The Changing Structure of Inner-city Retail Banking:

Examining Bank Branch and Payday Loan Outlet Locations in Winnipeg, 1980-2009

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Abstract

This paper examines the distribution of mainstream financial institutions (FIs) branches (banks and credit unions) and payday lender outlets in Winnipeg. This is done using historical records for the last thirty years. With statistical testing the article considers whether mainstream FIs and payday loan outlets have a location bias that favours more affluent neighbourhoods at the expense of low-income communities. The results find that mainstream FI branches dropped slightly during the study period and dropped dramatically in Winnipeg's inner-city. Payday lender outlets first appeared in the late 1990s and experienced rapid growth in the mid 2000s. Statistical testing supported the hypothesis that poor neighbourhoods are underrepresented by mainstream FI branches and overburdened by payday lender outlets. Policy implications point to the need for a more holistic basic banking concept that includes an understanding of the importance of branch location and fringe bank regulations.

JEL Classification code: G21 - Banks; Other Depository Institutions; Micro Finance Institutions; Mortgages

The Changing Structure of Inner-city Retail Banking:

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1) Introduction

This article examines the changing structure of mainstream financial institutions' branches and payday loan outlets in Winnipeg over a thirty year period from 1980 to 2009. It uses these data to examine the argument that the provision of banking services has become more bifurcated during this period so that banking services in low-income neighbourhoods have become weaker as compared to more affluent neighbourhoods. Questions explored in the paper include, how have the total number of bank branches and payday loan outlets changed over time? How have branches and outlets been distributed across the city, with particular reference to neighbourhoods' average income level? This latter question is addressed by using different indicators of neighbourhood average income and by using the inner-city—suburb dichotomy. The paper seeks to understand how well low-income neighbourhoods are served by banks through their branches. It is assumed that the number of branches in a neighbourhood is one important factor in determining how well people within that neighbourhood are served.

This study examines three types of financial institutions that are grouped into two general categories. The three institutions are banks, credit unions, and payday lenders. The two categories are mainstream financial institutions (FIs), which includes banks and credit unions (and trust companies, which are not a part of this study), and fringe banks, which includes payday lenders (and pawnshops and rent-to-owns, which are not a part of this study). Banks and credit unions, the mainstream FIs, are deposit-taking institutions that are regulated at the federal and/or provincial level. Payday lenders, the one type of fringe bank studied here, are not deposit-taking institutions and have only recently been the subject of specific provincial regulation.

Mainstream FIs are the dominant actor offering retail banking services in Canada. Five very large banks control the lion's share of the retail market. These institutions are Canadian owned corporations that operate throughout the country with extensive branch and automatic teller machine (ATM) networks. They are federally regulated. Credit unions are provincially-regulated and operate within a province. They are member-owned cooperatives with roots in various ethnic, economic and regional communities. Banks and credit unions offer the full range of retail banking services including transactions services (accounts, bill payment, etc.) and developmental services (savings, mortgages, investments, etc.).

Payday lenders are a form of fringe bank, along with pawnshops, cheque-cashers, and rent-to-own firms. Payday lenders began offering payday loans in Canada sometime in the late 1990s and the number of firms, and particularly outlets rose rapidly in the 2000s, so that there are now over 1,300 outlets in Canada. Prior to the development of the payday loan, some of these firms, such as National Money Mart Inc., were primarily involved in cheque-cashing services. These services provide the customer with immediate cash and are associated with a hefty fee, e.g., $2.50 plus 2.5% of the cheque's value. Payday loans are small loans (less than $1,500), for a short period (12-14 days), offered to the customer who agrees to leave a post-dated cheque, cashable on his/her payday, to cover the loan's principal and fees. Fees for payday loans are also high, amounting to APRs over 250 percent sometimes as high as 800 percent. In comparison with fees for equivalent mainstream FI services, fringe bank fees are very high.

That fringe bank fees are high relative to mainstream FI fees is one problem that has been raised in the financial exclusion literature (Buckland and Martin 2005, Barr 2004, Stegman and

Faris 2003, Ramsey 2000, Squires and O'Connor 2001). Other concerns are that fringe banks are weakly, if at all, regulated (Buckland 2008), and that they do not offer developmental services that would help a client to become more financially independent (Sherradan and Barr 2005, Buckland 2006). Studies at the neighbourhood level have identified a series of obstacles that prevent low-income people from using mainstream FIs, and, rather, relying on fringe banks. These obstacles include lack of appropriate services (Sherradan and Barr 2005), poorly trained or motivated mainstream FI staff (Buckland and Martin 2005), and inconvenient operating hours and/or locations (Buckland and Martin 2005). Financial market segmentation, a strategy that differentiates service according to client profitability, can have the effect of reducing options for poor people who may turn to fringe banks to fulfill their unmet needs. On mass, the approach has the potential to aggravate the already growing problem of income inequality (Dymski 2003).

This study addresses the location issue. Research in the US (Graves 2003, Temkin and Sawyer 2004), and the UK (Leyshon and Thrift 1997) has found that mainstream FIs are often under-represented and fringe banks over-represented in low-income neighbourhoods. That is to say, as compared with average and above-average income neighbourhoods, low-income neighbourhoods have fewer mainstream FIs and more fringe banks. The location of bank branches has an important bearing on how convenient it is for residents to access services. If a neighbourhood has very few branches then some residents will find that getting to the branch is inconvenient. Convenience is one important factor among several that affect consumer choice. The location of banks has been of particular interest in the US and UK literature but little evidence has been compiled in Canada. This paper provides data and analysis that begins to address this gap in the literature.

a) Historical Changes of Note to Banking, 1980s-2000s

Retail banking in Canada has undergone substantial changes during the study period. Deregulation and technological change are two important changes. Deregulation is rooted in neoliberal policy based on theories such as credit rationing and risk-based pricing. This theory sees the market as the most effective means to meet the common good and limits the state's role to protecting property rights and in providing public goods. State regulations are seen as impediments to the functioning of the market. One type of deregulation that has affected Canadian banks is to permit banks, trusts, and insurance companies to compete with one another in financial and insurance services. Previously regulation disallowed each of these actors to operate in one of the two other areas, e.g., banks were prohibited from owning insurance companies.

Bank operations and services have also been transformed by new information and communications technologies. Much of the routine work of banking was automated during this period, and is now carried out in central processing operations rather than the branch. For example, technology was applied to credit administration. This included the development of automated credit scoring and a list of associated products such as credit cards, overdraft protection, personal credit lines, and home equity facilities. These credit products increased efficiency and lowered bank costs by replacing manual supervision with automated supervision. The introduction of automated banking machines, telephone and on-line banking and debit cards changed how customers accessed routine service, and unproductive floor-space was reconfigured to create more space for selling financial products and services to generate fee income (Leyshon & Pollard, 1998). For the first time, data warehousing permitted banks to segment and evaluate the profitability of their customer base and resources were dedicated to retaining and promoting services to customers deemed to be more financially active based on selected attributes, including larger assets and higher net worth (Coltman, 2007; Danna & Gandy, 2002). During the 1980s banks began to trim their branch infrastructure in selected markets.[2]

There are similarities and differences between banks and credit unions in this regard. Credit unions work within a for-profit model, but the profit goal is tempered, relative to that of mainstream FIs, through its cooperative governance model. Whereas banks have a demarcation between their clients and their shareholders, for credit unions the clients, or members, are the shareholders. Smaller, provincially-regulated, and more local in scope, credit unions at the industry-level were unable to take full advantage of the technology and decentralization that was available to the banks during this period (Chan & Mountain, 1986). While this provided some stability for a time, by the late 1990s the cost to update and maintain much needed technology platforms and administrative support was more than many small credit unions could sustain on their own. Their ability to serve their membership and function economically in future would ultimately lead them to consider the benefits of merging with other credit unions (Cash 2009). Doing so would allow them to pool resources, streamline operations and attain needed economies of scale.[3] Local credit unions either maintained their branches or appear to fill some of the spatial gaps created by bank branch closures.

Every ten years the government reviews its policies related to financial services. The deregulation and technological change of this period affected the review process that involved the McKay Taskforce and culminated in a new policy regime in 2001. The new policy framework includes measures to promote the efficiency and growth of the sector, foster domestic competition, empower and protect consumers, and improve the regulatory environment

[2] In its Submission to the Task Force on the Future of the Canada Financial Services Sector (1997), Royal Bank refers to the maturity of the financial services industry and the role of technology in creating excess capacity, saying "increasing capacity implies over-banked markets and suggests substantial consolidation will be required" (p.8).
[3] Indeed, one of the major recommendations of the task force on the future of the Canadian financial services sector was to strengthen the position of credit unions to make them more effective, including the power to become or to form banks (McKay Report, 1998, p.7).

