The evolution of financial intermediation: evidence from 19th century Ontario microdata

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Introduction

Financial intermediation – the use of a financial institution to allocate funds between borrowers and lenders – has long been identified as an important component of economic development. Relative to bilateral relationships, use of a financial intermediary allows pooling of risk and information costs, and an efficient means of payment. Historically in Canada and many other countries, banks have been the largest and most significant financial intermediaries.[1] From 1871 to 1913 the banking sector grew relative to the size of the Canadian economy, and the nature of bank liabilities changed dramatically: in 1871, 32% of the monetary liabilities of the Canadian banks were notes in circulation, while by 1913 that ratio had fallen to 9.5%. This shift accompanied a period of tremendous development and growth in the Canadian economy.

In this paper we use micro-data on individual's asset holdings to analyze the growth of banking and the changing nature of monetary liabilities. The data are from inventories of 7,516 probated estate files of Ontario decedents in the years 1892 and 1902. Using data from these years allows us to link the individuals to census data, and at a macro level the trends from 1892 to 1902 are consistent with the broader secular trends between 1871 and 1911. The data allow us to examine the determinants of individual's asset monetary holdings and thereby shed light on the role of demographic, locational and economic factors in the growth of the banking system.

The paper begins by briefly describing the economy of Ontario at the end of the 19th century and in more detail the nature of the financial system at that time. The second section describes the data sources and presents basic summary statistics. In the following section we empirically assess the determinants of money holding amongst the decedents, with a particular focus on what changed between 1892 and 1902. The final section ends with a discussion of results that concludes that macro level factors were an important determinant of the change in asset holding.

Economic and Financial Development in Late Nineteenth Century Ontario

Late nineteenth century Ontario was a diverse province that combined regions of old and recent settlement, urban and rural areas, manufacturing and commercial centres as well as resource frontier regions in the north. Settlement in Ontario began in the southern portion of the province with the

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[1] The only other sizable financial intermediary was the mortgage trust companies; in 1890 their assets were 50% the size of the banking system and in 1900, 31%. (Neufeld; 1972). Other data from Urquhart (1993).

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arrival of the Loyalists in 1784 and by 1891 much of the south had been settled for over 100 years, while the north was a new resource frontier.

In terms of population, Ontario in the 1890s was Canada's largest province and also accounted for the greatest economic output.[2] During the 1890s, Ontario was rapidly industrializing and Canada's economy was on the verge of an economic boom driven by settlement of the western provinces for which Ontario would serve as a manufacturing and commercial centre. Ontario was evolving from a commercial-agricultural-rural province to one that was industrial and urban.[3] This economic environment provided a diverse set of opportunities for wealth accumulation behaviour that allows for contrasts and comparisons across socio-economic and geographic groups of population.

The economic history of Canada between Confederation and World War I is frequently told as the story of an economy that struggled for a few decades before experiencing a boom related to wheat exports and a surge of capital and labour inflows beginning in roughly 1896. Data from Dick and Floyd (1992) show a growth rate of per capita real income of 1% p.a between 1886 to 1896 and 5% p.a. from 1896 to 1906. The Green and Urquhart data show real per capita GNP per capita also growing 1% p.a. from 1886 to 1896 and then growing nearly 7% p.a. from 1896 to 1906.[4]

The absence of comparable provincial level data makes it difficult to gauge the extent to which the experience of Ontario reflects the national story, but likely this province also showed a quickening pace of economic activity after the mid-1890s. Inwood and Irwin (2002) in their estimates of regional output show total income in current dollars for Ontario growing from 175 million in 1871 to 313.8 million by 1891 for nominal growth in total output of about 4 percent a year. The Green-Urquhart numbers show annual growth in nominal GDP of about 3.5 percent a year over the same period.

In terms of its monetary environment, Canada was a part of the international gold standard having gold coins as legal tender with C$1 = US$1. As such, Canada experienced the cycles of price fluctuations that characterized the gold standard of that period. In the 1880s and early 1890s prices fell and from the mid-1890s – reflecting world-wide gold discoveries and production – prices rose. Using the Urquhart (1993) deflator, the price level in 1892 and 1902 were identical; Dick and Floyd (1992) report prices 6% higher in 1902 than in 1892.

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[2] For comprehensive economic histories of Ontario, see Drummond (1987) and McCalla (1993).
[3] In 1871, 22 percent of Ontario's population was urban whereas by 1901 the percent share urban had risen to 43 percent. See Drummond (1987:412).
[4] See Green and Urquhart (1987)

The banking system in late 19th century Canada was in many ways similar to that of today. A small number of branching banks were large relative to the size of the economy. Many of the banks had been established prior to Confederation but the federal government acted quickly to homogenize the rules for banking. The Bank Act of 1871 renewed charters for all the banks with a pre-existing provincial charter and set a common term of 10 years. The Act continued many of the features of the provincial acts: banks were required to have a minimum paid-in capital; they were permitted to issue bank notes which were redeemable on demand in either gold coins or (government issued) Dominion notes; bank notes had to have a value of $4 or higher[5];   loans were limited to the discounting of 'real bills' – such as warehouse receipts. In 1892 there were 18 banks that had branches in Ontario, a total of 231 branches. By 1902 the number of branches had risen to 320 (see Maps) although the number of banks had not increased.

The growth of the banking system relative to the Canadian economy is suggested by Figure 1 which shows the ratio of bank assets to GDP. While the change in the growth path of the economy is usually dated in 1896, the banking system which seemed static from 1871 to 1890 appears to grow steadily from 1890 to 1907.

