An Examination of the Canadian Mortgage Broker Industry

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This thesis by Andrew T Williams is accepted in its present form by the Department of Economics as satisfying the thesis requirements for the degree of Bachelor of Arts with Honours

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Table of Contents

List of Tables

List of Figures

Abstract

This thesis seeks to answer the question “why are mortgage brokers relatively under used in Canada and what could be gained from increasing their usage?” Through examination of the current market, mortgage brokers were found to be impeded by a combination of the following factors: broker inexperience, a history of fraud, the major bank’s dominance of advertising and consumer opinion, and the established status quo bias amongst Canadians. A third degree price discrimination model was subsequently used to estimate the consumer cost of these impediments. The consumer surplus cost was calculated to be $41.2 million in 2009. Individually, consumers can benefit from the use of mortgage brokers but the mortgage industry as a whole benefits from the decrease in dead weight loss, calculated to be $15.89 million. It is the existence of these savings that will likely encourage growth in this industry in the future.

Chapter 1 – Introduction

On July 13th 2009, a Globe and Mail reporter named Rob Carrick interviewed Robert McLister, the author of the Canadian Mortgage Trends blog and registered Mortgage Planner. In the course of the interview, Carrick mentioned that only 10% of people renewing their mortgage shop around for a better interest rate.[1] McLister comments that if a borrower was to consult a mortgage broker instead of going to a bank directly, they would likely be able to lower their interest rate more than 30 basis points from the given bank rate.[2] Interestingly, McLister mentions that only about a third of Canadians use mortgage brokers which means a large number of the Canadian homebuyers are missing out on significant savings.

The research question that this thesis will focus on is as follows: why are mortgage brokers under used in Canada and what could be gained from increasing their usage?

In 2009, total mortgage credit in the Canadian market was a record $930 billion[3] and surveys suggest that only 30-40% of this was obtained through mortgage brokers.[4,5] The mortgage market in Canada predominantly features the monopolistically competitive “Big Five” banks.[6] These banks originate more than half of all mortgage

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[1] Rob Mclister, interview by Rob Carrick. *Getting the Best Mortgage Rate* (July 13, 2009).
[2] Mclister
[3] Bank of Canada. Residential Mortgage Credit. *CANSIM*, 03 08, 2010
[4] CMHC. "2009 Mortgage Consumer Survey Results." *CMHC*, 2009: 3
[5] Will Dunning, "The Canadian Residential Mortgage Market During Challenging Times." *CAAMP*, April 2009: 7 - 10.
[6] Note 1 - See Appendix A for a List of the Big 5 banks

credit in Canada and are the first choice of a majority of Canadian customers.[7] In addition to these banks, there are over a hundred smaller credit institutions and Caisses Populaires present in the Canadian banking industry. These institutions are the second largest provider of independent residential mortgage credit in Canada with about 13% of the total market in 2009.[8] In comparison, the mortgage broker industry, as recently as 15 years ago was largely marginalized to the role of lender of last resort in Canada. Art Trojan, the head of Norlite Financial Services, one of Canada's largest brokerages, said that in the past:

> "The stereotypical image of the mortgage broker was that of a guy who's sitting in a back room, saying, 'Hey buddy, do you need some money? We're going to charge half a point extra and, if you miss a payment, we're going to break your legs.'"[9]

While this makes for a lively caricature, the industry's transition into a more reputable profession is both complex and incomplete.

This thesis will explore the limitations currently facing the Canadian mortgage industry, despite efforts to reform. The main reasons for such limitations include: broker inexperience and fraud, Big 5 marketing dominance, and consumer status quo bias.

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[7] Will Dunning. "Risks are Contained Within the Canadian Mortgage Market." *CAAMP*, October 2008: 3
[8] Bank of Canada. "Residential Mortgage Credit." *CANSIM*, 03 08, 2010
[9] Paul Kaihla. "Canada Mortgage Broker: If you're looking for a cut-rate mortgage, don't go to the bank -- call a broker." 2004. http://canadamortgagebroker.ca/brokers/canadian_business.htm (accessed 02 2010).

The structure of this thesis is as follows: in Chapter 2, an industry background will be presented and the role of mortgage brokers will be explained. In addition, an account of the current trends in the Canadian housing market will place the following discussion in greater context. In Chapter 3, the critical issues relevant to the broker industry will be detailed. The goal is to provide an understanding of the limits and problems that impede the broker industry from achieving greater market power.

Chapter 4 will define the fundamental characteristics that distinguish the mortgage industry. Third degree price discrimination will be introduced as the primary economic rationale for the existence of limited market competition. Chapter 5 will take the theoretical framework put forward in Chapter 4 and apply it to the Canadian Mortgage Market. A numerical example will be constructed to examine the question "If the limitations inherent in the mortgage broker industry were removed, what would be the increase in consumer surplus."

In summary, this thesis will initially present a review of the deficiencies present in the mortgage broker industry. Following that, the market structure will be considered as a whole and an estimation of consumer surplus currently forgone will be provided. Taken together, this analysis will explain why brokers are under used in Canada and the consumer costs associated with this underuse.

Chapter 2 – The Mortgage Brokerage Industry in Canada

2.1 - What is a Mortgage Broker?

A mortgage broker is an agent that represents the interests of the consumer when securing a loan from a bank or credit institution. Their role is to find the lender with the mortgage terms and interests rates that best suit the borrower's needs. Typically, they work independently and do not originate any loans themselves. Instead, they constantly compare rates between the lending institutions into order to establish which ones on a given day are offering the best deal. They also have access to private lenders and broker only institutions that customers would not be able to contact themselves. In addition to comparing rates, brokers study the lending profiles of various institutions. They learn the types of projects that each institution favours, whether it is mortgages for hotels or low income city townhouses. Matching a bank's lending strategy to the risk and credit profile of the borrower allows the broker to find the lowest rates available.

Mortgage brokers also maintain strong ties with the lending institutions themselves which allows for greater negotiating power. Rate discounts can be negotiated on the basis of number of borrowers the broker brings to the bank, the quality of borrowers, and amount being borrowed. Naturally, the more customers that the broker matches to a certain bank, the increased likelihood that they will offer a quantity discount to the broker. Brokerages such Quebec's Multi Prêts Hypotheques bring in over $100 million worth of credit to the banks yearly and this allows for a very strong bargaining position.[10] Some smaller credit institutions, such as First National Financial, rely entirely on brokers to find potential borrowers. By working solely with brokers, they are able to completely eliminate the need for a physical location from which to interact with and meet customers.

Another fundamental part of these interactions is the broker's negotiating experience. As they represent the borrower's interests and receive compensation on a transaction basis only, they are motivated to negotiate the best deal possible. Compensation comes mostly in one of two forms: a finder's fee from the lending institution for bringing in a borrower, or a commission based on a percent of the total mortgage acquired. The finder's fee is the most common form of compensation making broker usage a cost free process for most consumers. In the event of a commission based broker, the Canadian Mortgage blog puts the average commission at 65 basis points.[11] Brokers are entitled to charge a commission themselves but few for competitive reasons.

[10] Paul Kaihla. "Canada Mortgage Broker: If you're looking for a cut-rate mortgage, don't go to the bank -- call a broker." 2004. http://canadamortgagebroker.ca/brokers/canadian_business.htm (accessed 02 2010).
[11] Ibid

2.2 - A Young Canadian Industry

Mortgage brokerages have been present in Canada for at least the last 50 years but it was only towards the end of the century that the industry began to become institutionalized.[12] One of the earliest associations was the Ontario Mortgage Brokers Association (OMBA) which was founded in the 1960s and ceased operations in 1996.[13] In 1975, the Alberta Mortgage Broker Association (AMBA) was created to maintain "a high level of integrity and professionalism" within the Alberta broker community.[14] In alignment with AMBA's goals, the Mortgage Brokers Association of British Columbia (MBABC) and the Mortgage Brokers Association of Ontario (IMBA) were created in 1990 and 2000 respectively. Nationally, the industry was formally unified in 1994 with the creation of the Canadian Institute of Mortgage Brokers & Lenders (CIMBL) which served as "the industry voice with government, media and regulators."[15]

The rise of broker associations had a noticeable effect on how the Canadian banks use interest rates to entice customers. Economist Virginie Traclet, in her 2005 paper "The Structure of the Canadian Housing Market and Finance system," found that the increase in the mortgage broker and virtual banking industry in the 1990s pushed major Canadian banks to begin discounting their posted rates on a customer to customer

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[12] Lawrence B. Smith, "Financial Intermediary Lending Behaviour in the Postwar Canadian Mortgage Market." *The Quarterly Journal of Economics*, Aug., 1967: 493.
[13] Mal Eccles, interview by Andrew Williams. IMBA History (February 02, 2010).
[14] Alberta Mortgage Brokers Association, "About AMBA." 2010. http://www.amba.ca/Default.aspx?tabid=71 (accessed February 2010).
[15] CAAMP. "About CAAMP." 2010. http://www.caamp.org/info.php?pid=330 (accessed November 2009).

basis.[16] Discounts could range from 25 to 125 basis points depending on one's credit history, personal relationship with the bank, or personal wealth. However, the effective mortgage rate (the posted rate minus the discounted rate) remained unchanged in the late 90s because of the banks began to increase their posted rates to offset their discounting. Traclet notes that as of 2005: "the maximum discounted rate offered by banks is now broadly in line with the rate offered without negotiation by virtual banks and mortgage brokers." [17] This statement corroborates the previously presented theoretical basis for a mortgage broker's ability to reduce consumer mortgage costs relative to banks. If consumers can receive low rates from brokers without the burden of extensive negotiations, they stand to save substantial amount of both money and time. It is therefore significant that most consumers in the 90s and 2000s did not use brokers despite the gains they might make.