(Department of Finance, Canada 2008). A stronger role for credit unions was also contemplated within the policy framework, allowing for the creation of a single national services entity that will help credit unions overcome regional fragmentation and help them to compete better with large institutions.

The legislated consumer provisions in the Bank Act provide for an array of protective measures, ensuring access to basic banking services, the provision of low-cost accounts, publication of annual public accountability statements,[4] and notification guidelines for branch closures. The notice of branch closure regulations requires banks to provide four months' notice of branch closures. In rural areas where there is no other financial institution located within a 10-kilometre radius of the closing branch, six months' notice is required. In addition, publication of the address of deposit-taking institution branches opened and closed over the year reported by province are to be included in each institution's annual public accountability statement.

b) Theoretical Framework

This study is rooted in institutional theory. There are several types of institutional theory including economic institutionalism (North 1990), new institutional economics (Ruttan 2004) and institutional approaches rooted in sociology and politics. The institutional theory used here is most closely related to the economic approach. For the purpose of this study, institutional theory is an approach that examines problems within the context of socio-economic relationships and institutions. Thus, this approach addresses problems such as financial exclusion by examining the relationships between the key actors, and the institutions that support those relationships. Because

[4] Banks and federally incorporated and registered trust and insurance firms with more than $1 billion in equity are required to publish information in the form of public accountability statements , describing the institution's contributions to the Canadian economy and society. A detailed interpretation of the regulation is found in the amendment to the Bank Act (Communication Canada 2002, 'Registration SOR/DORS/2002-132,' *Canada Gazette*, Part II, Vol.136 (8): 810-813, 10 April 2002, available: http://gazette.gc.ca/archives/p2/2002/2002-04-10/pdf/g2-13608.pdf (accessed 25 August 2010).

of the nature of financial exclusion –that it disproportionately affects low-income people– the framework focuses on institutions that affect low-income people. One consequence of this is that, rather than referring to one type of bank, this study refers to two types of providers of banking services: mainstream and fringe banks.

There are two important examples of institutional theory that examine topics closely related to financial exclusion: Caskey's demand and supply analysis of fringe banking, and Sherradan and Barr's institutional analysis of savings. Caskey (1994) sought to explain the growth in pawnshops and cheque-cashers in the US in the 1990s. He identified several key institutional factors from the demand- and supply-side that affected the growth of fringe banks. Demand-side variables included preference for convenience, need for quick cash, unsuitability of bank accounts, and stagnating personal incomes at the bottom of the income hierarchy. Supply-side factors included bank branch closures, the introduction of deposit account transaction fees, and the declining availability of small loans. A second relevant institutional economic theory is Sherradan and Barr's (2005) institutional theory of savings. It examines institutional factors that influence savings behaviour among low-income Americans including markets, state programs, social organizations and social relations. The model seeks to explain savings behaviour and identifies several factors affecting savings behaviour such as access to banking services, information about banking services, incentives to save, etc.[5]

The key actors identified in this institutional approach to financial exclusion include bank consumers, banks, and the state. Banks seek to generate profits for their shareholders by expanding their operations in lucrative services and geographies and reducing operations in marginal services and locales. Bank consumers seek to maintain and build their finances by using

[5] Sherradan and Barr (2005) list seven factors including, access, information, incentives, facilitation, expectations, restrictions, and security.

financial services that have a maximum benefit and a minimum cost. The state regulates the banking market within the limits associated with neoliberal policy.

One may identify three key decisions that influence retail bank profit: markets, services, and the use of technologies. By markets, we refer to where banks locate their branches. For the purposes of this discussion, we are particularly interested in bank location strategies in low-income neighbourhoods, sometimes located in inner-cities, the first ring of predominantly residential areas surrounding a city's downtown. Mainstream and fringe banks may have quite different strategies in this regard. The services banks provide are a second important way in which profits are generated. Services may facilitate transactions, such as getting cash, cashing a cheque, paying a bill. And services may be developmental, such as credit and investment services. Mainstream and fringe banks demonstrate distinctly different approaches with fringe banks focused on routine transactions and small developmental services, and mainstream FIs focused on longer-term, developmental services. Finally, 'higher-technology' delivery employed by banks (ATMs, telephone, and internet) is generally accepted as more economical and more efficient than service delivered through 'lower-technology' (in-person, in-branch).

Next, consider what it means for bank consumers to maximize the net benefits from their banking services. People choose financial services –whether they are from mainstream or fringe banks– that facilitate their finances. Sometimes these financial services choices appear less than rational. A $300 two-week payday loan may have a $75 dollar fee, amounting to an annual percentage rate (APR) of 760%. A careful use of a credit card, for the same dollar amount, could cost considerably less (possibly not more than the transaction fee). Significant insights from behavioural economics have improved our understanding of human behaviour related to financial issues. Rather than present banking consumers as simple rational economic optimizers, behavioural economics has identified human behaviour such as the use of heuristics (rules of thumb), overconfidence, framing, discounting, and status-quo bias that limit rationality (Thaler and Sunstein, 2008; Mullainathan and Thaler, 2001) and amount to 'bounded' rationality. Framing and discounting are particularly interesting insights for the payday loan topic. In this case, framing has to do with how a service is presented. Payday loan fees are generally given in the form of an absolute dollar figure, not in an annualized interest rate. Thus, the cost of the payday loan is framed as a fee, not an interest rate. Research on discounting suggests that in using payday loans, people may observe a unique form of discounting of future benefits and costs, termed hyperbolic discounting (Skiba and Tobacman 2008).

Finally, consider the role of the state in regulating banking services. Neoliberalism has guided policymaking in Canada and other northern nations since the 1980s. It finds that the market is the most important tool to foster citizen well-being and the role of the state is limited to regulating markets and providing public goods. With respect to financial services, two main types of interventions are identified. Consumer protection laws have been broadened to encompass financial services to ensure that they are offered with full information (about prices and design) allowing the consumer to 'shop around.' Regulations that promote basic banking for underserved people are another type of regulation in this regard. Access to basic banking regulations specify that banks are to provide certain essential services. These regulations are found in Canada, France, Portugal and Sweden (Carbo *et al*. 2007). Although the US Community Reinvestment Act does not specify universal provision of basic banking services, it requires that banks demonstrate that they make credit available to neighbourhoods in which they accept deposits.

c) Literature Review

Financial exclusion studies have identified a number of factors that influence an individual's decision to use a certain type of financial service. One major factor is convenience and this includes proximity to a branch. This study will use Winnipeg as a case study to consider whether different varieties of bank branches are equally convenient across neighbourhood income level and over a thirty year period. The location question is important because of the widely held belief that lack of bank branches in poor neighbourhoods has contributed to the emergence and growth of payday lenders.

Although a number of studies have focused on the spatial patterns of mainstream and fringe banks, most of them have been carried out in the United States and the United Kingdom. Spatial studies of fringe bank locations are best developed in the US where the industry has a longer history. Studies cover a variety of geographic regions, most often cities or counties but occasionally individual states and, in one case, the entire country. A common approach is to compare social and economic characteristics of the areas where payday lenders are located to other areas, or to areas more densely populated by banks. Factors commonly found to affect branch location include household income, race, and level of education. Some studies have also considered factors such as regulatory regime and creditworthiness of the surrounding population.

Results of studies regarding payday lenders often find that payday lenders tend to be concentrated in lower- income and minority neighbourhoods although not necessarily in geographic isolation of banks (Apgar & Herbert, 2004; Burkey & Simkins, 2004; Fellowes & Mabanta, 2007; Prager, 2009; Temkin & Sawyer, 2004). Conversely, these studies find that mainstream FIs are concentrated in wealthier neighbourhoods as compared with poorer ones.

In one frequently cited study, Graves (2003) analyzes the site-location decisions of payday lenders relative to banks in seven parishes in Louisiana and in Cook County, Illinois. The study compares the ethnicity and income characteristics of census block groups that have payday lenders to those that have bank branches using a difference of means t-test. The results of the test suggest that the payday lending industry is targeting neighbourhoods with a higher percentage of poor and minority residents. It further suggests that banks are avoiding or withdrawing from these same neighbourhoods in favour of those that are whiter and wealthier than average. The Graves study is one of the first to isolate payday lenders from other fringe banks in performing a point-in-time spatial analysis, drawing attention to the unique characteristics of this particular industry.