As shown in Figure 2, the role of bank notes on bank balance sheets declined secularly from 1870 to 1910, declining from about a third of the monetary liabilities of the banking system to 10%. Over the decade between 1892 and 1902 the 'notes to deposits' ratio fell from 24% to 16%.   The probate micro-data show that the comparable 'notes to deposits' ratio between 1892 and 1902 was lower than the aggregate number but also fell, from 14% to 5%.

Figure 2 also shows that the decline in the share of bank notes was in Canada was comparable with that in the US. The US share of notes is lower throughout the period, but this most likely reflects the more significant role of savings banks in the US than in Canada. In the US the savings banks competed aggressively to hold savings accounts while in Canada the chartered banks dominated both the savings and chequing account business lines. The share of bank notes in the UK is considerably less than in either the US or the UK, but this may reflect the much greater share of (gold) coin in the 'currency in circulation' in that country.

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[5] In 2011 dollars (CPI based) $4 would be roughly $100; skilled wages in Toronto in 1884 for carpenter were $1.25 per day and for a blacksmith 85 cents per day (Source: Inwood & Irwin, Table B3, 2002); A building trades laborer in Toronto in 1901 earned 23 cents an hour while a carpenter earned 25 cents per hour. (Source: Historical Statistics of Canada, 1965, D48-51).   Dominion notes were either for amounts less than $4 or for very large amounts (known as 'large legals') that were used for bank reserves and interbank settlements.

Data Overview

The micro-data comprise of 7,156 census-linked probated decedents from the counties and districts of Ontario, Canada for the years 1892 (3,515) and 1902 (3,641) constructed from the probate records of the county surrogate courts and the 1891 and 1901 Census of Canada.[6] As an institutional process, probate transferred property from the dead to the living making the inventory and valuation of property of key importance. The executor of the estate (or administrator in intestate cases) conducted the inventory[7] that legally was conducted in response to a request by a legatee or creditor but in practice was done voluntarily (Howell 1880: 325-326).[8]

The use of probate data brings great strengths but acknowledged challenges. On the one hand, the probate data mainly reflects individuals of higher socio-economic status at the end of their life span. On the other hand, the detail of the wealth and financial data with links to census socio-economic characteristics is not matched by any other nineteenth century source and offers a potentially useful perspective on financial intermediation and economic development.

The inventory provided wealth estimates grouped into sixteen categories[9] allowing for separate estimates of real estate, financial assets and personal property and most crucial for the purposes of this paper an estimate of the deceased's cash on hand (or currency and notes C) and cash in bank (or deposits D). This allows us to construct two individual level monetary variables: a cash to money ratio defined as the ratio of currency to the sum of currency and bank deposits i.e., $C/(C+D)$ and a money to wealth ratio defined as the ratio of currency plus deposits to wealth as a share of wealth i.e., $(C+D)/wealth$. We are also particularly interested in whether money holding behaviour differs between rural and urban areas and identified a decedent as urban if they lived in a city town or village.

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[6] Sources for the data set were: (1) Public Archives of Ontario, Surrogate Court Wills, 1892, 1902 and (2) Public Archives of Canada, Census of Canada, 1891,1901 Manuscripts. For details on the construction of the census-linked data as well as a discussion of potential biases see Di Matteo (1997) and Di Matteo (2008).

[7] Intestates are decedents without a will.

[8] According to Howell's (1880: 325-326) *Probate, Administration and Guardianship* "The inventory should contain a statement of all the goods, chattels, wares and merchandize, as well moveable as not moveable, which were of the person deceased at the time of his death within the jurisdiction of the court. A proper inventory should enumerate every item of which the personal estate consisted, and should specify the value of each particular. But unless by order of court, or in obedience to a citation, an inventory does not set forth the goods and chattels in detail." Real estate was usually recorded net of any mortgages outstanding so that the wealth figure used in this paper is a measure of net wealth. See also Howell (1895).

[9] The inventory categories were:(1) Household goods and furniture, (2) Farm implements, (3) Stock in trade, (4) Horses, (5) Cattle, (6) Sheep and Swine, (7) Book Debts and Promissory Notes, (8) Moneys secured by mortgage, (9) Life Insurance, (10) Bank stocks and other shares, (11) Securities, (12) Cash on hand, (13) Cash in bank (14) Farm produce, (15) Real estate, (16) Other personal property. Items (7) to (13) constitute financial assets.

In addition, Scobie's Directory was used to obtain information on the bank branches in each Ontario county in the years 1891 and 1901 and this was used to construct variables for whether or not a bank branch was located in a specific urban center (city, town or village) or a rural township in the years 1891 (Bank1891) and 1901 (Bank1901). Such a variable provides an additional indicator of financial development over time by registering if new bank branches are coming into being. The bank branch variables are useful as they indicate an effect of growing financial intermediation on the cash to money ratio and the money to wealth ratio.

The variables available in this data set are set out in Appendix 1 and some summary statistics are presented in Table 1. Of particular interest we see that the proportion of decedents with some cash remains constant (at 27%) across the two years while the proportion holding a bank account rises from 35% to 52%. Average cash holding (conditional on holding some cash) declined slightly and median cash holding declined significantly between 1892 and 1902. Figure 3 is a histogram of cash holding which shows more clearly the rise in the proportion of decedents holding very little (<$20) cash.[10]

While the proportion of decedents reporting holding a bank deposit rises between 1892 and 1902 the amount of the deposit (whether mean or median) changes relatively little. Figure 3 reports the distribution of deposits (again conditional on positive holdings) and shows that the changes are not concentrated in any one part of the distribution.

