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PUBLIC BANKING IN NEW HAMPSHIRE

Assessing the Possibility of Establishing a State Bank

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Commerce and Consumer Affairs

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1. EXECUTIVE SUMMARY

The possibility of establishing a public bank may offer an opportunity for New Hampshire to exercise more control over its finances, and may offer an opportunity for a public sector institution to fulfill public needs that the private sector cannot or will not adequately meet.¹ This report examines New Hampshire's capital needs, current state funding mechanisms, and the potential costs and benefits of a public bank, to assess whether or not a public bank better meets New Hampshire's financial needs than current institutions and financing arrangements. We find that existing public and private sector services are likely to sufficiently meet the state's financial and capital needs. Furthermore, establishing a public bank may not necessarily introduce interest payment savings or increase the availability of loans but may instead increase state expenditures. New Hampshire's broad landscape of quasi-public lending institutions and partnerships with local banks offer municipalities, small businesses, and individual borrowers a wide variety of avenues for accessing capital. These lenders leverage their specialized functions to work directly with borrowers to meet their needs. Our research shows that the work of these existing quasi-public institutions could be expanded on an individual basis to better meet state needs, rather than consolidated into a public bank.

2. INTRODUCTION

Following the 2007-2008 financial crisis that illustrated flaws in the current banking system, states and other governmental units have explored alternative banking arrangements commonly called public banking.² Public banking may provide the state greater control in directing bank funds toward state projects. Within New Hampshire, House Bill 672 proposes to establish a development bank in the state, which would act as a depository for public funds and make loans in support of public works projects.³ The rationale for the bill stems primarily from the reasoning that interest payments to private banking entities result in large outflows of money that New Hampshire could otherwise allocate to public projects.⁴ After being introduced to the Committee on Commerce and Consumer Affairs, HB 672 currently has been recommended for interim study.⁵

2.1 Background

Public banking's mandate differs from private banking as its shareholders differ. Private banks are composed of shareholders seeking the highest return on their investment.⁶ Meanwhile, public bank shareholders are the general public, so the public bank can operate as a public agency without a profit-maximizing mandate. Furthermore, public banks can use their profits to directly fund public projects. A public bank lowers the cost of public projects because it can loan money based on its deposits, rather than first borrowing through bonds.⁷



Currently, only North Dakota has a state bank in the United States, and the returns of the Bank of North Dakota (BND) have proven promising. In 2013, BND's profit was reported to be \$94 million and BND's return on equity was 70 percent higher than Goldman Sachs and J.P. Morgan. But BND's clients are not traditional retail banking accounts; rather, BND serves to provide loans to companies within North Dakota.⁸ These loans are generally to sectors that private banks might ignore, like infrastructure and rural housing, that may have lower returns on banks' investments than loans to other projects. This model provides aid to struggling sectors of North Dakota that might not offer the greatest return (if any) on investment, but investing in these sectors would provide benefits to the residents of North Dakota. For example, by extending rural housing loans, oil workers can purchase homes within North Dakota and continue to support oil industry growth.⁹

Other examples of successful public banking models include the Commonwealth Bank of Australia; Alberta Treasury Branches in Alberta, Canada; and, cooperation between public and private banks in Switzerland, Germany, India, China, and Brazil.¹⁰ Seven states in the United States previously established their publicly-owned banks. While three banks were occasionally profitable but eventually liquidated, three of these banks ultimately failed.¹¹

2.2 Motivation

The ability to exert more control over New Hampshire's money makes public banking a potentially attractive policy option for state legislators. A public bank would offer banking services exclusively for the state of New Hampshire and could, perhaps, better serve state interests. This might happen because a public bank would not need to address the interests of other constituencies that private banks must, including individual and corporate depositors and shareholders.¹² Supporters of a public bank in New Hampshire have identified a desire to reduce interest payments on the state debt, which amount to roughly \$77 million dollars annually. New Hampshire currently borrows some of its capital on the private market through bonds which, as with any loan, carry interest fees and increase state debt.¹³ Finally, legislators seek to extend the lending power of small banks in New Hampshire and provide greater security for New Hampshire's assets.¹⁴ Other proponents of public banking also identify the opportunity to better fund capital projects within the state, projects that might not receive funding through other existing private and public lending avenues.¹⁵ In this report, we will use the motivations for establishing a public bank as a basis for evaluating whether a public bank could solve these perceived problems in interest payments and capital needs.

2.3 Constitutionality

Before addressing the potential benefits and economic impacts of establishing a public bank in New Hampshire, we first need to establish its constitutionality. In other words, is creating a public bank in New Hampshire legally permissible? In order to investigate the



issue of constitutionality, we consulted the United States Constitution and Supreme Court doctrine, the BND, and the New Hampshire State Constitution. First, the United States Constitution does give Congress the power “To coin Money, regulate the Value thereof, and of foreign Coin.”¹⁶ In 1931, Congress delegated the ability to coin money to the Federal Reserve. However, the Constitution does not explicitly provide provisions for banks to create their own money supply. Thus, the justification for state banks to issue money is that state bank notes are simply representative of money.¹⁷

Within North Dakota, the constitutionality of a state bank was addressed in 1920 in *Green vs. Frazier*. The plaintiffs argued that the legislation to capitalize the state banking system with taxes violated the Fourteenth Amendment of the Constitution.¹⁸ However, the court ruled that the laws in question were of a public nature, and thus the state could use tax revenue to fund a public bank. The court ruled that it was constitutional for the state banking system to engage in the business of manufacturing and mortgages; to appropriate state money to fund the bank; and to draw upon bond issues and taxation for capitalization.¹⁹ As a result, BND was able to purchase bonds using state taxes to pay for the bonds, principal, and interest.²⁰

In the 19th century, several states established their own state banks, including Kentucky. In 1820, the Supreme Court ruled on the constitutionality of Kentucky’s state bank in *Briscoe v. Bank of Kentucky*.²¹ The plaintiff sued the bank for failing to repay him, stating that the bank violated the Article 1, Section 10 of the Constitution that the state shall not issue bills of credit.²² The court ruled that the bank had issued the notes on its own credit, not Kentucky’s credit, and thus was constitutional.

Limited information on the legality of a New Hampshire state bank exists within the New Hampshire State Constitution. However, given the arguments for a state bank outlined above, it seems likely that a New Hampshire state bank would be constitutional.

2.4 Methods

For our analysis, we combined qualitative and quantitative methods. First, we assessed the capital needs and budget expenditures by policy sector for the state of New Hampshire. Second, we interviewed key policymakers in New Hampshire’s existing lending agencies, as well as experts in New Hampshire’s banking industry. In all, we conducted eight interviews. To supplement the expert commentary, we also evaluated the financial activities of these lending agencies. In addition, we performed a cost-benefit analysis of establishing a public bank, including logistical obstacles and alternatives to establishing a public bank. Next, we conducted a quantitative analysis of New Hampshire’s state debt and interest payments. To assess whether New Hampshire might possess the resources to establish a public bank, we performed a survey of New Hampshire’s various reserve funds. In order to compare New Hampshire’s lending activities against the only existing example of a public bank in the United States, we also



completed a case study of North Dakota's Bank of North Dakota and its associated lending agencies.

3. PUBLIC FUNDING NEEDS IN NEW HAMPSHIRE

3.1 Capital Needs in New Hampshire

A state's capital and infrastructure needs depend on its geography, demographics, and economic position. If a state could, without dire consequences, allocate unlimited resources to address its problems, it would do so. However, in a system of scarce resources, effective public policy allocates monies toward projects that will best serve the public good. With this framework in mind, this section evaluates the condition of New Hampshire's physical infrastructure and overall state finances as well as its health and municipal systems.

In October 2015, the New England Economic Partnership published a report on the state of New Hampshire infrastructure evaluating the state's physical school, water, Internet, bridge, and road systems.²³

We identify the following areas of concern. First, New Hampshire is ranked 4th lowest in the country in terms of money spent on school infrastructure per pupil.²⁴ Second, nearly one third of New Hampshire's bridges are considered deficient and the estimated costs to repair or replace these bridges range from \$174 million to \$256 million.²⁵ Finally, 54 percent of New Hampshire's roads are considered in poor or mediocre condition, which costs each New Hampshire motorist \$259 more per year in operating costs due to repairs.²⁶ As a result, there appear to be unmet infrastructural needs that a public bank or another other public or private lending institutions could address when considering opportunities for capital distribution.

As for New Hampshire's overall fiscal health, we considered its short and long term budgetary solvency, with particular focus on legislatively mandated social services, as well as projected revenues. According to the *Truth in Accounting Project*, New Hampshire's most recent report for 2014 ranks the state 25th overall in terms of taxpayer burden.²⁷ Based on financial information from New Hampshire's 2014 Comprehensive Annual Report, New Hampshire has approximately \$4 billion in debt, approximately \$2 billion in liquid assets that could be used to pay those debts, leaving \$4,700 in individual taxpayer burden to cover the remaining sums. The approximately \$2 billion budget shortfall comes from unreported state retirement debt.²⁸

Policy organizations, including the New Hampshire Center for Public Policy Studies, base their analysis of the state's finances on short term and long term budgetary solvency, which is calculated on two measures, "the operating ratio (total revenues divided by total expenses) and surplus/deficit per capita, measured as the change in net assets over a given year per 1,000 residents."²⁹ Since 2011, the ratio has been slightly above 1, which



indicates that New Hampshire was taking in more revenue than its expenses.³⁰ It further noted that despite being positive, a near 1 ratio indicates that the New Hampshire is accumulating very few assets. This drop in cash reserves accounts in part from the static nature of the state's saving account, otherwise known as a "rainy day fund," which has been consistently at \$9 million as of 2013.³¹

The NHCPPS 2015 report further examined the state's long-term budgetary solvency, measuring it on the basis of long-term liabilities per capita as well as liabilities as a share of total assets.³² It found that liabilities per capita have spiked significantly, doubling to approximately \$1,800 per person in 2013, from \$800 per person in 2008.³³ Similarly, the report found a steady increase from 2008 to 2013, with liabilities as a percent of total assets rising from approximately 0.21 percent to just above 0.40 percent.³⁴ It notes with additional concern that, in 2012, New Hampshire had the 46th worst funded pension program, with approximately 60 percent of total pension and medial liabilities being funded.³⁵

As a percent of the national average, New Hampshire falls significantly below other states in terms of total spending per capita, total change in spending per capita, as well as education spending per child. Relative to the national average, New Hampshire places a priority on public welfare spending per person in poverty, as well as protection from crime.³⁶ The growth rate for health care spending in the state outpaces the growth in spending on energy, as well as tax revenues.³⁷ More significantly, health care spending has been outpacing inflation, and the total costs of health care spending have been rising faster than the growth of New Hampshire's income.³⁸ These trends, though significant, do not account for the full implementation of the Affordable Care Act.

