Banks, Credit Markets and Early American Development—
A Case Study of Entry and Competition

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Abstract

New England experienced a significant economic transformation after the American Revolution. It is widely believed that financial markets and the spread of banks were essential in launching American economic development. However, little is known about the precise role of banks and credit markets in the process. This paper exploits a unique dataset from bank and court records of Plymouth County, Massachusetts. My results show that the first bank at its early stage was in fact more selective in lending than the pre-existing personal credit market. Thus the mere introduction of a single bank did not broaden access to credit. Following liberalization of chartering policy in the 1820s, however, free entry and competition drove banks to extend credit to farmers and artisans.

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1. Introduction

Financial markets have long been considered crucial for economic growth. Empirical research such as King and Levine (1993) and Levine and Zervos (1998) establishes a positive relationship between credit market development and economic growth. The development of United States seems congruent with this view: Sylla (2002) argues that a sophisticated banking system emerged during the 1790s, and Rousseaux and Sylla (2005) suggest that financial development drove economic progress in the nineteenth century. Upon closer examination, however, the underpinnings of this interpretation are not yet clear. In the early national period, state legislatures tightly controlled the number of bank charters. States thus had an incentive to protect local monopoly rents by restricting entry. Because little is known about the behavior and practices of the first banks, one cannot be sure whether they really advanced the overall quality of the credit market, relative to the personal credit market that long pre-dated American independence.

This paper investigates the impact of early banks using a newly developed dataset drawn from court and bank discount records of Plymouth County, Massachusetts. These detailed records allow one to compare bank lending practices before and after a major change in entry policy: before 1828, many banks remained local monopolies; however, the democratic atmosphere of the Jacksonian era fostered freer entry. The resulting change in the competitive environment provides an opportunity for examining the effect of competition on bank credit access for small farmers and artisans. Beyond narrow economic issues, the results bear on broader hypotheses about the linkage between political democracy and economic development.

Among all regions in nineteenth century America, New England was the most remarkable case of economic development. On the eve of the Revolution New England had the lowest per capita wealth among American colonies. Yet by 1840 its income per capita was 30% higher than the South.[1] Economic development in early 19th century New England was not merely the result of exogenous changes in industrial technology, but represented a much broader transformation of institutions and behavior.[2]

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[1] Rothenberg (2000)

[2] In addition to industrialization, New England also experienced rapid productivity growth in agriculture, as in Rothenberg (1992).

It is widely believed that the path for capital market development is to move away from personal towards impersonal lending. As individuals are open to a broader set of potential lenders, they are able to pursue a wider range of opportunities. Rothenberg (1992) shows that local credit markets existed in the colonial era, long before the first banks were established in the United States. The multiple, interwoven credit relationships formed intricate networks. Over time these networks expanded both in depth and in width—the numbers of transactions increased and the relationships extended farther away. Moreover, interest charging also became more pervasive—a sign of market-type behavior. These findings suggest that there was no lack of a credit market. The personal credit network, centered around local merchants and moneylenders, was prevalent long before the Revolutionary war. Small farmers and artisans borrowed extensively from merchants and among themselves.

After the Revolution, banks began to surface. However, the emergence of early banks may not signify progress towards impersonal exchange. Previous literature has established the personal nature of early banking activities. Lamoreaux (1994) found that 19th century New England banks took advantage of kinship ties to overcome the problem of asymmetric information. Big businesses and industrialists chartered banks in order to lend to themselves. Maurer and Haber (2004) examine related lending in Mexico around the turn of the 20th century. They discovered that the recipient of related loans performed at least as well as their competitors. In both cases, related lending was a means of overcoming the poor quality of information.

Early nineteenth century saw the co-existence of banks and personal credit markets. However, we know very little about the interaction between the two. This is especially interesting in New England, as Lamoreaux (1994) shows that the insider lending was prevalent in this region. Thus the insider-lending banks and their impact on farmers and artisans are intriguing. Combining bank discount records, court records, and federal censuses of 1820, 1840, 1850, I am able to identify the occupations of borrowers from the bank and track its distribution over time. The information enables us to investigate the interaction between the bank and the personal market. Subsequently, the advent of *de facto* free banking in Massachusetts as of the 1820s also allows me to analyze the impact of entry on credit access to groups other than wealthy merchants.

My results confirm that long before the appearance of Plymouth Bank in 1803, a personal credit market existed in Plymouth County. Farmers and artisans relied heavily on personal borrowing. Between 1803 and 1833, the Bank used existing personal networks in extending credit; its initial stockholders were deeply involved in the local credit market long before the bank. Moreover, much of the bank's loans went to these stockholders. Occupation-wise, the bank extended credit mostly to merchants. Other major groups, such as farmers and artisans, still borrowed in the personal market. In general the bank served a very select group of clients, maintaining ongoing relationships with them. This forms a sharp contrast to the personal credit market, where farmers, and later artisans, were the major borrowers. Geographically, the bank lent mostly to residents of the county; within the county, its borrowers spread out across different townships. Thus the bank was indeed a local monopoly.

Thus in its first thirty years, the bank was the credit source for well-established merchants and the wealthy. Its discount practice was similar to the insider-lending story of Lamoreaux (1994), but without the links to dynamic industrial firms. By the 1840's, this pattern had changed dramatically. Artisans became the most frequent borrowers of the bank. The gap between lending profiles of the bank and that of the personal credit markets narrowed. Even farmers, a group in relative decline, received more bank credit than in the monopoly period. What caused this change? My contention is that the primary factor was intensified competition between banks. In Plymouth County, a new entrant located in the same town was able to take away part of the clientele of Plymouth Bank. The free-entry policy of the Jacksonian Era prompted the expansion of the market, as the force of competition drove banks to reach out for new potential borrowers. The rise of banking competition in Plymouth County was a reflection of the anti-monopoly sentiment in Jacksonian era. Thus political democratization, by opening entry and thus fostering competition, also enhanced economic democratization by broadening access to credit.

2. Institutional Context of Early Banks: the Case of Massachusetts

In the colonial period, merchants usually relied on British bankers for credit. Local stores and merchants engaged in both importing and exporting. The local farmers purchased imported goods on credit from the merchants. The merchants, in turn, imported the goods

on credit from British merchant. Thus local merchants were intermediaries of credit. The local buyers of goods were the ultimate debtors, and the London merchants were the ultimate creditors. Wright (2001) argues that the revolutionary war changed this credit structure. The war interrupted credit flows, at least temporarily, into the United States. This changed the role of American merchants in the credit market. They were no longer just the pure intermediaries; in order to conduct business, they had to seek new financing sources.

Merchants founded most early banks. Individual merchants, no matter how successful, could only extend a limited amount of credit without their own credit source. In the colonial period, British banker provided the credit services. British mercantile policy prohibited colonial America from forming its own banks. After the Revolution, banks provided a new profit opportunity. The first bank chartered in Massachusetts was the Massachusetts Bank in 1784, owned by the Commonwealth. There was no other bank until 1792. In the 20 years between 1784 and 1804, the number of banks in Massachusetts increased only slowly. In 1804, however, it almost doubled from 7 to 13. Figure 1 plots the number of banks between 1784 and 1850. Over this period, despite occasional stagnation, the number of banks increased rapidly in Massachusetts.

In the early 19th century, New England and the Mid-Atlantic region were the first to open up to banking. Figure 1 also compares the numbers of banks among Massachusetts, Pennsylvania and New York. It shows that before 1840, Massachusetts had the largest number of banks.[3] After the free banking act of 1838, New York outgrew Massachusetts to become the state with most banks. Even so, Massachusetts was still among the states with highest bank credit per capita, second only to Rhode Island.[4]

Despite their rapid expansion, banks did not spread out evenly over Massachusetts. Within the state, number of banks varied across counties. Table 1 lists the number of banks in each county between 1790 and 1850. Suffolk County and Essex County had multiple banks since the 1790's—thanks to the two cities within them. Both Boston of Suffolk County and Salem of Essex County had multiple banks as of 1820, and the trend continued. By 1830, Boston had 17 banks and Salem 6. This concentration of

[3] Pennsylvania took a short lead in the number of banks after the "Omnibus Act" of 1814. However, the number of banks stayed roughly the same for the next 20 years.
[4] Bodenhorn (2000)

banks was not that common among Massachusetts's towns and cities. In the same year, only 7 townships had multiple banks.[5] Overall, the growth of banks at the state level penetrated into towns gradually; it was not uncommon for a county to have only one bank throughout the 1820's.

2.1 The Banking Business and Regulation in the Early 19th Century

In the first half of 19th century, two sets of laws governed banking operation in Massachusetts: private laws and general laws. The General Court, Massachusetts's legislature, was in charge of both. The former applied to individual banks. Its rules only targeted the specific bank mentioned in the bill, whereas the latter applied to all banks in Massachusetts. The most common private laws on banks were charters, which was a comprehensive set of rules for the bank. In addition, any changes in the charter also required the passing of a special law. Such examples include an increase or decrease in capital stock, extension to pay in capital, renaming the bank, and closing the bank.

General laws applied to every bank in the State, and usually regulated a certain aspect of banking. Despite the distinction between private and general laws, their contents converged over time. Before 1828, all the acts on banks governed a specific aspect of banking, such as bill issuance or returns to the Governor. The charters, as mentioned above, would also incorporate new regulations from the general laws. Both of these kinds of regulation evolved over time, gradually changing the banking practices. However, up until 1828, there was no one complete set of rules that applied to every bank in the Commonwealth.

The first step in establishing a bank was to petition for a charter. The legislature had the right to decide whether to grant a charter or not. After a bank was incorporated, it could begin to raise capital by selling stocks. Stockholders then elected the directors of the bank. The president was in turn elected by and among the directors. The directors also appointed a cashier to handle the daily operations of the bank.