2.3- Recent Trends in the Canadian Mortgage Market

Canada's housing market is currently one of the most robust in the world with over $219,569 million worth of new mortgage credit being extended in 2008.[18] Despite the recent recession, Canadians have embraced homeownership as a long-term means of investment. In an attempt to stimulate national investment, the Bank of Canada has continually decreased target interest rates from late 2007 onwards. One can see from

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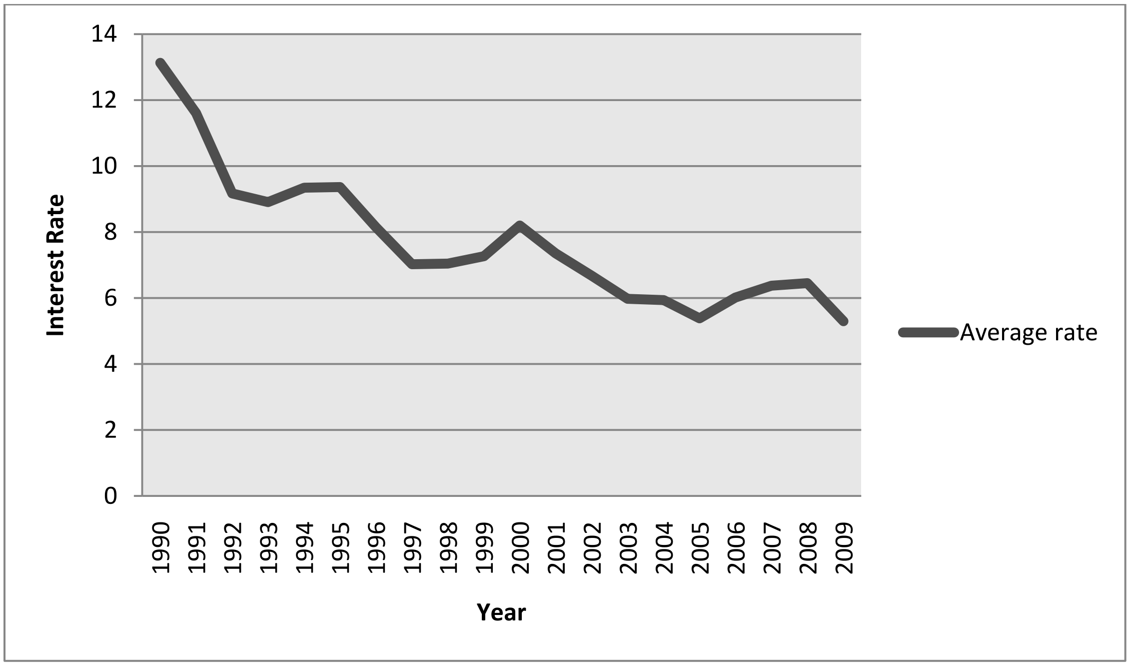
[16] Virginie Traclet. "Structure of the Canadian housing market and finance system." *Bank of Canada*, 2005: 4
[17] Ibid, 5
[18] CMHC. "CHS - Mortgage Lending 2008." *CMHC*, 2008: 5

Figure 2.1 that since 2007, the average mortgage rates for five year fixed term mortgages has fallen slightly over a full percent.[19]

Figure 2.1 – Average Mortgage Rates



Source: CMHC. "Average Residential Mortgage Lending Rate: 5 Year." CMHC, 2010: 1-2.

This decrease in rates has stimulated an increase in mortgage investment by consumers. As seen in Table 2.1, total outstanding residential mortgage credit increased 20% from 2007 to 2009. The National Housing Act (NPA) Mortgage Back Securities section of the table shows a 12% increase over the measured time period. These NPA mortgages are largely originated from one of the big five banks and then securitized by the Canadian government through the CMHC. There is not a decrease in residential mortgage

[19] James MacGee. "Federal Reserve Bank of Cleveland: Why Didn't Canada's Housing Market Go Bust?" February 12, 2009. http://www.clevelandfed.org/research/commentary/2009/0909.cfm (accessed Feburary 2010).

originated by the banks, rather, there is a decrease in mortgage credit held and securitized by the banks.

Table 2.1 – Residential Mortgage Credit by Institution

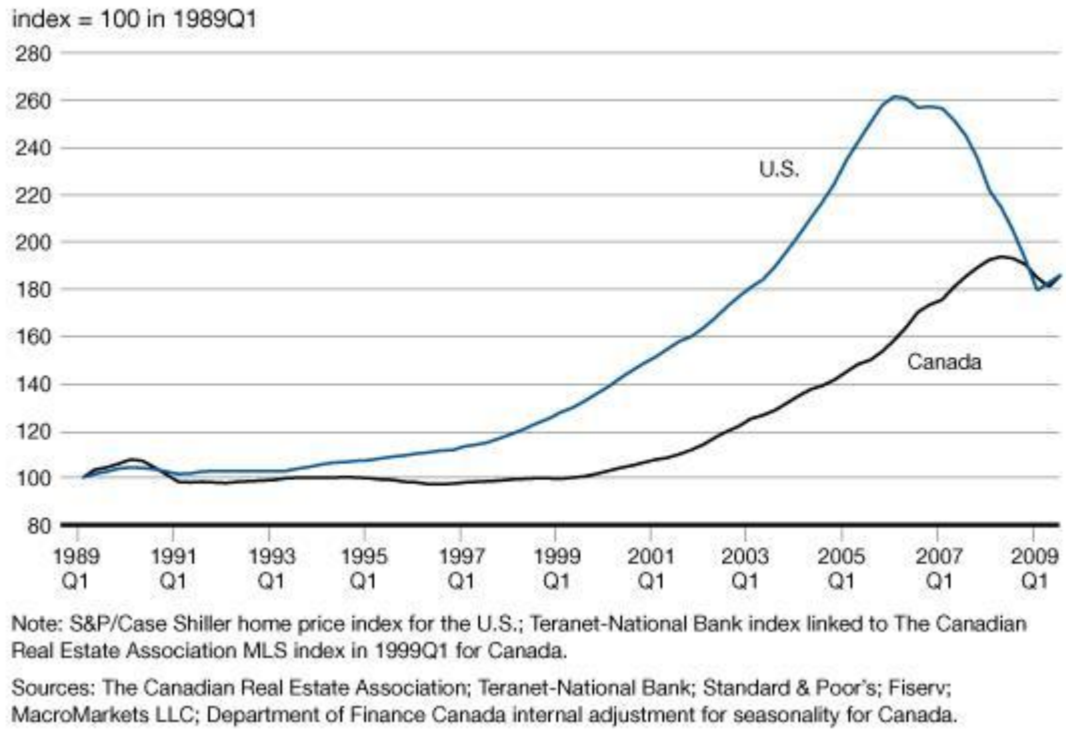
Institution	2007		2009		
	In Millions $	% Total	In Millions $	% Total	% Change
Chartered Banks	442,116	57%	450,939	48%	-9%
Trust and Mortgage Loan Companies	8,502	1%	10,321	1%	0%
Life Insurance Companies	14,803	2%	15,395	2%	0%
Pension Funds	13,238	2%	15,685	2%	0%
National Housing Act Mortgage-Backed Securities	134,593	17%	274,129	29%	12%
Credit Unions and Caisses Populaires	102,507	13%	117,334	13%	0%
Special Purpose Corporations (Securitization)	24,886	3%	17,932	2%	-1%
Other	31,492	5%	28,288	3%	-2%
Total	772137	100%	930,023	100%	20%

Source: Canada, Bank of. Residential Mortgage Credit. CANSIM, 03 08, 2010

This increase in mortgage credit however, has largely been contained in a few of the country's major cities: Vancouver and Toronto being the most robust. Influence of these markets pushed average housing prices to the highest they have ever been in the fourth quarter of 2009.[20]

[20] Tony Wong. "YourHom.ca: Mortgage Debt Soars in Canada." November 17, 2009. http://www.yourhome.ca/homes/realestate/article/726557--mortgage-debt-soars-in-canada (accessed January 2010)

Figure 2.2 – Existing Home Prices



Source: Canada, Government of. "Canada's Economic Action Plan." Action Plan. 12 02, 2009. www.actionplan.gc.ca (accessed February 2010).

Figure 2.2 shows housing prices from the first quarter of 1989 to the first quarter of 2009. The last 10 years have been characterized with massive growth in housing prices in both Canada and the US. The Canadian Real Estate Association reports that while housing prices rose 11% in 2009; this figure is heavily skewed by the nation's most heated markets.[21] This data is consistent with the International Monetary Fund's findings that the western provinces are overvalued by about 8%[22] when compared to

[21] Alyson Fair. "CREA News: MLS home sales grow stronger in the third quarter." October 15th, 2009. http://creanews.ca/2009/10/15/mls%C2%AE-home-sales-grow-stronger-in-the-third-quarter/ (accessed January 2010).
[22] Evridiki Tsounta. "Is the Canadian Housing Market Overvalued? A Post-Crisis Assessment." *International Monetary Fund*, 2009.

the rest of Canada. Controlling for regional variation, the IMF found that “Canadian home prices presently reflect long-term fundamentals and are close to equilibrium.”[23] It is only in specific cities that the combination of low interest rates and limited housing has pushed housing prices to their recent heights.

2.4 - Housing Bubble Fears

During the fall of 2009, various media outlets reported fears of a potential housing bubble. Traditionally, housing markets follow the overall economic conditions of the country and one would typically expect a price decrease in the housing market during a recession. Despite these pressures, Canadians purchased houses while the interest rates were low, thereby keeping the housing market strong.

Another concern was that if interest rates were to rise quickly, Canada would see a wave of mortgage defaults similar to the 2007-2008 American experience. However, the major Canadian banks and various government organizations were quick to dismiss claims of a housing bubble. The Bank of Canada declared that the interest rate would not rise sharply but instead stay at its current overnight rate of 0.25 until the second quarter of 2010 before rising slowly as the economy enters full recovery.[24] Economist Michael Gregory of BMO Nesbitt Burns believes that the housing market is on the

[23] Rob McLister, Melanie Mclister. “Canada Mortgage Trends: The Good News About Cheap Money.” November 2, 2009. http://www.canadianmortgagetrends.com/canadian_mortgage_trends/2009/11/the-good-news-about-cheap-money.html
[24] TradingEconomics.com. “TradingEconomics : Bank of Canada Holds Rate Low.” January 19, 2010. http://www.tradingeconomics.com/Economics/Interest-Rate.aspx?Symbol=CAD (accessed February 2010).

rebound, not in an inflationary bubble. In a recent *Globeinvestor* interview, he gives his reasons for this belief:

> "Discretionary and big-ticket purchases of all types were postponed in the post-Lehman panic, creating an abnormal amount of pent-up demand…Once the panic subsided, pent-up demand started to unwind, pulled by record low mortgage rates, cheaper home prices (around 9 per cent on average), and an emerging sense among consumers that the worst of the recession was over."[25]

Cities like Vancouver are expensive because of its year round warm temperatures and international reputation. It is likely that lower interest rates added to Vancouver's high prices but they should not be seen as the determining factor.

The Canadian Mortgage and Housing Corporation (CMHC) were criticized for relaxing their standards in their housing insurance appraisals but this was later found to be largely unfounded.[26,27] It's true that CMHC insured more debt than ever before in 2008 but both the IMF and the Bank of Canada report that it was not done in a reckless and dangerous way.[28] The people taking advantage of the low rates were those that had steady jobs and good credit ratings, not the marginal customers that characterized the

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[25] Virginia Galt. "GlobeInvester: Three Views on a Housing Bubble." November 16, 2009. http://www.globeinvestor.com/servlet/story/GI.20091116.escenic_1365253/GIStory/ (accessed November 2009).

[26] James MacGee. "Federal Reserve Bank of Cleveland: Why Didn't Canada's Housing Market Go Bust?" Febuary 12, 2009. http://www.clevelandfed.org/research/commentary/2009/0909.cfm (accessed Feburary 2010).