As for the state's municipalities, there has been a substantial reduction in aid received from the state since the recession. One of the main sources of town funding is state aid, which is then combined with local property taxes. A 2012 assessment of local aid, through the NHCPPS, found that, from 2007 to 2011, state aid to cities and towns fell approximately 17 percent.³⁹ In turn, the biggest cuts in the municipal budgets came from local infrastructure projects, including "water systems, capital outlays, and sanitation services," while increasing spending in general government functions and public safety.⁴⁰ Finally, there exists large variation in gross municipal appropriations per capita with some towns allocating upwards of \$35,000 and others as low \$1,000.⁴¹ Despite this wide range of appropriations, there has been a general decline in property value following the recession, further hurting local coffers. Between 2008 and 2011, total property values declined by more than \$8,000 per person, after a near decade of increases.⁴²

In all, declines in state infrastructure, combined with a tighter state and municipal fiscal situation, demonstrate some areas where capital could be needed in the state. More specifically, New Hampshire faces critical lapses in its highway and local road maintenance, to the point where roads have become increasingly unsafe and costly to drivers. Fiscally, the state has a significant level of debt as well as expanding costs of



health care and pensions to contend with. Finally, funding for municipalities has been drastically reduced since the 2008 crisis, leaving wide gaps in what New Hampshire's towns and cities can accomplish, as they increasingly have to rely on their own property taxes to support local projects. As we explain in the following section, these conditions dramatically influence taxpayers' appetite for debt, making them less likely to approve capital projects.

4. EXISTING FUNDING STRUCTURES

In this section, we examine the existing landscape of public policy funding mechanisms in New Hampshire. To meet capital needs, New Hampshire has access to a variety of types of funding. First, New Hampshire's lending institutions direct capital to individual borrowers, small businesses, and municipal governments. Second, New Hampshire receives federal grant money to subsidize its participation in federally funded programs and support the activities of its lending agencies. Third, New Hampshire issues bonds to finance state programs. Each of these methods provides New Hampshire with widespread access to many different types of capital, which, it appears, mostly satisfy the state's capital needs. Although New Hampshire has many unfilled capital needs, these do not stem from a lack of mechanisms to fund them, but rather a revealed preference that not to fund these unmet needs, because New Hampshire taxpayers do not want to raise property taxes.⁴³

4.1 Lending Agencies

Many states, including New Hampshire, create lending agencies and similar institutions to provide capital to low-income individuals, small businesses, projects of public importance, and local municipalities, all at lower-interest rates than commercial lenders. These agencies work to offer low-interest rates in order to better serve low-income New Hampshire residents and because federal grants enable the lending agencies to provide greater safeguards for borrowers. Often created by state legislation, these organizations are usually private or quasi-public, but do not receive funding directly from the state government. Instead, they receive capital from conventional banks, private investors, and federal grants. Above all, states identify affordable housing, business development, and capital infrastructure improvements as necessary for economic growth within the state, so these institutions provide greater access to the capital needed to address these gaps.

New Hampshire possesses a robust network of lending agencies and similar institutions. Because these institutions range from housing finance and community lending to higher education and municipal bonds, each organization possesses knowledge unique to its specific industry, while a public bank might adopt a generalist approach to lending. This combination of organizations allows lenders to tailor programs offered to the specific needs of customers, an advantage that a public bank might not be able to meet.



In order to identify the potential gaps in existing lending capacity, we first offer a survey of the different lending agencies. New Hampshire has five primary lending agencies: the New Hampshire Housing Finance Agency (NHHFA), the New Hampshire Community Loan Fund (NHCLF), the New Hampshire Business Finance Authority (NHBFA), the New Hampshire Higher Education Lending Corporation (NHHELCO), and the New Hampshire Municipal Bond Bank (NHMBB).

A quasi-governmental agency created by an act of the state legislature, the New Hampshire Housing Finance Authority offers both single family and multifamily housing loans, designed to accommodate first-time homebuyers, low-income residents, and developers of affordable housing units. The NHHFA's access to federal programs, such as government guarantees on loans, allow it to offer lower or similar interest rates than conventional lenders, making these loans more accessible to lower-income borrowers.⁴⁴ For example, the most basic single family loan currently offered by the NHHFA, the Home Flex, has an interest rate of 3.5 percent.⁴⁵ In contrast, the average commercial mortgage interest rate in the United States is 3.8 percent.⁴⁶ New Hampshire's average commercial rate for a 30 year fixed rate mortgage is 3.5 percent, the same rate as the one offered by the NHHFA.⁴⁷ Traditionally, lenders have issued bonds to finance multifamily housing. However, in the wake of the 2008 financial crisis, lenders have moved away from bond-based financing, according to NHHFA Managing Director David Sargent.⁴⁸ Instead of this method, the NHHFA participates in a joint venture between the Treasury Department and the Department of Housing and Urban Development that provides a risk-shared insured loan that the NHHFA can then sell to the Federal Financing Bank, a division of the Treasury. Due to this risk-insured loan program, borrowers can access interest rates lower than the bond market, a benefit for developers of affordable housing. While the NHHFA's single-family delinquency rate of 8.5 percent might be higher than that of conventional lenders, it has a lower delinquency rate than similar state and national lenders.⁴⁹ Overall, the NHHFA appears to be a reasonably effective avenue of financing for homebuyers in New Hampshire, because it offers lower interest rates for first-time, low-income homebuyers and incentivizes the construction of affordable housing.

Considered a community development financial institution (CDFI), the New Hampshire Community Loan Fund offers housing loans to individuals and communities, assists financing of child-care facilities, and gives business development loans. In order to allow lower-income NH residents to participate more fully in the economy, the NHCLF offers loans that increase the leveraging ability of local banks and make these business development projects possible. Unlike banks, it receives its capital from a pool of local investors, which offers greater regulatory flexibility in lending. According to banking regulations, banks cannot provide a loan to cover the full capital expenses of the project. However, since the NHCLF loans private funds, it can cover this gap. Since its establishment in 1983, the NHCLF has originated roughly \$229 million in loans, which has allowed banks to lend an additional \$560 million. The NHCLF currently enjoys a AAA credit rating. Finally, the NHCLF offers technical assistance to borrowers, such as



identifying and correcting flaws in business plans to help address these areas for development. Most importantly, the NHCLF fulfills an important capital need for NH borrowers because it offers loans to cover remaining costs of projects, such as down payment assistance. This extends the lending ability of conventional banks.⁵⁰

The New Hampshire Business Finance Authority partners with local banks to incentivize loans to small businesses. For example, its Capital Access Program (CAP) offers loans of up to \$200,000 to assist small businesses with start-up costs.⁵¹ While banks would typically avoid these relatively risky loans, the NHBFA has established a loan-loss fund to prevent losses when loans default.⁵² In addition to its programs through local banks, the NHBFA also possesses a Business Energy Loan Fund, capitalized through a grant from the New Hampshire Public Utilities Commission, that offers loans to businesses and non-profits to help them become more energy efficient and sustainable.⁵³ Finally, the NHBFA issues tax-exempt bonds to businesses, municipalities and non-profit organizations for capital projects.⁵⁴ Like the NHCLF, the NHBFA also leverages banks to produce its loans, but it only incentivizes lending. The NHBFA does not provide capital itself.

In June 1993, the state of New Hampshire designated the New Hampshire Higher Education Loan Corporation as a lending agency exclusively focused on student loans. Rather than directly lend money to students, the NHHELCO serves as an intermediary between students and federal and private lenders. The NHHELCO's principal loan program, EdvestinU, allows students to access loans at competitive rates and to consolidate federal and student loans.⁵⁵ The NHHELCO offers a means for helping students navigate the complicated process of student loans, rather than providing loans itself. The New Hampshire Higher Education Association (NHHEAF) oversees the activities of the NHHELCO, but focuses generally on helping student borrowers avoid default on their loans. The NHHEAF reports a default rate for 2.8 percent, below the national average of 11.8 percent.⁵⁶ Although the NHHEAF's assistance might work with students to prevent default, its borrowers also might enjoy a greater financial ability to repay their loans. As a result, the presence of the NHHELCO might not provide an additional opportunity for NH students to access capital, but connects students to existing loan programs.

Intended to help state municipalities access capital, the New Hampshire Municipal Bond Bank issues tax-exempt bonds. Since the bonds are tax-exempt, they often offer lower interest rates than the rest of the bond market. The rest of the bond market offers taxable loans, which means they need to charge interest at a higher rate. These bonds help towns complete important capital infrastructure projects, such as renovating schools or improving roadways. Bonds issued by the NHMBB are very secure; the bank has never defaulted. In order to repay these bonds, municipalities raise property taxes, which means that a town would go bankrupt before the bond defaulted.⁵⁷



Through this combination of public, quasi-public and private institutions, New Hampshire residents, businesses and municipalities have substantial access to capital. Beyond simply offering loans and issuing bonds, these organizations offer expert technical advice and motivate local banks to extend loans to small businesses. Through the activities of these organizations, low-income New Hampshire residents can access business development capital and take out loans to purchase a home.