Most of the loans came in the form of discounts. The banks were usually open for discount only once a week. The cashier would gather all the discount applications and submit them to the discount committee. The discount committee then decided whether to

[5] In addition to Boston and Salem, Nantucket had 3 banks, Newburyport, New Bedford, Danvers and Worcester all had two banks.

grant the discount or not. Most discounts fall into two categories: accommodation paper or commercial paper. The former was virtually a direct loan to the promissor of the note. The note itself was similar to a personal IOU. Borrowers presented a note drawn by him and the bank accepted it. The note was the asset of the bank, just like a loan in modern days. The commercial paper, on the other hand, was passed into the holder's hands through a specific commercial transaction, backed by real goods in the trade. The predominant commercial paper was the bill of exchange. When a note or bill of exchange was discounted, the banks issued the bank notes as payment. The "discount" means that the interest was deducted before due. At the interest rate of 6%, a $100, 60-day note would generate $99 from the banks. After the notes were due, the presenter of the discount could either pay up the amount owed or try to renew it.

Throughout the period, several features of bank laws deserve attention. First, the 6% usury law was repealed only in 1867,[6] meaning the usury law was in effect throughout the first half of the 19th century. Second, the Act of 1828 strengthened the control on bank practices in terms of risk and capital adequacy. Third, the requirement to lend to agricultural and manufacturing interest disappeared in 1828. Fourth, despite the relative low threshold for chartering banks, Massachusetts was a latecomer in free-banking laws.[7] The 1851 "free banking" act established a clear set of rules for the entry. Any group of people who met the requirement of the act could start a bank. Moreover, instead of both charter and general statutes, the latter became the only source of banking laws. When Massachusetts officially moved into the era of free banking, *de facto* free banking had long been achieved. Thus some scholars, such as Wallis (2005), argue that the real effect of the free banking act on bank entry was minimal.

2.2 Debt Collection Mechanism

Since colonial times, the Court was the major means of debt collection. In fact, most of the court cases were debt litigations. This pattern started as early as the early 18th

[6] For a more complete discussion of usury law in the United States, see Rockoff (2003)
[7] New York passed its free banking act in 1838.

century.[8] When debtors defaulted, the court would make a judgment and issue a writ. The sheriff would take the writ to the debtor and enforce the judgment by asking the debtor to pay both the judgment and the court cost. Sometime the debtor would not be able to pay back. In this case a few measures could be used. The first one would be debtor's prison.[9] The era under investigation was before permanent bankruptcy law. Thus occasionally, especially in the earlier period, debtors could be confined to jail if they could not repay the debt.

If the debtor had some property, real or personal, the sheriff could seize them as a way to repay the debt.[10] Overall, the law always had some restriction on what could be levied for execution. The bottom line was that the debtors could keep some of his personal belongings in order to survive. The list of property that cannot be seized expanded over time. By 1836, the list included the apparel of the debtor's family, household furniture, fuel, livestock, hay, tools of trade, uniform and fire arms, wherever applicable, and the right of burial. The upshot of such practices meant that a person's property was always implicitly used as collateral when borrowing.

In 1832, the General Court passed a law approving the concept of the chattel mortgage. This means that personal property could be used as a collateral. To some extent, any debt was always backed by real and personal property ex post. However, it only occurs after the default and debt litigation. Mortgage, however, allowed the creditor

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[8] Khan (2005) found that in Maine territory, by the first decade of the 18th century, 90% of the debt cases involved debt litigation.

[9] The law dated back to 1638, and was applied to private credit relationship as early as 1739. The earlier law required that the debtors be imprisoned at their own expenses until all debt was paid off. In late 17th century, the creditors became liable to the jail fees. Generally speaking, over the early 18th century, there were constant policy changes on relief of poor debtors. Despite such oscillations of early 18th century, Massachusetts was moving towards more debtor relief and away from imprisonment. The formal abolishment of debtor's prison in Massachusetts was not due until the middle of the 19th century. Nevertheless, this does not mean that imprisonment was prevalent or even used at all before the abolishment. Even in late 18th century, compared with the number of debt cases, the number of cases involving imprisonment was never really high, and it has declined over the first twenty years of the 19th century. Moreover, the changes in statutes came after the trend in enforcement. That is, in reality, the laws of debtor's prison were not strictly enforced by 1820. For a complete discussion, see Coleman (1974)

[10] In practice, when the property had to be seized, three officials were appointed to determine the value of the property. After paying back the creditor, the remains, if any, would go back to the debtor. The major change came in 1784. The 1784 statutes stated that the property would have to be sold publicly by the court instead. After paying back the debt and deducting the fee to the sheriff, the remainder of the proceeds from the auction would go back to the debtor. A case in 1821 (Sykes vs. Sever) involved the sale of stocks to pay back the debt. The stock was sold and debt cleared within a month. The swift sale and the formalized writ indicate that such procedures were routines

to claim specific property after default without going through the litigation process. In Massachusetts, a chattel mortgage would require registration with the town clerk. The mortgagee must retain the property during the period of mortgage. Potentially, chattel mortgage could improve access to credit for farmers because it offered an opportunity to borrow backed by assets other than land.

The Plymouth Bank was involved in relatively few debt cases in the Plymouth Court Records. There were only 5 cases in the sample of court records between 1803 and 1850 where the Plymouth Bank brought its debtor to court. There is no information on the total amount of personal lending and borrowing in Plymouth County. It is therefore impossible to compare the default rate between bank credit and personal credit. However, the Plymouth Court Records showed that 133 individuals had more than 5 cases as the plaintiff after the bank opened. For example, one of the petitioners to acquiring the charter for the bank, Kilborn Whitman, had 32 cases after 1803. The low number of debt cases again implies that Plymouth Bank was careful in extending credits. This is consistent with the observation that the Bank lent to a very selective group of borrowers.

3. Case Study: Plymouth County, Massachusetts

Despite the fast growing number of banks in the first half of 19th century, banks only gradually penetrated into local economies. Much has been written about banks in urban centers such as Boston, New York and Philadelphia, but we know relatively little about banks' role in a more typical local economy. This paper uses Plymouth County, Massachusetts to analyze the purpose and impacts of early banks.

Plymouth County is located between Norfolk and Barnstable Counties, facing the Cape Cod Bay, with Bristol County to the west. The eastern part of the county, like other eastern counties in Massachusetts, underwent commercialization, with Plymouth being the regional trade center. The west side of the county, especially Middleborough and Bridgewater, was mainly agricultural. Despite being one of the earliest settlements in North America, Plymouth in the early 19th century was in the shadow of the urban center of Boston. Thus, the County as a whole engaged in a variety of economic activities.

Table 2 lists the number of individuals in major sectors of the economy according to the 1820 Federal Census. Suffolk County, which includes Boston, had very little

farming. Its main economic activities were commerce and manufacturing. Barnstable County, which is just south of Plymouth County, engaged primarily in commerce with relatively little other activities. The western Massachusetts counties were primarily agricultural. Thus the industry mix of Plymouth County reflected those of the neighboring counties. The distribution of Plymouth County is almost identical to that of Massachusetts as a whole; thus Plymouth County was by no means an outlier in its economic profiles. This diversity in occupation distribution allows us to examine credit market behavior both within and among different groups. Moreover, there was only one bank in Plymouth County until 1828, which was also common among non-urban areas. Thus Plymouth County offers a unique opportunity in investigating the role of banks in a less urban setting with a variety of economic activities.

3.1 Data Sources

Various records from Plymouth County, Massachusetts provide a rare opportunity to examine various credit market issues in the early 19th century. The main data sources are Plymouth Bank Records and Plymouth Court Records, along with 1820, 1840 and 1850 federal censuses. The detailed data allows a closer look at banks and their impact on the local credit market at the grass-root level.

The first major source of data is the records from Plymouth Bank. These records started at the very beginning of the bank in 1803. The discount records exist for years between 1803 and 1833, and then from 1844 to 1849. Among all records, the discount books provide the most detailed information on the lending practice of bank. Early banks used the approach of discounts as the primary way to extend credits. The presenter brings a note, usually either a promissory note or a bill of exchange, to the bank. The bank then discounts the note and gives the presenter the net amount due in the form of bank notes. The Plymouth Bank was open for discounts once a week between 1804 and 1833. In the same period, all discounts were at 6% interest rate with no exception. This is in accordance with the interest ceiling imposed by the Commonwealth. Most of the discounts were 60-day notes; however, they were due in approximately 56 days, or 8 weeks after the discount. The discount for each note was still calculated for the 60-day period. This small difference adds up to about a month after six renewals. That is, the

interest rate is 6% for 11 months rather than a year. This seemed to be a general practice as it applied to every discount.

On the early discount books, there could be as many as four names for each entry: the promisor, the payee, the second endorser, and the presenter of the note for discount. The format was designed to fit the format of commercial paper. However, accommodation paper also used the same format in the records. The amount presented for discount, the actual amount paid, and whether the debt was paid off was also recorded in the books.

The second source is the Plymouth Court Records; these records documented all court cases from the 17th century to 1859. At the county level, the two courts were Court of General Sessions and the Court of Common Pleas. The former dealt with administrative issues but gradually lost power and was abolished in 1827. The latter dealt with litigations in Common Law. In the records of Court of Common Pleas, an overwhelming majority of cases were debt litigation. A typical records entry includes name and occupation or social status of both parties, amount of debt under dispute, the terms of the loan (interest, due date, and instrument used), the court's judgment, cost of the litigation, and notes on enforcement. The enforcement part states how the debt was paid back, if at all. The debtor may pay back the judgment in part, or they may have to surrender their property to be sold. In earlier periods, the insolvent debtor may also be confined to jail.