Multivariate analysis – what explains who held money?

We analyze the changes in money holdings by looking separately at holdings of cash and holdings of bank deposits. In each case we examine the factors that make it more probable that positive holdings are observed and then at the determinants of the amount of that holding. Initial analysis of the data in all four cases led us to reject the hypothesis that the models were different across the two years of data. We therefore estimated a single model, but included a dummy variable for the year 1902 which we interacted with the three variables that we were most interested in: wealth, urbanization and the existence of at least one bank branch.

We estimate the following equation where C represents Cash holdings or Deposit money holdings.

$$Prob\ (C_i > 0) = f(1902, lnwealth, lnwealth02, urban, urban02, branch, branch02, controls)$$

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[10] The histogram reports only holdings up to $600 as the tail of the distribution is very long. This covers 92% of the cash holders in 1892 and 95% in 1902. The maximum holdings were $13,085 in 1892 and $6,000 in 1902.

'1902' is a dummy variable with a value of one in 1902; 'urban' is a dummy variable equal to one if the decedent was reported to live in a village town or city; 'branch' is a dummy variable equal to one if there was a at least one branch of a bank in the location where the decedent lived. We controlled for demographic variables, birthplace, occupation, marital status, religion, the number of children and gender.

Column (1) of Table 2 reports the marginal effects from a probit estimate of the probability of observing positive cash holdings. The table reports a regression that excludes control variables that were insignificant, however, including all controls did not change the results in any qualitative way. We used the log of wealth as a covariate and the coefficient indicates that at the mean wealth level ($5,148) a 1% increase in wealth raised the probability of holding cash by 8%.[11] The coefficient on urbanization is positive but insignificant in 1892, but the interacted variable is significantly negative: In 1902 urban households were (ceteris paribus) less likely to hold cash than rural households. The existence of a bank branch nearby was not a (statistically significant) determinant of whether individuals held cash. The coefficient on the dummy variable for 1902 is not significant

Turning to the determinants of the probability of holding money in the bank, we report the results of a similar estimation in column (2) of Table 2. Again, wealth is clearly an important determinant of deposit holdings, and equally so in 1892 as 1902. The dummy variable for having a bank branch is also significant, indicating that even controlling for living in an urban area in 1892 you were more likely to have money in the bank if there was a local bank branch. The interactive term for having a local branch is negative though not significant, suggesting that the 'benefit' of having a local bank branch had gone by 1902.

The most striking result is that despite the fact that we have many significant covariates, the dummy variable for 1902 is statistically significant and economically large. The summary statistics reported that the proportion of the population that had a bank account in 1902 was 52%, rather than 35% in 1892. The marginal effect of the dummy variable is 0.182 – the probability of holding money in the bank increased by 18 percent as the result of time alone.

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[11] The sample for estimation excluded the top and bottom 1% of wealth holders (wealth less than $71 and greater than $70,371 respectively).

Multivariate analysis – what explains how much money was held?

We turn now to analyzing the determinants of the amount of cash held, amongst the 27% of the sample that reported positive cash holdings. Again, the same specification (reported in Table 3 column 1) captured the effect of the majority of the covariates in both years so we proceeded with a single regression model and interacted a dummy variable for 1902 with the key variables.[12] Essentially the only significant determinant of cash holding was wealth which was positive and significant (the coefficient indicating that a $1 increase in wealth increased cash holdings by 1.5c). Urbanization, religion, sex, age, ethnic origin, literacy and religion were all insignificant in determining the amount of cash held. The coefficient on '1902' was negative and insignificant

The amount of money held on deposit was far more predictable – suggested by the adjusted R^2 of 0.177 rather than 0.07 in the previous regression (see col. 1 Table3). The dummy variable for 1902 is not significant and neither are the variables interacted with it – perhaps unsurprising given the small change in the unconditional mean of deposit holdings amongst those with positive holdings. Having a bank branch had a negative (but insignificant) effect on the amount of money held in the bank (recall this is conditional on having some money in the bank and also controlling for urbanization). Urbanization is significantly positive (insignificantly less so in 1902). Again the primary determinant of money holdings is wealth, with a $1,000 increase in wealth leading to a $73 increase in money in the bank.

Interpretation

Our initial question was whether the micro data can help us to determine the factors that led to the observed aggregate increase in the amount of bank deposits and the decline in the ratio of bank notes to deposits. The answer is that it does, but "partially".

The data show that the increase in holdings of bank liabilities occurred more at the extensive than the intensive margin. In 1892, roughly a third of Ontario decedents held bank accounts while by 1902 the majority did so. Variables in the model cannot fully explain this increase. Demographic variables and the existence of a local bank branch all affected the probability of holding a bank account but the coefficients are not large and the levels of those variables did not change enough to account for the

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[12] The regression was weighted using the inverse of the age-sex-specific mortality rate assigned using the life tables constructed by Bourbeau and Legare (1982) for Canada in order that younger individuals receive a heavier weight in the regression given the large proportion of individuals in the data-set over age 50. When we did not weight the regression urbanization (and children) were significant variables. In addition, the top 1% of wealth holders were excluded from the analysis. The table reports the results of a regression in which significant control variables only were included. Results from regressions with all the control variables are very similar.

change in aggregate holdings of deposits. Indeed the only economically large effect was the dummy variable for 1902 showing that the determinant of the change in the use of banks was not a factor that varied at the individual level. Turning to the intensive margin we found that the model explained the determinants of the amount of deposits relatively well, and the dummy variable for 1902 was insignificant.