Overall, New Hampshire's varied network of lending agencies offer individuals, small businesses and municipalities substantial opportunities to access capital to finance housing, business development, capital infrastructure improvements, and higher education. Given these institutions, there might not exist a need for a public bank to offer additional loans in these sectors. However, we will discuss the potential gaps in lending opportunities in a later section (Gaps Between Needs and Funding Capacity, 4.4).

4.2 Federal Resources

In general, to finance capital projects, New Hampshire uses a combination of federal grants and general obligation bonds. When the state of New Hampshire incurs expenses to support federally funded programs, federal grants reimburse the state government.⁵⁸ For example, the Highway Fund, the Fish and Game Fund, the Capital Projects Fund, and the State Revolving Fund all receive some of their capital from federal grants.⁵⁹ In fiscal year 2015, the state of New Hampshire received \$309 million in federal grants.⁶⁰ However, access to federal grants is contingent upon meeting the requirements of that grant program and any applicable regulations.⁶¹

New Hampshire receives 68 percent of its revenue from various programs, which includes federal and local grants. The remainder of New Hampshire's revenue comes from taxes.⁶² In the last year, revenue from federal grants increased due to federal funding for newly eligible Medicaid patients through the New Hampshire Health Protection Program. New Hampshire's lending agencies also enjoy special access to federal programs, thus increasing access to federal capital for New Hampshire borrowers.⁶³ For example, the New Hampshire Housing Finance Agency offers securitized loans with government backed guarantees, a 3 percent interest rate, and down payment assistance. The Department of Housing and Urban Development also gives the NHHFA an annual allocation of funds to support financing multifamily housing.⁶⁴ Federal grant programs directly fund programs in New Hampshire and expand the reach of lending agencies.

Federal grants and programs provide a substantial portion of New Hampshire's operating expenses. As a result, continuing to access federal grants might offer a better means of fulfilling capital infrastructure needs and funding public policy projects.



4.3 State Bonding

New Hampshire generally takes out three types of bonds, which the State Treasurer is responsible for repaying. First, New Hampshire issues general obligation municipal bonds through the New Hampshire Municipal Bond Bank. In 2015, the Treasury issued \$6,213,609 in general obligation capital investment bonds. These bonds fund various capital improvement projects throughout the state and are managed by the authorized state agency.⁶⁵ These bonds are generally scheduled to be repaid in 10-20 years. For example, for fiscal year 2016-2017, the state authorized \$271 million in capital improvements leveraging \$126 million in general fund bonding authority. The balance of these capital improvement funds come from other sources.⁶⁶

In addition, New Hampshire uses Turnpike Revenue Bonds to finance improvements in the roadway system, which are repaid via toll revenue. These bonds mature in eight years. The total outstanding Turnpike System debt is \$428 million.⁶⁷ Finally, the state of New Hampshire often issues Federal Highway Grant Anticipation Revenue bonds, but did not do so in 2015. These bonds are backed by Federal Highway funds from the Department of Transportation.⁶⁸

In total, New Hampshire has \$1.401 billion in total bonded debt, which includes \$906 million in general obligation bonds, backed by the full faith and credit of New Hampshire, and \$155 million in Federal Highway Grant Anticipation Bonds.⁶⁹ According to the State Treasurer's Comprehensive Annual Financial Report for 2015, "Fitch Ratings has assigned the State's bond rating of AA+, Moody's Investors Service of Aa1, and Standard and Poor's of AA."⁷⁰

New Hampshire already issues bonds to fund infrastructure projects, especially improvements in the road systems. A public bank would exist to fund the same types of projects, but through loans rather than bonds. In this way, establishing a public bank may just duplicate the bonding activities already performed by the State of New Hampshire and the NHMBB.

4.4 Gaps Between Needs and Funding Capacity

According to experts on the New Hampshire banking industry and state capital needs, including State Treasurer Bill Dwyer, the borrowing programs currently available in New Hampshire appear to meet the capital needs of individuals, businesses, and municipalities.⁷¹ While New Hampshire may possess some unmet capital needs, it appears that these needs go unfulfilled not because the capital is inaccessible, but rather because New Hampshire taxpayers are not interested in paying back, via increased taxes, the additional loans that funding these projects would require.⁷² For example, to issue a bond for a capital project, town boards must approve the project, which they are currently approving less frequently. Sheila St. Germain, the Executive Director of the NHMBB,



noted that her bank previously did roughly \$50 million in bonding twice a year. In the last two years, this has fallen to just \$5 million. St. Germain pointed to the recent economic downturn as a possible explanation for the decrease in bonding, and noted that town boards simply are not approving these large capital projects, primarily because they do not want to shoulder the burden of paying off the loan.⁷³

This happens because towns usually raise property taxes to repay the bonds. If New Hampshire established a public bank to make loans, towns would likely still use property taxes to pay back the loans.⁷⁴ As a result, potential capital needs would still go unmet due to lack of demand for loans, not because opportunities for lending do not exist. In this way, offering additional loans via a public bank might not better fulfill capital infrastructure needs.

However, some funding gaps, which a public bank might be uniquely positioned to fill, might exist for municipalities looking to finance smaller capital projects. Bill Sullivan manages the New Hampshire Public Deposit Investment Pool, an entity where states can choose to invest funds, then funnel the returns back into public policy projects. He observed that the NHMBB mainly exists to serve municipalities financing large projects, issuing bonds of \$1 million or more.⁷⁵ Based on the NHMBB's financial records, they typically issue bonds that range between \$500,000 and \$5 million.⁷⁶ Further, many small municipalities do not possess the level of sophistication needed to successfully locate and apply for loans on the market.⁷⁷

Currently, Sullivan explained that the NHMBB only serves as a conduit for lending money to municipalities. Unlike the NHCLF, it does not work with local governments to help them match the loan program to the purpose of the capital project.⁷⁸ We will explore whether a public bank can successfully close these gaps in a later section (Alternatives to a Public Bank, 5.4).

5. POTENTIAL COSTS AND BENEFITS OF A PUBLIC BANK

In this section, we assess the potential costs and benefits of establishing a public bank. We also address potential logistical and technological difficulties that would arise if New Hampshire established a public bank. In order to determine whether a public bank would be appropriate for meeting New Hampshire's capital needs, we compare gaps in funding for public policy projects with the proposed functions of a public bank. After establishing that a public bank might not be the appropriate solution for fulfilling unmet capital needs, we offer potential alternatives to a public bank.

5.1 Benefits of Establishing a Public Bank

The development bank of New Hampshire, as proposed by House Bill 672, would act as a depository institution for public funds under the management of a president and



subordinate officers, who would oversee day-to-day bank operations on behalf of a governor-appointed board of directors and an advisory committee comprised of industry representatives.⁷⁹

Under this arrangement, the bank would not serve private retail banking needs but could participate in money creation via fractional reserve banking using deposits of public dollars. These dollars would in turn be reinvested pursuant to RSA 6:8 and RSA 387 and used to fund municipal and public works projects via loans. Although the bill does not discuss specifics, it would require the bank to offer interest on deposits competitive with rates at existing retail banks. Revenues in excess of operating expenses would be transferred to the state General Fund.⁸⁰ We explain the potential benefits of this proposed setup below.

Table 5.1 – Potential Benefits of Establishing a Public Bank

Benefit	Arising from	Likelihood of realization
Increase availability of loans	Money creation power of depository banks will allow state to expand borrowing ability, provide counter-cyclical relief (particularly for much-needed infrastructure projects) and enhance the ability of state to facilitate economic activity. ⁸¹	Fractional reserve banking would in theory allow the state to “create money” in this way. However, this is not a free-for-all: controlling overall money supply would create an added federal regulatory burden. ⁸² Furthermore, there is no evidence that existing retail banks are not already doing this to their capacity.
Lower rates on loans	By acting as the conduit for both access to and provision of funds, a state bank eliminates the need for a financial intermediary. As a result, transaction costs (e.g. searching for financing sources, accurately pricing risk) could be reduced.	Unless a state bank <i>fully</i> eliminates the need for the state to access municipal markets for working capital, it would be redundant to reproduce existing market mechanisms solely to retain interest payments. Further, if existing lending rates are competitively priced for a given level of risk in the private market, it would be unwise for the bank to offer rates below the required rate of return. ⁸³
Lower rates on other programs	Current interest payments are made to private banks with operations outside the state. By containing state debt payments to within the state itself, revenue from interest receivable will enrich state coffers, allowing the state to reduce rates on property taxes, students loans, and other existing funding programs for the benefit of individual citizens. ⁸⁴	With interest payments going toward state bank revenues rather than that of a private bank, the state will inevitably expand sources of revenue receipts. (<i>Related:</i> We provide a breakdown of current payments on state debt in section 6.2.) However, it is uncertain whether the amount collected on interest payments would exceed the cost of setting up the infrastructure necessary for a state bank.



Strengthen local banks	Many small banks may not have the available capital to meet the volume and lumpiness of state liquidity needs. ⁸⁵ Co-lending deals in which the state bank partners with local banks would allow local banks to be competitive with the big banks.	Loan syndications and participations would indeed reduce individual banks' exposure to risk, thereby benefiting from pooling. ⁸⁶ Nonetheless, these loan syndications would all be subject to the same risk exposure: that is, the risk associated with being only in the state of New Hampshire (versus large banks, which can increase independence of risks by holding a diverse portfolio of loans nationwide). ⁸⁷ For this reason, co-lending arrangements may not produce a net efficiency gain and may in fact <i>increase</i> the state's vulnerability to default risk.
Strengthen local rule	Use of federal grant money typically comes with regulatory strings attached. By seeking loans only from the state itself, municipalities can proceed with public works projects to best suit local needs instead of satisfying federal requirements that may not be most effective for the state. In addition, the development bank of New Hampshire can elect to not be FDIC insured.	While it is true that depository institutions may elect not to be FDIC insured, the bank must nonetheless offer a comparable way to ensure the safety and soundness of its deposits. ⁸⁸ Because the bank would handle only public taxpayer dollars, the bank must be highly capitalized—which constrains its capacity for leverage and money creation—with layers of collateral. ⁸⁹

Regarding the development bank's facility for money creation, we emphasize two key points. First, putting new money into circulation will increase overall money supply. Our fiat money, which is not backed by a physical commodity such as gold, must be controlled to protect against excessive inflation.⁹⁰ As a result, the integration of a state bank into the existing financial system would require both operational changes (e.g. transferring of bank files) and additional regulatory oversight (e.g. by the Federal Reserve, which is in charge of monetary policy).