The Court Records provides us a glimpse of credit relationships in early periods, though it is obviously a biased sample. In other words, the court cases shows that there existed a credit system long before the emergence of Plymouth Bank. These records may very well be a tip of the iceberg; there may have been a very large personal credit market behind it. The cases in Plymouth Court Records represent only small subset of existing credit relationships.

A third source of the data is the census of 1820, 1840 and 1850. These censuses were mainly used to identify the borrowers' occupations. The 1820 and 1840 censuses were based on households. Under each household head's name, there is information on the occupation of household members. In 1820, the occupations were categorized into agricultural, commercial, or manufacturing. The 1840 census added mining, navigation,

and learned profession to the classification. The 1850 manuscript census provides information on an every individual's age, occupation and property owned.

Despite the missing years in the discount records, these records combined still provide invaluable information. First, much has been written about banks in later years; the topics range from banks role in industrialization to the legal and political aspects of banks. However, we know relatively little about banks in the very beginning of 19th century. Second, one could compare the occupations of borrowers from the banks and those in the personal credit market. The court records also provide an opportunity to add more information to individuals involved with the bank. Moreover, the long stream of records allows one to track the changes in banking business between different periods. Up until 1833, Plymouth Bank was the only bank in the County. Between 1828 and 1837, five other banks in the county acquired state charters; one of them, Old Colony Bank, was located in Plymouth. This offers the possibility of comparing banking practices between a monopolistic bank and a bank facing competition for the first time.

3.2 Occupations and Social Status

In both the court records and the censuses, some form of social class or occupation was recorded. In the court records, the common categories were esquire, gentleman, yeoman, merchant (trader), attorney, cordwainer, and housewright. "Yeoman" appeared in the records most often. The yeomen class referred to freeman with land holdings. The term "yeomen", despite the possibility that some may have other pursuits on the side, in general means farmers. The census data also indicate that farmer was the most common occupation in Plymouth County. Therefore it is no wonder that yeoman appeared often in the court records. Another class of farmers, husbandmen, means farmers without land. The distinction between the two is important when considering credit markets: husbandmen did not have land as implicit collateral in case of default. They had no real property to be seized.

Gentleman and Esquire were honorary titles, given to people with more wealth.[11] Esquire may also mean people affiliated with the legal profession, usually those who

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[11] Main (1965) described the difference in property holding between gentlemen and esquire in late colonial America.

served as a judge or Justice of the Peace.[12] The Esquire class was in general wealthier than yeomen and gentlemen. Esquires could be merchants, large land-owning farmers, or even artisans and professionals. Gentlemen, on the other hand, were another economically better-off class, if not quite as wealthy as Esquires. Once again the Gentlemen class may contain men of many different means. The title of Gentleman was even more loosely conferred than Esquire, indicating again that it may contain a wide range of occupations. Therefore, the honorary titles did not provide detailed information about a man's profession.

Surprisingly, until 1859, the court used titles such as Esquire and Gentleman wherever applicable. There were, however, never really clear criteria on how to become a gentleman, not even in the 18th century England. Wealth was a necessary but by no means a sufficient condition. Education, manner, sensibility, and even appreciation of arts would enhance the chance of acquiring such titles, but it was never for certain.[13] For the purpose of analyzing credit market behavior, this distinction in social classes does provide some rough if not precise information on each individual.

In addition to the yeomen, gentlemen and esquires, there were also other professions that were recorded more precisely. One major class was merchants and traders. Another major category is the learned professions, including physicians and attorneys. These professional in general were also wealthier. The artisans, such as cordwainer, carpenter, housewright, tailor, and tanner, also constituted a significant portion of the population. Note that the category of artisan refers to individuals engaging in small-scale production, as opposed to manufacturer, which belonged to a distinct category.

Since Gentleman and Esquire are honorary titles, it could be difficult to tell their true occupations. To further analyze the occupational composition of borrowers from banks, one needs to know the exact occupations of gentlemen and esquires. Unfortunately no direct evidence for the period prior to 1850 exists, except for the three censuses. Therefore I matched the names of gentlemen and esquires in the court records to the

[12] Koenig, David Thomas Editor's Introduction: A Guide to the Use of the Plymouth Court Records. In Plymouth Court Records.
[13] Hancock, David. Citizens of the World: London merchants and the integration of the British Atlantic Community, 1735-1785, pp. 280-285

occupation in the bank records. In the gentlemen category, 36 out of 54 identified gentlemen were merchants. Similar ratio applies to esquires: 16 out of 23 esquires were merchants. Thus at least for the period around 1840 and 1850, most gentlemen and esquires were merchants.

4. Analysis of Discount Records

4.1 Initial Stockholders

The first step in investigating the relationship between Plymouth Bank and the local credit market is to look at the stockholders' profiles. Plymouth Bank was the only bank in the county at the time it was chartered; interestingly, its stockholders spread out over the county. As Plymouth was the major town in the county, over half of the stockholders resided in Plymouth. It is also worth noting that two merchants from Boston were among the stockholders. Their names also appeared in Plymouth Court Records before 1803, suggesting that they had an ongoing business relationship in the county before the Bank. The discount records showed that they had a few large discounts between 1803 and 1812, and they did not hold any share after 1812, when the bank was re-chartered. On the other hand, these observations do not generalize to all stockholders outside the township of Plymouth. Some of the out-of-town stockholders never appeared in the court records, nor did they engage in any activity with the bank. The occupation composition of these stockholders was also diverse, including farmers, merchants, physician and attorneys. This suggests that there were some pure investors in the bank.

The Court Records also enables us to figure out the occupation of stockholders. Out of the initial 73 stockholders, 63 of them could be identified by their occupation, either from the census or the court records. Table 3 tabulates the occupation of the identified stockholders and the shares under each occupation or social status. The stockholders consisted of mostly merchants, gentlemen and esquires. Among them, merchants constituted a great portion of stockholders. They held more than 55% of the stocks among those identifiable stockholders.

The most interesting observation, however, lies in the involvement of stockholders in personal credit markets. 43 out of 73 initial stockholders were plaintiffs in debt litigation before 1803; among those stockholders, eight were involved in more than

10 cases as plaintiffs. This shows that those stockholders were already deeply involved in the local credit market well before the bank started-- they have lent extensively in the local market. Of all the cases involving the stockholders as plaintiffs, 35% of the defendants were farmers (yeoman). This number, as seen in Table 4, could potentially go up since some gentlemen could be wealthy farmers. Even at the bare minimum of 35%, this still constitute the largest fraction of these cases. On the other hand, only 27 cases before 1803 involved a total of 14 stockholders as defendant. Therefore, most of the stockholders at the beginning of the bank were lenders to the local community. The last column of Table 4 extended the sample court cases to 1804 and 1833. The numbers showed that although there were fewer cases, similar patterns still persist for the distribution of litigations among different occupation groups. The changes in percentage of defendant groups, mostly between artisan and yeoman, are likely to be the result of changes in the economic activity in Plymouth County.

A few "insiders" were frequent lenders in the local credit market. The moderator of the bank, Joshua Thomas, was especially involved in the local credit market. He himself appeared more than 40 times as plaintiff in debt litigations. The first bank clerk, William Goodwin, also appeared in the court records 9 times. Two of the three petitioners for act of incorporation frequented the court for debt litigations.[14]

4.2 Analysis on Discount: Occupation Distribution, 1804-1833

Table 6 gives the distribution of discounts by occupation. As mentioned earlier, it is crucial to make the distinction between new discounts and renewals because if a note was renewed a large number of times, the same discount would appear in the records about every sixty days. Therefore their significance could be inflated. However, whether new discount or renewal, merchants were by far the major debtors to banks between 1804 and 1833. Over 50% of all discounts in the sample were to merchants. If combined with the new discounts to gentlemen and esquires, this number increases to over 85%. This again shows that the bank was serving mainly the economically well-off classes. Moreover, Figure 4 demonstrates the number of discounts by year. The proportion of

[14] Nathaniel Goodwin had 19 cases in the sample; another petitioner, Kilborn Whitman, had 35.

discounting to merchant fluctuates over time, but it remains around 60% and showed no downward trends. The distribution remains stable throughout the period.

Despite being the largest group of borrowers, not just every merchant had access to banks. Between 1804 and 1833, approximately 380 different merchants brought suit in the sample.[15] 93 out of these 380 merchants resided in the town of Plymouth. In the same period, only 32 of these merchants received discounts from the bank. On the other hand, most frequent borrowers from the bank were also frequent lenders in the personal market. Thus the Bank indeed extended credit only to a very selected group of borrowers. Even within the merchant class, the bank still lent very selectively.

It is not surprising that the bank had such ability to differentiate good borrowers from bad ones. The directors of banks were either lawyers or big merchants. They had the social ties and relationships with locals. Either profession would possess a large amount of information about the potential borrowers, either through commercial transactions or litigations. Therefore, as in Wright (2002), banks usually had the ability to evaluate a potential borrower's credit-worthiness.

Table 7 lists the occupation distribution of the two records in the same period. Note that in the period under inspection, very few cases involved any bank, again evidence for the prudent discounting policy. Therefore bank discounts and transactions represented in court cases had very little overlap. The figures indicate that a significant difference between the composition of borrower from the bank and that in the court cases. If no specific group was more likely to bring disputes into court, the data translates into a major distinction in bank credit and personal credit. Namely, farmers and artisans did not have easy access to banks. They usually borrowed on the local credit market. Their presence in the court records shows that they did have demand for credit; however their demand was not met by the Plymouth Bank during this period.

The simple comparison above, however, needs further examination. One may argue that merchants usually engage in frequent and repeated transactions with each other. Hence the court was only one of the possible resorts of conflict resolution. Reputations could have played a key role. Thus a low percentage of merchant defendants does not mean that there was a small number of merchants borrowing from other

[15] The number here is a rough estimate. This is because a lot of cases had multiple plaintiffs.

individuals. It could simply mean that they either had a lower default rate because of the reputation mechanism at play, or there were other means of conflict resolution. Both factors could contribute to the low percentage of merchants as defendants.