Burkey and Simkins (2004) used Zip Code Tabulation Area (ZCTA) level data for 2000 to look at the determinants of the locations of payday lenders and bank branches in North Carolina. The findings are consistent with the claim that payday lenders are more dominant than banks in areas characterized by lower incomes, higher minority and younger, less educated populations. However, the authors do find evidence that banks and payday lenders are co-located in many instances. Damar (2009) also employs ZCTA-level data to focus exclusively on the entry of new payday lender outlets in Oregon during the period 2002-2004. His study reveals that new payday lender outlets are more likely to open in areas that have a larger number of bank branches and a larger population, suggesting that this is a departure from the industry's history and may mark its evolution as it reaches for new markets.

Several large studies utilize census tract-level data to carry out location analyses of payday lenders, cheque-cashers and pawnshops relative to banks in seven counties across the U.S. and in Washington, DC (Temkin & Sawyer, 2004), in Dallas, Texas (Apgar & Herbert, 2004) and across the entire country (Fellowes & Mabanta, 2007; Prager, 2009). Although each of these analyses offers slight variations in purpose, variables tested and approach, the main finding common to all is payday lenders are disproportionately located in lower-income and minority areas, often in close proximity to banks.

Canadian spatial analyses of the distribution of payday lenders relative to banks are relatively scarce. One study prepared for the Canadian Bankers Association submission to the

Senate Standing Committee on Banking, Trade and Commerce, provides a short analysis of payday lenders operating in four Canadian cities: Toronto, Vancouver, Winnipeg and Halifax (Jones, Bermingham & Erguden, 2005). It draws distance bands of 250, 500, 1000, 1500, 2000 and 3000 metres around the locations of payday lenders to test the hypothesis that payday lenders have located in areas not served by traditional financial institutions. In each of the four cities studied, more than 50% of the payday lenders are found within 250 meters of a bank branch, and more than 90% of locations are found within 1,000 meters. Payday lenders are locating in close proximity to banks. A second study carried out by Buckland *et al*. (2007)[6] involves the mapping of payday lenders currently located in Winnipeg. While no statistical methods are applied, the maps suggest that the current inventory of payday lenders were concentrated in neighbourhoods with poorer income indicators, lower education levels, and higher minority populations.

Overall, while the research into payday lenders and their density in low-income and minority communities is fairly well established in the United States, there have not been any longitudinal studies that have examined the relationship between trends in the industry's location patterns and the location of mainstream FI branches. A survey of the relatively few spatial studies of this type in Canada indicates a much more significant gap that this research project aims to address.

2) Research Methods

The purpose of this study is to analyse the locations of mainstream FIs and payday lending outlets in Winnipeg during the period 1980-2009. Changes in the mix and stock of payday lender outlets and mainstream FI branches are directly observable and sequential patterns provide

[6] The study was carried out for the purpose of the Manitoba PUB hearings on setting maximum rates for payday lenders, and was intended to explore the relationship between payday lender outlet location and concentrations of vulnerable citizens.

insight not otherwise afforded by point-in-time snapshots of physical location. Accordingly, a decade-by-decade discussion of general distribution trends of payday lenders and mainstream FIs during the study period will offer added context for the mapped observations.

Next, the study maps the locations of banks, credit unions, and payday lenders using a Geographic Information System (GIS). Pearson's chi-square goodness-of-fit statistical procedure is used to test the hypothesis that there is no statistically significant difference in the proportion of each of the three selected financial institution –banks, credit unions, and payday lenders– types in non-residential, below average household income and above average household income Winnipeg dissemination areas. Location analysis using distance buffers[7] is used to test a second hypothesis that payday lenders are solely located in areas where there is an absence or reduced presence of bank and credit union branches.

a) Site Selection

The study focuses on the City of Winnipeg, Manitoba. It currently has a population of just under 700,000 people. The city is located in the longitudinal centre of the country, on the eastern edge of the Canadian Prairies. Its economy is focused on agriculture, agro-processing, transportation, and light manufacturing. The city of Winnipeg is an appropriate study site given a statistically viable number of branch locations for the period under review. Currently, there are approximately 120 bank branches, 68 credit unions and 62 payday lender outlets concentrated in the province's capital city. Winnipeg is also shown to rank among the top 3 cities in Canada in terms of number of payday lender outlets per capita, behind Edmonton and Saskatoon (Buckland and Dong, 2006).

[7] The term distance buffer refers to the area contained within a specified distance from an object and is a tool commonly used in spatial studies.

An important consideration in selecting Winnipeg as the study site is the clear demarcation of its inner-city and suburban neighbourhoods. Spatial inequality is reflected in a number of indicators including average income level, unemployment rate, and percentage of households falling below the Low-income Cut-off. Moreover, some poor neighbourhoods have much higher proportions of aboriginal and newcomer residents. For instance, in Point Douglas, a neighbourhood in Winnipeg's inner-city, over one-half of economic families are defined as low income compared with 4 percent and 6 percent in the suburban neighbourhoods of Seine River and Fort Whyte. The unemployment rate in Point Douglas is nearly triple that observed in the suburbs and there is a stark difference between the relative proportion of aboriginal population and households headed by lone-parents in these neighbourhoods (Mackinnon, 2009).

The core neighbourhood boundary was established by a process of public participation and statistical analysis during the late 1970s, known as the Core Area Initiative (Buckland *et al.* 2007). The designated boundary allows for the focused delivery of programs designed to address the urban decline in the ring that runs around the downtown, including the acutely impoverished North End which has a falling population and pronounced private sector disinvestment.

The demarcation between Winnipeg's inner-city and suburban neighbourhoods is useful for the purpose of this study, but that is not to say that all suburban neighbourhoods in the city and province are uniformly privileged in terms of level of affluence and education, or that they are less diverse. Indeed, the study does not rely entirely on the inner-city—suburb dichotomy. Still, it is fair to assess a number of neighbourhoods as being more likely to attract middle and upper income households in greater proportion, an important factor in selecting the study site.

b) Data Sources & Challenges

Data necessary to conduct the geographic analysis and statistical tests were bank listings, addresses, and census data. As a first step, longitudinal data was used to measure changes in mix occurring over the last 30-year period (1978-2009). Data collection required a record of mainstream FI branch openings, mergers and closures to facilitate the time series and provide a historical perspective.

The process of obtaining past and present street addresses for banks[8] and credit unions was straightforward. A key source of current information is a publicly available, on-line database maintained by the Canadian Payments Association (CPA).[9] Copies of the CPA directories are published by year, dating back to 1983. Prior to 1983, the Canadian Bankers Association (CBA) maintained the directories in two separate publications: the *Bank Directory of Canada* (BDC) for bank branch information, and *Routing Numbers of Deposit-taking Institutions in Canada Other than Chartered Banks*. This included information about credit unions, trust and mortgage companies. After 1983, these publications were merged and are now maintained by the CPA.

There is no official record of payday loan companies operating within Canada or the Province of Manitoba. Acquiring location data of payday lender outlets is difficult and time-consuming due to the lack of authoritative sources. The process is arduous and is likely the reason why most studies draw their samples from a single point in time; usually one year, rather than over a period of years. Thus, a variety of sources were consulted to secure as comprehensive a record as possible. A fairly current Winnipeg listing, complete with street addresses, is contained in the report prepared for the recent Manitoba PUB hearings to cap payday loan fees (Buckland *et al.* 2007). Also, a preliminary historical data base of Winnipeg fringe banks, including payday loan companies, that contains street addresses, and open and close dates for the

[8] Only banks that provide personal banking services were included. Commercial banks, investment brokerages, student loan offices, private banking centres and representative offices for foreign banks have been omitted.
[9] See: Canadian Payments Association 2010, 'Financial Institutions Branch Directory,' Ottawa: CPA, available: http://www.cdnpay.ca (accessed 23 August 2010).

period 1981 to 2008 was generated for this study. Both lists were compiled using a combination of Henderson and Yellow Pages telephone directories. Websites of major firms with multiple Winnipeg outlets, as well as the Canadian Payday Lenders' Association website were consulted to ensure that new outlets not yet listed in the Yellow Pages were captured.

Another key challenge for location studies is the potential for interdependency among test variables. Classic regression models, for example, assume independence among observations. However, spatial dependencies in georeferenced data introduce a problem in statistics known as spatial autocorrelation[10] (Fotheringham, Brunsdon & Charlton, 2000). The analysis for this study did not include regression analysis and we have not tested for spatial autocorrelation.