Conclusion

From 1890 to 1906, the Canadian banking system expanded dramatically, with bank assets rising from 40% of GDP to 60%, during a period when GDP itself grew rapidly. This expansion is partly reflected in the micro-data particularly in the proportion of decedents reporting a bank account between 1892 and 1902. That expansion had to occur on both sides of the balance sheet, liabilities with assets. The sources of this growth are not understood, for example, it is not known if the demand for savings vehicles or a medium of exchange flooded the banks with funds which they then managed to loan out, or the growing economy needed investment funds which the banks aggressively sought out. One way to evaluate the competing factors would be to look at interest rates, which would fall in the former case and rise in the latter. While there is some evidence of a rise in interest rates, the Canadian interest rate data are notoriously poor and the lack of a Canadian money market means that this avenue is unlikely to be fruitful.

In this paper we have analyzed micro-data on the money holdings of Ontario decedents in 1892 and 1902 to learn how individual factors may have influenced the holding of bank liabilities.[13] We find that individual characteristics such as wealth holding, urban location and certain demographic variables, were important determinants of the probability of having a bank deposit and of the amount of that deposit, but that these variables cannot explain the change between 1892 and 1902. Moreover, the coefficient for 1902 is statistically significant and economically large suggesting that an excluded but time related factor is important in accounting for the expansion in terms of the probability of having a bank deposit but not its size. This leads us to conclude that the important change occurred at the macro level. Candidate explanations would include general technological improvements in transportation and communications systems that lowered costs and facilitated expansion[14] or the existence of network effects for the use of chequing accounts.

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[13] The Ontario population grew significantly over this decade so it is not the case that Canadian growth happened outside Ontario.

[14] By way of comparison, in 1861 the British government established a system of national post-office savings banks. The number of accounts grew from 0.320 millions in 1862 to 4,827 millions in 1890 and reached 8.440 millions by

	Table 1	
	Summary statistics	
	1892	1902
	n=3515	n=3641
Proportion male	77%	70%
Proportion urban	42%	46%
Proportion married	61%	58%
Proportion widow/widower	28%	28%
Average age	61.2	61.7
Average no. Children	3.3	2.8
Average wealth	$ 7,427	$ 6,334
Proportion with cash	27%	27%
Proportion with cash in bank	35%	52%
Proportion with mortgages (assets)	22%	21%
Median (mean) cash on hand	0 ($71)	0 ($40)
Median (mean) cash in bank	0 ($515)	$25 ($731)
Conditional on asset holding		
Median (mean) cash on hand	$60 ($262)	$50 ($150)
Median (mean) cash in bank	$412 ($1,466)	$479 ($1,414)
Median (mean) wealth	$3,009 ($7,427)	$2,750 ($6,334)

1900. Until the 1920s, transactions were still processed by hand and large scale mechanization was not achieved using card based records and book keeping machines until the period 1926-1930. However, the cost per transaction fell dramatically between 1880 and 1910 –from 9.79 pence to about 5 pence - despite the labour intensive technology. Transactions costs were reduced by occasional organizational changes and innovations such as minimum deposit amounts. Another big saving in data processing costs came from the employment of women, boys and girls. See Campbell-Kelly (1998).

	(1) Prob(Cash)		(2) Prob(Deposits)	
	dF/dx	p-value	dF/dx	p-value
1902 (d)	0.021	0.777	0.182*	0.019
Ln(Wealth)	0.0794***	0.000	0.0730***	0.000
Ln(wealth)*1902	0.000	0.966	0.000	0.966
Urban (d)	0.004	0.879	0.053	0.069
Urban*1902 (d)	-0.0632*	0.045	-0.005	0.902
Branch (d)	-0.024	0.352	0.0914**	0.002
Branch*1902 (d)	0.008	0.837	-0.056	0.163
Sex (m=1) (d)	0.0530***	0.000	-0.182***	0.000
Age	0.00783***	0.000	0.002	0.459
Age squared	-.000057**	0.002	0.000	0.636
Children	-.00924***	0.000	-0.00998***	0.000
Single (d)	0.107***	0.000	0.152***	0.000
Widow/er (d)	0.103***	0.000		
England (d)			0.0711***	0.000
Scotland (d)			0.0602**	0.002
occ2nf (d)			0.0652**	0.009
occ1 (d)			0.0832***	0.000
_cons				
Pseudo-R squared	0.0589		0.0817	
N	7016		7016	

Table 2

Trimmed sample

(d) for discrete change of dummy variable from 0 to 1

* p<0.05, ** p<0.01, *** p<0.001

Table 3

	(1)		(2)	
	Cash		Deposits	
	Coef.	p-value	Coef.	p-value
1902	-42.39	0.214	103.2	0.268
Wealth	0.0155***	4.56E-17	0.0716***	1.26E-48
Wealth*1902	-0.0016	0.52	0.00325	0.597
Urban	14.88	0.796	285.8*	0.0419
Urban*1902	30.39	0.689	-123.3	0.491
Branch	22.24	0.714	-172.3	0.207
Branch*1902	-25.55	0.75	-10.27	0.954
Sex (m=1)	-19.97	0.506	-105.8	0.0726
Age	-10.26*	0.0185	-14.19	0.134
Age squared	0.0923*	0.0319	0.273**	0.00365
Catholic			267.7**	0.00171
Single			271.6***	0.000105
Constant	361.9***	0.000916	271.6	0.27
Adjusted R squared	0.0692		0.177	
N	1900		3047	
Trimmed sample; Analytic weights				
***** p<0.05, ** p<0.01, *** p<0.001				