In a local economy, farmers and artisans, not just merchants, also had repeated contacts with other potential lenders or borrowers. It was true that merchants had close relationships in business; farmers, however, also maintained close relationships with local merchants since the latter provided them credit and outlets for agricultural output.[16] Therefore the use of social ties or even just the threat of losing future business was not restricted to merchants. Thus one cannot be sure that merchants are less likely to default. Moreover, merchants were the largest group of plaintiffs, making up more than 24 percent in all litigations. In fact, using the same Court Records, Nelson (1981) found that the commercial center in the county, the Town of Plymouth, had a much higher rate of litigation. Moreover, these intra-town suits were brought about by a small group of "litigious" individuals, usually merchants. This suggests that merchants may be more prone to litigations. The evidence is not definitive: since merchants were likely to engage in many more credit transactions, it is possible that they resolved a portion of their debt disputes by other means.

Another possible explanation is the discrepancy in geographical representation of bank records and court records. Simply put, the bank lent mostly to individuals in the town of Plymouth, which, as a commercial center, had more merchants than other regions. The court records, on the other hand, represent the defaults of the whole county. If this is the sole explanation, once we restrict the samples to the town of Plymouth, the gap should vanish. The result, however, shows otherwise. If we look at only the town of Plymouth, about 70% of the bank's discount went to the merchants. In the court records, about 8.5% of the defendants were merchants, with farmers and artisans making up 20.7% and 21.7%, respectively. Even if one considers all the gentlemen to be merchants, this would still only account for 31% of the cases. Thus the gap still exists.

The difference presented in Table 7 is indeed striking. Farmers had very limited presence in the discount records of the Bank—only slightly more than 8%. The number is fairly close to the stipulated 10% for agricultural and manufacture loans in the charter.

[16] Bidwell and Falconner (1925)

The fact that such statute appeared in the charter also reflects the reluctance of contemporary banks to extend credit to people other than the economically well-off class. These pieces of evidence demonstrate that there was indeed a discrepancy in borrowers between bank and personal credit.

4.3 Discount Amounts

Up to this point, we have some basic information on the discount practices of the Plymouth Bank. The bank discounted mainly to a selected group of merchants. The discounts were renewed frequently, meaning that a great portion of them became virtually long-term loans. Accommodation paper, rather than commercial paper, was the principal form even for merchants. This means that the credit was not based on or backed by specific transactions. Overall the Bank did not exclusively provide commercial credit for the merchant community. This rules out the possibility of specialization. In the personal credit market, the most common form of lending was in promissory notes; most of them were due on demand, which makes them virtually long-term debts. Interest-charging on promissory notes also became prevalent in early nineteenth century. The use of promissory notes was not restricted to farmers or artisans, either. Therefore, intrinsically there was not much fundamental difference in the functions between institutionalized credit and personal credit. It was true that the Bank served a very different clientele. This only begs the question of whether a local monopoly bank like the Plymouth Bank really advanced the credit market in the sense that it broadens the accessibility of bank credit. Or did it simply skim off the best of borrowers? If the latter is true, what was the Bank's contribution to the economy, if any?

One interesting issue lies in the amount of debt. Just by comparing the amount of discounts from banks and amount of debt in court cases gives a rough idea. The court cases, once again, provide a biased sample. A 1786 statute stipulated that all debt cases involving less than $4 should go to the local Justice of the Peace. Therefore, the Court of Common Pleas would only deal with cases with larger amounts. Thus the sample used here is biased upward in amounts.

Between 1804 and 1833, the discount amounts from the Bank are much higher than the debt cases presented in the court. The mean of the former was $817.56 and the latter is $123.74. One important qualification, however, is the fact that the personal

credit market and the bank had distinct clienteles. As mentioned above, the occupation distribution of the borrowers were indeed very different. Therefore it may very well be that the merchants, who borrowed from the bank a lot, simply needed larger amount of loans. This may be the driving force of such distinctions.

In order to control the selection problem of the borrower, I matched all the names that appeared in both records. The purpose is to compare the amount of both bank discounts and debt owed from the same group of people. Out of the 471 individuals in the bank's records from 1804 to 1833, 108 also showed up as defendants in the court. Another issue is renewal in the bank records. The majority of discounts were renewals; just comparing the average amounts may thus be misleading. Especially when the long-term debts could be paid back slowly, taking the mean may cause the initial borrowing amount to be biased downward. Therefore I restrict the sample to only new discounts.

Table 8 shows the mean amounts for the same group of borrowers in the court records and bank discount books. The Bank lent out larger amounts. Equivalently, the same group of borrowers would borrow greater amount from the bank than from individual personal credit markets. Even if one compares the average amount year by year, the same results still hold. Table 9 breaks down the percentage lent to different occupation groups by quartiles of amount. Moving from small loans to large loans, the percentage of discount extended to merchants also increases accordingly. Nevertheless, even for small loans, merchants still constituted the largest group of borrowers. This once again proves that merchants were the main borrowers from the bank.

It is not surprising that banks were able to lend out greater amounts. After all, the banks gathered the financial resources of many investors. Individual moneylenders or shopkeepers, no matter how successful, only had limited financial resources to their own. Even if they had substantial assets, they would not be willing to lent a great amount to one single borrower, for the simple cause of risks: if the borrower failed, a great portion of their wealth was in jeopardy. On the other hand, banks had a much larger pool of capital. This enabled them to diversify successfully even though the amount of each discount was large.

Unlike modern banks, deposits were not the major source of funds for early 19th century banks. Instead, a great part of the loanable funds came from paid-in capital. In

Massachusetts, banks could potentially lend up to double of their capital stock. The low level of deposits and the low leverage ratio somewhat constrained banks' capacity to extend credit. Thus even under the relative conservative banking laws of Massachusetts, banks still offered credit on a greater scale, even if only to a small group of people.

5. Discount Data, 1844-1849

5.1 The Changing Competition Landscape

The first half of the 19th century saw the emergence of industry in the Northeast. The New England area has been the herald of economic development. In the early years of the bank, most discounts went to local merchants. Over the years, textile mills sprung up in the region. Artisans and small manufacturers constituted a growing share of population. In the financial market, other financial intermediaries, including banks and savings banks, also emerged starting 1828 in Plymouth County. Many scholars, such as Wallis, regard Massachusetts as the earliest free-banking state. Although Massachusetts did not move into the *de jure* free banking until 1851, its relatively ease of chartering banks made it *de facto* free banking. The literature in political history indicated that the anti-monopoly sentiment of Jacksonian Era imposed pressure on states. In Massachusetts banking, the act of 1828 embodied this political atmosphere. The effect of such policy was a fast growing number of banks in Jacksonian Era. Overall, the *de facto* free banking refers to the state as a whole where Massachusetts had a great number of small banks. This was especially true for the urban center of Boston, where successful kinship groups could establish its own bank as its financial arm. At relatively rural locales, it was not uncommon to have only one bank within the whole county. In the case of Plymouth County, two new banks (Hingham Banks and East Bridgewater Bank) were chartered as late as 1828. Both were at the northern part of the county. However, neither started its operation until after 1833. In 1832, Old Colony Bank acquired its charter in the town of Plymouth. It began its operation within a year. Two other banks were chartered in 1833. They were Duxbury Bank (1833) and Wareham Bank (1833).

The early 1830's were also an era for the beginning of savings banks. The savings banks were organized for the members, who made deposits. The savings bank could invest in assets with collateral, such as, bank stocks, government bonds, and mortgages. It

could also make personal loans, but only with at least two sureties and no more than half of its deposits.[17] Thus its loan activities were somewhat restricted. Savings banks also got into the mortgage market more frequent than banks, although there were also limits on how much mortgage credit it could lend out.[18]

Looking at the petitioners and their relationship with the Plymouth bank shed some light on the effect of these new banks. Not surprisingly, for the new banks outside of the town of Plymouth, only one petitioner borrowed from Plymouth Bank. All others never appeared in the sample in the discount book. Meanwhile, 5 out of 7 petitioners of Old Colony Bank had previously discounted at the Plymouth Bank. Two of them, John B. Thomas and James Spooner had more than 10 entries in the discount records of the Plymouth Bank between 1804 and 1833. Neither appeared in the discount records between 1844 and 1849. Their names, however, still appeared in the 1850 census, indicating that they were alive throughout the period.

Out of the seven original petitioners of Old Colony Bank, only one had discounts at Plymouth Bank after 1844. The missing records between 1833 and 1844 prevent one from further looking into this issue. However, judging from the lending pattern of contemporary banks, it was not surprising that the insiders of new banks did not discount at the existing banks. In fact, no other petitioners for the new banks had any discounts at the Plymouth Bank in the sample between 1844 and 1849.

5.2 Analysis of Discounts, 1844-1849

The second set of the discount records was between 1844 and 1849. There were several fundamental differences in the recording of these entries. First, between 1804 and 1833, there was only the original weekly discount date and the duration, usually 60 days. In the records of 1845 and 1846, there was only the due date and dates of discount. The period of discount was usually 60, 120, or 180 days. From 1846 to 1849, the dates of the original notes were also recorded, and they usually differ from the date of discount. That is, there were three different dates for each entry: the date of the discount, the date of the original note, and the due date of the note. Despite that the duration still centered around

[17] Overall, the investment activities were under much tighter control for savings banks. For example, the loans to banks required the backing of bank stocks at no more than 90% of its par value.
[18] The limit was imposed in 1834. Mortgage assets could not exceed 75% of the total deposits of the savings bank. See Law of Massachusetts, 1834, Chapter 190, §8

60, 120 and 180 days, the distribution of actual discount periods was much more spread out. It was similar to a spectrum ranging from 6 days to 180 days, some lasted even longer than that. The information on discount renewals was incomplete. The discount books recorded whether a discount was renewed only in early 1844. Nevertheless, out of the 117 samples in early 1844, only 33 were paid in full. Most others were renewed at full amount, and relatively few were renewed in part.