[27] Rob McLister, "The Good News About Cheap Money." November 2, 2009. http://www.canadianmortgagetrends.com/canadian_mortgage_trends/2009/11/the-good-news-about-cheap-money.html

[28] Ibid

2008 subprime crisis in America. A 2006 CAAMP consumer survey also accessed the fear of default expressed by Canadians and found that only 9% of mortgage holders considered themselves in danger if interest rates increased.[29]

Mortgage brokers during the last 5 years have increased their market presence by 11% thanks partially to the strength of the housing market. [30] High housing prices in the most expensive areas of the country have made seeking the lowest mortgage rate extremely important. The difference of even a few basis points can have a massive effect on the total cost of one's mortgage. The recent increase in the use of brokers will be fully expanded upon in subsequent chapters. In addition, a theoretical demonstration of the increase consumer surplus achieved by getting a lower mortgage rate will be provided.

[29] Will Dunning. "Consumer Mortgage Choices in a Changing Market." *CIMBL*, 2006: 7
[30] CMHC. "2009 Mortgage Consumer Survey Results." *CMHC*, 2009: 3

Chapter 3 – Critical Issues with the Mortgage Broker Industry

3.1 - Problems with Experience and Consumer Confidence

The inherent individualism of the broker industry, combined with the lack national standards of education until 2004, has resulted in an inconsistently trained and experienced workforce. Despite the ability to reduce consumer searches costs and mortgage rates, the inconsistent quality of the individual brokers presents a substantial obstacle to the industry. Various broker associations have increased the industry’s standards but unfortunately, many young and poorly trained brokers are hindering the industry’s ability to compete with the banks. While no one has actually measured the damage done to the industry by inexperienced brokers, there are signs of the negative effects they produce.

Consumer satisfaction surveys are a possible way of measuring the public's opinion of both brokers and banks. CAAMP recently commissioned Maritz Research, to find consumers’ opinions about a range of broker and bank issues. The 2009 report noted that despite interest rate discounts, consumer “satisfaction is slightly higher among those originating with a Bank or Credit Union” rather than with a broker. [31] In agreement with the Maritz research, the 2009 CMHC Consumer Survey also found that,

[31] Kyle Davies, Rob Daniel. "Fall 2009 Canadian Mortgage Industry Snapshot: Key Findings." *CAAMP*, 2009: 11

on average, consumer’s rate satisfaction to be higher with banks rather than with brokers.[32]

Despite the advantages of being able to obtain lower rates, brokers are still limited in their appeal to Canadians. One possible explanation for this can be found in the Maritz report's additional findings. The survey found that consumers place a very high value on confidence in the lending institution, rating it just below the highest concern: “interest rate obtained.”[33] Customers confidence in brokers is likely to be undermined by the fact that many brokerages are relatively new and do not have the same history of reliability that the banks have. While there are a number of well established and experienced brokerages that have been in the industry for many years, the recent success of the industry has encouraged many to become brokers. These new brokers are of varying quality because their training is limited and their practice time is short. Broker experience can be therefore characterized in two main ways: limited (new brokers) and established (experienced brokers).

3.2 - Mortgage Fraud

The first efforts to improve training and general professionalism in the industry came with the creation of CIMBL and the various provincial associations. These institutions sought to redefine consumer’s traditional perception of brokers being a

[32] CMHC. "2009 Mortgage Consumer Survey Results." *CMHC*, 2009: 1-4.
[33] Kyle Davies, Rob Daniel. "Fall 2009 Canadian Mortgage Industry Snapshot: Key Findings." *CAAMP*, 2009: 1-16.

“lenders of last resort.”[34] Compounding this negative perception is the widespread association of mortgage fraud and brokers. Mortgage fraud is defined by the Criminal Intelligence Service of Canada as the

> “Deliberate use of misstatements, misrepresentations or omissions to fund, purchase or secure a loan. Simply put, mortgage fraud is any scheme designed to obtain mortgage financing under false pretences, such as using fraudulent or stolen identification or falsifying income statements."[35]

In the context of Canadian mortgage brokers, the theft and use of a borrower’s money and identity are some of the most common forms. As brokers have access to a tremendous amount of private credit information, some have been known to access credit history and personal details without authorisation.[36] The purpose of this abuse of client information is most often identity theft[37]. In America, brokers have allowed consumers to falsify or inflate their earnings in order to become eligible for larger mortgages. This type of fraud is usually only discovered once the borrower defaults on

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[34] Derek Sankey, “Canwest News: Mortgage brokers find a larger niche.” March 30, 2009. http://www.donnalodberg.com/index.php/why_a_mortgage_broker (accessed February 2010).

[35] Criminal Intelligence Service Canada. “Mortgage Fraud & Organized Crime in Canada.” 2010. http://www.cisc.gc.ca/products_services/mortgage_fraud/mortgage_fraud_e.html (accessed February 2010).

[36] Tara Perkins. “Report on Business: Feds Probe Mortgage Brokerages.” August 31, 2009. http://www.theglobeandmail.com/report-on-business/feds-probe-mortgage-brokerages/article1270265/ (accessed December 2009).

[37] CBC News. “Court ruling frees Toronto couple from fraudulent mortgage.” November 1, 2006. http://www.cbc.ca/consumer/story/2006/11/01/mortgage-fraud.html (accessed March 2010).

the mortgage.[38] Recently in Canada, a fraudster named James Gibb was charged with defrauding two separate borrowers of $400,000. Gibb claimed to be an investment, loan and mortgage broker through his self run company called Micropayments Inc. but in reality he had no qualifications.[39]. Mortgage fraud is estimated by industry and government sources to cost consumers and industry hundreds of millions dollars annually[40]. Additionally, in the summer of 2009, the federal government began an extensive audit of Ontario brokers suspected of fraudulent activity.[41] In September of 2009 it was reported that

> "The Financial Services Commission of Ontario has conducted at least 68 investigations into the suitability of individuals who have applied for mortgage broker or agent licences, and at least two investigations involving unlicensed

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[38] Sasha Arms. "Mortgage Fraud and the Global Economic Downturn." September 15, 2009. http://crime.suite101.com/article.cfm/mortgage_fraud_and_the_global_economic_downturn#ixzz0hADUazVx (accessed February 2010).

[39] Stuart Paterson. "Globe and Mail: Ontario man accused of two frauds worth $400,000." November 30, 2009. http://www.theglobeandmail.com/news/national/toronto/ontario-man-accused-of-two-frauds-worth-400000/article1383131/ (accessed February 2010).

[40] Criminal Intelligence Service Canada, "Mortgage Fraud & Organized Crime in Canada." 2010. http://www.cisc.gc.ca/products_services/mortgage_fraud/mortgage_fraud_e.html (accessed February 2010).

[41] Tara Perkins. "Report on Business: Feds Probe Mortgage Brokerages." August 31, 2009. http://www.theglobeandmail.com/report-on-business/feds-probe-mortgage-brokerages/article1270265/ (accessed December 2009).

mortgage brokerage activities. It has sought to deny an application for a licence, or to revoke a licence, more than 25 times.”[42]

While this level of fraudulent activity exists, it is understandable that consumers are not as satisfied with brokers as they are with banks. While the vast majority of brokers are legitimate and trust worthy, a fringe minority are causing significant damage to public perception of the broker industry. The extent of the problem is not to be underestimated; Alex Haditaghi, the chief executive of Mortgagebrokers.com, is quoted as saying "There is tremendous fraud going on in the broker industry," and that federal investigation is "much needed."[43]

3.3- Efforts to reform

In an effort to establish a base level of qualification need to become a broker, CIMBL introduced the Accredited Mortgage Professional (AMT) program in 2004. In addition to this, CIMBL changed their name to the Canadian Association of Accredited Mortgage Practitioners (CAAMP) in order reinforce the notion of required industry qualifications. In 2009, CAAMP reported that there are over 12,000 accredited mortgage practitioners in Canada and professionalism among those who have undertaken the AMT program has increased.[44] This increase in training seems to be having a effect on limiting fraud activity. A recent Globe and Mail report stated that while mortgage fraud

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[42] Tara Perkins. *“*Report on Business: Feds Probe Mortgage Brokerages.*”* August 31, 2009. http://www.theglobeandmail.com/report-on-business/feds-probe-mortgage-brokerages/article1270265/ (accessed December 2009).
[43] Ibid
[44] CAAMP. “Industry Overview.” 2009. http://www.caamp.org/info.php?pid=331 (accessed 2010).

still exists in Canada, it is decreasing nationwide from 90s levels.[45] Furthermore, individual brokerages are beginning to take steps themselves to ensure they do not hire fraudsters by requiring credit and criminal record checks on all potential applicants to their firm.[46] Greater media coverage of significant cases will also make more people aware to the dangers of mortgage fraud and how to avoid it.

The AMT program has increased average broker competence to a standard minimum level but unfortunately, the level of experience of the average broker remains low. A large number of the brokers working in Canada today have only entered the industry in the last five years.[47] Doug Robison, manager of fraud prevention at Scotia Mortgage Authority, a ScotiaBank mortgage brokerage, believes that this group of poorly experienced brokers is dangerous to the consumer. Robison advocates that consumers should be very careful when picking a broker because of the varying quality that is inherent in the industry. He comments that "the more brokers you use, the increased chance there is of fraud occurring."[48] For a country that is already reluctant to compare interest rates between banks, the added challenge of comparing potential mortgage brokers for quality does not endear the average consumer to the industry.

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[45] Karim Bardeesy, "Report on Buisness: Mortgage Fraud Down, but Not Out." October 13, 2009. http://www.theglobeandmail.com/report-on-business/industry-news/the-law-page/mortgage-fraud-down-but-not-out/article1322236/ (accessed 11 2009).
[46] Tara Perkins. "Report on Business: Feds Probe Mortgage Brokerages." August 31, 2009. http://www.theglobeandmail.com/report-on-business/feds-probe-mortgage-brokerages/article1270265/ (accessed December 2009).
[47] David Benson. "MortgageExpertise: Mortgage Intelligence." 2008. http://www.mortgageexpertise.ca/insidepages/aboutus.htm (accessed February 2010).
[48] Mortgage Broker News. "Guide to Combatting Fraud." September 23, 2009. http://www.mortgagebrokernews.ca/contents/details.aspx?id=37255&tid=&ctyp=&p=2 (accessed February 2010).

