National Infrastructure Bank (NIB) –
Frequently Asked Questions

Last Updated: September 6, 2019

Q: Why is a National Infrastructure Bank (NIB) needed?

A: Our nation's spending on infrastructure has fallen to its lowest level in 70 years: to 2.5% of our nation's GDP. That's half the comparable level in Europe, and 1/3 the level in China. As a result, we are loosing our world-wide competitive edge.

Over our 240-year history, infrastructure spending has largely accelerated only when a National Infrastructure Bank has been place (there have been four major ones in the past, starting with the First Bank of the United States created in 1791 by Treasury Secretary Alexander Hamilton, and ending with FDR's Reconstruction Finance Corporation (RFC). Similarly, infrastructure spending has fallen when the charters for those four banks – all of them successful – were permitted by Congress to lapse.

Q: Why can't we just rely on Federal and State budgets to fund infrastructure?

A: For two reasons. First, infrastructure development needs long-term planning, and a reliable source of long-term funding, in order to succeed. That's just not possible under a system of uncertain annual appropriations (unreliable funding for the Eisenhower Highway Trust Fund is a case in point), and politicians' short-term horizons of from 2 to 4 years. Second, the Federal budget, and many State budgets, are in financial disarray, with dwindling tax receipts, rising debts/bond issues, and ever-increasing spending on other budget items that crowd out any plans to increase infrastructure spending in the future.

Q: Why not rely on State Infrastructure Banks (SIBs)?

A: There are some 33 SIBs – revolving funds, actually –but because they were established with very small Federal and State grants (totaling $661 million), they are simply too small to finance very much of America's infrastructure needs.

There is one notable exception, however: The Bank of North Dakota is the only state-owned deposit-money Bank in America, and it is dedicated to investing only in North Dakota's infrastructure. It is no accident, therefore, that North Dakota has the highest rate of infrastructure spending of any state in the nation (21% of that state's budget, or twice the national average), and that its spending as a percent of state GDP has fallen the least of any state since 2002 (in fact, it actually grew). We need a scaled-up version of the Bank of North Dakota to fund all of our country's infrastructure needs.

Q: OK, then why not rely on Public-Private Partnerships (see Glossary definition below), if the claim is true that they can provide private capital to complete projects more quickly, cheaply, and innovatively that governments can?

A: For one thing, that claim has not been conclusively proven, while experience in the U.S. shows that many P3s have run into financial, monopoly pricing, and other operational and contractual problems. For another, **P3s simply have not stepped in to fill the infrastructure financing gap.** The American Society of Civil Engineers (ASCE) estimates, in its 2017 report, that $4.6 trillion is needed just to repair our nation's infrastructure, of which $2.1 trillion is currently NOT funded (see Table 2 below). Meanwhile, only about 1.5% of the country's infrastructure projects are paid for through P3s, using private capital, despite banks having plenty of liquidity (cash on hand) to fund them. If P3s could have financed critical infrastructure projects over the past 60 years (since the RFC was wound down), they would have done so already. This observation is echoed by the House Committee on Transportation and Infrastructure, in a 2014 study of P3s, that concluded: "… given the limited number of high-cost, complex projects, P3 projects have the potential to address only a small portion of the Nation's infrastructure needs."

TABLE 2

Cumulative Infrastructure Needs by System Based on Current Trends Extended to 2025 (dollars in 2010 billions)

Infrastructure Systems	Total Needs	Estimated Funding	Funding Gap
Roads, Bridges, & Transit[1]	$2,042	$941	$1,101
Electricity[1]	$934	$757	$177
Schools[2]	$870	$490	$380
Public Parks & Recreation[3]	$114	$12	$102
Airports[1,4]	$157	$115	$42
Dams, Levees, Waterways & Ports[1,5,6]	$162	$38	$124
Water & Wastewater[7]	$150	$45	$105
Rail[8]	$154	$125	$29
Hazardous & Solid Waste[7]	$7	$4	$3
Total	$4,590	$2,526	$2,064

Source: American Society of Civil Engineers (ASCE) 2017 Report Card for American Infrastructure

In light of today's State and Federal budget constraints, and the limited scope for P3 funding, the reality is that only a sufficiently large National Infrastructure Bank, dedicated to long-term lending for infrastructure, is proven capable of rebuilding American infrastructure.