Figure 1: Chartered bank assets: GDP, 1871-1913
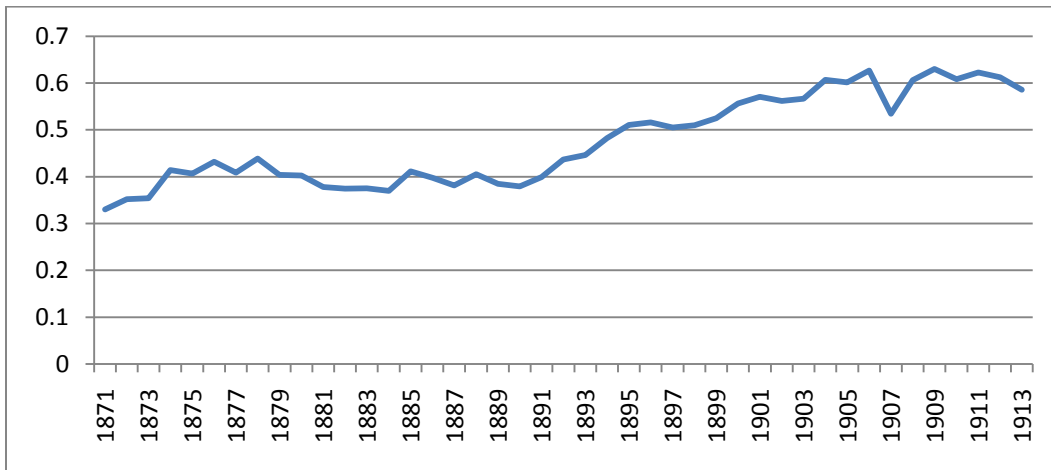
Sources: Urquhart 1993; Curtis 1931.

Figure 2: Bank Notes/ Bank deposits
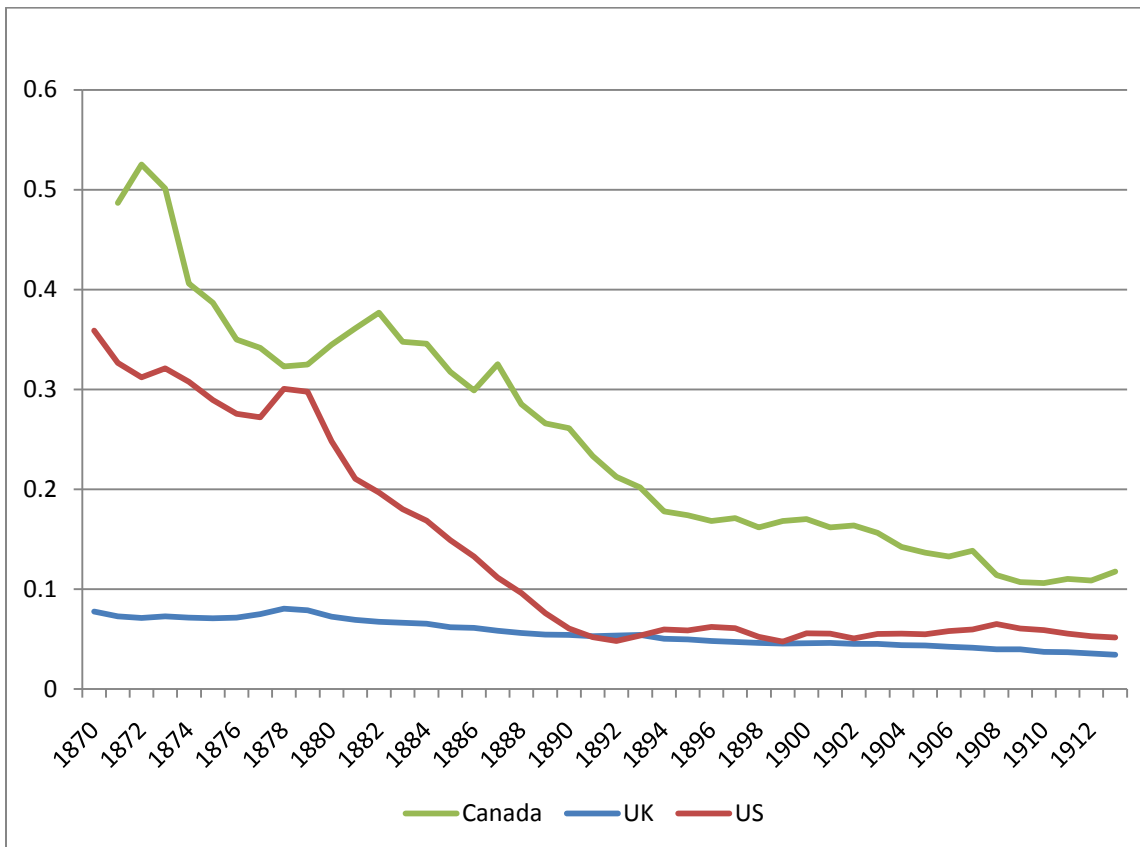
Sources: Metcalf, Redish Shearer (1990); Friedman and Schwartz (1963); Capie and Webber (1985).