3.4 - The Major Banks in Canada: An Overview

Canada's Big Five Banks represent one of the most substantial challenges to the broker industry due to their size and pervasiveness. Combined, the Big Five banks have over 5,000 bank branches and employ close to 300,000 personnel nationwide.[49] This significant presence within Canadian communities allows for an unrivalled access to consumers as well as control over the distribution of market information. As a consequence of this, these banks are responsible for originating the majority of mortgage credit in Canada.[50] In addition to have a large market presence, Canada's banks are regarded as some of the best in the world. In 2008, the World Economic Forum declared that Canadian banks form the world's soundest banking system.[51] Due to Canada's relative stability during the 2008 Financial Crisis, the international opinion of the Canadian banking system has increased substantially with even President Obama taking note of Canada's stability during a 2009 CBC interview.[52]

This perception of strength and stability has had a positive effect on customer trust, even throughout the recent recession. In 2009 a global marketing information firm, J.D. Power and Associates, reported that customer satisfaction with Banks has

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[49] Note 2 - See Appendix A for explanation

[50] Bank of Canada. "Residential Mortgage Credit." *CANSIM,* 03 08, 2010.

[51] Taylor, Rob. "Canada rated world's soundest bank system." October 02, 2008. http://www.reuters.com/article/idUSTRE4981X220081009 (accessed February 2010).

[52] Vieira. "Obama finds the Canadian banking system 'striking." February 18, 2009. http://network.nationalpost.com/np/blogs/fpposted/archive/2009/02/18/obama-finds-the-canadian-banking-system-striking.aspx (accessed February 2010).

remained stable throughout 2008 and 2009.[53] As mentioned previously, the 2009 Maritz Consumer survey found the perception of stability to be extremely important to consumers. As a result of the banks proven stability, lender loyalty is has been found to be extremely high. Table 3.1 and Figure 3.1, confirm this statement.

Table 3.1 – Sentiment by Bank

Bank	Very Positive	Somewhat Positive	Neutral	Somewhat Negative	Very Negative	% Positive or neutral
BMO	9%	24%	58%	3%	6%	91%
Td	10%	20%	55%	12%	3%	85%
CIBC	7%	32%	47%	10%	4%	86%
BNS	4%	28%	60%	5%	3%	92%
RBC	4%	45%	39%	9%	3%	88%

Source: Gladney, Patrick. The "Big-Five" Canadian Banks in Social Media. October 1, 2009. http://socialcurrency.nsresearch.com/2009/10/the-%E2%80%9Cbig-five%E2%80%9D-canadian-banks-in-social-media/ (accessed February 2010).

Table 3.1, taken from a study done by a social researching company called NorthStar Research Partners, shows that in 2009, Canadians were overwhelmingly positive on their perceptions of the Big five banks. The study cites the reason for this positive sentiment as coming from consumer knowledge of recent failures in the American Banking system. In addition, international commendation for Canadian banks also contributed to positive consumer perceptions.

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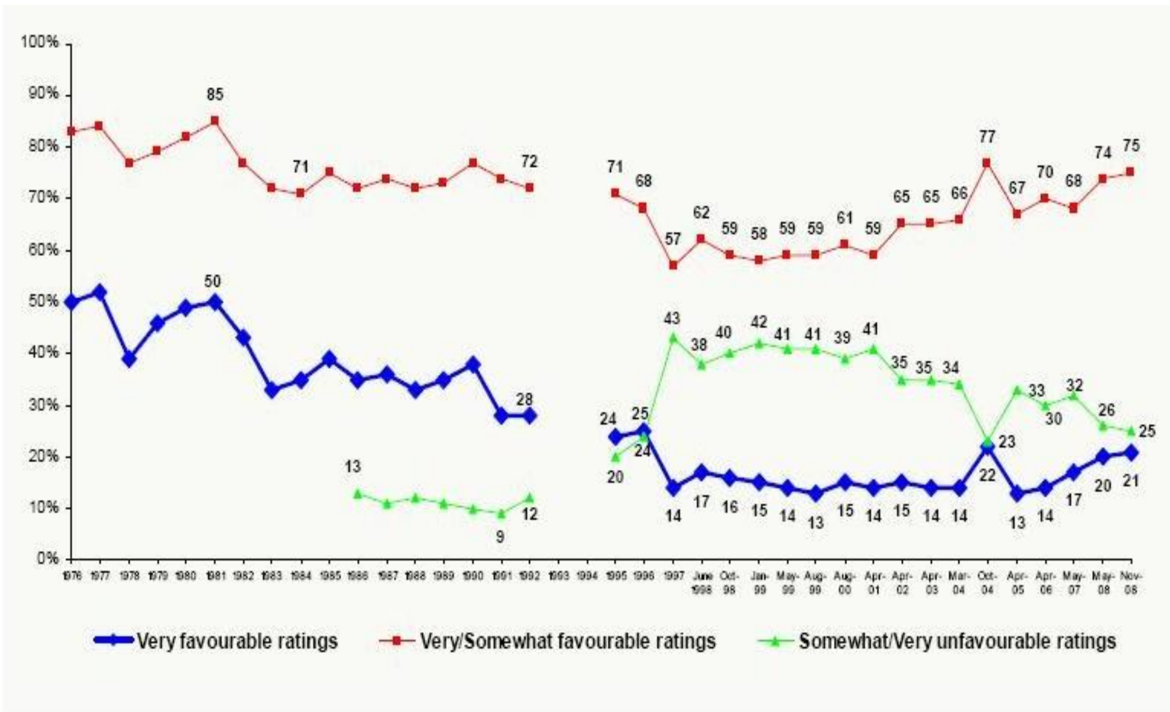
[53] CA Magazine. "Customer satisfaction with Canadian banks remains stable." February 2010. http://www.camagazine.com/archives/web-features/2009/camagazine29536.aspx (accessed Feburary 2010).

Figure 3.1 – Trends in Public Support for the Banks



Source 1: Thompson Lightstone Tracking Studies.
Source 2: The Strategic Counsel Survey of 1000 Canadians, March 1997.
Source 3: The Strategic Counsel Survey of Canadians, May 1997.

Source: Counsel, The Strategic. "Assessments of Canada's Banks: Fall 2008." Canadian Bankers Association, 2008: 1-18.

Figure 3.1 shows favorability ratings for Canada's major banks over the last thirty years. The decrease in unfavourable ratings from 2006 to 2008 coincides with the recent period financial turmoil. Consumers are signalling through these surveys that that stability is a key indicator in determining consumer preference. As mentioned, mortgage brokers have had difficulties in the past with fraud and negative consumer perceptions. These problems contribute to consumer perceptions of industry instability and as such they are reluctant to try brokers. Banks are viewed as trustworthy and therefore consumers regard them with increasing reports of satisfaction.

3.5 – Advertising

Canadian Mortgage Trends, a broker information blog, recently reported that only 10% of an average broker's customers come to them because of advertising. The majority of customers came from other customer's referrals.[54] This statistic points to an important facet of the banks dominance of the Canadian market: their advertising budgets. The Big Five all have marketing and promotion budgets that go into the hundreds of millions of dollars. In 2008, Scotia Bank alone spent $320 million, which was an increase of 9% from 2007.[55] In comparison, the largest Credit Union in the country, Vancity Credit Union, is reported to have spent $10.962 million on marketing and promotions.[56] Brokerages are private firms, as such do not publish their marketing expenditures and a direct comparison cannot be conclusively made. However, an indirect comparison can be made by looking organizations that represent Canadian mortgage brokers such as CAAMP. In CAAMP's 2007-2008 annual report, $322,015 was spent on public relations.[57] In addition to this, over 80% of the membership fees taken from their Accredited Mortgage Practitioner (AMP) program are used in the promotion of the AMP designation. This amounted to over $1.714 million in 2008.[58] Private Brokerages engage in a variety of advertising methods with television commercials,

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[54] Mortgage Broker *News. "Mortgage Brokers Today."* December 01, 2009. http://www.canadianmortgagetrends.com/canadian_mortgage_trends/2009/12/mortgage-brokers-today.html?cid=6a00d8341c74cb53ef01287600b67c970c (accessed February 2010).

[55] ScotiaBank. "2008 Annual Report." 2008. http://cgi.scotiabank.com/annrep2008/en/index.html (accessed February 2010).

[56] Vancity Credit Union. "2008 Annual Report." *Vancity Credit Union*, 2008: 1-58.

[57] CAAMP. "Annual Report 2007-2008." *CAAMP*, 2008: 11

[58] CAAMP. "Annual Report 2007-2008." *CAAMP*, 2008: 8

print ads, and websites being the most prominent. A representative from Dominion Lending, a fast growing national brokerage firm, was recently interviewed on the "CanadianMortgageTrends" blog on the subject of advertising. The representative, President Gary Mauris, is quoted as saying:

> "Our budget for advertising over the next 12 months is well over $2 million, primarily directed towards television advertising. From September 2008 to September 2009 our base buy of television advertising will make more than 140 million viewer impressions via more than 7300 commercials across Canada."[59]

While these figures are significant, the bank's advertising dominance is hardly being challenged. The only example of major competition to the Big Five comes from the international online lending institution ING Direct. Internationally, in 2007, ING direct spent $1,017 million on advertising and promotion. In 2006, the Credit Union Central of Canada hired Financial Industry Research Monitor (FIRM), an industry research group, to access consumer's perceptions on a wide variety of mortgage topics. One relevant question regarded the advertising recall among consumers during the 2006-2007 period. Figure 3.2 shows the breakdown of the surveyed consumer's ability to remember advertising over three separate survey periods: September 2006, June 2007, and September 2007. ING Direct achieved top recall scores for two of the surveyed periods, September 2006 and June 2007, and was beaten by RBC in September 2007.

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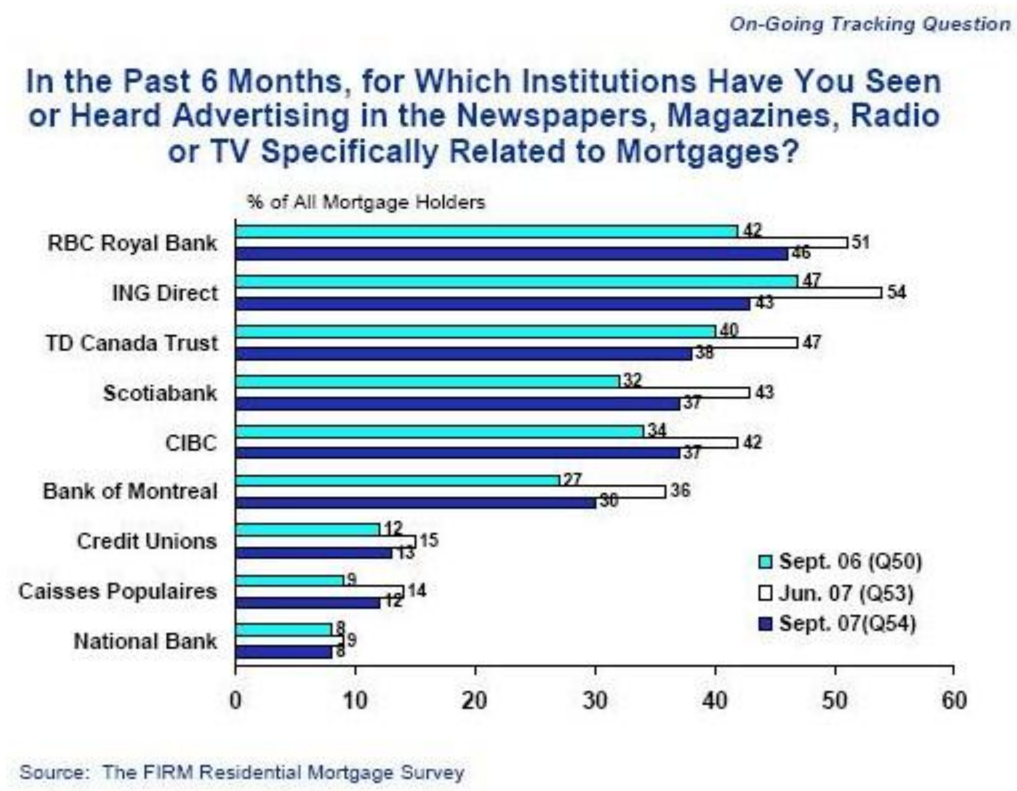
[59] Mortgage Broker New, "Dominion Lending: A Chat with Gary Mauris." October 23, 2008.
http://www.canadianmortgagetrends.com/canadian_mortgage_trends/2008/10/dominion-lending-a-chat-with-gary-mauris.html (accessed February 2010).