Despite a change in format, the bank records seemed to put accommodation paper and commercial paper in the same entry format, as in the pervious sample period. Using the same technique in identifying commercial paper, approximately 150 entries out of the 681 discounts could be identified as commercial paper. Therefore, a majority of the discounts were still accommodation loans. It is difficult, however, to track down the exact duration of the loan, as each entry itself may have different lengths. Nevertheless, from the high renewal rate in 1844, one could infer that the discounts usually lasted longer than the duration of the note itself.

Table 10 exhibits the same information as Table 7, only for the period between 1844 and 1849. The proportion of discount to merchants has decreased while that to farmers and artisans increased. This change is especially significant. If we divide the previous period (1804-1833) into small sub-periods, the distribution was fairly stable over the first 30 years of the bank. The same is true between 1844 and 1849. Therefore the difference between the two sample periods is striking. This suggests some fundamental changes occurred in the banking environment between 1833 and 1844. Compared with the court records in the previous period, the merchant class actually constitutes\d a higher proportion of plaintiffs. This change, unlike discount data, occurred only gradually. The proportion of merchant plaintiffs increased year by year.

Another interesting finding for this period is the change in the profiles of borrower's occupations. Table 11 shows the breakdown of discounts in frequency and amounts. Compared with Table 7, the major change is the decrease in number of discounts to merchants. Instead artisans constituted a great number of discounts. This is especially striking as in the previous sample period, discounts to artisans consist of only 3% of all discounts. The case for farmers, however, is somewhat blurred since in the first period, there could have been wealthy farmers categorized as gentlemen or even esquires.

In order to gain a better grasp of what exactly were the gentlemen's occupations, I single out the individuals with the title of gentlemen and use the 1840 and 1850 census to figure out their occupation. In the limited sample we have, the gentlemen were predominantly merchants, with relatively few in other occupations. Of course, this does not really give us their precise occupations in the earlier period, but the result indicated that they could very well be merchants. If the pattern is true for early 19th century, then indeed the farmers had very limited access to bank credit.

Therefore, based on the information I have, farmers and artisans had a greater share of bank credit. The merchants, as opposed to the period of 1804 and 1833, received relatively fewer discounts from the bank, even after including the gentlemen as merchant class. Once again, the distribution of the occupation was stable over the years, implying a structural change between 1833 and 1844.

6. Competition and Lending Patterns of Banks

Up to this point, one can conclude that the Plymouth Bank did undergo changes in lending practices over the first half of the 19th century. Namely, they lent mostly to merchants before 1833, and after 1844, artisans became the largest borrower group. What caused this change?

One candidate would be changing economic activity. The first half of the 19th century was the era of rapid industrialization in New England. Thus the lending patterns of banks might have simply reflected the economy in transition: the economy is shifting from commerce to small industry. In order to further understand this phenomenon, one needs to take into account the occupational breakdown of the Plymouth population. The 1840 census provided the background information for the County. Table 12 compares the census of 1820 and 1840. Clearly the twenty-year period saw an increase in manufacturing. The population in the county as a whole increase by approximately 24%, but the population engaging in manufacturing almost doubled. Thus the increase in discounting to artisans may be partially explained by the shifting occupation distribution: despite the obvious bias towards merchants, bank discounts somewhat reflected the changing landscape of economic activities.

However, this point does not really explain the lack of bank discounts to artisans between 1804 and 1833. First, the shifts in economic sectors did not occur suddenly;

there must have been gradual changes in the composition of occupations. Therefore, if bank discounts simply reflect the economic profile of the county, one should be able to observe gradual changes. Specifically, amounts of credit extended to artisans and manufacturers between 1804 and 1833 should have increased gradually. However, this was not the case. Despite year-to-year fluctuations, the distribution of occupations remained stable from year to year between 1804 and 1833. The proportion of discounts to merchants was at the level around 60% throughout the period. In other words, despite the shifting economic focus, the lending practice has not changed much. Moreover, the agricultural lending also casts doubts on this hypothesis. Relative to small manufacturing, the number of people working in farming increased only marginally. Yet the bank lent much more frequently to farmers in the later period, the share rising from 8% to 14%. Therefore the shift in economic activity alone could not really explain the changes in lending.

Another possible explanation could be the regulation on banks. Two possibilities arise here: the requirement to lend to farmers and artisans and the limit on asset to capital ratio. The Plymouth Bank was required to make discounts to farmers and small manufacturers in its initial charter and later in the 1812 renewal.[19] With the sample of the bank records, it is difficult to really figure out what was the ratio of such discounts to the capital of the bank. Since such discounts usually were up for renewal only once a year, it is possible to calculation the ratio of such discounts outstanding to total discounts only if one has all discount records. Nevertheless, the rare occurrence of such one-year discounts suggests that the banks could have been operating at the minimum required level.

The regulation on the minimum level of long-term agricultural discounts vanished in the bank's 1828 charter. In fact, as the 1828 act was the basis for all subsequent charters for all banks in the state, there was no such restriction anymore. Therefore the increase in discounts to farmers could not be the result of further requirement for agricultural loans. Combined with a higher number of discounts to farmers, the relaxation

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[19] Such discounts, according to the charter, should constitute 10% of its capital. Moreover, it should last for at least one year and the amount should be between $100 and $500 dollars. Such statutes were common if not pervasive among early charters. Other banks, such as the Berkshire Bank of 1806, were required to make such discounts for up to one eighth of its capital stock.

of such laws suggested that loans to farmers were not really stipulated by the government.

The other regulatory factor is the limit on the ratio of “debts due to banks” to bank capital. Such ratio had been 200% for Plymouth Bank and was still in effect up to 1850. One might argue that the bank might have reached such limit between 1804 and 1833, thus it was unable to extend credit to farmers and artisans. Petition for increase in capital required a special law, incurring fixed cost for the bank. However, Figure 6 shows that such limits were not reached until the late 1840’s, meaning that the restriction was never binding between 1803 and 1833. Thus there must have been other forces that induced the bank to lend more to farmers and artisans.

Yet another plausible explanation is the passage of a chattel mortgage law in 1832. Discounts, even accommodation papers, were implicitly backed by personal and real properties in this period. However, the bank had to go through a litigation procedure after default to liquidate the debtor’s asset. Moreover, the debtor might have multiple creditors, all of them making claims on the property of the debtor. Therefore banks may not be able recover the full amount owed by the borrower. Chattel mortgage provided a new means of collateral, especially for small loans. Like mortgage, the mortgagee (bank) had the first priority over the mortgaged item, creating more security in default. Bogue, Cannon, and Winkle (2003) demonstrated that chattel mortgages were important in Middle West agriculture as it provides farmers short-term financing.

Is chattel mortgage crucial for broadening the access to credit in Plymouth County? In the sample of 681 discounts between 1844 and 1849, there were only 13 discounts with collateral. It was also difficult to tell what exactly was the collateral. Objects used as collateral could be railroad stocks, banks stocks, or other personal properties. The small number of collateralized loans indicates that chattel mortgage could not explain the significant change in borrower’s profile. Moreover, among the 13 collateralized loans, 9 of the borrowers could be identified of their occupation. 7 discounts went to merchants whereas the other two went to mariners. Thus the chattel mortgage law did not seem to make any difference, either.

6.1 Evidence on Credit Rationing

To examine the effect of new entrant, one must first establish the existence of an incumbent monopolist. In the case of banks in 19th century America, the definition of monopolistic behavior was unique—under usury law, the "monopolist" could not set prices. However, they did have the advantage of information on borrowers. Debates on the validity of usury law abound; however, most focused on the possibility in the personal credit market, such as the dual prices of local storekeeper. Despite some small complications in calculating the annual interest rate, the standard discount rate was at 6%, that is, 1% for a 60-day discount. This number applied to virtually all discounts in the time span. Therefore, one has reason to believe that the usury law was indeed binding. Under such restrictions, banks naturally would have to minimize the default rate to maximize profit. Another piece of evidence for credit rationing can be seen from the profitability figures of banks. If credit rationing indeed existed, the new entrant should be able to attract the excess demand for credit at the interest rate ceiling. In other words, there would be enough demand to support both the incumbent and the entrant. On the other hand, if the interest rate ceiling were at or close to the market-clearing rate, the new entrant would lower the interest rate and curtail the profitability of both banks.

Profitability also provides some insight into the issue. Despite new entrants, the Plymouth Bank continued to make profit. Moreover, its direct competitor, Old Colony Bank, was also profitable from the very beginning. Both banks paid out dividends consistently. The next question, however, why didn't Plymouth Banks simply provide more credit? Such possibility could be approached from two angles. The bank might have been able to use a higher leverage to lend more. However, this was constrained by the banking regulations of note issuing—any bank could only issue notes up to twice of its paid in capital. Thus in order to lend more, banks would need to expand their capital stock.

Although profitability figures provide preliminary evidence on credit rationing, there are a few caveats. First, one cannot know the counter-factual; Plymouth Bank could have made more profits were it not for the new entrant. Second, the profitability of the

new entrant could also be due to cyclical factors. Figure 5 shows the net profit[20] of the two banks in Plymouth county. During the period under analysis, the capital stock remained the same for both banks ($100,000 each). Thus one only needs to look at the absolute level of profit and dividend. There was indeed a profitability surge around 1832, when the Old Colony Bank began its operation. However, for Plymouth Bank, the surge started before 1832. Figure 5 also shows the dividend for both banks. Overall, the profit of the banks fluctuated significantly over the latter period. Nevertheless the banks were able to distribute dividends at a fairly constant rate, with the exception of 1837. It shows that despite fluctuations, the banks were in general profitable.