All location data was entered into spreadsheet files that recorded the name of the financial institution, street address, type (payday lender, bank, credit union, or trust company), the opening or first year the entity appeared in the records and the closure or last year the entity appeared in the records. As a preface to the geocoding[11] exercise, the opening dates and the closing dates

[10] Spatial data tend to be positively autocorrelated in the sense that similar values cluster together on a map. For instance, types of firms or retailers may be clustered together in a particular geographic area to reach a defined target market, but physical location is also based on factors that include commercial zoning, transportation routes, favourable lease terms, parking availability and neighbouring tenants. Commercially-zoned areas often include office buildings, industrial property, apartment blocks and a mix of residential neighbourhoods that may or may not fully represent a particular retailer's target market. As result, statistical tests that find similarities or differences in geographic distribution of commercial retailers can be over-stated and must be interpreted with caution (Fellowes & Mabanta, 2007). Observations drawn from the immediate area cannot be deemed independent of one another, which violate a basic statistical assumption of classic regression models. (i.e., errors in the regression model cannot be deemed as having zero covariance with each other). Alternative spatial regression models have been developed to measure and account for spatial autocorrelation. Common measures include Moran's I, Geary's C, Ripley's K and Join Count analysis, designed to measure the strength of spatial autocorrelation and test the assumption of independence. These and other indices may be used to correct for the problem or to acknowledge and treat the dependencies as a source of information (Fotheringham, Brunsdon & Charlton, 2000; Upton & Fingleton, 1982; Ward & Gleditsch, 2008).

[11] The geocoding software, which was used to determine geographic coordinates (i.e. latitude and longitude) for the street addresses, utilizes four methods of varying accuracy. Coordinates not determined with the most precise method were determined the second most precise method, giving positions for all of the addresses that exceeded the requirements of this study. The most precise "roof-top" coordinates were assigned to 38% of the Bank, 32% of the Credit Union and 44% of the Payday Lender addresses. All of the remaining locations were calculated with "range-interpolation", which uses the coordinates of street segments and their address ranges. For example, an address of "150 Main Street" might be assigned coordinates placing it in the middle of a segment of "Main Street" with addresses ranging from 100 to 200.

were checked for any errors or inconsistencies that might have occurred during manual entry, and corrected using a variety of strategies.

The bank and payday lender addresses within the database were translated into geographic coordinates, i.e., latitude and longitude, using a reputable geocoding program website[12] and then imported into an ArcGIS map file. Similarly, files containing socioeconomic data, describing mapped neighbourhood, were created and linked with other data layers for subsequent analysis.

3) Results

a) General Distribution Trends of Payday Lenders and Mainstream FIs by Decade

This section presents a historical 'snapshot' of trends in the distribution of payday lenders and mainstream FIs in Winnipeg over the last three decades. Included here are selected tables that depict the number of payday lender, bank and credit union sites in selected years. For illustration purposes, the map divides Winnipeg into suburb and inner-city, with an inset of the inner-city region shown at a larger scale.

It is evident that bank branches have reduced in overall number, declining from 204 in 1978 to 145 in 2009, representing more than a 25 percent decline (Table 1). The number of credit unions in Winnipeg increased during the study period from 53 in 1978 to 82 in 2009, representing a 55 percent increase. The first payday lender, beginning primarily as a cheque-casher in 1998, was Money Mart. The number of payday lender outlets rose to 8 in 2000, and this was followed by a spike in outlet numbers, jumping to 53 in 2006, and 71 in 2009.

[12] Batchgeocode.com is a geocoding tool website. See: Batchgeo 2010, 'Batchgeo,' available: http://www.batchgeocode.com (accessed September, 2009).

Table 1 here

Bank branch numbers witnessed their greatest decline in the inner-city, hovering around 90 branches in the late 1970s and declining to around 30 by 2009 (Figure 1)[13]. Credit union branches, on the other hand, have seen only a slight decline in the inner-city. Payday lenders originated in the inner-city and by 2009 are disproportionately represented there relative to banks and credit unions, but have recently expanded their network beyond the inner-city to the suburbs. Maps for the years 1985 (Figure 2), 1995 (Figure 3) and 2009 (Figure 4), illustrate the trend and highlight the retreat of mainstream FIs from the inner-city and the arrival of payday lenders (operating as cheque-cashers at the time) to the area.

Figure 1 here

The 1980s witnessed a movement of mainstream FIs from the inner-city to the suburbs and U.S- based Money Mart appears in the late 1980s as a cheque-casher in the inner-city. Despite the recession of the early 1980s, the decade witnesses a significant suburban expansion for the banks although it coincides with the closure of many branches in Winnipeg's core. The economic downturn meant funding for branch network expansion would be curtailed (Schull & Gibson 1982). Consequently, older branches, in declining markets, would be exchanged for new ones in markets offering more growth potential.[14]

[13] For the province of Manitoba, the total number of bank branches from 1982 to 2002 declined from 343 to 305 while the number of credit union branches increased from 184 to 222. The majority of these changes occurred in the city of Winnipeg. Although there is evidence of some closures occurring in the rural markets, the larger centres such as Brandon, Thompson, Portage la Prairie and Dauphin show little absolute change in the number of bank branches over this period. Unlike bank branches, the number of credit unions located in these rural sites more than doubled during this period.

[14] Technology had not yet materially changed the way consumers could access service, so branch closures at the time would have meant that customers would have to travel further to conduct their banking, or perhaps change banks

It is in the midst of the migration of mainstream FIs to the suburbs that Money Mart appears in what was then its capacity as a cheque-casher. The first Money Mart appears in Winnipeg in 1988 with two locations in the inner-city. The Logan Avenue location closes later that same year. There are no further openings until 1991.

Figure 2 here

The 1990s are characterized by a decline in the number of bank branches in the inner-city, some important changes in the role of credit unions, and expansion of Money Mart outlets. In addition to bank branch closures in the inner-city, there is also evidence of closure in declining neighbourhoods in other parts of the city, such as the original cores of Transcona and St. Vital. New bank branches are observed to be opening throughout the city, but at half the rate seen in the 1980s. Net closures, on the other hand, are found to be much greater than in the previous decade. Credit unions hold their position, posting a slight gain in number of locations during this period. In contrast, Money Mart is seen to expand its network to include seven more outlets over the same period, two of which close a year after they open. Two others move from their original location but remain open, suggesting location decisions may have been somewhat experimental during the start-up phase.

The 1990s also witness changes in the location of payday lenders. Close examination of the map series shows that, in some cases, the Money Mart locations were originally located next to a stretch of banks and credit unions in the inner-city. At the end of the 1990s, distance band

altogether. The implications of these decisions would only be revealed in hindsight as the cumulative effect of many firms vacating the downtown core became a major issue for the city; one that it continues to grapple with today.

analysis shows that of the 7 payday lenders in the city, all but one were located within 1,000 metres of a bank, and 3 were located within 250 metres of a bank. Over time, the numbers of neighbouring mainstream FIs begin to thin out and gradually disappear, suggesting that Money Mart was left behind to service the transactional needs of the unbanked in the area. Residents of the inner-city, least likely to own an automobile, would have farther to travel to access the full range of deposit, loan and less expensive transaction services offered through well-regulated banks and credit unions (Buckland & Martin, 2005).

Figure 3 here

The 2000s can, in some ways, be described as an acceleration of trends rooted in the prior decade. The forces that initiated a reshaping of the financial services industry in the 1990s were still at work. During the 2000s, mainstream banks continued to close branches, credit union branches declined through merger activity, and payday lender outlets rapidly multiplied.

Figure 4 here

The timing of these mainstream FI developments corresponds with the sudden appearance and rapid growth of the number of payday loan operators and outlets in Winnipeg, as well as other regions of the country. Through the mid and late 2000s, new payday lender locations cropped up in the suburbs, often in more moderate income, but perhaps less credit-worthy areas across the city and province. This movement is consistent with a product offer that centers on the payday loan, which requires the borrower to have a job and a bank account held at a depository institution. It is also consistent with the trend toward ramped up household debt, creating financial pressures that conventional lenders may not be in a position to help alleviate. While more outlets in the last five years have been situated in the suburbs, there is still a positive relationship between payday loan location and low income, a reflection of their early concentration in the inner-city and downtown core.