The key conclusion is that in order to make substantial inroads in regards to advertising in Canada, the mortgage broker industry will need to spend significantly more money.

Figure 3.2 Advertising Recall



Source: Monitor, Financial Industry Research. "FIRM Residential Mortgage Survey." Credit Union Central of Canada, 2008: 1-116.

3.6 - Bank Brokerages

In an effort to undermine independent brokers, the Big Five Banks have in the last 10 years begun to open their own brokerages that work exclusively for them. These bank brokers work in the same way as independent brokers with one pivotal difference: instead of comparing rates from a diverse selection of banks, they only offer rates from one bank. TD call's theirs "Mobile Mortgage Specialists"[60] because of their willingness to travel to you. Hector McMillan, a senior independent broker, refers to them as "road runners" and equates them to the travelling salespeople of the mortgage industry.[61] While they may offer a wider selection of mortgage products and rates than the typical bank branch mortgage planner, they are still constrained by their allegiance to one bank. Furthermore, they do not necessarily have the borrower's best interests in mind. Independent brokers work almost entirely for commissions given from lenders and as mentioned; their customers are largely referral based. Bank brokers have the interests of their employer in mind and they're customers are derived from affiliation with the bank. While the difference may seem cosmetic, both McMillan[62] and a representative from CanEquity[63], an Alberta mortgage brokerage, expressed concern over this growing source of competition.

3.7 - Status Quo Bias

The final critical issue, status quo bias, brings together many of the previously stated problems facing the mortgage broker industry. Status quo bias is defined as "a strong tendency to remain at the status quo because the disadvantages of leaving it [seem] larger than the advantages."[64] This perception of the great cost of change,

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[60] Tonya Russell. "Your Mortgage Professional." 2009. http://www.tdcanadatrust.com/msf/tonyarussell/index.html (accessed February 2010).
[61] Hector McMillan , interview by Andrew Williams. *The Canadian Mortgage Market* (January 11, 2010).
[62] Ibid
[63] CanEquity Representative, interview by Andrew Williams. *Mortgage Brokers in Canada* (November 2009).
[64] Richard H. Thaler and Cass R. Sunstein. *Nudge*. (New York, Penguin Books Ltd, 2008), 68

regardless of the reality, has been demonstrated in numerous fields of economics as well as in political science and psychology.[65] Richard Thaler and Cass Sunstein in their 2008 book, Nudge, show status quo bias to having a dramatic effect on subjects as varied as individual savings, healthcare choice, and product marketing . [66]

The current status quo for consumers looking for a mortgage is their traditional banking institution. The creation and maintenance of this status quo is likely drawn from a combination of factors. The convenience of using one's own lending institution, an ignorance of other lending institutions, a distrust of mortgage brokers, a fear of mortgage fraud, an ignorance of the consumer benefits of using mortgage brokers, are all contributing factors. The fear of change is reinforced by the negative aspects of the broker industry and the pervasive influence of the Big Five`s marketing campaigns. If the mortgage broker industry is to flourish in Canada, it is necessary for the industry to redefine the bias in their favour. Key to undermining the traditional relationship between banks and potential borrowers is capturing the first time buyer market. Mortgage brokers seem to be making the most headway in this area with 44% of first time purchasers in 2009 using the services of a broker, up from 28% in 2005.[67] These consumers tend to be young, aged 25 to 34,[68] and have larger outstanding mortgage amounts.[69] By focusing on the first time buyer markets, brokers will set themselves up

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[65] Behavioural Finance. "Status Quo Bias." http://status-quo-bias.behaviouralfinance.net/ (accessed February 2010).
[66] Richard H. Thaler and Cass R. Sunstein. *Nudge*. (New York, Penguin Books Ltd, 2008)
[67] CMHC. "2009 Mortgage Consumer Survey Results." *CMHC*, 2009: 3
[68] CMHC. "2008 Mortgage Consumer Survey Results." *CMHC*, 2008: 5
[69] Financial Industry Research Monitor. "FIRM Residential Mortgage Survey." *Credit Union Central of Canada*, 2008: 31

for return business in the form of refinancing, renewal, and new mortgages from these customers. Currently the most under represented demographics for broker usage are renewers and refinancers, at 12% and 25% usage respectively, and this is most likely because these customers rely on their status quo lending institution. When originally purchasing their mortgage, these consumers were likely unaware of mortgage brokers or had a negative opinion of them and therefore went to their status quo bank. In the following Chapter, the theoretical model used to estimate the increase in consumer surplus and social welfare will be outlined.

Chapter 4 – Market Characteristics

4.1 - Introduction

In this chapter, the concept of third degree price discrimination will be outlined as the model to provide an answer to the question "if the limitations inherent in the mortgage broker industry were removed, what would be the increase in consumer surplus?" The impediments discussed in the previous chapter can be summarized as follows: mortgage broker inexperience and fraud, the Big Five's dominance of advertising and consumer opinion, and the status quo bias amongst Canadians. These impediments currently allow for the existence of price discrimination in the Canadian mortgage market and therefore significantly impact consumer surplus. Relevant market characteristics will now be detailed. This will be followed by an estimation of lost consumer surplus and social welfare.

4.2- Monopolistic Competition

The first market assertion is that the Canadian banking system is monopolistically competitive. This has been characterized by a number of studies, most recently, Bikker, Spierdijk, and Finnie's *Misspecification of the Panzar-Rosse Model: Assessing Competition in the Banking Industry* in 2006, Allen and Liu's *A Note on Contestability in the Canadian Banking Industry* in 2007, and Allen and McVanel's *Price Movements in the Canadian Residential Mortgage Market* in 2009. Bikker, Spierdijk, and Finnie systematically reviewed the conclusions of 28 studies that concern the contestability of various banks worldwide and tested them empirically using a Panzar-

Rosse model. The authors conclude that that most studies overestimate the level of competition in a given nations banking system and Canada is one such nation. Allen and Liu build on the conclusions of Bikker, Spierdijk, and Finnie by testing the competitiveness of the Canadian bank system directly. They conclude that while comparative statistics cannot completely identify the market power structure in Canada, rejecting the monopolistic competition conclusion is unlikely.[70] Allen and McVanel confirm the findings of the previous two papers as well as conducting analysis of the banks use of posted rates in price setting behaviour.

Monopolistically competitive industries are defined as "market structures in which firms have market power but no additional firms can enter and earn positive profits."[71] Additionally, monopolistically competitive markets are characterized in the following way: no firm has total control over the market price, consumers perceive that there are non-price differences among the competitors' products, there are few barriers to entry and exit, and producers have ability to raise price profitably above marginal cost.[72] While Canada's five largest banks may initially appear to follow an oligopoly model, the presence of smaller competitive firms gives Canada’s financial services market a higher degree of competition. While the Big five originate the majority of the mortgage credit, a diverse range of smaller institutions make up the significant

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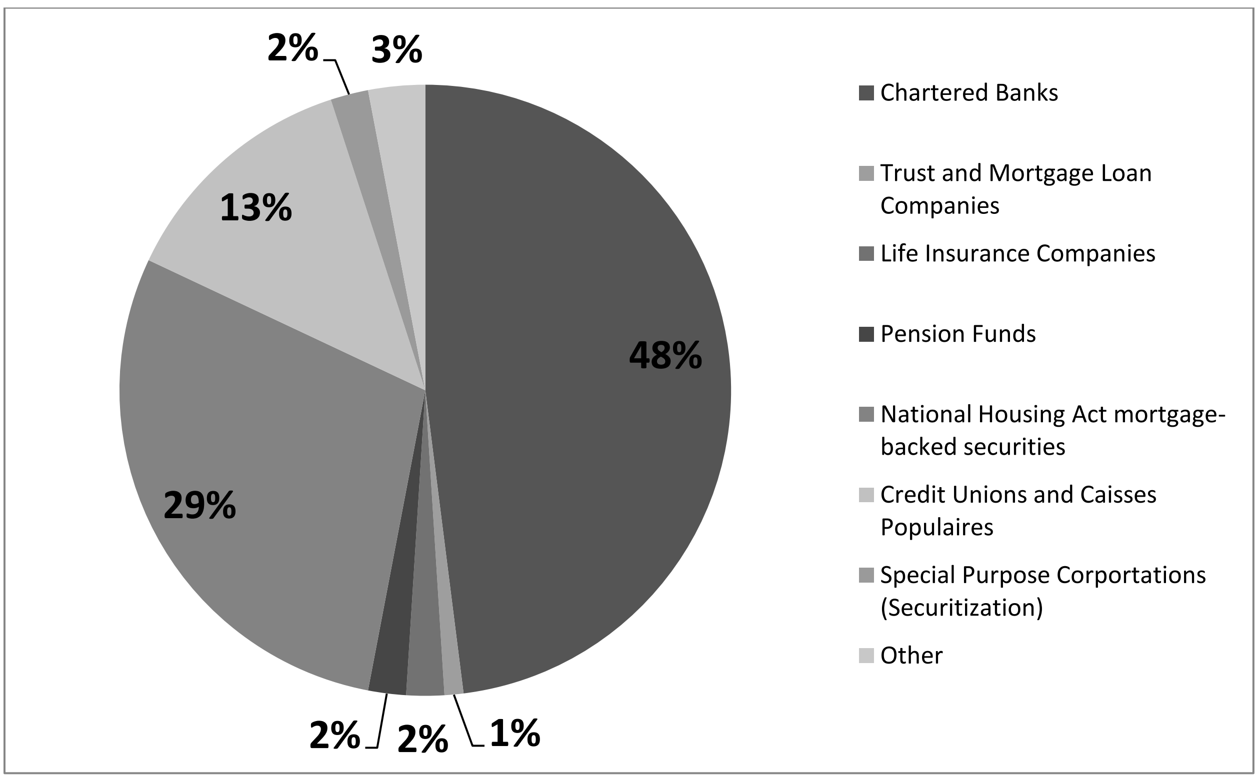
[70] Jason Allen, Ying Liu. "A Note on Contestability in the Canadian Banking Industry." *Bank Of Canada*, 2007: 13

[71] Jeffery M Perloff. *Microeconomics: Forth Edition.* (Boston, Pearson Education Inc, 2007),419

[72] Economics Online. “Economics Online - Price Discrimination.” 2010. http://www.economicsonline.co.uk/Business_economics/Price_discrimination.html (accessed 02 24, 2010).

remainder. In Figure 4.1, the market share that each type of institution had in 2009 is given. It is important to note that the 29% accorded to National Housing Act Securities are mortgages that were originated largely by charted banks and subsequently securitized by the CMHC. If one considers this point of origination, charted banks can be seen as originating close to 80% of the market's mortgage credit. This is accordance with the three previously mentioned studies which have found that the market characterized by monopolistic competition.