6.2 Competition in the Credit Market—Impact of New Entry

Theoretically, the incumbent and the entrant could possibly take different strategies in attracting discounts. That is, they could pursue different markets. One could target the higher risk, the other could stay in the mature market. However, because of existing personal relationships and contemporary laws, this was obviously not the best choice. First, merchants formed both banks. With the information they possessed from daily transactions, each bank had a potentially low-risk client base. This existing information structure provided a perfect environment to price discriminate. However, the usury ceiling was still enforced, at least for banks. Judging from the bank discount rates, the interest rate ceiling was binding. Therefore neither bank could pursue a high-risk clientele by raising the interest rate.

Due to the lack of information on the lending profiles of Old Colony Bank, it is difficult to find out the exact extent to which the entrant eroded the clientele base of the Plymouth Bank. However, judging from the behavior of the petitioners, the Old Colony Bank did have a group of merchants who were involved in the local credit market. Moreover, they themselves also had demand for credit. One of the major borrowers from Plymouth Bank between 1825 and 1832, Bourne Spooner of Plymouth, did not appear once in the period of 1844 to 1849. From the census of 1850, he was 60 and living in Plymouth. Thus it would be unlikely that he had no need for credit. The most probable

[20] The data between 1832 and 1850 come from Weber (2005). The data for Plymouth Bank before 1832 come from Plymouth Bank Records. The profit was imputed using retained profits and dividend. Namely: profit=(retained profit for current year)-(retained profit for previous year)+(dividend).

explanation was that one of the family members, James Spooner, petitioned for the Old Colony Bank. Thus Bourne Spooner had a more readily available source of credit. A few other names associated with the petitioners of the new bank also stopped discounting at Plymouth Bank. Judging from the census of 1850, they were still alive and working. This suggests that these people borrowed at the new bank.

Migrating from one bank to the other completely was not the only way to the entrant could take away to clients of the Plymouth Bank. Some borrowers discounted at both banks. George Drew, a merchant of Plymouth, discounted extensively at Plymouth Bank between 1804 and 1832. His name also appeared in two entries in the later period. In 1843, both the Plymouth Bank and Old Colony Bank, along with another individual, brought suit against him. This shows that he maintained credit relationships with both banks.

Looking at the amount of asset holdings of banks can also shed lights on the impact of new entrant. Figure 6 plots the "debts due to banks" for both Plymouth Bank and Old Colony Bank. One can see that between 1833 and 1835, the assets of Plymouth Bank dropped. This could very possibly be the effect of Old Colony Bank taking away the old customers. Although Old Colony Bank started its business in 1832, it is reasonable that it impact was most strongly felt only a while after its entry. This is because a large proportion of the discounts were renewed multiple times until it was finally paid off. Hence it took some time before one borrower completely transferred to one bank from another.

In any case, the entry of Old Colony Bank took away part of the reliable customer base at the Plymouth Bank. However, after a few years, Plymouth Bank was able to regain its profitability. Its assets (debt due to banks) went back to its original level around 1836 and 1837, only to take another hit during the crisis of 1837. In addition to the occupation breakdown, one can also look at the "concentration" of presenters of discounts. In order to make the proper comparison, I sampled the years 1825 to 1832 and the years 1844 to 1849. Between 1825 and 1832, 190 discounters discounted a total of 583 times, averaging 3.06 times per discounter. In the latter period, 277 discounters presented 674 discount, averaging 2.43 times. Moreover, despite fewer data points between 1825 and 1832, 13 discounters had more than 10 entries in the records. For the

latter period, only 6 discounters had more than 10 entries. This suggests that by 1844, the body of borrowers were less concentrated than ever. This is also consistent with the hypothesis that people had access to bank credit. If Plymouth Bank only pursued existing borrowers, one would expect that in the aftermath of the 1837 crisis, those endured should be the long-term borrowers. Thus the borrowers should look less diverse.

The amount lent also provides evidence on the change in the borrowers of the banks. First of all, the average amount between 1804 and 1833 was $816.73, with the median of $500. In the latter period, the average amount was $496.64, with the median of $274.84. Both mean and median was much lower in the latter period than their counterpart in the earlier period. Moreover, despite some fluctuations in these two statistics from year to year, the basic feature remains stable: the amount lent was much lower in the latter period. To pursue this argument further, Table 13 lists the occupation distribution by quartiles of amount between 1844 and 1849. One can see the transition between small loans and large loans. Artisans and farmers had more small loans and merchants mainly borrowed greater amounts. This matches the conjecture that the farmers and artisans had access to small loans. Moreover, this also explains the large number of loans but relative low assets holding between 1844 and 1849. Plymouth Bank was shifting towards smaller loans.

7. Conclusions

Sylla (2002) argues that the United States had one of the most advanced and innovative financial systems as early as the 1820's. Massachusetts, a front-runner in industrialization, was also a leader in financial markets. It possessed a large number of banks and the highest bank capital per person through the antebellum period. Thus Massachusetts as a whole seemed to be a financially advanced region with burgeoning industry. In urban areas such as Boston, merchants could gain access to bank credit by forming their own banks. Their reputation and diversification attracted investors to purchase bank stocks. Outside of Boston, however, many banks remained local monopolies even in the 1820's, lending only to well-established merchants. Thus despite a "well-developed" market, most potential borrowers in Massachusetts did not have access to bank credit.

The case of Plymouth County is instructive on the effect of competition. From the information in court records, we know that farmers and artisans borrowed extensively in the personal credit market long before the bank, implying a demand for credit from those sectors of the economy. However, the entry of Plymouth Bank alone did not broaden access to credit for farmers and artisans; instead it lent to a very small group of borrowers. Over the years political pressure to charter more banks started to build up, culminating in the Jacksonian Era. The loosening of control on charters created a wave of new banks. Among them was Plymouth bank's direct competitor, Old Colony Bank. After Old Colony Bank entered the market, Plymouth Bank began to lend more to farmers and artisans. The new entrant not only eroded the clientele of the incumbent, it also provided more credit in the market. Thus a broader range of individuals gained access to bank credit.

The advanced state of the "national" capital market in the 1820s did not preclude pronounced regional variations in banking policy and structure. The current study of New England thus serves as a first step in detailed investigation of the relationship between politics, banks and economic development. Wright (1999) demonstrates that banks in New York and Pennsylvania exhibited a distinct pattern from New England—larger banks with more diverse groups of stockholders. The South developed branch banking, yet another alternative model of banking system. The underlying sources of divergent regional paths in banking, and their effects on economic development, remain to be studied.

The political forces that promoted freer entry, however, were not peculiar to New England. Competition among states and expansion of suffrage were nation-wide phenomena in early 19th century America. This case study therefore calls attention to the interaction between political and economic change. Haber (2005) points to several forms of political competition within the United States. Federalism, expansion of suffrage, division of power, and competition among states reinforced one another. These political forces restrained the states from capturing monopoly rents and led them to charter more banks. This paper focuses on the subsequent development of competition in credit market. The results demonstrate that competition among banks indeed broadened access

to credit, especially for small artisans and farmers. At least in this case, political access eventually precipitated democratization of the capital market.

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Table 1. Number of Banks in Counties of Massachusetts, 1800-1850

County	1/1790	1/1800	2/1811	1/1820	6/1830	10/1840	9/1850
Barnstable	0	0	0	0	2	2	2
Berkshire	0	0	0	1	2	4	5
Bristol	0	0	1	2	4	10	11
Essex	0	3	6	11	16	27	27
Franklin	0	0	0	0	1	1	2
Hampden	0	0	0	1	2	3	6
Hampshire	0	0	1	1	3	3	3
Middlesex	0	0	0	1	3	8	10
Nantucket	0	1	2	2	3	3	1
Norfolk	0	0	0	0	0	5	5
Plymouth	0	0	1	1	1	4	4
Suffolk	1	2	3	7	19	32	35
Worcester	0	0	1	1	6	11	15

Source: Weber (2005)

Table 2. Occupation Distribution of Different Counties, 1820 (%)

County	Agriculture	Commerce	Manufacturing
Barnstable	26.7	57.7	15.6
Suffolk	3.5	44.6	51.9
Plymouth	54.3	14.4	31.3
Worcester	72.9	0.8	26.3
All Counties	57.6	12.1	30.4

Source: 1820 U.S. Federal Census

Table 3. Occupation of Initial Stockholders

Occupation	Frequency	Percentage	Average shares ($100/share)	Percentage
None	1	1.6	5	0.6
Farmer	6	9.5	10.67	7.4
Artisan	4	6.4	8.5	3.9
Gentleman	5	7.9	6.6	3.8
Esquire	9	14.3	18.1	18.7
Merchant	28	44.4	17.2	55.3
Professional	7	11.1	9.3	7.5
Public Office	0	0.00	-	0
Manufacture	1	1.6	10.0	1.1
Mariner	2	3.2	7.5	1.7
Total	63	100.00	13.82	871

Table 4. Occupation Breakdown of Defendants with Stockholding Plaintiffs (%)

	1785-1803	1803-1833
Artisan	17.2	30.6
Esquires	5.2	2.8
Gentlemen	24.6	8.3
Husbandman	0.9	0.00
Laborer	3.9	6.9
Mariner	1.7	5.6
Professional	0.00	4.2
Trader	9.1	9.7
Yeoman	35.8	29.2
Others	1.7	2.8
Number of Observations	232	72

