would lead lenders to seriously evaluate the risks involved with providing a loan. With this understanding, it can be seen that subprime mortgages carry a potentially extreme risk, and for this very reason, were kept in limited supply before 2004.

To expand upon the obvious detriment of subprime mortgages, it becomes necessary to view several examples which highlight these facts statistically. For demonstrative purposes, a US\$ 300,000 30-year fixed-rate U.S. mortgage will be evaluated in both a traditional setting and a subprime situation. With a traditional 20% down payment – and extraneous factors, such as interest rate, remaining constant – the total monthly payment for the mortgage is US\$ 1,688 per month with the total of all payments being US\$ 667,814 (2.23 times the original principal amount of US\$ 300,000).<sup>47</sup> With a subprime mortgage, it is safe to predict that 0% will be paid down and a much higher interest rate – 10% for the purposes of this example – will be charged.

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<sup>46</sup> FreeScore, “Good, Average and Bad Credit Score Range”, p 3.

<sup>47</sup> U.S. Mortgage Calculator, “U.S. Mortgage Calculator with Taxes, Insurance and PMI”, p 1.



In this new scenario, the total monthly payment becomes US\$ 3290 per month with the total of all payments being US\$ 1,140,445 (3.80 times the original principal amount of US\$ 300,000).<sup>48</sup>

A shockingly evident fact has now been brought to light. In a traditional setting, a lender will profit slightly over twice his or her investment. In a subprime setting, a lender will make almost four times his or her investment. If a borrower has the potential to repay the mortgage, then a subprime situation would appear to be the most beneficial avenue for a lender. Why then, did this not work for lenders? The answer is simple and absolute: teaser rates. *Teaser rates* are defined as an initial rate on an adjustable-rate mortgage that will typically be below the going market rate.<sup>49</sup> As discussed in the section titled *Mortgage Management*, adjustable-rates are more beneficial in the short term; whereas, fixed-rates are typically more beneficial in the long term. For U.S. borrowers with poor credit, a 30-year term may be the only way to get a mortgage payment within the realm of possibility. With exceptionally poor credit – like that of subprime mortgage borrowers – an adjustable-rate may appear more enticing in the short run as the payments will be marginally cheaper. With *teaser rates*, this marginal reduction in price becomes significantly greater and plays a more pivotal role in the mortgage process for borrowers.

To show the potential downfall of teaser rates, take into account the example given previously where repayments are 2.23 times value for a 20% down mortgage, and 3.80 times value for a 0% down mortgage. Converting this scenario to an adjustable-rate mortgage is simple enough and reveals a monthly payment of US\$ 1,610 with 5% interest – considerably

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<sup>48</sup> U.S. Mortgage Calculator, “U.S. Mortgage Calculator with Taxes, Insurance and PMI”, p 2.

<sup>49</sup> Investopedia, “Teaser Rate”, p 1.

less than the previously mentioned monthly payments. A commonly used teaser rate for U.S. mortgages is 3% for the duration of the introduction period.<sup>50</sup> Taking this teaser rate into account, the monthly payment would appear to be US\$ 1,265 for the short term. Once this teaser rate expires, the mortgage interest normalizes and the payments become slightly higher than they would be otherwise; falling in the US\$ 1,700 range for the purposes of this example. For a borrower, a teaser rate can be the determining factor involved in the mortgage process. For a lender, a teaser rate can be the sole means of ensuring higher interest and higher return on investment in the long term.

Unfortunately, a perfect storm appeared on the horizon with the subprime lending rate being astronomically high and the borrower requirements being at an all-time leniency. These factors are the missing pieces in the puzzle and work to create a cohesive vision of the entire disaster that took place. With an ill-defined system in place, the U.S. provided unsecured loans to borrowers who simply did not possess the ability to repay satisfactorily. Longer terms, less informed buyers, and a lack of penalties for those that defaulted on mortgages laid the groundwork for subprime lending that ultimately required several massive government interventions (i.e. the Dodd-Frank act which authorized \$475 billion to be used to buy illiquid securities and mortgages) in order to prevent nationwide economic collapse.

As the U.S. faced widespread panic and restructuring, Canada remained resolute and unaffected.<sup>51</sup> In the Canadian system, subprime mortgages reached an historic high in 2014 at

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<sup>50</sup> Realtor, "How to Avoid the Traps of a Teaser Rate", p 1.

<sup>51</sup> Richmond Fed, "Why Was Canada Exempt from the Financial Crisis?" p 1.

2.2%.<sup>52</sup> Even at its highest, the Canadian subprime mortgage rate is barely one-quarter of that of the U.S. before this rate inflated in 2006. At the height of the U.S. subprime mortgage problem, the participation rate of Canadian subprime mortgage was one-tenth that of the United States. This statistic alone provides the backbone for the entire Canadian mortgage system, and goes to state a single objective: do not provide loans to borrowers who are unable to repay loans satisfactorily. As evidenced in the section titled *Mortgage Foreclosure*, the Canadian system is nowhere near as lenient as that of the U.S. system. Taking this stalwart attention to borrowers into account, the fact that Canadian borrowers are required to be more educated prior to the mortgage process becomes critically important. The clear definition of the Canadian system, coupled with borrower education, and lender recourse creates a manageable and elastic system impervious to “bubbles” like those that so negatively affected the U.S. system.

### **Conclusion**

Now that the keystone factors involved in the 2007 financial crisis has been evaluated and explained properly, a conclusion can be provided. The United States mortgage system is fundamentally weaker than that of the Canadian mortgage system due to lack of borrower knowledge, lack of lender recourse in seeking penalties against delinquent borrowers, and the desire for long-term mortgages. In the Canadian system, borrowers must educate themselves

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<sup>52</sup> Financial Post, “Subprime Lending Market in Canada Skyrockets to Record as Banks Tighten Reins”, pp 1-2.

on the numerous options available before beginning the mortgage process; whereas, in the U.S., buyers are coached at the time of the mortgage process. This shows a clear and polarizing difference in borrower responsibility and contributes greatly to every additional step of the mortgage process as a whole. In the Canadian system, lenders may seek damages such as asset liens, wage garnishments, and lawsuits; whereas, in the U.S. system, lenders typically accept losses and attempt to minimize them.

This provides a clear view that the U.S. system suffers from a lack of definition and could have reduced its precipitous position during 2007 by simply providing retaliatory measures for lenders. In the Canadian system, mortgages are, at most, ten years in duration; whereas, in the U.S. system, mortgages can be as long as thirty years. While this would appear to lower costs to borrowers and provide a more manageable payment, it actually does the opposite and creates a situation where up to 3.80 times the value of the property is paid over the course of the loan.<sup>53</sup> These three factors – education, penalties, and term – prevented economic disaster in Canada in 2007, as clearly evidenced throughout the preceding chapters; whereas, the U.S. required government assistance in the form of \$475 billion to prevent a total crippling of its mortgage system.<sup>54</sup>

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<sup>53</sup> Referring specifically to the figure presented in the preceding chapter.

<sup>54</sup> Investopedia, “Troubled Asset Relief Program – TARP”, p. 1

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