Second, it remains to be explored whether the role of money creation – when transferred partially from large retail banks, as it is done now, to a partial responsibility of a public state bank – would actually increase the supply of capital for public projects. From interviews with the New Hampshire Municipal Bond Bank, the New Hampshire Housing Finance Authority, and State Treasurer Bill Dwyer, it appears that lack of financing sources is not presently a cost-prohibitive barrier to undertaking additional public works projects. Instead, demand for loans has declined due to the economic slowdown.⁹¹ Counter-cyclical relief, as provided by a state bank, may not necessarily facilitate economic revitalization if local appetites for debt have declined.



Thus, while many benefits are possible from establishing a public bank, it is important to evaluate the potential benefits in light of both their likelihood and potential costs.

5.2 Costs of Establishing a Public Bank

HB 672 includes a Fiscal Note from the Department of Treasury, Banking Department, and Department of Justice. We use this note as the starting point for our cost analysis.

Costs for the state can be roughly divided into explicit costs and implicit costs. The former can be broken down into initial setup and continual costs while the latter, the opportunity cost of capital, is more difficult to approximate. These costs are further detailed in the figure below:

Table 5.2 – Potential Costs of Establishing a Public Bank

EXPLICIT COSTS

Initial setup	<p><i>Capitalization:</i> In general, \$10-30 million is required for initial capitalization of a bank in the United States.⁹²</p> <p><i>Filing fees:</i> An additional \$500,000 to \$1 million will be required for startup legal assistance, obtaining a charter, and compliance paperwork.⁹³</p>
Continual costs	<p><i>Payroll:</i> Examiner fees are estimated to be around \$18,000 to \$19,000 per annum. Legal fees approximate \$102,000 for a full-time attorney and \$29,644 for a part-time paralegal. This does not include salaries of full-time bank officers. While board members and the advisory committee will serve without compensation, travel fees will need to be reimbursed.</p> <p><i>Overhead:</i> Overhead will depend on the number of branches and locations.</p>

IMPLICIT COSTS

Opportunity cost of capital	<p>The opportunity cost of capital is best described as the next best alternative for the deployment of capital to achieve the stated objectives of expanding loan availability and stimulating economic activity throughout the state. We more thoroughly address alternative methods for capital usage in section 5.4.</p>
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In addition to initial capitalization, the bank will have to meet daily minimum capital requirements outlined by international standards of Basel III, which demands a seven percent capital threshold. Given the state's \$5.3 billion average balance, this would require roughly \$63 million in total capitalization should the bank eventually grow to house all state funding needs.⁹⁴

The Fiscal Note concludes that establishing a state bank would increase state expenditures with certainty while impact on revenue is uncertain, particularly in a low interest rate environment.



5.3 Logistical Obstacles for a Public Bank

Currently, state statutes require that state funds be deposited in federal or state-chartered banks.⁹⁵ Primarily, New Hampshire has deposited its funds in Citizens Bank, Bank of America, and TD Bank. State Treasurer Bill Dwyer notes that these banks more than adequately perform needed services for the State Treasury, but that competition between additional large banks would drive down the cost of standardized services. In addition, these three banks have branches throughout New Hampshire.⁹⁶ For example, Citizens Bank has 73 branches throughout New Hampshire and TD Bank has 72.⁹⁷ This helps state agencies, such as the Lottery Commission and the Liquor Commission, who need to deposit daily, transport funds securely and efficiently to nearby branches. As a result, having a public bank with a single location in Concord might not serve the day-to-day banking needs of some of New Hampshire's state agencies.⁹⁸

Establishing a public bank would also pose significant technological and logistical obstacles. Beyond simply providing a routing number, a bank performs many sophisticated technological operations when handling capital. For example, larger federally and state-chartered banks have the technology necessary to process checks and cash deposits in bulk. A public bank would need to perform these tasks itself or outsource the performance of them to private banks.⁹⁹

5.4 Alternatives to a Public Bank

In order to justify creating a public bank, it would need to be demonstrated that a public bank would offer increases in efficiency and/or better lending opportunities.¹⁰⁰ Instead of creating a public bank, New Hampshire could pursue several alternatives to increase access to capital. First, it could expand the reach of current lending agencies to address gaps in access to capital. Lending agencies already enjoy considerable advantages over a public bank because they have greater access to federal resources and are less heavily regulated than banks. For example, the New Hampshire Housing Finance Authority can offer mortgage insurance, down-payment assistance grants, and low-income tax credits due to its status as a quasi-governmental agency.¹⁰¹ The New Hampshire Community Loan Fund enjoys greater regulatory freedom because it derives its capital from a pool of private investors, so its loans can close the gap between loans offered by conventional banks and the needs of the borrower.¹⁰²

Moreover, state lending agencies benefit from a certain level of specialization. While a team of professional bankers would run a public bank, it might not be able to reach the same level of collective specialization in a particular sector. Beyond just a loan, lending agencies like the New Hampshire Community Loan Fund provide their borrowers with technical assistance, such as assisting a group of residents with making a bid to purchase their affordable housing complex.¹⁰³ Expanding these types of services would allow state lending agencies to best serve the capital needs of New Hampshire. However, Bill Sullivan identified a shortcoming in the services of the New Hampshire Municipal Bond



Bank, which is that it does not provide resources for municipalities seeking smaller loans. Sullivan explained that these towns often lack the level of sophistication necessary to put together a compelling loan proposal. By increasing the services offered by the NHMBB, these needs could be better met.¹⁰⁴

In addition, some states and municipalities have been experimenting with innovative “social impact bonds.” Similar to loans, private investors provide non-profit organizations with capital and these organizations cooperate with local governments. The funds are contingent upon meeting certain goals. If the project’s goals are met, the government repays the investors. The investors lose money if the goals are not met.¹⁰⁵ This incentivizes private investors to work closely with nonprofits and government agencies to tackle difficult social problems. For example, in 2014, Massachusetts used this model to address chronic homelessness. The project leveraged \$3.5 million in private funds to create 500 units of stable, supportive housing over six years. By providing stable housing over six years, Massachusetts hoped to enable the homeless to get back on their feet, thus reducing chronic homelessness in the future.¹⁰⁶ New Hampshire could use this model to harness the expertise of local nonprofits to best meet social needs.

Above all, these alternative solutions are rely on matching the sector-specific expertise of state lending agencies with the problems they are designed to solve. Instead of the catch-all solution proposed by establishing a public bank, expanding the reach of lending agencies could better target the capital needs of New Hampshire while supporting local borrowers.

5.5 Analysis of Public Bank Efficiency

In previous sections, we have outlined potential benefits, costs, obstacles, and alternatives to establishing a public bank in New Hampshire. However, we also discuss whether a public bank would offer an increase in economic efficiency. Here, we use the metrics of liquidity and risk to determine whether having a public bank would deliver more efficient economic outcomes.

First, we address liquidity management. The function of banks is two-fold: to act as depository institutions and to originate loans.¹⁰⁷ Following this definition, financial intermediation bears risk not only to the bank itself but also to depositors, counterparties, and the financial system as a whole due to the nature of fractional reserve banking and systemic risk.¹⁰⁸

For example, suppose that depositors suddenly rush to withdraw a large amount of funds. If the bank is heavily leveraged and has a significant portion of its assets tied up in illiquid securities, it may not have enough capital on hand to meet this sudden surge in withdrawals.¹⁰⁹ Further, if an unforeseeably large number of loans to the bank end in default due to mispricing of credit risk, the bank will suffer additional losses in its cash and equity holdings.



To meet depositors' withdrawal demands, the bank must liquidate some assets, potentially at fire-sale prices due to the immediacy of liquidity demands. This further cuts into the bank's assets and equity. Finally, if debtors assess the position of the bank and call their loans in light of the bank's sudden credit crisis, the bank will end up in a downward liquidity spiral, unable to meet demands from depositors, debtors, and institutional counterparties all at once.¹¹⁰

Several safeguards exist to protect against the series of risks described above. In the existing lending infrastructure, guarantees by the Federal Deposit Insurance Corporation (FDIC) insure up to \$250,000 per depositor per account per bank.¹¹¹ To benefit from this arrangement, banks must pay a premium to qualify as a FDIC-insured banking institution. While banks are not required to be FDIC insured, the nature of retail banking has made FDIC-insurance a point of competition in winning over customers.¹¹²

Since the proposed development bank would only serve deposits of public funds, a state bank would not have to cover the FDIC insurance premium. Nonetheless, a state bank would have to find other means to secure its deposits, whether by holding U.S. government securities and other highly marketable securities or by pledging collateral such as physical land and property or a stream of future payments such as tax revenue, student loans, or home mortgages. In either case, the state would end up paying – directly to a retail bank via servicing fees and soft dollars or indirectly as described above – for the security of its deposits.

The safety and soundness of deposits may in fact be reduced if held by a state bank due to risks inherent in concentrating deposits. This is because if the state bank were only to serve local loan needs, correlated default risk on its loans would constrain its ability to reap the benefits of pooling across a diversified portfolio of independent risks.¹¹³

State Treasurer Bill Dwyer notes that the Treasury's number one priority is ensuring enough aggregated liquidity to meet fluctuating daily demands on operating cash. Currently, the state deploys cash for needs ranging from \$100 to \$500 million through strategic withdrawals with institutional banking vendors.¹¹⁴ By diversifying funding sources, the state also benefits from competition between vendors to keep rates competitively low.