Figure 4.1 Residential Mortgage Credit % By Institution



Source: Canada, Bank of. *Residential Mortgage Credit.* CANSIM, 03 08, 2010.

4.3 - Asymmetric information

This assumption holds that the market is characterized by consumers having access only to asymmetric information. Asymmetric information is defined as a "situation in which one party to a transaction knows a material fact that the other party does not."[73] In the case of the Canadian mortgage industry, banks and brokers know about interest rate comparison and discounting while most consumers do not. The presence of this asymmetric information creates a market distortion which the Big Five capitalize on by charging higher interest rates. Use of mortgage broker is evidence that a consumer is no longer constrained by this lack of information.

4.4 - Price Discrimination

Price discrimination is defined as "the practice by which a firm charges consumers different prices for the same good."[74] Price discrimination is dependent on the following three characteristics:

1) Imperfect Competition
2) Consumer Variation
3) No Arbitrage

The first characteristic holds that a "firm must have market power, otherwise it cannot charge anything other than the competitive price, firms that are monopolistically competitive can do this."[75] The second assumption holds that "Consumers must differ in

[73] Jeffery M Perloff. *Microeconomics: Forth Edition.* (Boston, Pearson Education Inc, 2007), 636
[74] Ibid, 385
[75] Ibid, 389

their sensitivity to price and a firm must be able to identify how consumers differ in this sensitivity."[76] The final assumption is that arbitrage (resale) is not possible or is not economically viable.

The Canadian Banking system fulfills all three of the price discrimination characteristics. Previously it has been mentioned that the Canadian banking system has been found to be monopolistically competitive thus fulfilling the first assumption. The second assumption, consumer variation, is fulfilled by the fact that consumers are individuals that have specific and unique preferences. In terms of the mortgage market, these unique preferences are based on an individual's level of price sensitivity. Price sensitivity is the relationship between quantity demanded of a good or service and the change in its price. Depending on how sensitive a consumer is, a change in price can have a dramatic influence on demand. Firms can identify a borrower's sensitivity to price by looking at their credit history or during a mortgage negotiation. If a borrower is highly sensitive, they will likely reject any uncompetitive interest rates offered by any particular bank. The high sensitivity of such a consumer is likely based on their access to industry information. If a consumer is poorly educated about the mortgage industry rates, they will probably have a low sensitivity to interest rates offered by a bank. This means that they will accept higher mortgage rates compared to those that consult a broker.

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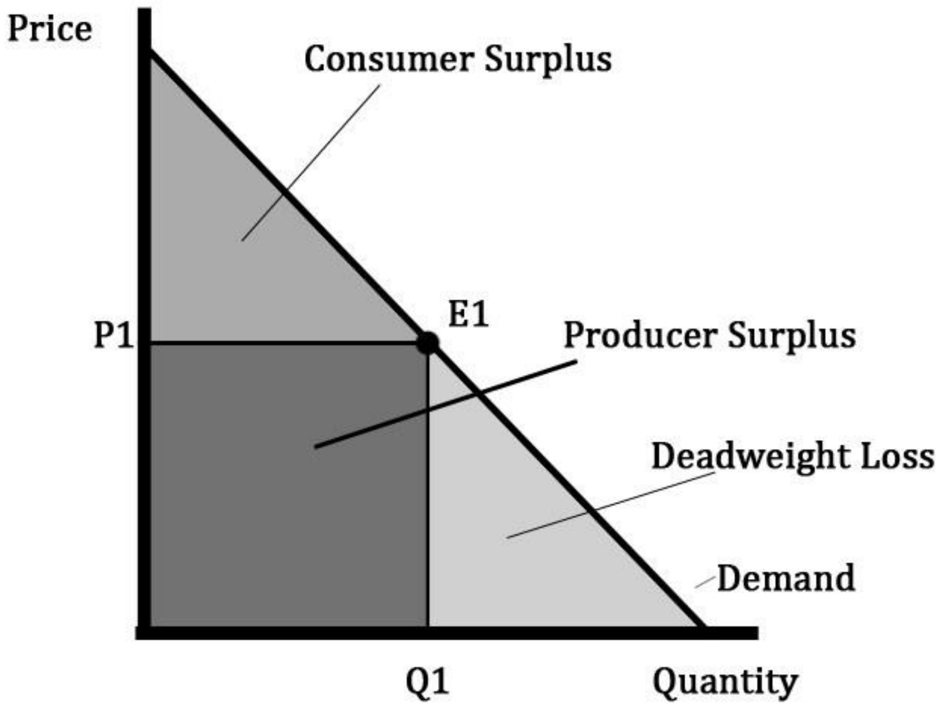
[76] Jeffery M Perloff. *Microeconomics: Forth Edition.* (Boston, Pearson Education Inc, 2007), 389

The final assumption of no arbitrage can be quickly accepted by the very nature of the Canadian mortgage market. The acquisition of cheap mortgage rates and then the consequent resale of those mortgages require large amounts of capital and significant market presence for it to be viable. Consequently, Canada has historically seen very little repackaging and securitization of mortgages, unlike America.[77] Some commentators have regarded this fact as a major reason for Canada's current banking stability.[78]

[77] Will Dunning. "The Canadian Residential Mortgage Market During Challenging Times." *CAAMP*, April 2009: 7 - 10.
[78] Ibid, 8

Figure 4.2 – Price Discrimination



In Figure 4.2, a basic example of monopolistic price discrimination is displayed. The key components relevant to this thesis are consumer surplus (CS), producer surplus (PS) and deadweight loss. Consumer surplus is defined as "the monetary difference between what a consumer is willing to pay for the quantity of the good purchased and what the good actually costs."[79] Producer surplus is defined as "the difference between the amount for which a good sells and the minimum amount necessary for the seller to be willing to produce the good."[80] Lastly, deadweight loss is defined as "the net reduction in welfare from a loss of surplus by one

[79] Jeffery M Perloff. *Microeconomics: Forth Edition.* (Boston, Pearson Education Inc, 2007), 267
[80] Ibid, 272

group that is not offset by a gain to another group from an action that alters a market equilibrium."[81]

If a monopolistically competitive firm sets the price equal to P1, this will result in the quantity of Q1 being sold. The triangle above the line P1 to E1 is the surplus captured by the consumer. Anything below that line is the producer surplus. The deadweight loss is the area right of line E1 to Q1. It is the surplus that is forgone by both consumers and producers and represents a welfare loss to society as a whole. Elimination of deadweight loss is needed for a market to achieve economic efficiency.

4.5- The Three Types of Price Discrimination

When discussing price discrimination, it is important to establish which level of discrimination characterizes the Canadian mortgage market.

4.5.1 - First Degree Price Discrimination

First degree discrimination, also called perfect discrimination, is a situation in which a firm sells each unit at the maximum amount any customer is willing to pay so prices differ across customers and a given customer may pay more for some units than for others.[82] Perfect price discrimination is a theoretical concept and cannot be applied to the mortgage market in Canada. While banks try to make a strong estimate of a consumer's price sensitivity, they are not able account for the myriad of unobservable variables that makes up a person's actual price sensitivity.

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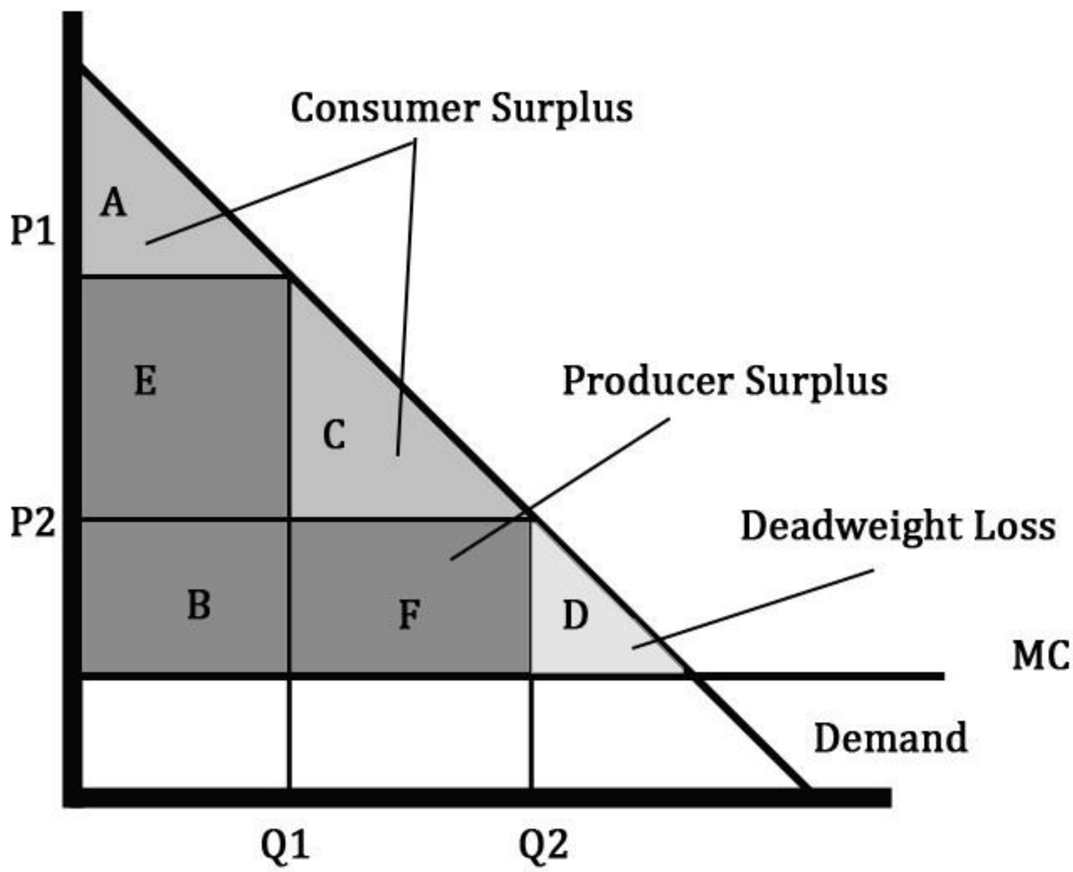
[81] Jeffery M Perloff. *Microeconomics: Forth Edition.* (Boston, Pearson Education Inc, 2007), 276

[82] Ibid, 391

4.5.2 - Second Degree Price Discrimination

Secondary Price Discrimination, also called quantity discrimination, describes a situation which a firm charges a different price for large quantities than for small quantities. In addition, all customers who buy a given quantity pay the same price.[83]

Figure 4.3 - Second Degree Price Discrimination



In Figure 4.3, the monopolist can increase its producer surplus by offering two prices for two different quantities. A single price monopolist would could operate at Q1 and P1

[83] Jeffery M Perloff. *Microeconomics: Forth Edition.* (Boston, Pearson Education Inc, 2007), 391

and expect a consumer surplus of area A and a producer surplus of areas B and E. A quantity discriminating monopolist would offer a second quantity and price at Q2 and P2 respectively. This would result in an increase in consumer surplus of area C and an increase of producer surplus of area F. Deadweight loss decreases between the two pricing models from an area of C, D, and F, to an area of just D.