Money Mart is observed to continue the expansion of its network through this period, joined by many others in the industry as new entrants begin to test the market in 2000. The numbers of outlets increase and disperse throughout the city, locating near mainstream FIs along major transportation routes in a variety of retail settings, but predominantly in strip malls (Figure 4). Although a number of independently-owned outlets open for business in the early 2000s, nearly half close or disappear after a year or two of operation. By 2009, 68% of 62 mapped locations in Winnipeg are controlled by the "Big 3" national firms. Edmonton-based Cash Store Financial (Instaloans and Cash Store) is operating 20 locations in the city, compared to US-based Money Mart with 17 outlets and the newest entrant from across the border, National Cash Advance, establishing 7 locations over a two-year period beginning in 2008.

The largest payday lender in Canada is on record for stating its intention to locate closer to banks and toward a more solidly middle-class target market.[15] If so, this should show an eventual convergence of both types of financial service providers in areas of the city meeting these conditions.

b) Hypotheses Tests

This section first presents results of Pearson's chi-square goodness-of-fit tests used to test if there is a statistically significant difference in the proportion of each of the three selected financial

[15] From transcript of Manitoba Public Utilities Board hearing, April 17, 2006. See: Manitoba Public Utilities Board 2006. 'To determine allowable fees for cashing government cheques' Winnipeg, Manitoba: PUB, Volume IV.pp.738-745.

institution types–banks, credit unions, and payday lenders– in non-residential, below average household income and above average household income Winnipeg dissemination areas.[16] Location analysis using 'distance buffers' will be used to test a second hypothesis that payday lenders are solely located in areas where there is an absence or reduced presence of bank and credit union branches. The foregoing tests are performed either for a single year, or for selected years after 2000. Prior to 2000, the payday lender population in Winnipeg was too small to provide a statistically valid result.

i) Hypothesis 1: Equal Distribution of Banks

This section tests the hypothesis that there is a statistically significant difference in the proportion of each of the three selected financial institution types –banks, credit unions, and payday lenders– in non-residential, below average household income and above average household income Winnipeg dissemination areas.

A two-step procedure was used to evaluate the hypothesis. Before proceeding with the first hypothesis test, a boundary file for City of Winnipeg dissemination areas was obtained together with average 2005 household income from the 2006 census. The average household income for Winnipeg (census division 11) was $63,123. The number of payday lenders, banks and credit unions that existed in 2005 was determined for the following categories:

1. Located in a non-residential/no data dissemination area or area without household incomes
2. Located in a dissemination area that had a below average household income (<$63,123)
3. Located in a dissemination area that had above average household income (>$63,123).

[16] One of the limitations of these tests is that they are subject to the boundaries chosen.

Figure 5 depicts the city divided into the three classes for the corresponding chi-square test. If there is no relationship between household income and where the three types of institutions are located, then payday lender, bank and credit union locations should appear in equal proportions within the three designated income classes. That is, if half of the payday lenders, banks and credit unions as a whole fall within the higher income area then that would also be true for each type of institution individually.

Figure 5 here

The comparison of observed and expected counts reveals that there were 36 payday lender sites in below average income areas (versus 28.4 expected), 3 in above average income areas (versus 9.1 expected) and 3 in non-residential areas (versus 4.5 expected). In contrast, 76 bank branches were located in below average income areas (versus 82.4 expected), 31 were in above average income areas (26.4 expected) and 15 in non-residential areas (13.2 expected). Credit union branches, on the other hand, were all close to the expected counts. The Chi-square critical value for the selected significance level of 0.05 is 9.49. As the chi-square observed value of 8.4 is less than this threshold; the null hypothesis is accepted with 95% confidence. We can not say that there are statistically more payday lenders and fewer banks and credit unions in low-income neighbourhoods, as compared to what was expected.

However, when a similar statistical test is performed with two categories of banks, 'mainstream' banks (lumping banks and credit unions together) and payday lenders the results are different. Here we find a chi-square observed value of 8.14, which at a 95% significance level exceeds the critical value of 5.99. In this test we reject the null hypothesis in favour of the alternative that mainstream banks and payday lenders do not appear in statistically equal proportions in non-residential, low income, and high income dissemination areas. In low income areas there are, in fact, fewer mainstream banks (120 observed, 127.6 expected) and more payday lenders (36 observed, 28.4 expected). In high income areas there are more mainstream banks (47 observed, 40.9 expected) and fewer payday lenders (3 observed, 9.1 expected).

A third statistical test was performed with the bank location data, in this case using after-tax Low Income Cut-off (LICO) data to provide an alternative indicator of neighbourhood wealth. After obtaining after-tax LICO data from the 2006 census, the city's dissemination areas were divided into three groups:

1. Areas with more than 30% of economic families falling below the LICOs after taxes
2. Areas with 30% or less of economic families falling below the LICOs after taxes (and unknown)
3. Non-residential areas.

Figure 6 shows the city divided into the three classes for the associated chi-square test. If there is no relationship between the proportion of economic families falling below LICO and where the three types of institutions are located, then payday lender, bank and credit union locations should appear in equal proportions within the three designated classes. The test here is to investigate if there is a statistically significant difference in the proportion of each of the three selected financial institution types between Winnipeg dissemination areas with more than 30% of the economic families falling below after-tax LICOs and those with less than 30% of economic families falling below after-tax LICO.

Figure 6 here

The comparison of observed and expected counts shows that there were 9 payday lender sites in below average income areas (more than the 5.6 expected). In contrast, there were slightly fewer bank branches (12) that fell into the low income area than the 16.4 expected. Once again, credit union branches were all close to the expected counts. The Chi-square critical value for the selected 0.05 significance level is 5.99. The observed chi-square value of 4.6 falls short of this threshold; therefore we cannot say there is a statistically significant difference with 95% confidence. Lowering the stringency of the test to 0.2 significance level did find statistically different proportions, so while we cannot be 95% certain we can be 80% sure that there are fewer banks and more payday lender in areas with more families falling below the poverty line.

Another test was done with the two categories –mainstream bank and payday lenders– instead of three, and again no statistically significant results were found at the pre-selected 95% confidence level.

These tests, taken together, provide evidence that lower income neighbourhoods in Winnipeg in 2005 were more densely populated by payday lenders and less densely populated by banks and credit unions, as compared to more affluent neighbourhoods.[17]

ii) Hypothesis 2: Distance Bands

[17] Payday loan borrowers are often characterized as low to modest -income earners, many of whom face credit challenges that prevent them from seeking loans from mainstream FIs. To the extent that payday lenders offer alternative solutions to conventional loans, the possibility that they choose to locate in pockets where the concentration of credit-challenged borrowers is highest was briefly examined using a measure called the 'consumer risk predictor' (CRP). According to Equifax Canada, the CRP is a generic delinquency risk score that predicts the likelihood of a consumer having a 90+ day delinquency or bankruptcy within two years. Results showed that there were many more payday lender outlets than expected in areas with higher CRP scores, and, conversely, there were fewer payday lenders than expected in areas with lower CRP scores. In comparison, there were a few less banks than expected in areas with higher CRP scores, and, there were a few more banks than expected in areas with lower CRP scores. Again, credit union branches were all close to the expected values. Manitoba CRP data for years 2003 through 2009 were supplied by Equifax Canada.

This section investigates the hypothesis that payday lenders are solely located in areas where there is an absence or reduced presence of banks and credit union branches. The following procedure was used to evaluate this hypothesis. First, city maps were produced containing (1) payday lender site locations and bank branch locations; and (2) payday lender site locations and credit union branch locations. The maps were produced for the years 2000, 2005 and 2009. These years were selected to represent the years of greatest growth of the payday loan industry in Winnipeg. Once the map series was completed, distance buffers were drawn around each bank and credit union. The distance specified was 250 metres and 1 kilometre in keeping with the parameters used in an earlier Canadian study (CSCA, 2005). That study found more than 50% of payday lenders sampled across four cities were located within 250 metres of a bank branch, and more than 90% were within 1,000 metres.

Here, the number and percentage of payday lenders in Winnipeg that were (1) within 1 kilometre (and, therefore, also within 250 metres), (2) within 250 metres, and (3) farther than 1 kilometre from a bank branch or credit union are shown for the selected years. Beginning with bank branch proximity, nearly 43% of payday lenders were found within 250 metres of a bank branch, and more than 85% were within 1,000 metres in 2000. The trend is steady throughout 2005 and 2009, although there is a slight increase in the number and percentage of payday lenders farther than 1 kilometre from a bank over the period. As the temporal analysis noted above, this is due in part, to the number of bank branch closures that occurred during this period.