Since the scope of a public bank would be limited to the state itself, it might experience difficulties achieving the same level of liquidity and market-driven price competitiveness. Given the initial outlay required to set up a bank, any net efficiency gains of capitalizing a bank to solely serve the state's public funding needs are not immediately apparent.

Furthermore, while the state has the ability to generate \$100 to 600 million of liquidity at any one point, it would need to create additional mechanisms to ensure the safety of its own deposits if held in its own bank. For this reason, the New Hampshire Treasury finds



it presently cost-effective to maintain accounts at several multi-branch banks around the state, including Citizens Bank, Bank of America, and TD Bank.¹¹⁵ By pooling deposits nationwide to minimize the impact of any individual loan default, large banks have the capacity and sophisticated banking technology to meet state liquidity needs.

Second, we turn to risk management. Beyond the financial system itself, individual banks can take measures to limit their risk exposure. We discuss these measures in the table below.

Figure 5.5 – Methods to Manage or Mitigate Risk

Method	How it works	Could a state bank do it better?
Information discovery	Employ risk-based pricing such that loans with greater determinable risk compensate by paying higher interest. As such, highly risky loans do not pose a problem because they would be priced accurately to reflect their risk profile. ¹¹⁶	Given the cost and expertise required of information discovery, a state bank is unlikely to hold a competitive advantage in accurately pricing risk if just starting out. Economies of scale apply here, since having more loans to price would allow high fixed costs to be spread over a greater number of realized loans. ¹¹⁷
Capital buffer	In times of liquidity stress, a high capital buffer in excess of minimum federal capital requirements allows banks to stay afloat longer. This reduces the chance that the bank will have to liquidate assets at fire-sale prices. Capital serves as the first line of defense in the event of value loss. ¹¹⁸	A public bank whose loans are concentrated in public projects will not capture the full range of diversification benefits due to the non-independent common trait of being intrastate. When loans go bad, they may all go down together, which would quickly deplete the bank's capital buffer.
Diversification	A wide-ranging portfolio of uncorrelated risks reduces exposure to any individual loan's default risk. The greater the independence between loans, the greater the benefits of diversification.	As with capital buffers, a bank whose scope is limited to the state faces a significantly reduced ability to handle default losses should the loans be correlated on some level. This renders pooling of risks less effective.
Hedging	More relevant to interest rate positions than loan decisions: if the bank were to finance its assets (e.g. loans) using liabilities (e.g. deposits) with shorter maturities, the bank could hedge its refinance position with a long position on interest rate derivatives. ¹¹⁹	It is not immediately obvious whether economies of scale or scope would prohibit a state bank to perform this function just as efficiently as a large, well-diversified bank. However, it should be noted that the greater risk inherent in certain derivative instruments may limit their appropriateness for a bank handling solely public funds.



Securitization	Banks resell the risk on loans via collateralized debt obligations. Like syndicated loans, they work by reducing individual risk exposure and allowing those who have a comparative advantage in holding risk to buy the risk premium, effectively transferring the risk, and its potential rewards, to the latter party instead of the loan originator.	As above, it is not immediately obviously whether economies of scale or scope would prohibit a state bank from performing this function just as efficiently as a large, well-diversified bank.
External insurance	External guarantees of deposits, as provided by FDIC insurance, impose a cost via the premium paid to be FDIC-insured.	This is unlikely. The state would also have to develop ways to collateralize loans.

We can draw several conclusions from the above analysis. First, a risk-return tradeoff exists. Higher risks beget higher premium payments on loans and higher returns on reinvested funds. In the case of a public bank, types of loans made and sources of reinvestment earnings on deposits are dually limited due to the riskier nature of certain investment opportunities. As a result, a public bank may face greater constraints when pursuing the most profitable investment decisions as compared to private retail banks. For this reason, New Hampshire's public bank would have difficulty getting initial capitalization off the ground and growing if it erred on the side of caution in reinvesting its deposits. However, lower-return investments also tend to be safer.

But would a public bank be safer overall? Economics of scale and scope suggest that this is unlikely. A development bank whose operations are contained to intrastate lending and depository activities is limited in its ability to capture the benefits of pooling and diversification. This is because risk exposure increases with a pool of borrowers who share some non-independent trait. The competitiveness of a public bank is further constrained by activities necessitating high fixed costs. In the latter area, large existing banks hold a significant advantage by spreading high fixed costs over a greater scale of operation, customers, and daily transactions.

Additionally, the caution required in handling public dollars may necessitate a higher reserve requirement than regular retail banks face. If this is the case, it would be more difficult for a public bank to offer rates competitive with that of private banks due to the nature of leverage.

Moreover, lending standards under a public bank may have to be more stringent than retail bank loans currently made through private placements or underwritten for the municipal bond market. The increased stringency of a public bank's loans would therefore put the bank at a cost disadvantage to the market for debt overall, in which case only bonds that fail to be bought on the private market would seek financing through the



public bank. The public bank could subsequently face an adverse selection problem and, counter to the original intent of higher standards, end up holding all the riskier loans because these borrowers have no other option.

The key to running a more efficient public bank, then, is to derive cost-cutting innovations from reducing transaction costs realized by cutting out the middleman – in this case, by eliminating the need to access capital markets. At present, with just under \$1 billion in general obligation bonds outstanding, it appears feasible that a public bank could eventually achieve the scale to replace the need for capital markets to fund municipal and state projects.¹²⁰

However, the current process for bonding activity, facilitated by the NHMBB or individually by municipalities of larger cities, appears to be sufficient. Sheila St. Germain, Executive Director of the NHMBB, notes that although municipalities must go through an approval process, only two times in thirty years have any applications been denied.¹²¹ Given this information, it is unlikely that capital needs in the state are being constrained by tightness of lending standards. We conclude that debt financing for public projects does not presently face a quantity restriction.

Next, we look to default rates to examine efficient pricing. If current interest rates on state debt are inefficiently priced, then we would expect there to be high rates of default. Here again, we find no evidence that debt is being priced inappropriately. In fact, the NHMBB has a default rate of zero.¹²² Because towns have the power to raise property taxes to meet debt payment schedules, a town would have to go bankrupt before the bond defaults. Since the NHMBB was established thirty years ago, it has never defaulted on a bond obligation.

Given the constraints on pooling, scale, diversification, and scope of a state public bank, we conclude that it would be very difficult to set up the state's own infrastructure to deliver greater efficiency and stability than what the current process for debt financing provides.

6. TRANSITIONING TO A PUBLIC BANK

In this section, we address how New Hampshire could transition its finances to a public bank, if state legislators were to decide a public bank was desirable. First, we address the question of sources of capitalization by examining restrictions on New Hampshire's existing reserve funds. Next, we explore New Hampshire's current system of interest payments to understand whether establishing a public bank could reduce interest payments on the state debt and bank service fees. Finally, we assess the potential effects of a public bank on New Hampshire's credit rating.



6.1 Sources of and Constraints on State Capital

If state legislators chose to capitalize a public bank, they would have limited opportunities to access funds from New Hampshire's different reserve funds, most of which earmark funds for specific purposes. In addition, these funds also make capital available for higher education loans and capital improvement projects, needs that a public bank might attempt to fill. We include below an explanation of each type of fund and its current balance.

First, New Hampshire uses its General Fund to appropriate money for various capital projects throughout the state.¹²³ Tax revenue and other sources create the capital in the General Fund, which can be utilized for a variety of purposes, which would potentially include capitalizing a public bank. Since the remainder of the funds were established for specific purposes, such as supporting fish and game protection, they might not be available for capitalizing a public bank. On June 30, 2015, the fund's balance was about \$284 million.¹²⁴

New Hampshire's Highway Fund covers both the operating expenses of maintaining the state's highway system and long-term capital improvement activities.¹²⁵ On June 30, 2015, the fund's balance was roughly \$125 million.¹²⁶ The Education Fund distributes education grants to participating school districts.¹²⁷ On June 30, 2015, the fund had a deficit of about \$92 million.¹²⁸ The Fish and Game Fund finances the activities of the State Fish and Game Department, including land acquisitions, operation of fish hatcheries, and wildlife protection efforts.¹²⁹ On June 30, 2015, the fund's balance was about \$7 million.¹³⁰ The Capital Projects Fund accounts for projects intended to be funded through issuing bonds or through federal grants, such as capital roadway improvement projects.¹³¹ On June 30, 2015, the fund's balance was about \$59 million.¹³² The State Revolving Fund (SRF) makes loans to municipalities to ensure access to clean and safe drinking water.¹³³ The SRF currently has about \$16 million in outstanding bonds.¹³⁴

State legislators could only use General Fund capital to capitalize a public bank. However, New Hampshire relies on its General Fund to finance all other capital activities within the state, including capital improvements and the day-to-day operating activities of state agencies. Legislators would not be able to use funds from reserve funds other than the General Fund because these funds have been established to meet specific public needs. For example, funds from federal grants are deposited into the Capital Projects fund for use in infrastructure improvements. However, state legislators might not necessarily want to use capital from the General Fund to capitalize a public bank because this method would constrain the ability of the state government to fund other essential state functions, increasing the opportunity cost of capitalizing a public bank.