Quantity discrimination can be related to the relationship between brokers and the various lending institutions in Canada. Mortgage brokers are largely paid a finder's fee by the respective institutions for bringing in mortgage clients and institutions have been known to give special rates to brokers that bring in high numbers of borrowers[84]. If a broker were to bring a large quantity of borrowers to an institution, they could use that as leverage to pressure the institution to quote them lower interest rates. This, in turn, would make them more competitive in the broker market. Quantity discrimination describes the relationship between banks and brokers but not between customers, banks, and brokers. Third degree price discrimination is the most suitable for that relationship.

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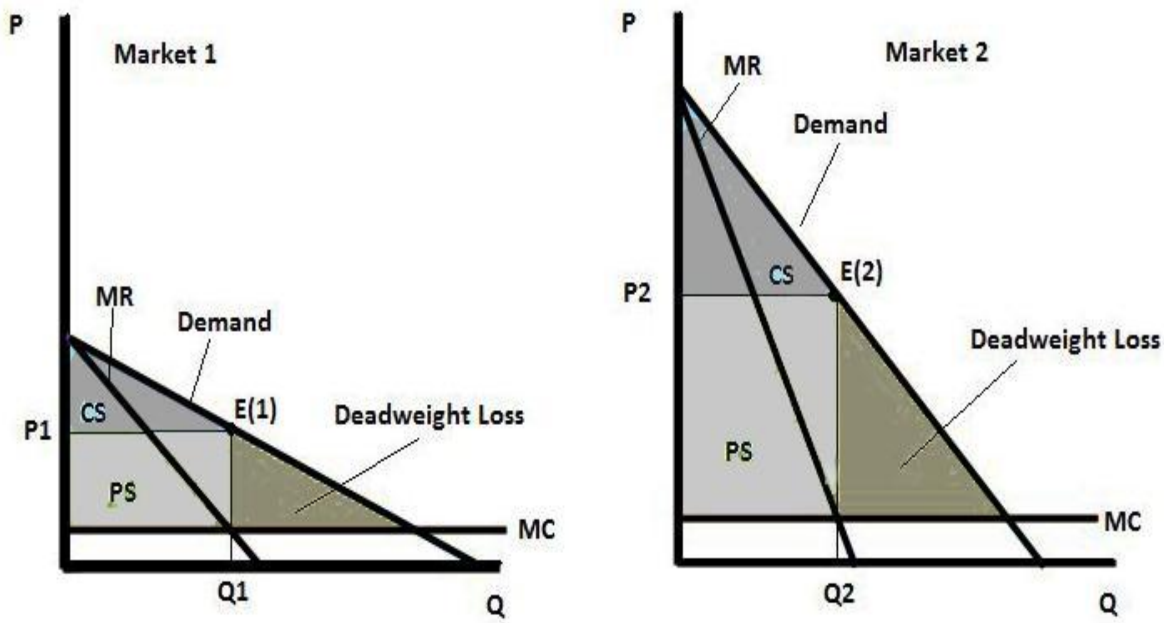
[84] Paul Kaihla. "Canada Mortgage Broker: If you're looking for a cut-rate mortgage, don't go to the bank -- call a broker." 2004. http://canadamortgagebroker.ca/brokers/canadian_business.htm (accessed 02 2010).

4.5.3 - Third Degree Price Discrimination

Third Degree Price Discrimination, also called Multimarket discrimination, is a situation in which a firm charges different groups of customer's different prices but charges a given customer the same price for every unit of output sold[85].

Figure 4.4 – Third Degree Price Discrimination



In Figure 4.4, the monopolist has access to two separate markets, Market 1 and Market 2. Each market has a different relative price sensitivity, as indicated by the differences in the demand curves slopes. Market 1 is relatively more price sensitive and as such the monopolist can only charge price P1, for the quality Q2. It picks this price because it maximizes its producer surplus when its MR curve meets its MC line. Market 2 is much

[85] Jeffery M Perloff. *Microeconomics: Forth Edition.* (Boston, Pearson Education Inc, 2007), 391

more price insensitivity then Market 1 and as such has a steeper demand curve. This allows the monopolist to charge a much higher price, P2, for a comparable quantity, Q2. As each graph is drawn in to the same scale, one can see the difference in producer surplus, consumer surplus, and deadweight loss between the two markets. By practicing multi market price discrimination, a monopolist can increase its surplus over markets with different price sensitivities.

Third degree discrimination is the most applicable pricing model if one wishes to describe the differences in consumer surplus that consumers face when borrowing from banks or brokers. If one separates the mortgage market into two groups, those that use mortgage brokers and those that do not, one can compare each market and subsequently estimate the total loss in consumer surplus from borrowing directly from banks. The mortgage broker clients, who are more price sensitive, will theoretically receive better rates. Their use of brokers compels lenders to compete with each other and this competition will result in the lowering of interest rates to a more competitive level. Those that do not know to use mortgage brokers do not demand the same level of competition and are therefore likely to receive higher interest rates.

The end goal of analyzing price discrimination in the Canadian market is to establish the difference in consumer surplus achieved by different segments. Consumers that receive their mortgage credit through brokers will likely experience a significant increase in their surplus compared to those that originate with banks. In the next section, consumer surplus among broker and bank customers will be compared on a nationwide level. While these consumer surplus differences are estimates, they effectively convey the idea that Canadian consumers are missing out on significant savings.

Chapter 5 –Price Discrimination in the Mortgage Market

5.1- Introduction

In this chapter, the market characteristics discussed in the previous chapter will be applied directly to a third degree price discrimination model using Canadian mortgage data gathered from a number of market sources. Despite the fact that the market is characterised by monopolistic competition, this thesis will use a monopoly price discrimination model. The major difference between the two depends more on levels of contestability in the industry rather than differentiated products. As this model is concerned with only one product, 5 year fixed rate mortgages; the monopoly model is deemed applicable.

The forgone amount of consumer surplus from using a bank rather than a broker will be estimated on a national level. The reasons behind forgone consumer surplus were covered in Chapter 3. As a review, the main points are as follows: mortgage broker inexperience and fraud, the Big Five's dominance of advertising and consumer opinion, and the established status quo bias amongst Canadians. By providing a numerical example of the benefits to using a mortgage broker, the previously stated reasons for broker under use become much more poignant. First, a quick review of the model conditions will be given, followed by the calculations and graphical representation.

5.1 - Assumptions

In order to represent the Canadian mortgage market as an industry that is monopolistically competitive and practices price discrimination, a number of conditions must be established. Firstly, this market is divided into two types of borrower sections: those that use brokers and those that do not. Secondly, both markets are assumed to have constant and equal costs of MC. There is no reason to assume either would have significantly higher or lower costs when it comes to processing actual transactions. Thirdly, firms are profit maximizing and will produce at the point MC=MR. This is in line with the monopolistic competition assumption discussed in previous sections. Finally, the characteristics discussed in the section regarding third degree price discrimination are applied to this example.

5.3 - An Estimate of Consumer Surplus in Canada

Using the latest CMHC numbers, it is reported that brokers arranged about 38% of total mortgage credit 2009.[86] The total amount of mortgage credit in the market in August of 2008 was $930.0 billion which would indicate that brokers were roughly responsible for arranging $353.4 billion of the total amount. The majority of remaining $576.6 billion was arranged via traditional banking and credit institutions. This clearly divides the market into two separate types of consumers, those that use a broker and those that do not.

[86] CMHC. "2009 Mortgage Consumer Survey Results." *CMHC*, 2009: 3

Data for average interest savings for consumers that use brokers is not available so proxy estimates will be used. Differences in posted rates between the Big Five banks and a broker-only financial institution will serve as the theoretical discounts brokers can ensure. An average of the Big Five's posted rates for a 5 year closed term mortgage was found to be 5.39% on February 25th, 2010. The rate posted by Firstline Mortgages on the same day was 4.19% for a 5 year closed term mortgage. Firstline Mortgages was picked because it is a credit institution that only works through mortgage brokers. Independent consumers cannot borrow from Firstline without going through a broker thereby setting it apart from many other financial institutions.

The Canadian Real Estate Association (CREA) estimates that in January of 2010, the average national wide house price was $328,537.[87] Using a typical online mortgage calculator, in this case the one found at CanEquity's website,[88] total payments for a 25 year mortgage were calculated for each respective interest rate. CMHC's fees were included, down payment was assumed to be zero, and payments were done monthly. Using the average bank rate of 5.39%, total payment was found to be $619,125 with total interest rate payments being $277,447 Using the Firstline rate of 4.19%, total payment was found to be $549,798 with total interest rate payments being $208,119. The difference between the two total payments is calculated to be $69,327. February

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[87] CREA. "CREA - MLS Statistics." January 2010. http://www.crea.ca/public/news_stats/statistics.htm (accessed February 2010).
[88] CanEquity. "CanEquity: Mortgage Calculator." Feburary 2010. http://www.canequity.com/mortgage-calculator/ (accessed February 2010).