Figure 3 Histogram of cash holding (decedents holding cash - excludes top 5-8%)
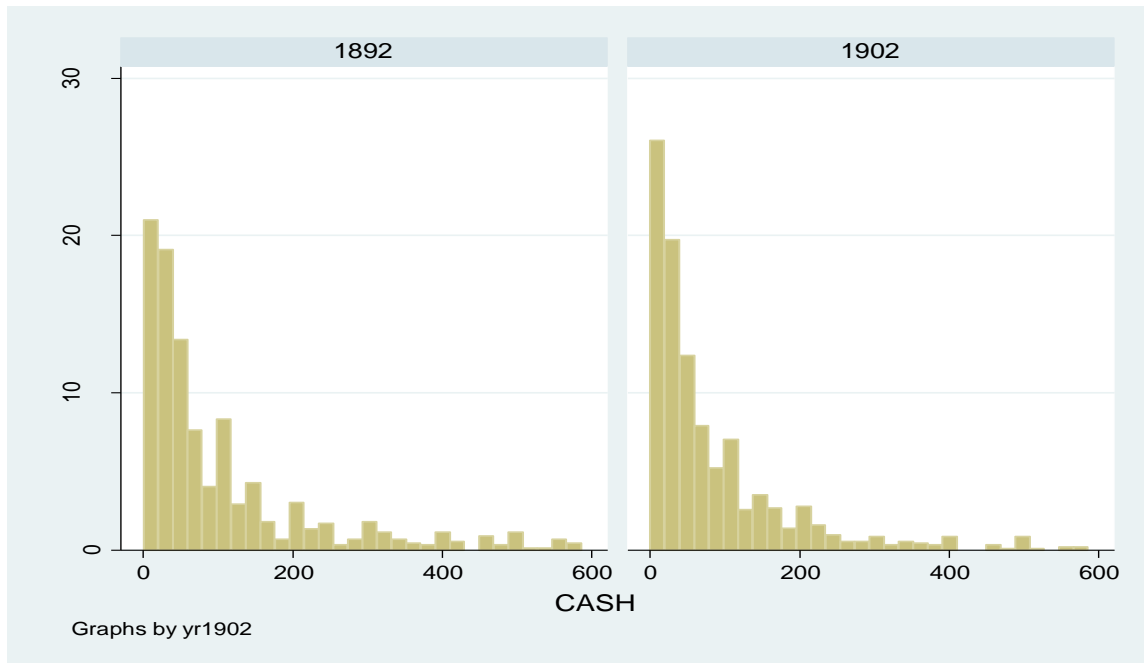