The story is somewhat different for credit union proximity. In 2000, just over 14% of payday lenders were found within 250 metres of a credit union branch, but nearly 86% were within 1,000 metres. By 2009, the trend begins to reverse and more payday lenders are found within 250 metres of a credit union (32.3%) with 79% of them within 1 kilometre. A similar pattern to that of bank proximity is found with a slight increase in the number of payday lenders located farther than 1 kilometre from a credit union. Again, the temporal analysis will illustrate that the trend has as much to do with the movement of credit unions as it has with payday lenders.

However these trends have come about, the results of the tests convey the evidence does not support the hypothesis that payday lenders are solely located in areas where there is an absence or reduced presence of bank and credit union branches. The evidence suggests that the majority of payday lender outlets are located in close proximity to branches of mainstream financial institutions. Hypothesis 2 is therefore rejected.

4) Discussion & Conclusion

This study has examined bank, credit union, and payday lender locations in Winnipeg over a thirty year period from 1980 to 2009. The impetus for the study is the financial exclusion literature that has identified the changing landscape of bank branches together with the proliferation of fringe banks as a problem for low-income people and communities. The literature has identified the problem as one or more of the following: few mainstream branches in low-income neighbourhoods, declining availability of mainstream FI branches in low-income neighbourhoods, excessive representation of fringe banks in low-income neighbourhoods, and/or growing representation of fringe banks in inner-city neighbourhoods.

The data presented in this study found that bank branches, in total, have declined in Winnipeg. This is not surprising given the automation processes that have been applied to banking the last few decades. Also, not surprising, is that credit union branches have increased in numbers in the city during this time. Credit unions have been able to fill some, but not all of the geographic gaps left by the retreating banks (in the sense that the total number of bank and credit union branches has declined over the study period). This study has limited its examination of fringe banks to payday lenders, and as expected, the numbers of outlets starting in the late 1990s rapidly increased through the 2000s. These data support the argument that banking services have become more bifurcated over time with mainstream FIs concentrating in neighbourhoods that are more affluent and payday lenders concentrating in low-income neighbourhoods.

The inner-city was particularly affected by the mainstream FI branch decline. Credit unions were able to fill some geographic gaps in the city as a whole, but they did not do so in the inner-city. Credit union branches also declined in the inner-city, but to a lesser extent than banks. Payday lender outlets were initially exclusively located in the inner-city but in the early 2000s they began to open outlets in the suburbs, if the less affluent suburbs. The mapping exercise found that payday lenders often locate near mainstream FIs. However, when these mainstream FIs retreat from certain, often low-income, neighbourhoods, the payday lender is left on its own. Payday lenders are more concentrated in the inner-city and mainstream FIs are more concentrated in the suburbs, supporting the argument that banking is becoming more tiered.

The hypothesis testing was another tool used to examine bank location dynamics. Using average household income and the proportion of households under LICO, at the neighbourhood level, this study examined if, in 2005, there was a statistically different density of banks in low-income neighbourhoods as compared with non-poor neighbourhoods. The statistical test using average household income, with two bank groups (mainstream banks and payday lenders) supported the hypothesis that there was a difference in the density of banks across these neighbourhoods. Banks and credit unions are under-represented in low-income neighbourhoods, and payday lenders are over-represented there. The second test, examining the relationship between mainstream FI and payday locations found that payday lenders are not located in areas where there is an absence or reduced presence of mainstream FIs. The quantitative data and one of the statistical tests found that low-income neighbourhoods, as compared with other neighbourhoods, have fewer mainstream FIs and more payday lenders.

If we consider that low-income people are less likely to have a car, a computer, the internet, and even a telephone, then this result confirms the claims made by many low-income people that accessing mainstream FIs is difficult. Other studies have found that low-income people perceive that mainstream FIs are not conveniently located, that their services are unsuitable, and their staff are not sensitive to their needs. One community study using a mixed method survey in Winnipeg's North was entitled 'There are No Banks Here,' drawing on comments made by many respondents (Buckland *et al.* 2005). These data support the view that, at least for Winnipeg, people in low-income neighbourhoods have poorer access to mainstream FI financial services. This might partly explain the reliance on fringe banks, including payday lenders.

The results of the spatial analysis in Winnipeg suggest that the newer, suburban payday lender outlets are almost always located next to mainstream FIs and credit unions. The exception would be the inner-city, where payday lenders are more densely located and where mainstream FIs have gradually retreated from the area. The theoretical implication is that payday lenders offering a full product line that includes cheque-cashing services, bill payments, and money transfers, in the absence of mainstream FIs, could be viewed as a substitute for routine transaction services. Therefore, payday lenders in the inner-city may very well fit this conceptualization. On the other hand, payday lenders offering an alternative to conventional financing and who are located in the suburbs next door to banks and credit unions may be perceived as offering a niche product that is a complement to the full array of services offered by mainstream FIs.

Insights about these market dynamics can be drawn from payday lenders public documents. For instance, the owner of one of the largest payday lender chains, Cash Store

Financial Inc., highlighted in its 2010 Annual Report that its business model emphasizes customer-service, convenient locations, and long hours of operation. "Cash Store Financial is an alternative to traditional banks, providing short-term advances and other financial services, to serve the needs of everyday people… (Cash Store Financial 2010, p.24). It claims to offer a bank account, through a 'third-party' bank. Dollar Financial Corporation, Money Mart's US parent company, is more transparent about its location strategy:

> Despite the demand for basic financial services, access to banks has become increasingly difficult for a significant segment of consumers. Many banks have chosen to close their less profitable or lower-traffic locations and to otherwise reduce the hours during which they operate at such locations. Typically, these closings have occurred in neighborhoods where the branches have failed to attract a sufficient base of customer deposits. This trend has resulted in fewer convenient alternatives for basic financial services in many neighborhoods. Furthermore, traditional banks have tended in recent years to eliminate, or have made it difficult or relatively expensive to obtain, many of the services that under-banked consumers' desire (Dollar Financial Corporation 2010, p.3).

Dollar Financial Corporation expects that this market will expand as mainstream banks continue to withdraw from low-income neighbourhoods and certain 'demographic trends' persist (Dollar Financial Corporation 2010, p.3). These demographic trends refer to an increasing reliance on low-wage jobs in the service sector and in small business.

That payday lenders are disproportionately, but not exclusively, located in low-income neighbourhoods also holds policy implications. Have they –with their small loans, cheque-cashing, bill payment services– become the only viable banking option for low-income people in certain neighbourhoods? If so, this is very problematic because of the challenges associated with their services discussed in the introduction. Moreover, a system of two-tier banking where more affluent people benefit from less expensive, more extensive, and higher quality financial services and low-income people access more costly, limited, and mixed quality financial services, will aggravate income inequality. Repatriation of mainstream FI branches offering h specialized service into low-income neighbourhoods would be a more equitable, and possibly, more productive direction in the long run.

The implications from these results for public policy can be related to the issue of access to basic banking. Given that banking has certain public good features (i.e., ‘non-subtractability,’ meaning that the more people who have a bank account does not diminish the availability of bank accounts for others), as more people have access to banking, by increasing available capital in the formal economy and improving liquidity efficiencies, the better-off everyone is. Access to mainstream FIs in all neighbourhoods is important for those neighbourhoods, and generally, for the common good. Currently regulations require federally regulated banks to open a bank account for anyone with adequate identification and to cash certain federal government cheques for no fee. These regulations do not deal with bank branch locations except that the Financial Consumer Agency of Canada does require notifying residents of a branch closure and offering to hold a public meeting, if residents request it. These regulations require certain processes to be followed but they cannot stop the bank from closing its branch and they certainly cannot require banks to open new branches in neighbourhoods that are underrepresented by mainstream FIs. The results from this study demonstrate that some vulnerable neighbourhoods in Winnipeg are not well represented by mainstream FIs. Public policy needs to be devised to ensure adequate access by low-income people to physical FI branches.