5.4 - Graphical Representation

Figure 5.1 – Increase in Consumer Surplus

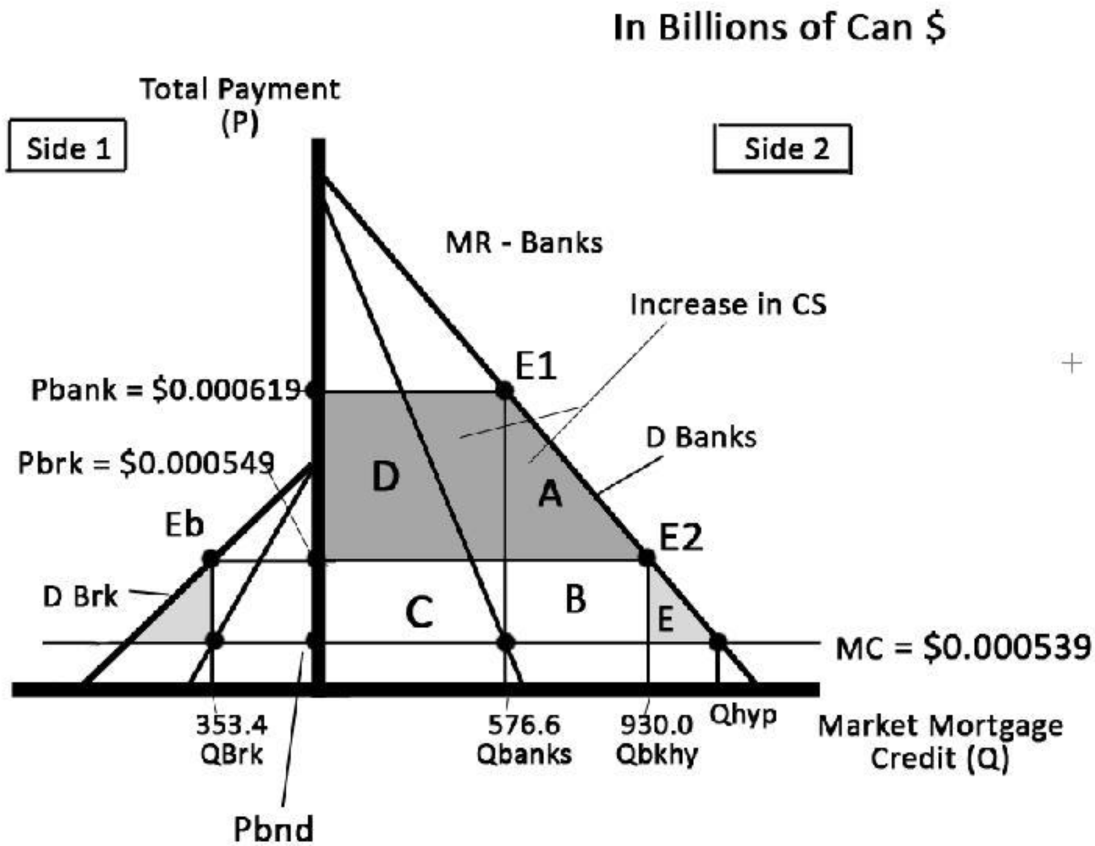

Figure 5.1 is similar to Figure 4.4 in that it represents third degree price discrimination. The major difference is that in this case, each market mirrors each other about a single vertical axis. The vertical axis is measures the total mortgage payment (P) that a mortgage consumer can expect to pay for a given interest rate. The horizontal axis measures the total amount of mortgage credit there is in the Canadian market. Side one represents the demand curve of the broker market while side two represents the non broker market. Currently, the broker market is at equilibrium at point Eb where the

quantity of mortgage credit supplied (Qbrk) is $353.4 billion at an average total home cost of $0.000549 billion. The non-broker market is at equilibrium at point E1 where the quantity of mortgage credit supplied (Qbanks) is $576.6 billion at an average total home cost of $0.000619 billion. If brokers were to be used by the entire market, the market would be at equilibrium at point E2. At this point brokers would arrange all $930.0 billion of mortgage credit at point Qbkhy (Broker Hypothetical) at an average total home cost of $0.000549 billion.

To calculate the increase in CS that would be generated if the entire market used the broker interest rate of 4.19%, the following equation was used:

$$Increase\ in\ CS = D + A$$

$$= [(Q_{banks})(P_{bank} - P_{brk})] + [0.5(Q_{bkhy)} - Q_{banks})(P_{bank} - P_{brk})]$$

Using the numbers described in the previous section, the calculated increase in Consumer Surplus is found to be $41.2 million in 2009.

In order to calculate the total increase in welfare, a value for the marginal cost (MC) must first be established. The marginal cost of mortgage lending is the opportunity cost of investing that money elsewhere. For the purposes of this thesis, the 30 year Government of Canada bond yield will be used as the alternative investment opportunity; this yield will be set at 4%.[89] Using the previously mentioned Can Equity mortgage calculator, the total mortgage cost for a $328,537 mortgage paid over 25

[89] Bank of Canada. "Bonds and Rates". *Bank of Canada*. March 2010. http://www.tmxmoney.com/HttpController?GetPage=BondsAndRates&Language=en (Accessed March 16th, 2010)

years at 4% interest is $539,188.90. Like the broker and bank rate examples, the conditions of monthly payments, no down payment, and CMHC fees were applied. Marginal cost will therefore be equal to $0.000539 billion (Pbnd).

The total increase in social welfare is equal to the decrease in deadweight loss. Originally, sections A, B and E made up the market deadweight loss. By using the broker rate, sections A and B are converted from deadweight loss to consumer surplus (A) and producer surplus (B). Using the following equation:

$$Converted\ Deadweight\ loss = A + B$$

$$= [(Q_{bkhy} - Q_{banks})(P_{brk} - P_{bnd})]$$

$$+ [0.5(Q_{bkhy)} - Q_{banks})(P_{bank} - P_{brk})]$$

The decrease in deadweight loss is calculated to be $15.89 million.

Table 5.1 – Calculated Findings

Finding	
	In Millions
Increase in Consumer Surplus (A+D)	41.2
Increase in Producer Surplus (B)	3.53
Increase in Social Welfare (A+B)	15.89
Decrease in Deadweight Loss (A+B)	15.89

Table 5.1 summarizes the findings of the chapter. Increase in social welfare is alternatively stated as the decrease in deadweight loss. The remaining deadweight loss, section E, represents the fact that even with greater competition due to mortgage broker usage, the market is still monopolistically competitive. While the deadweight loss can be minimized, it is unlikely to be eliminated completely.

Chapter 6 – Summary and Conclusion

6.1 - Summary

Chapter 1 provided an overview of the relevant thesis questions and study rationale. The question asked was: why are mortgage brokers underused in Canada and what could be gained from increasing their usage? In addition general mortgage market statistics were introduced to give context for the forthcoming chapters.

Chapter 2 dealt with fundamental mortgage industry characteristics. Mortgage brokers were defined and a basic overview of their role was given. A short history of the broker industry was then detailed with the conclusion that most of significant broker activity has happened in the last 10 to 20 years. An overview of the recent trends within the Canadian housing market was included with emphasis placed on the recent (2007-2009) increases in housing prices and mortgage demand. Finally, the potential 2009 housing bubble was discussed with the conclusion that Canada's housing market is generally close its fundamental equilibrium.[90]

Chapter 3 was devoted to the critical issues that impede the expansion of the mortgage broker industry. The main concepts discussed were mortgage broker inexperience and fraud, the Big Five's dominance in advertising and consumer opinion, and the established status quo bias amongst Canadians. These reasons formed the basis for the subsequent development of the third degree price discrimination model shown

[90] Jason Allen, Ying Liu. "A Note on Contestability in the Canadian Banking Industry." *Bank Of Canada*, 2007: 7

in Chapter 5. This chapter also included sections concerning the industry's effort to reform and the how the use of the internet is affecting the industry.

Chapter 4 established a market framework for the Canadian Mortgage Market. The market characteristics established were monopolistic competition, asymmetric information, and price discrimination. Third degree price discrimination was deemed the best at describing the Canadian mortgage industry. Consumers were split into two separate markets, those that use brokers and those that do not. Based on this split, a difference between market consumer surpluses was found.

In Chapter 5, data from Statistics Canada, CMHC, CREA, and CAAMP was applied to the price discrimination model. Estimates of consumer surplus, producer surplus, and deadweight loss were made. If all the mortgage credit in Canada was originated at the estimated lower mortgage broker interest rate, societal welfare would increase by $15.89 million. The consumer surplus portion of this welfare, amounting to $41.2 million, is a significant increase for the 5.4 million Canadian mortgage holders.[91]

[91] Canadian Mortgage Trends. *"CAAMP's Annual Mortgage Market Report - 2009."* November 18, 2009. http://www.canadianmortgagetrends.com/canadian_mortgage_trends/2009/11/caamps-annual-mortgage-market-report---2009.html (accessed March 17, 2010).

6.2 – Conclusion

The fundamental goal of using the third degree price discrimination model was to convert consumer surplus into a dollar value. The calculated value amounts to 0.062% of the total new mortgage credit orientated in 2009. While this may seem small, individual mortgage consumers can benefit from even a small decrease in mortgage costs. The elimination of a significant amount of deadweight loss increases the efficiency of the industry, and by proxy, the Canadian financial market as a whole.

The mortgage broker industry, while impeded by its various flaws, has increased its market share greatly over the last 10 years. Widespread acknowledgement of the industries limitations has been fundamental to the creation of various solutions such as the creation of CAAMP or the AMT program. In addition rise of the internet is a significant contributing factor to the recent increase in broker market share. The internet has allowed brokers to cheaply target the new internet-savvy generation of first time buyers whereas mortgages that originated in pre internet periods remain out of their reach. Internet advertising is much cheaper than traditional methods such as TV and Billboards and some studies suggest that it can be just as effective.[92] An independent mortgage broker can set up an appealing website and advertise on demographically relevant websites for much cheaper than they could on TV or in

[92]comScore/dunnhumbyUSA Research. "Online Advertising on Par with TV Advertising in Growing Retail Sales of Consumer Packaged Goods Brands." August 17, 2009. http://comscore.com/Press_Events/Press_Releases/2009/8/comScore_dunnhumbyUSA_Research_Shows_Online_Advertising_on_Par_with_TV_Advertising_in_Growing_Retail_Sales_of_Consumer_Packaged_Goods_Brands (accessed March 2010).

magazines. A younger demographic is also much more likely to be aware of the mortgage broker option because they are statistically more likely to search online for advice and rates.[93] CMHC actively promotes the use of brokers online as do literally thousands of independent blogs and web commentators. Due to the expansive nature of the internet, it is impossible for the banks to create a new monopoly online.

It is likely that the mortgage broker industry will continue to expand in the future. Unfortunately, the critical issues that currently characterize the industry are significant obstacles to prospective customers. Once the problems, broker fraud and inexperience, are solved, it is likely that the industry will flourish.

[93] CMHC. "2005 Mortgage Consumer Survey Results." *CMHC*, 2005: 2.

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Appendix A

Note 1- The Big Five Banks: Bank of Montreal, Royal Bank of Canada, The Toronto-Dominion Bank, the Bank of Nova Scotia, and the Canadian Imperial Bank of Commerce

Note 2 - The Big 5 employ 300,000: This number is based on figures found in each of the Big Five banks 2009 annual reports