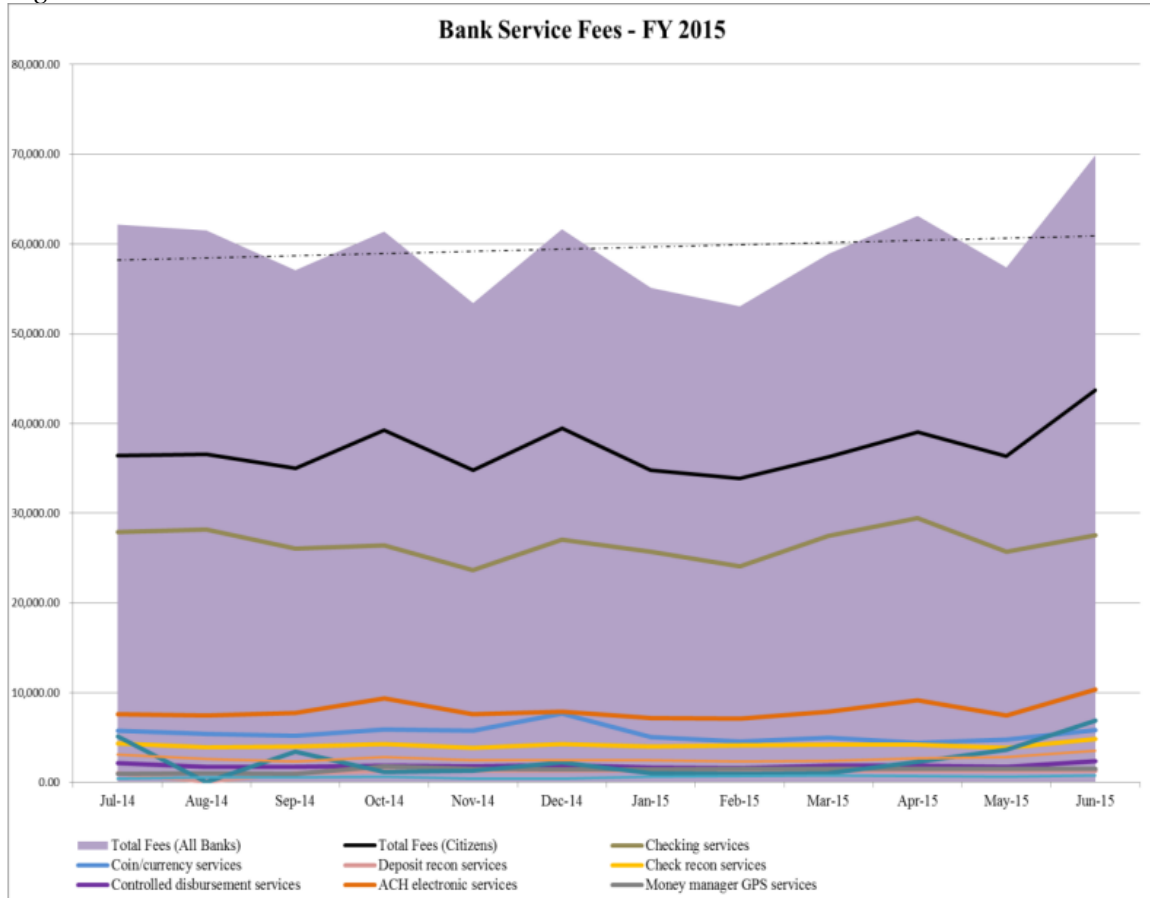
6.2 Current Payments on State Debt

The state currently holds \$918 million in total outstanding general obligation bonds, which are backed by the “full faith and credit of the State.”¹³⁵ These bonds have maturities ranging from June 30, 2016 to June 30, 2043, with cumulative principal repayment totaling about \$1.6 billion in present discounted dollars.¹³⁶ Interest ranges from 2 to 7.2 percent, totaling \$551,699,000. Total debt service net of federal interest subsidies, including both principal and interest, amounts to roughly \$2 billion over this 27-year horizon.¹³⁷

To service this debt, the state maintains a Debt Service Reserve Fund to pay for payments on bonds. This fund is financed through bond issues underwritten by the NH Municipal Bond Bank. In Fiscal Year 2015, \$6,213,609 of general obligation bonds were issued whose proceeds were used to serve as a stable reserve of investment for the NHMBB. In a transition to a public bank, it should be possible to redirect portions of the Reserve Fund’s investment income to finance operations of the development bank instead of channeling all income toward debt servicing. This would be particularly effective because the presence of a state bank would reduce the state’s existing use of banking services at private banking institutions.

The figure below, taken from the Annual Report of the State Treasury, represents monthly hard dollar fees paid to private retail banks for institutional banking services in FY 2015.¹³⁸ Total service fees approximated \$700,000. This includes all currency, disbursement, checking, and deposit services. Without additional details about the breakdown of servicing expenses, it is difficult to estimate how much debt servicing contributes to the overall fee expense. However, it should be noted that the Treasury earned interest income on the General Fund totaling \$214,169, after accounting for service fees paid out.¹³⁹ Thus, the overall management of the General Fund is a net inflow of money.

Figure 6.2 – Bank Service Fees¹⁴⁰



Finally, it may be advisable to close out previously issued general obligation bonds in order to take advantage of the current favorable interest rate environment. Based on the FY 2015 reports, it appears that the Treasury has already acted on this, leading to savings of \$7.6 million in presently discounted dollars.¹⁴¹ It is not inconceivable to think that the Treasury could further act on favorable interest rates by redirecting these savings into new issues of general obligation bonds with debt payments tied to future profits of the development bank.

6.3 Effects on State Credit Rating

The state of New Hampshire has enjoyed a steady AA credit rating from Standard & Poor's for at least the past decade, whose grades range from AAA to BBB. Other states' ratings range from AAA to A-, indicating New Hampshire's healthy credit rating.¹⁴²

The NHMBB, which underwrites bonds to fund municipal projects, currently holds credit ratings of AA2 from Moody's and AA+ from Standard & Poor's. While the NHMBB deducts an underwriting fee, its credit rating is significantly higher than what most



individual municipalities could achieve alone, allowing municipalities to enjoy lower costs on debt financing. Furthermore, because the NHMBB packages municipal bonds into tranches of \$50 million per issue, buyers of these bonds – which tend to be large institutional investors like Citi Bank – are more likely to accept lower rates. This is due to the benefits of pooling and diversification, arising from the corresponding greater independence of risks.

Regarding the impact of transitioning to a state bank on the state credit rating and subsequent bonding activity, it is difficult to predict precisely. However, credit rating agencies such as Moody's and Standard & Poor's base ratings on a combination of intrinsic and extrinsic factors. Intrinsic factors include the financial strength of the state, the predictability and reliability of future cash flows, and the existing debt profile and terms of debt.¹⁴³ Extrinsic factors include networks with counterparties, the reliability of these counterparties, the stability of local governments, and systemic federal support commitment. Following the 2008 crisis, it is apparent that credit quality of interdependent parties in financial networks is particularly important due to the nature of systemic risk.

When transitioning to a state bank, the stability and creditworthiness of relevant counterparties should be taken into consideration due to the importance of strong credit ratings in allowing for lower rates on capital market borrowing. If the state eventually plans to phase out reliance on capital markets entirely and rely solely on the development bank for borrowing needs, the state's credit rating would be inconsequential to itself in theory.

7. CASE STUDY: BANK OF NORTH DAKOTA

Since North Dakota is the only other state with a public bank, we provide a case study of the Bank of North Dakota's lending activities. First, we summarize the structure and lending of the Bank of North Dakota, then we compare it New Hampshire's existing lending agencies.

7.1 General Overview

This section provides a brief overview of the key mechanics of the Bank of North Dakota (BND), including its primary constituents, loan structure, and its overall financial impact. Further, this section contextualizes the factors and decisions that led to the creation of the BND and its larger economic impacts on the state. The BND was created with the express purpose of supporting state agriculture, commerce, and industry.¹⁴⁴ The bank effectively sustained its mission of providing safe, reliable lending to projects that foster state economic growth, including subsidies for farmers, while leaving riskier ventures, like affordable housing, to quasi-independent state agencies. For its lending practices, BND partners with many community banks, who originate the loan, and then the bank purchases it from these entities. It has also been used by the government of North Dakota as a means of balancing budget short falls, but this has been relatively infrequent.¹⁴⁵



The BND was first established in 1919 and capitalized with \$2 million, equivalent to approximately \$27.5 million today.¹⁴⁶ Created as a public policy tool to address a market failure, the bank sought to help North Dakota farmers access credit at interest rates that allowed them to sustain their businesses. Due to competition between public and private banks in the state, banking soon stabilized over a decade, and underwriting loans placed the BND in a supportive role relative to private banks. As the bank evolved during the 20th century it came to participate more actively in lending activity. However, the majority of the bank's deposits are attributable to the state government, which is required by its charter to deposit its cash reserves in the BND.¹⁴⁷ As of last quarter, BND held \$7.4 billion in total assets, and \$5.8 billion in total deposits.¹⁴⁸

The BND has been largely profitable for the state of North Dakota. Over the past 40 years it has returned approximately two thirds of its profits back to the state.¹⁴⁹ However, these funds have only accounted 0.75 percent of state expenditures in the same time frame. As a result, the average rate of return may be high, but returns do not comprise a significant portion of state expenditures.¹⁵⁰ Though this profitability is noteworthy and consistent, the BND often stumbles when the state stumbles financially, including during the 2008 financial crisis.¹⁵¹ In addition, its current profitability and returns are now more at risk than in previous decades due to recent changes in federal law regarding student loans. Though the bank began as a means of providing capital for farmers, its portfolio heavily relies on underwriting student loans. After the passage of the Federal Health Care and Education Reconciliation Act in 2010, the federal government underwrites these student loans, meaning this portfolio will decrease as existing loans are paid off.¹⁵² Overall, elements of the bank that are highly specific to North Dakota and its economic growth, industries, and demographics over the past 80 years, including its relatively sparse population and recent energy boom, make it difficult to draw casual inferences about BND's overall role in the state's economy.

7.2 Applicability to New Hampshire's Lending Structure

This section provides a brief overview of the various government and quasi-government lending entities in North Dakota, and then provides a brief comparison to New Hampshire's existing lending agencies.

The North Dakota Development Fund provides "gap financing" for a variety of private sector industries not typically funded through conventional lenders. Financing usually takes the form of loans or equity investments, depending on the amount of debt the business can take on. It provides for every industry outside of agriculture. As of 2014, it manages \$26 million in general assets.¹⁵³ Overall, the activities appear to mirror the functions performed by New Hampshire's Community Loan Fund.