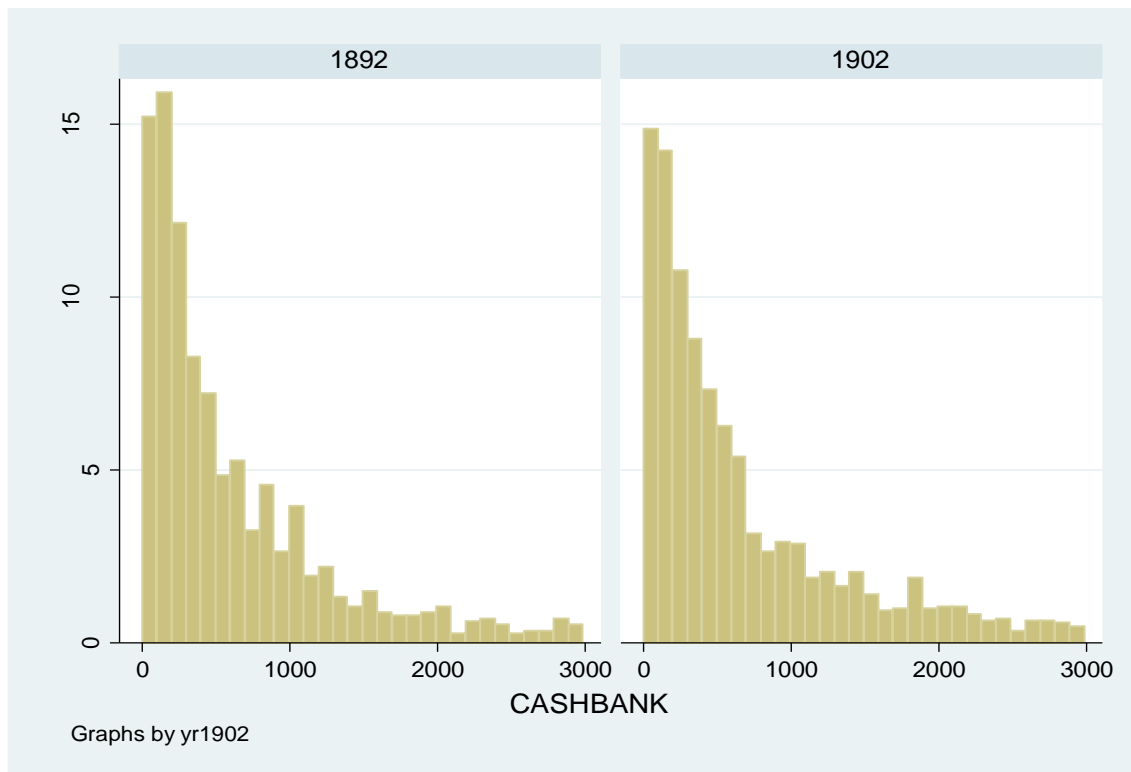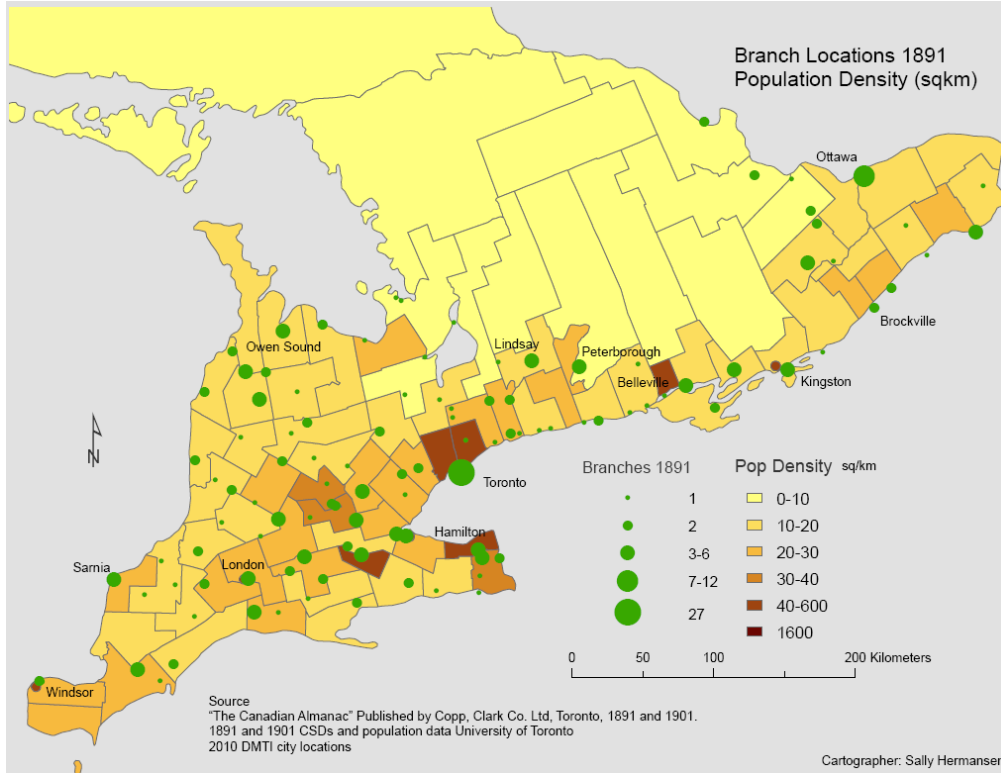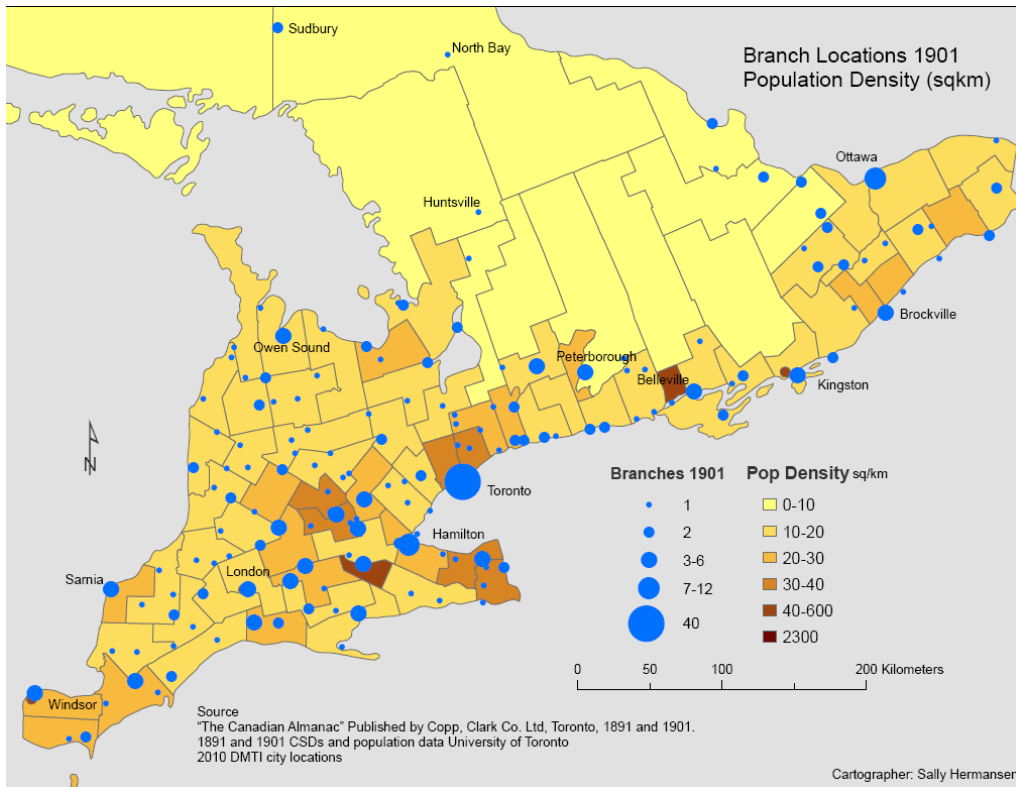