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Figures and Tables

Table 1. Total Number of Bank, Credit Union, and Payday Lender Branches/Outlets in Winnipeg by Year, 1978- 2009

YEAR	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Bank Total	204	203	214	213	204	217	215	211	203	201	207	207	208	204	201	196	193	192	179	179	181	174	167	158	157	152	145
Suburban	111	114	119	120	118	127	127	127	126	124	129	128	130	129	127	123	124	126	120	120	125	122	119	115	118	113	109
Inner-city	93	89	95	93	86	90	88	84	77	77	78	79	78	75	74	73	69	66	59	59	56	52	48	43	39	39	36
Credit Union Total	53	66	67	65	68	58	54	46	48	51	52	53	56	59	58	59	61	60	63	63	56	64	66	66	68	71	76
Suburban	35	38	37	38	39	35	31	29	29	32	34	33	37	38	38	38	39	36	39	39	34	39	40	42	43	46	50
Inner-city	18	28	30	27	29	23	23	17	19	19	18	20	19	21	20	21	22	24	24	24	22	25	26	24	25	25	26
Payday Lender Total	0	0	0	0	0	0	0	0	0	0	1	1	1	3	1	2	2	3	4	4	4	7	8	16	22	29	39
Suburban	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	9	10	15	22
Inner-city	0	0	0	0	0	0	0	0	0	0	1	1	1	3	1	2	2	3	4	4	4	4	5	7	12	14	17

Figure 1. Inner-city and Suburban Banks, Credit Unions and Payday Lenders in Winnipeg from 1978 to 2009