The Public Finance Agency was created with the express purpose of making loans to municipalities, counties, and certain private industries within the state.¹⁵⁴ It typically



helps fund the construction of schools. The North Dakota Public Finance Agency manages 73.9 million in total assets as of 2014.¹⁵⁵ Finally, the North Dakota Housing Finance Agency is a self-sustaining quasi-government agency that provides loans and home financing for moderate to low-income families.¹⁵⁶ It allocated 68.4 million in loans this past year, while holding \$82.7 million in total assets.¹⁵⁷

North Dakota's array of public and private financing options is similar to those of New Hampshire. Both states have a housing authority along with a different combination of programs to provide capital toward developing critical pieces of municipal infrastructure and to encourage business development. While New Hampshire possesses an entity to manage student loans, North Dakota does not have such an entity.

8. CONCLUSION

In our initial meeting with New Hampshire State Representative Valerie Fraser, four primary benefits of establishing a public bank were cited: reducing interest payments, expanding the lending ability of small banks in New Hampshire, greater capital security, and greater autonomy.¹⁵⁸ We find that a public bank might not achieve these objectives efficiently and effectively. First, a public bank does not necessarily reduce interest payments. While the state of New Hampshire would possess its own debt, it would still pay interest on that debt, potentially eliminating cost savings.¹⁵⁹ Second, many lending agencies in New Hampshire already expand the lending ability of local banks, such as the NHCLF and the NHBFA.¹⁶⁰ Third, State Treasurer Bill Dwyer pointed out that concentrating state assets in a single location might threaten the security of capital, rather than better secure it. Finally, while establishing a public bank might offer a measure of autonomy, the State of New Hampshire already presently enjoys positive relationships with private sector banks.¹⁶¹

While a public bank might not offer an appropriate solution for stimulating economic growth in New Hampshire, we conclude that current avenues of lending in New Hampshire and the economic impact of a public bank warrant further study. When Vermont considered establishing a public bank, it conducted an extensive study using detailed state economic (IMPLAN) data that calculated the economic impact in terms of jobs created and additional revenue for the state government.¹⁶² If New Hampshire legislators want to seriously consider a public bank, we recommend applying the IMPLAN method to New Hampshire. In addition, New Hampshire should consider the legal ramifications of establishing a public bank, with regard to the specific federal and state regulations with which a public bank would need to comply. Finally, if state legislators choose to pursue a public bank, we recommend creating a highly specific business plan that addresses the costs and process of establishing a public bank.



¹ Kodrzycki, Yolanda and Tal Elmatad. “The Bank of North Dakota: A Model for Massachusetts and other states?” New England Public Policy Research Center, May 2011, 4.

² “Exploring a Public Bank for Vermont.” Vermonters for a New Economy, December 2013, 2.

³ Establishing a State Bank, New Hampshire H.R. HB-672 (2016).

⁴ Valerie Fraser, New Hampshire House of Representatives. September 2015. Interview.

⁵ Establishing a State Bank, New Hampshire H.R. HB-672 (2016).

⁶ Introduction to Public Banking. (n.d.). Retrieved February 29, 2016, from http://www.publicbankinginstitute.org/intro_to_public_banking

⁷ Exploring a Public Bank for Vermont.” Vermonters for a New Economy, December 2013, 17.

⁸ Dawson, C. (2014, November 16). Shale Boom Helps North Dakota Bank Earn Returns Goldman Would Envy. *Wall Street Journal*. Retrieved February 29, 2016.

⁹ Dawson, C. (2014, November 16). Shale Boom Helps North Dakota Bank Earn Returns Goldman Would Envy. *Wall Street Journal*. Retrieved February 29, 2016.

¹⁰ Introduction to Public Banking. (n.d.). Retrieved February 29, 2016, from http://www.publicbankinginstitute.org/intro_to_public_banking

¹¹ “Exploring a Public Bank for Vermont.” Vermonters for a New Economy, December 2013, 17.

¹² “Rationale for Supporting New Hampshire House Bill FN-672: Banking in the Public Interest,” 2.

¹³ “Rationale for Supporting New Hampshire House Bill FN-672: Banking in the Public Interest,” 3.

¹⁴ Valerie Fraser, New Hampshire House of Representatives. 15 February 2016. Interview.

¹⁵ “Exploring a Public Bank for Vermont.” Vermonters for a New Economy, December 2013, 3.

¹⁶ U.S. Constitution. Article. I, § 8.

¹⁷ Money and the Constitution. (n.d.). Retrieved February 29, 2016, from <http://www.let.rug.nl/usa/essays/general/a-brief-history-of-central-banking/money-and-the-constitution.php>

¹⁸ Ibid.

¹⁹ *Green v. Frazier* 253 U.S. 233 (1920), 253.

²⁰ *Green v. Frazier* 253 U.S. 233 (1920), 253.

²¹ *Briscoe v. Bank of Commonwealth of Kentucky* 36 U.S. 257 (1837), 36.

²² Ibid.

²³ Dennis Delay. (2015) *New Hampshire Economic Outlook*, New Hampshire Center for Public Policy Studies, 8.

²⁴ Ibid., 9.

²⁵ Ibid., 12-13.

²⁶ Ibid., 13.

²⁷ Sheila Weinberg. (2015) *New Hampshire Hides 68 Percent of its Retirement Debt*, Truth In Accounting, <http://www.truthinaccounting.org/library/doclib/NH-2014-Press-Release.pdf>

²⁸ Ibid.

²⁹ Steve Norton. (2015) *Looking Down the Fiscal Road: What lies ahead for New Hampshire’s Long Term Finances?* The New Hampshire Center for Public Policy Studies, http://www.nhpolicy.org/UploadedFiles/Reports/FiscalRoad_forweb.pdf, 5.

³⁰ Steve Norton. (2015) *Looking Down the Fiscal Road: What lies ahead for New Hampshire’s Long Term Finances?* The New Hampshire Center for Public Policy Studies, http://www.nhpolicy.org/UploadedFiles/Reports/FiscalRoad_forweb.pdf, 5.

³¹ Ibid., 6.

³² Ibid., 7.

³³ Ibid., 8.

³⁴ Ibid., 8.

³⁵ Ibid., 8.

³⁶ Dennis Delay, and Steve Norton. (2012) *Getting What We Pay For? Health Care Spending in New Hampshire*, The New Hampshire Center for Public Policy Studies, http://www.nhpolicy.org/UploadedFiles/Reports/Healthcare_Spending_EFH.pdf, 1.



- ³⁷ Dennis Delay, and Steve Norton. (2012) *Getting What We Pay For? Health Care Spending in New Hampshire*, The New Hampshire Center for Public Policy Studies, http://www.nhpolicy.org/UploadedFiles/Reports/Healthcare_Spending_EFH.pdf, 1.
- ³⁸ Ibid., 4.
- ³⁹ Dennis Delay, Steve Norton, and Daniel Barrick. (2012) *Financing New Hampshire's Cities and Towns: Through 2011*, The New Hampshire Center for Public Policy Studies, http://www.nhpolicy.org/UploadedFiles/Reports/Town_Finance_Project_V14a.pdf, 1.
- ⁴⁰ Ibid., 1.
- ⁴¹ Ibid., 4-5.
- ⁴² Ibid., 9.
- ⁴³ Sheila St. Germain, Executive Director, New Hampshire Municipal Bond Bank. 19 February 2016. Interview.
- ⁴⁴ David Sargent, Managing Director, New Hampshire Housing Finance Authority. 8 February 2016.
- ⁴⁵ Interest Rates. (n.d.). Retrieved February 29, 2016, from <https://gonewhampshirehousing.com/buying-home/rates>
- ⁴⁶ Current Mortgage Interest Rates | Bankrate.com. (n.d.). Retrieved February 29, 2016, from <http://www.bankrate.com/finance/mortgages/current-interest-rates.aspx>
- ⁴⁷ Find the best mortgage rates in New Hampshire | Bankrate.com. (n.d.). Retrieved March 3, 2016, from <http://www.bankrate.com/new-hampshire/mortgage-rates.aspx>
- ⁴⁸ Sargent. 8 February 2016. Interview. (Not sure why note 50 doesn't identify this as an interview, and here it does).
- ⁴⁹ Sargent. 8 February 2016. Interview.
- ⁵⁰ John Flanders, Chief Operating Officer, New Hampshire Community Loan Fund. 25 February 2016. Interview.
- ⁵¹ Capital-Access-Program. (n.d.). Retrieved February 29, 2016, from <http://www.nhbfa.com/Capital-Access-Program.html>
- ⁵² ibid.
- ⁵³ Biz-Energy-Loan-Program. (n.d.). Retrieved February 29, 2016, from <http://www.nhbfa.com/Biz-Energy-Loan-Program.html>
- ⁵⁴ Bond-Financing. (n.d.). Retrieved February 29, 2016, from <http://www.nhbfa.com/Bond-Financing.html>
- ⁵⁵ NHHELCO.org. (n.d.). Retrieved March 1, 2016, from https://www.nhheaf.org/index.asp?page=abt_nhhelco
- ⁵⁶ New Hampshire Higher Education Assistance Foundation (NHHEAF). (n.d.). Retrieved March 1, 2016, from https://www.nhheaf.org/index.asp?page=abt_nhheaf
- ⁵⁷ St. Germain. 19 February 2016. Interview.
- ⁵⁸ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 52-53.
- ⁵⁹ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 90, 96, 99.
- ⁶⁰ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 60.
- ⁶¹ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 75.
- ⁶² "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 23.
- ⁶³ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 24.
- ⁶⁴ Sargent. 8 February 2016. Interview.
- ⁶⁵ "Annual Report of the State Treasury." State of New Hampshire. 2015, 3.
- ⁶⁶ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 8.
- ⁶⁷ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 25-26.
- ⁶⁸ "Annual Report of the State Treasury." State of New Hampshire. 2015, 3.
- ⁶⁹ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 25.
- ⁷⁰ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 26.
- ⁷¹ William Dwyer, Treasurer, State of New Hampshire. 10 February 2016. Interview.
- ⁷² William Sullivan, Managing Director, New Hampshire Public Deposit Investment Pool. 24 February 2016. Interview.
- ⁷³ St. Germain. 19 February 2016. Interview.