Table 5. Duration of Discounts by Occupation/Status

Occupation	1st quantile	2nd quantile	3rd quantile	4th quantile	Total
	60-396	396-1068	1068-2188	Over 2188	
Farmer	3	1	4	2	10
Artisan	3	1	3	0	7
Gentlemen	3	5	0	7	15
Esquire	2	2	3	3	10
Merchant	22	17	15	16	70
Professional	3	0	0	2	5
Manufacturer	0	0	1	3	4
Mariner	1	1	0	0	2
Total	37	27	26	33	123

Pearson Chi-squared (21)=26.1471 Pr=0.201

Table 6. Frequency of Discounts by Occupation/Status

Occupation	New Discounts		All Discounts	
	Freq.	Percent	Freq.	Percent
Farmer	10	5.7	206	8.3
Artisan	4	2.3	95	3.8
Gentleman	21	11.9	218	8.8
Esquire	16	9.1	199	8.0
Merchant	115	65.3	1494	59.9
Professional	1	0.6	116	4.7
Public Office			2	0.1
Manufacturer	2	1.1	96	3.9
Mariner	7	4.0	66	2.7
Total	176	100.00	2492	100.00

Table 7. Frequency of Occupation/Status from Plymouth Bank and Plymouth Court Records, 1804-1833 (%)

	Discounts (Bank)	Defendant (Court Records)	Plaintiff (Court Records)
Farmer	8.3	38.4	21.3
Artisan	3.8	20.3	11.2
Gentleman	8.8	11.5	19.5
Esquire	8.0	3.3	12.1
Merchant	59.9	8.3	24.3
Professional	4.7	1.8	3.0
Public Office	0.1	0.1	0.4
Manufacturer	3.9	0.03	
Mariner	2.6	5.7	3.2
Other		10.5	5.1
Total Sample	2492	3664	3735

Table 8. Comparison of Amounts Between Court and Bank Records, Controlling Borrowers

Loans/Discounts	N	mean	sd	median
All Court Samples	368	220.83	597.29	53.2
Before 1803	146	136.58	258.43	39.8
After 1803	222	276.24	735.42	65.8
Bank Records				
New Discounts	86	988.79	1197.63	500
All Discounts	1192	872.56	1055.47	500

Table 9. Occupation Breakdown by Quartiles of Amount Lent, 1804-1833

Occupation	≤ 1st quartile	>1st quartile ≤ median	> median ≤ 3rd quartile	> 3rd quartile
Farmer	18.1	9.7	2.5	0.9
Artisan	8.0	3.2	1.9	3.8
Gentleman	14.5	6.5	9.2	1.3
Esquire	7.2	6.4	7.7	10.4
Merchant	37.7	59.6	72.0	77.5
Professional	6.9	5.8	1.3	3.0
Public Office	0.9	0	0	0
Manufacturer	4.6	5.3	3.2	0.9
Mariner	2.3	3.5	2.2	2.3
Total	698	772	686	472

Note: 1st quartile=200, median=500, 3rd quartile=1000

Table 10. Frequency of Occupation/Status from Plymouth Bank and Plymouth Court Records, 1844-1849 (%)

	Discounts (Bank)	Defendant (Court Records)	Plaintiff (Court Records)
Farmer	14.1	20.8	19.6
Artisan	32.1	21.3	8.5
Gentleman	-	17.7	13.2
Esquire	-	0.9	8.9
Merchant	22.3	12.2	34.9
Professional	2.8		4.3
Public Office	3.6		
Manufacturer	6.6	0.9	0.4
Mariner	10.3	8.1	1.3
None	1.5		
Others	6.2	2.3	5.5
Total	465	221	235

Table 11. Summary Statistics by Occupation Using Discount Data, 1844-1849

Occupation	Frequency		Amount		
	Freq.	Relative Frequency (%)	Mean	Standard Deviation	Percentage of total amount
None	7	1.5	456.06	212.67	1.5
Farmer	66	14.1	221.93	121.47	7.1
Artisan	150	32.1	316.71	387.05	23.0
Merchant	104	22.3	861.64	847.65	43.4
Professional	13	2.8	415.38	368.77	2.6
Public Office	17	3.6	426.47	175.11	3.5
Manufacturer	31	6.6	277.52	219.75	4.2
Mariner	48	10.3	402.43	453.87	9.4
Clergyman	2	0.4	100.00	70.71	0.1
Others	29	6.2	369.74	1089.82	5.2
Total	467	100	442.07	602.66	100

Table 12. Occupation Distribution, Plymouth County, 1820 and 1840

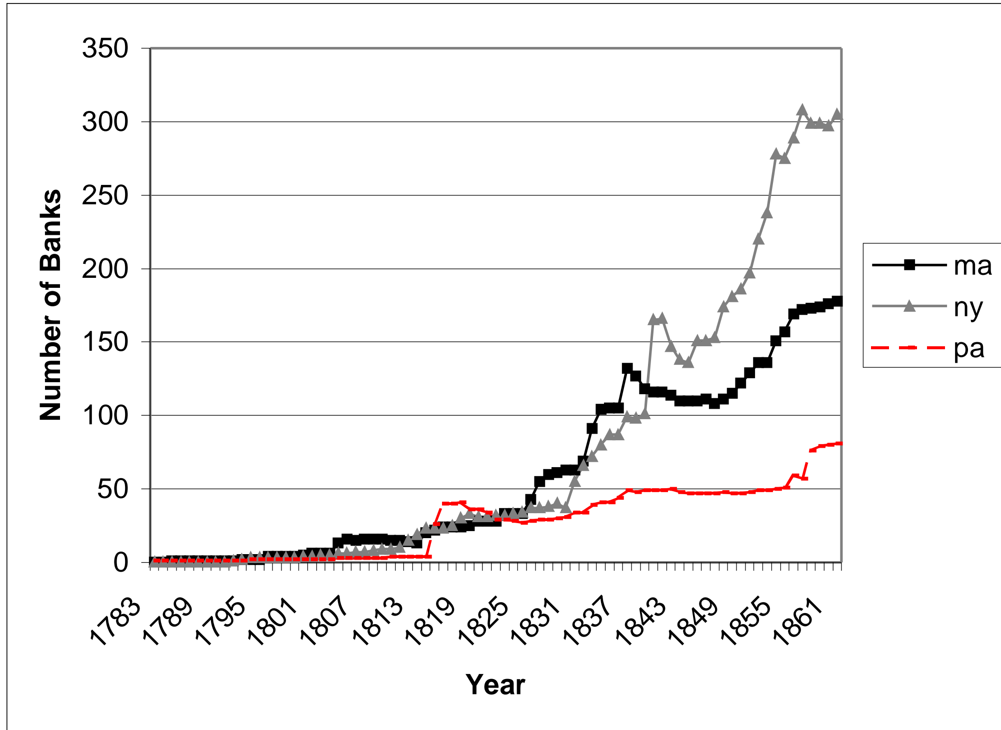
	Population	Agriculture	Commerce	Manufacture	Professional
1820	38136	4558	1208	2627	
1840	47373	5542	1490	5236	228

Table 13. Occupation Breakdown by Quartiles of Amount Lent, 1844-1849

Occupation	≤ 1st quartile	>1st quartile ≤ median	> median ≤ 3rd quartile	> 3rd quartile
None	-	0.7	4.5	1.5
Farmer	17.0	20.1	14.6	3.8
Artisan	44.9	37.4	20.2	20.3
Merchant	4.2	12.2	24.7	45.1
Professional	2.5	2.9	2.3	3.0
Public Office	-	2.9	6.7	5.3
Manufacturer	7.6	9.4	6.7	11.3
Mariner	8.5	11.5	12.4	8.3
Clergyman	0.9	0.7	-	-
Others	14.4	2.2	7.9	1.5
Number of Observations	118	139	89	133

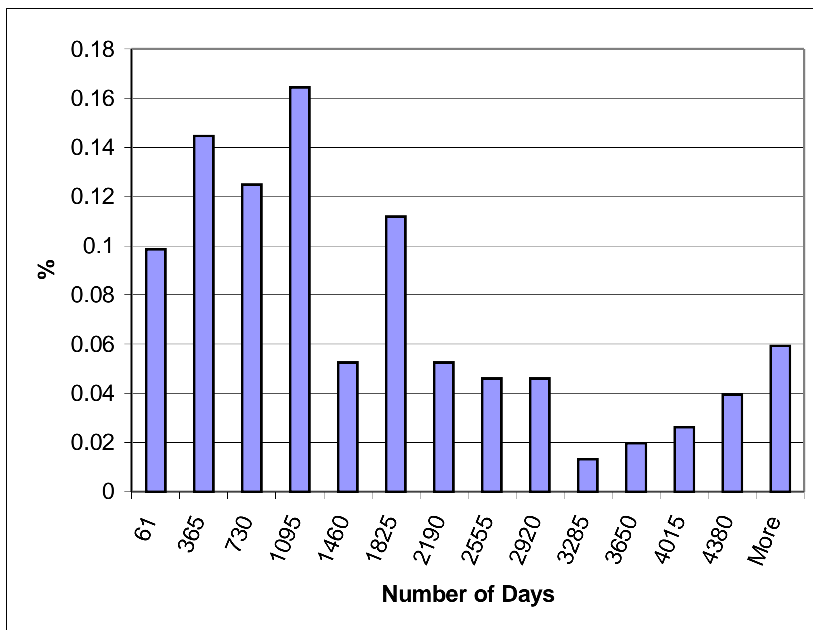
Note: 1st quartile=150, median=274.83, 3rd quartile=505.13

Figure 1. Number of Banks for Massachusetts, New York and Pennsylvania, 1783-1861



Source: Weber (2005)