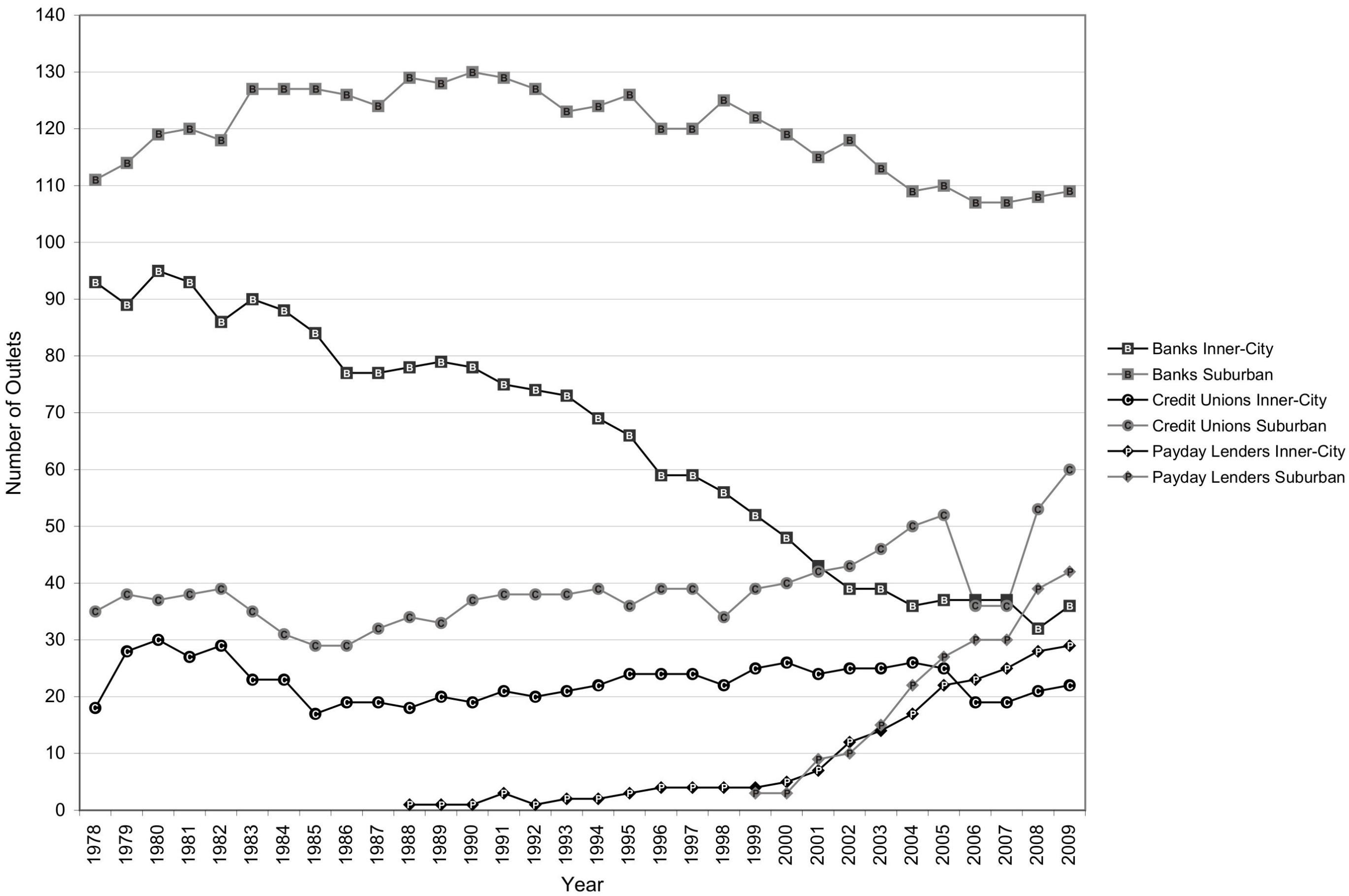

Figure 2. Banks and Credit Unions in Winnipeg - 1985

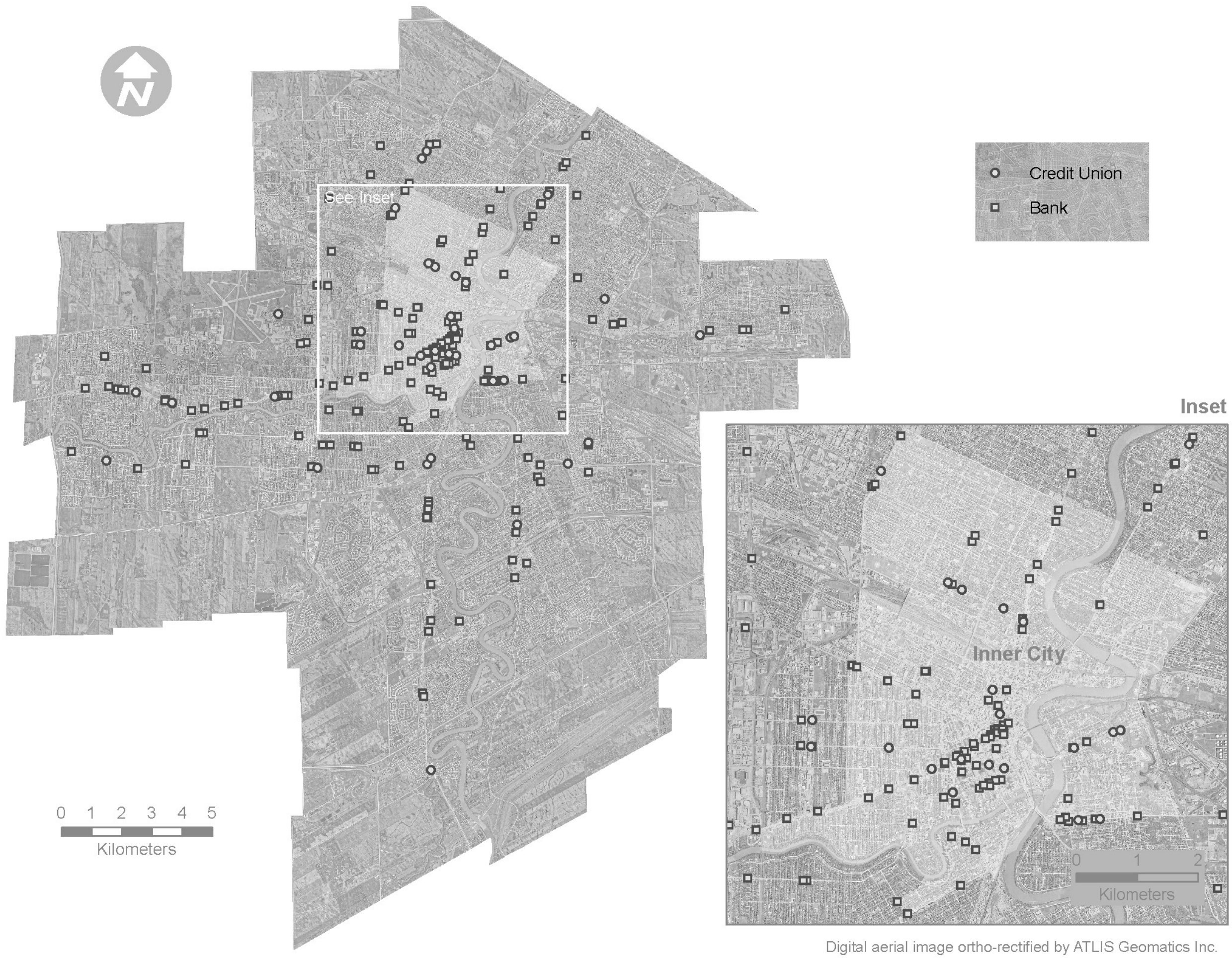

Figure 3. Banks, Credit Unions and Payday Lenders in Winnipeg – 1995

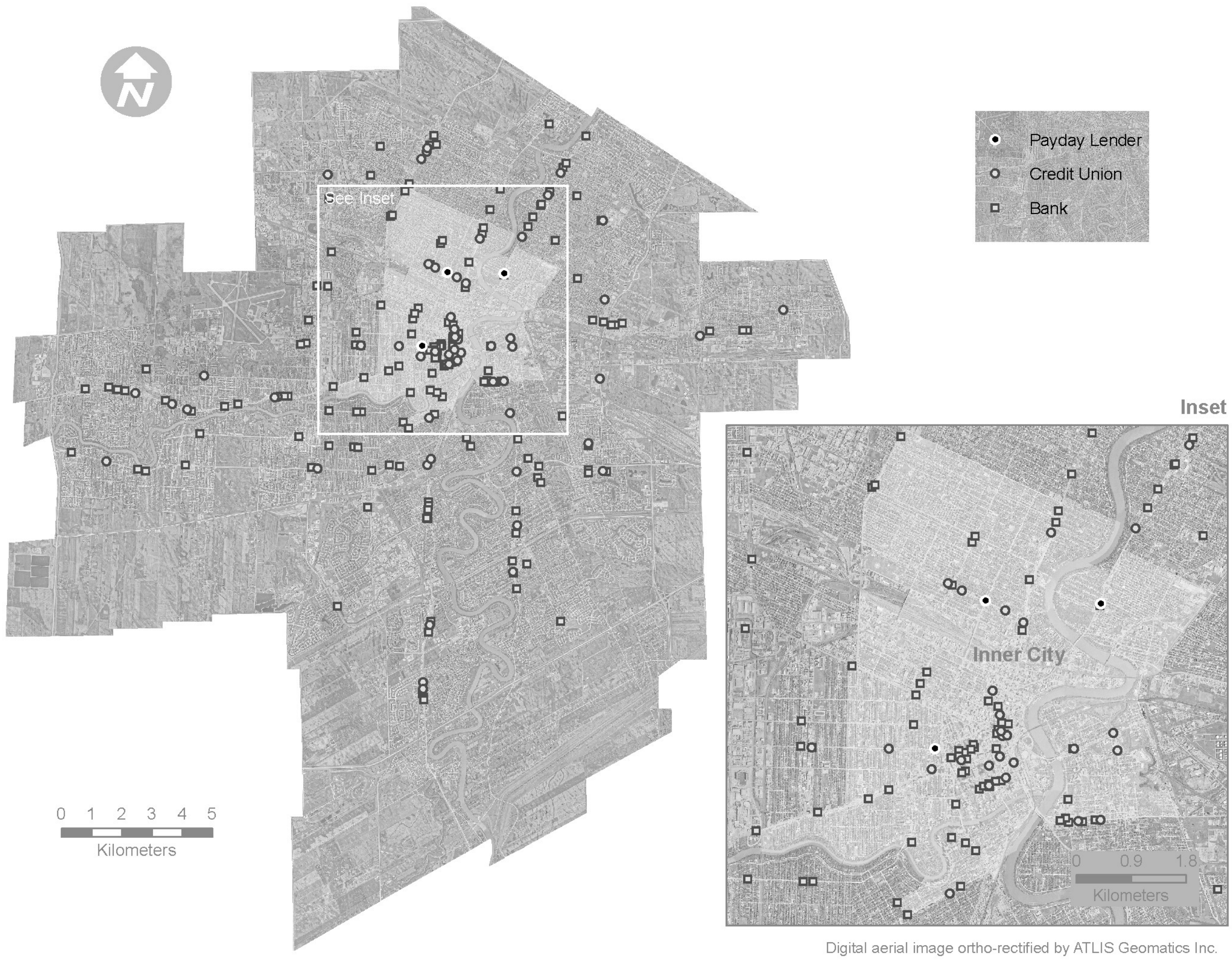

Figure 4. Banks, Credit Unions and Payday Lenders in Winnipeg - 2009

Figure 5. Banks, Credit Unions and Payday Lenders in Winnipeg Dissemination Areas with Above and Below Average Household Income– 2005

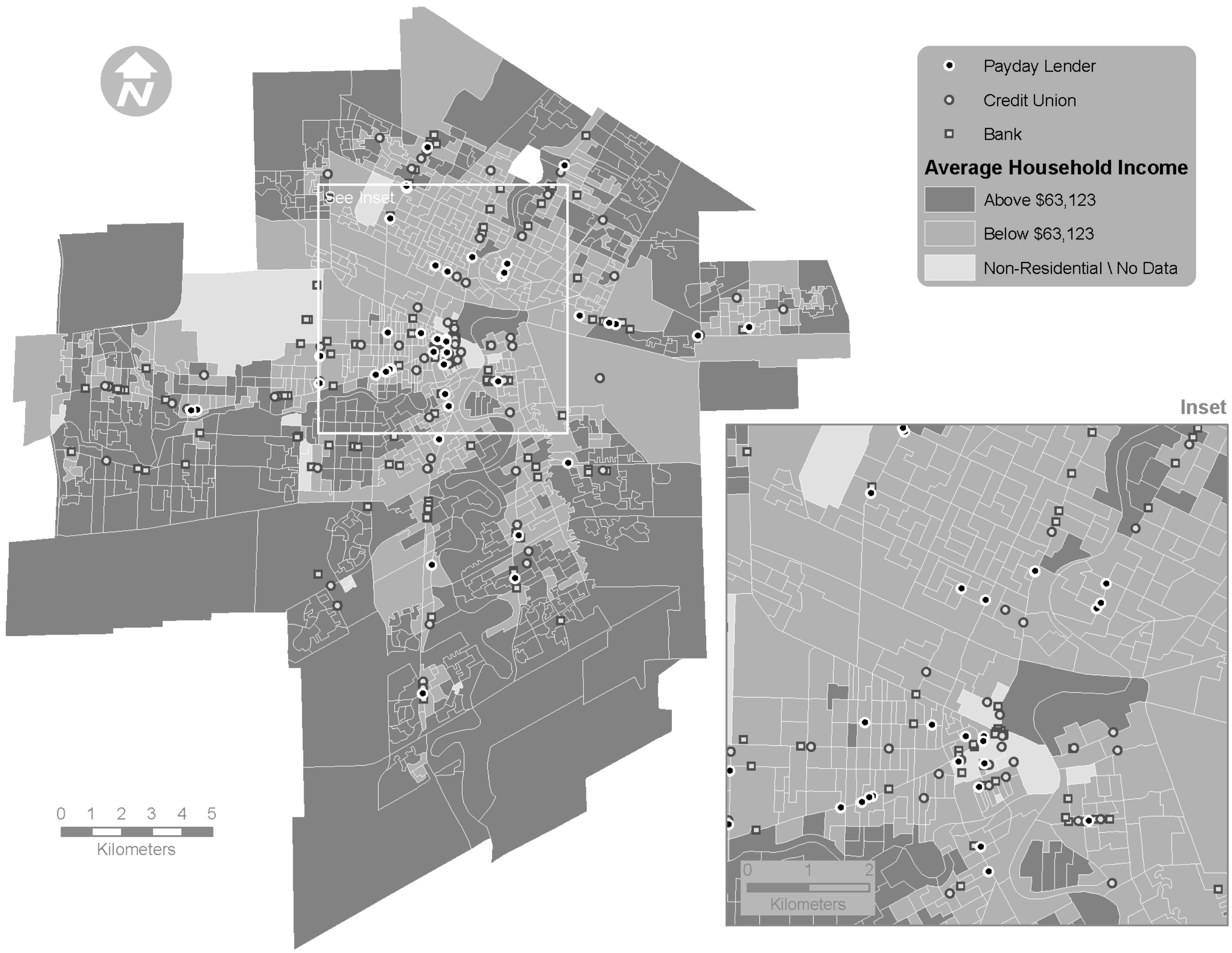

Figure 6. Banks, Credit Unions and Payday Lenders in Winnipeg Dissemination Areas with Above and Below 30 Percent of Economic Families with Low After Tax Income – 2005