-
- ⁷⁴ Ibid.
- ⁷⁵ Sullivan. 24 February 2016. Interview.
- ⁷⁶ 2016 Series A Final Official Statement, New Hampshire Municipal Bond Bank, B-9-10.
- ⁷⁷ Sullivan. 24 February 2016. Interview.
- ⁷⁸ Ibid.
- ⁷⁹ Establishing a State Bank, New Hampshire H.R. HB-672 (2016).
- ⁸⁰ Ibid.
- ⁸¹ Understanding How the Federal Reserve Creates Money. (n.d.). Retrieved February 18, 2016, from <http://www.investopedia.com/articles/investing/081415/understanding-how-federal-reserve-creates-money.asp>; FAQ. (n.d.). Retrieved February 18, 2016, from <http://www.publicbankinginstitute.org/faq>
- ⁸² How does the Fed determine interest rates to control the money supply?. (n.d.). Retrieved February 16, 2016, from <http://www.frbsf.org/education/publications/doctor-econ/2005/february/interest-rates-money-supply>
- ⁸³ Staten, Michael. "Risk-Based Pricing in Consumer Lending" University of Arizona Center for Capital Markets, October 2014, 20.
- ⁸⁴ FAQ. (n.d.). Retrieved February 18, 2016, from <http://www.publicbankinginstitute.org/faq>
- ⁸⁵ Dwyer. 10 February 2016. Interview.
- ⁸⁶ The risks and rewards of multiple lender financings: loan participations and syndicated loans. November 2014. Retrieved February 11, 2016 from <http://www.lexology.com/library/detail.aspx?g=2f1b5567-fdf3-483f-982d-1fb41a6d9810>
- Simons, Katerina. "Why Do Banks Syndicate Loans?" Federal Reserve Bank of Boston: New England Economic Review, January 1993.
- ⁸⁷ Kohn, Mier. *Financial Institutions and Markets*. Oxford University Press. 2003, 229-230.
- ⁸⁸ The Structure and Functions of the Federal Reserve System. (n.d.). Retrieved February 27, 2016 from <https://www.federalreserveeducation.org/about-the-fed/structure-and-functions>
- ⁸⁹ Dwyer. 10 February 2016. Interview.
- ⁹⁰ G. Thomas Woodward. Money and the Federal Reserve System: Myth and Reality. Congressional Research Service: Library of Congress, July 1996.
- ⁹¹ St. Germain. 19 February 2016. Interview.
- ⁹² Milton, Sue. *The Capital Needs of Central Banks*. Bank of England. 2001, 85.
- ⁹³ Ibid.
- ⁹⁴ Establishing a State Bank, New Hampshire H.R. HB-672 (2016).
- ⁹⁵ Ibid.
- ⁹⁶ Ibid.
- ⁹⁷ Deposit Market Share Report, Federal Deposit Insurance Corporation, accessed March 1, 2016. Retrieved from <https://www5.fdic.gov/sod/sodMarketRpt.asp?barItem=&sCounty=all>.
- ⁹⁸ Dwyer. 10 February 2016. Interview.
- ⁹⁹ Ibid.
- ¹⁰⁰ Andrew Samwick, Director, Rockefeller Center for Public Policy, Dartmouth College. 4 February 2016. Interview.
- ¹⁰¹ Sargent. 8 February 2016. Interview.
- ¹⁰² Flanders. 25 February 2016. Interview.
- ¹⁰³ Ibid.
- ¹⁰⁴ Sullivan. 24 February 2016. Interview.
- ¹⁰⁵ Wiltz, T. (2016, February 22). States, Localities Try Creative Financing to Help the Homeless. Retrieved March 01, 2016, from <http://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2016/02/22/states-localities-try-creative-financing-to-help-the-homeless>
- ¹⁰⁶ Massachusetts Launches Pay for Success Initiative to Reduce Chronic Individual Homelessness (n.d.). Retrieved March 1, 2016, from http://www.payforsuccess.org/sites/default/files/mass.gov-massachusetts_launches_pay_for_success_initiative_to_reduce_chronic_individual_homelessness.pdf
- ¹⁰⁷ Kohn, Mier. *Financial Institutions and Markets*. Oxford University Press. 2003, 135.



¹⁰⁸ Acemoglu, Daron et al. "Systemic Risk and Stability in Financial Networks." *American Economic Review*. Vol. 105, No. 2 2015, 564.

¹⁰⁹ Kohn, Mier. *Financial Institutions and Markets*. Oxford University Press. 2003, 645.

¹¹⁰ *Ibid*, 604.

¹¹¹ Understanding Deposit Insurance. (n.d.). Retrieved February 20, 2016 from

<https://www.fdic.gov/deposit/deposits/>

¹¹² Are all bank accounts insured by the FDIC?. (n.d.). Retrieved February 18, 2016 from

<http://www.investopedia.com/ask/answers/08/fdic-insured-bank-account.asp>

¹¹³ Kohn, Mier. *Financial Institutions and Markets*. Oxford University Press. 2003, 123.

¹¹⁴ Dwyer. 10 February 2016. Interview.

¹¹⁵ *Ibid*.

¹¹⁶ Meir Kohn. *Financial Institutions and Markets*. Oxford University Press. 2003, 230.

¹¹⁷ *Ibid*, 251.

¹¹⁸ Maurin, Laurent and Mervi Toivanen. "Risk, Capital Buffer, and Bank Lending." European Central Bank, November 2012, 16.

¹¹⁹ How are futures used to hedge a position?. (n.d.). Retrieved on February 28, 2016 from

www.investopedia.com/ask/answers/06/futureshedge.asp; Interest Rate Risk Vs. Reinvestment Rate Risk.

(n.d.). Retrieved on February 27, 2016 from <http://finance.zacks.com/interest-rate-risk-vs-reinvestment-rate-risk-5848.html>

¹²⁰ "Annual Report of the State Treasury." State of New Hampshire. 2015, 3.

¹²¹ St. Germain. 19 February 2016. Interview.

¹²² *Ibid*.

¹²³ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 51.

¹²⁴ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 89.

¹²⁵ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 96.

¹²⁶ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 24.

¹²⁷ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 51.

¹²⁸ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 91.

¹²⁹ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 51.

¹³⁰ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 102.

¹³¹ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 51.

¹³² "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 101.

¹³³ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 37.

¹³⁴ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 63.

¹³⁵ "Comprehensive Annual Financial Report." State of New Hampshire. 2015. 62.

¹³⁶ *Ibid*.

¹³⁷ *Ibid*.

¹³⁸ "Annual Report of the State Treasury." State of New Hampshire. 2015, 16.

¹³⁹ *Ibid*.

¹⁴⁰ "Annual Report of the State Treasury." State of New Hampshire. 2015, 26.

¹⁴¹ *Ibid*.

¹⁴² State Credit Ratings. (n.d.). Retrieved on February 10, 2016 from

https://ballotpedia.org/State_credit_ratings

¹⁴³ Cantor, Richard et al. "Understanding Moody's Corporate Bond Ratings And Rating Process." Moody's Investors Service, May 2002, 4.

¹⁴⁴ Kodrzycki Y. and Elmatad T. (2011), *The Bank of North Dakota: A Model For Massachusetts And Other States?* New England Public Policy Center, 3.

¹⁴⁵ Kodrzycki Y. and Elmatad T. (2011), *The Bank of North Dakota: A Model For Massachusetts And Other States?* New England Public Policy Center, 4..

¹⁴⁶ Teachout S. and Klein S., (2010) *Preliminary Review of Issues in Adopting a Bank of North Dakota (BND) Model in VT*, Vermont Legislative Joint Fiscal Office, 1.



-
- ¹⁴⁷ Kodrzycki Y. and Elmatad T. (2011), *The Bank of North Dakota: A Model For Massachusetts And Other States?*, New England Public Policy Center, 8.
- ¹⁴⁸ <https://bnd.nd.gov/pdf/12-15callreport.pdf>
- ¹⁴⁹ Kodrzycki Y. and Elmatad T. (2011), *The Bank of North Dakota: A Model For Massachusetts And Other States?*, New England Public Policy Center, 9.
- ¹⁵⁰ Kodrzycki Y. and Elmatad T. (2011), *The Bank of North Dakota: A Model For Massachusetts And Other States?*, New England Public Policy Center, 8.
- ¹⁵¹ Kodrzycki Y. and Elmatad T. (2011), *The Bank of North Dakota: A Model For Massachusetts And Other States?*, New England Public Policy Center, 10.
- ¹⁵² Kodrzycki Y. and Elmatad T. (2011), *The Bank of North Dakota: A Model For Massachusetts And Other States?*, New England Public Policy Center, 8-9.
- ¹⁵³ <http://www.business.nd.gov/uploads/10/nddocdevelopmentfundreportweb.pdf>
- ¹⁵⁴ North Dakota Public Finance Authority. (n.d.). Retrieved March 01, 2016, from <http://www.nd.gov/pfa/>
- ¹⁵⁵ Ibid.
- ¹⁵⁶ North Dakota Housing Finance Agency. (n.d.). Retrieved March 01, 2016, from <https://www.ndhfa.org/About/About.html>
- ¹⁵⁷ <https://www.ndhfa.org/Financial/AuditJune2015.pdf>
- ¹⁵⁸ Fraser. 15 February 2016. Interview.
- ¹⁵⁹ Samwick. 4 February 2016. Interview.
- ¹⁶⁰ Flanders. 25 February 2016. Interview; Loan-Plans-and-Guarantees. (n.d.). Retrieved March 01, 2016, from <http://www.nhbfa.com/Loan-Plans-and-Guarantees.html>.
- ¹⁶¹ Dwyer. 10 February 2016. Interview.
- ¹⁶² "Exploring a Public Bank for Vermont." Vermonters for a New Economy, December 2013, 2.