Figure 2. Approximate Durations of Discounts, Sample 1805-1830



Sample Size= 152

Figure 3. Dividend and Discount to Revenue ratio

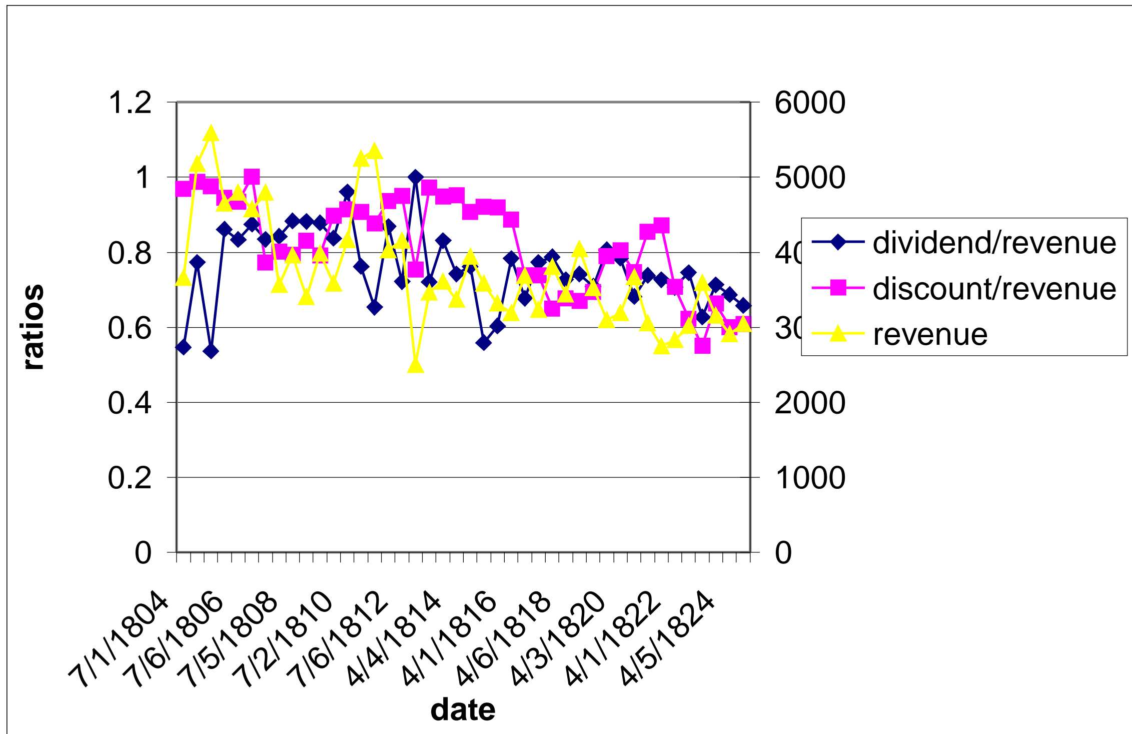


Figure 4. Discount Percentage by Occupation, 1804-1832

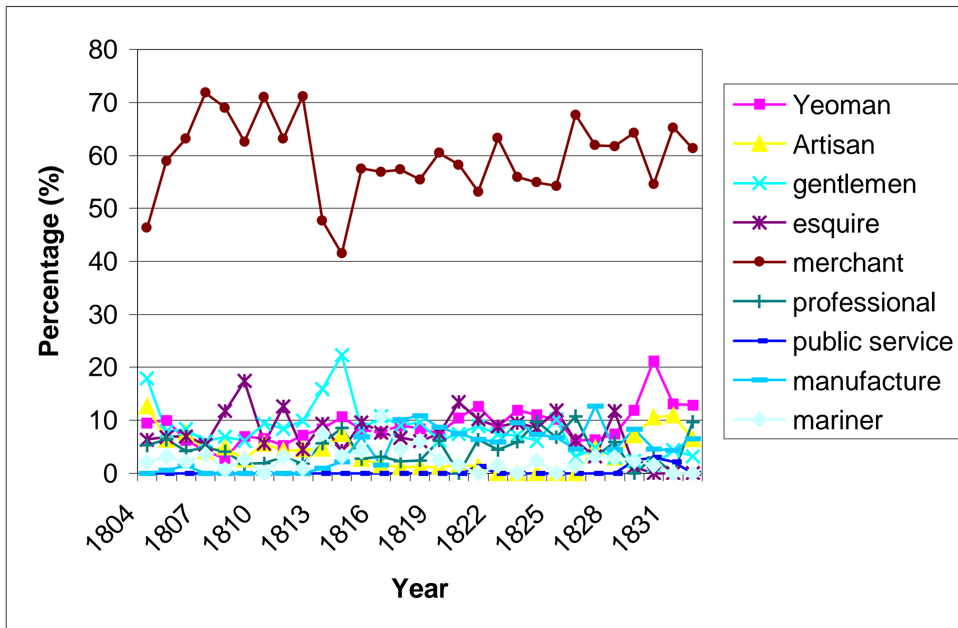


Figure 5. Profit and Dividend for Plymouth and Old Colony Banks

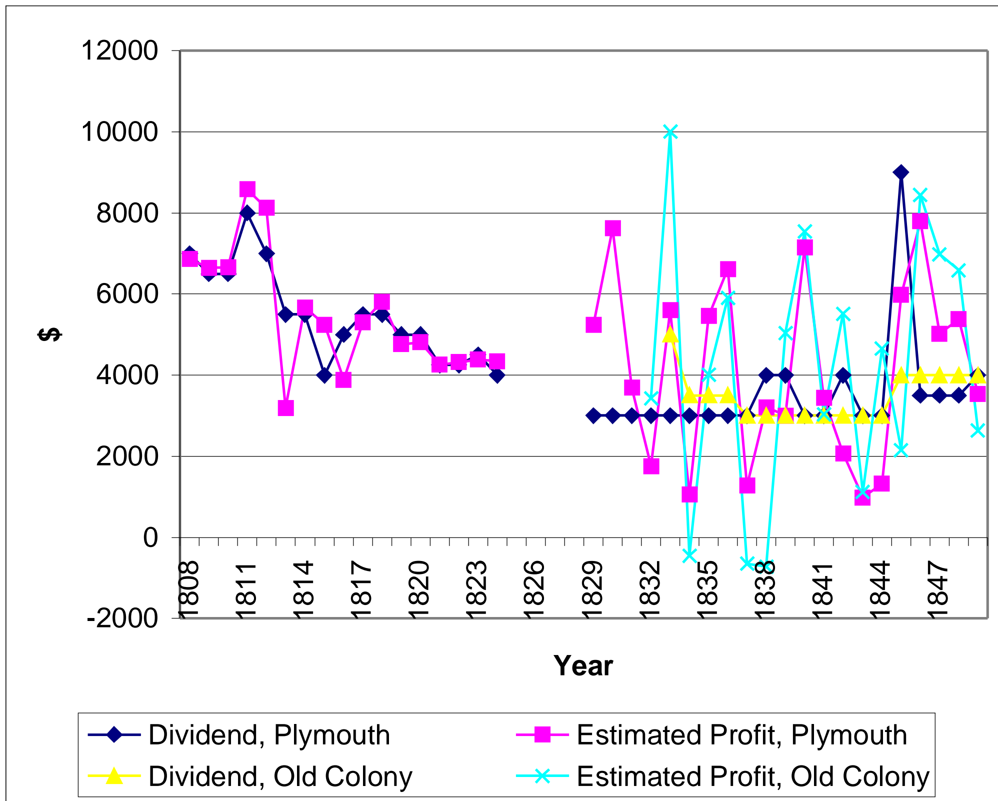
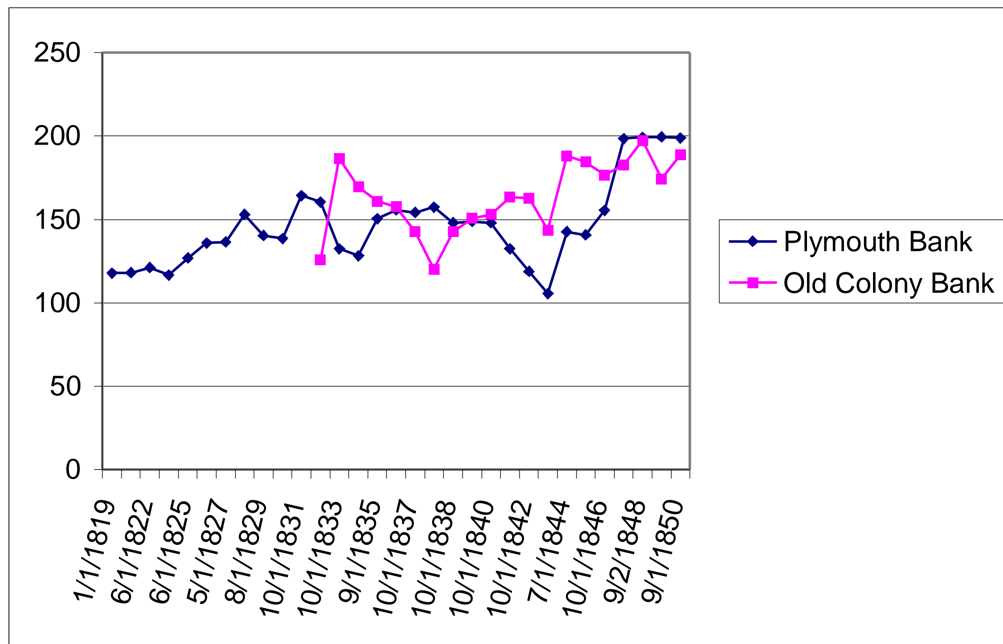


Figure 6. Percentage of Bank Assets (Debts due to Banks) to Capital Stock



Note: the capital stock for both banks were $100,000. The limit on such ratios were 200%
Source: Weber (2005)