Graphs by yr1902

Figure 4 Histogram of deposit holding (decedents holding deposits - excludes top 8-10%)

Graphs by yr1902

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Map of (Southern) Ontario with bank branches - 1891

Branch Locations 1891
Population Density (sqkm)

Ottawa

Brockville

Owen Sound
Lindsay
Peterborough
Belleville
Kingston

Toronto
Hamilton

Sarnia
London

Windsor

Branches 1891

•	1
•	2
●	3-6
●	7-12
●	27

Pop Density sq/km

☐	0-10
☐	10-20
☐	20-30
☐	30-40
☐	40-600
☐	1600

0   50   100   200 Kilometers

Source
"The Canadian Almanac" Published by Copp, Clark Co. Ltd, Toronto, 1891 and 1901.
1891 and 1901 CSDs and population data University of Toronto
2010 DMTI city locations

Cartographer: Sally Hermansen

Map of (Southern) Ontario with bank branches - 1901

Sudbury
North Bay

Branch Locations 1901
Population Density (sqkm)

Ottawa

Huntsville

Brockville

Owen Sound
Peterborough
Belleville
Kingston

Toronto
Hamilton

Sarnia
London

Windsor

Branches 1901

•	1
•	2
●	3-6
●	7-12
●	40

Pop Density sq/km

☐	0-10
☐	10-20
☐	20-30
☐	30-40
☐	40-600
☐	2300

0   50   100   200 Kilometers

Source
"The Canadian Almanac" Published by Copp, Clark Co. Ltd, Toronto, 1891 and 1901.
1891 and 1901 CSDs and population data University of Toronto
2010 DMTI city locations

Cartographer: Sally Hermansen

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Appendix 1: Variables

wealth	Value of total wealth in dollars.
cash	Value of cash/notes on hand.
cash in bank	Value of cash in bank deposits.
C/(C+D)	Ratio of notes to notes plus deposits.
(C+D)/wealth	Ratio of notes plus deposits to total wealth.
Bank1891	1 if location had a bank branch in 1891, 0 otherwise.
Bank1901	1 if location had a bank branch in 1901, 0 otherwise.
northern[a]	1 if decedent probated in Northern Ontario, 0 otherwise.
western	1 if decedent probated in Western Ontario, 0 otherwise.
eastern	1 if decedent probated in Eastern Ontario, 0 otherwise.
huronia	1 if decedent probated in Huronia, 0 otherwise.
golden horseshoe	1 if decedent probated in golden horseshoe, 0 otherwise.
sex	1 if decedent male, 0 otherwise
age	Age at death of decedent in years,
agesq	Age squared.
urb[b]	1 if decedent an urban resident, 0 otherwise.
childn	Number of living children reported by decedent.
canadian	1 if decedent born in Canada (including Newfoundland), 0 otherwise
english	1 if decedent born in England & Wales, 0 otherwise
irish	1 if decedent born in Ireland, 0 otherwise.
scot	1 if decedent born in Scotland, 0 otherwise.
usa	1 if decedent born in United States, 0 otherwise.
othbrth	1 if decedent born anywhere else, 0 otherwise.
married	1 if decedent married, 0 otherwise.
marspd	1 if decedent married but spouse deceased, 0 otherwise.
single	1 if decedent unmarried, 0 otherwise.
anglican	1 if Anglican, 0 otherwise.
catholic	1 if Roman Catholic, 0 otherwise.
presb	1 if Presbyterian, 0 otherwise.
baptist	1 if Baptist, 0 otherwise.
meth	1 if Methodist, 0 otherwise.
othrel	1 if any other religion, 0 otherwise.
literate	1 if decedent could read and write, 0 otherwise.
q1	1 if died in first quarter, 0 otherwise.
q2	1 if died in second quarter, 0 otherwise.
q3	1 if died in third quarter, 0 otherwise.
q4	1 if died in fourth quarter, 0 otherwise.
occ1	1 if Katz Occupational Status Category 1, 0 otherwise.
occ2f	1 if Katz Occupational Status Category 2 & a farmer, 0 otherwise.
occ2nf	1 if Katz Occupational Status Category 2 & not a farmer, 0 otherwise.
occ3	1 if Katz Occupational Status Category 3, 0 otherwise.
occ4	1 if Katz Occupational Status Category 4, 0 otherwise.
occ5	1 if Katz Occupational Status Category 5, 0 otherwise.
occ6	1 if Katz Occupational Status Category 6, 0 otherwise.

Notes:

a   The counties in each regional dummy are as follows: NORTHERN- Renfrew, Districts of Muskoka and Parry Sound, Sudbury-Nipissing, Algoma, Manitoulin, Kenora and Rainy River and Thunder Bay; GOLDEN HORSESHOE- Wentworth, Lincoln, Welland, Peel, Halton, York; WESTERN- Haldimand, Norfolk, Elgin, Kent, Essex, Lambton, Middlesex, Oxford, Brant; HURONIA-Waterloo, Perth, Huron, Wellington, Bruce, Grey, Simcoe, Dufferin; EASTERN-Ontario, Victoria and Haliburton, Durham and Northumberland, Peterborough, Hastings, Prince Edward Lennox and Addington, Frontenac, Leeds-Grenville, Dundas-Glengarry-Stormont, Prescott and Russell, Carleton, Lanark.

b   Urban is defined as a resident of a city, town or village.

c   These are socio-economic occupational status categories with OCC1 as the highest, OCC5 as the lowest and OCC6 as an unclassifiable (See Katz, 1975, 343-348). Category OCC1, for example contains lawyers, merchants, doctors, etc...Categories OCC2F includes farmers while OCC2NF contains minor government officials and small businessmen. Category OCC3 includes skilled tradesmen such as blacksmiths while OCC4 contains barbers and restaurant workers. Category OCC5 is mainly unskilled labour while OCC6 is unclassifiable containing mainly women.