Q: How would the NIB work?

A: The NIB would work just like the four successful National Infrastructure Banks that preceded it:

- The First Bank of the United States (1791-1811) created by Alexander Hamilton.
- The Second Bank of the United States (1816-1836) expanded under John Quincy Adams.
- A National Banking system instituted by Abraham Lincoln. And,
- Franklin Delano Roosevelt's Reconstruction Finance Corporation (RFC, 1932-1957).

From coast to coast, these banks financed the construction of roads, bridges, canals, the Transcontinental Railroads, schools, affordable housing, rural electrification, farm cooperatives, and other "internal improvements"; lifted us out of the Great Depression; and helped us to win WWII.

And just like previous banks, this new NIB would: take in existing, privately-held Federal debt (Treasury securities), as its paid-in capital (i.e., the debt would become an asset of the NIB (see Flow Chart, and Appendix II below, for complete descriptions). Currently, the private sector holds about $16 trillion in Treasuries, of which the NIB would need about $500 billion in capital, so as to have a proper ratio of capital to loans (also see below). In exchange, private sector holders would receive preferred stock in the NIB (i.e., a liability of the NIB) paying some 2% per annum above what they would otherwise have received on their Treasuries.

Q: Why is $4 trillion the targeted total for the NIB's lending portfolio? Is that size ADEQUATE to cover all of America's infrastructure needs?

A: $4 trillion would be sufficient to cover all of America's infrastructure needs, comprising:

- the unfunded repair needs identified by ASCE ($2.1 T; see Table 2),
- that portion of the remainder ($2.6 T) where funding falls through (a frequent occurrence, especially when matching Federal or State monies, or regulatory approval, do not materialize on time),
- cost escalators resulting from delays in funding infrastructure projects (ASCE estimates that total repair costs will balloon to $10 T by 2040, at present trends),
- funding for all manner of megaprojects, and small ones, that are not included on ASCE's repair list (e.g., cross-region development, high speed rail, and rural and urban development),
- affordable housing and complete access to Broadband, and
- technology and science drivers to provide 21st Century infrastructure.

Q: What funding for the NIB would the Federal Budget need to provide?

A: Only the incremental 2% dividend payment on preferred stock, or about $10 billion per year, would be needed as dedicated new funding from the budget. That amount would form mandatory spending, because the NIB would sign a stock sales agreement that guarantees the incremental 2%. The $10 billion/year would therefore not be subject to annual budget appropriations, but rather would be reported in the latest "Budgetary Effects of PAYGO Legislation" statement. Meanwhile, normal interest on the $500 billion in Treasuries (already mandatory spending) would be paid to the NIB as the new owner, and then sent on to preferred stock holders to complete the total promised dividend payment.

Also, a small budget appropriation of $100 million over two years would be needed to start the NIB's operations (hiring staff, office space, and banking technologies, etc.).

Q: Exactly how would the NIB create working capital to fund infrastructure loans?

A: In the same way as any commercial bank creates money when a customer comes in for a loan (some 90% of America's money supply is created this way; see Appendix II below). When a borrower brings in an acceptable infrastructure loan request, the NIB would create a dollar deposit in the borrower's name (an NIB liability) ready for use, and accept from the borrower a matching loan note (an NIB asset). The total in loans provided by the NIB in this way would not exceed $4 trillion, unless modified by an Act of Congress.

Q: Why does the NIB need to become a deposit money bank, accepting deposits of companies and individuals?

A: Because of the manner in which the NIB creates working capital, the NIB would be chartered as a deposit-money bank. That would allow the borrower's deposits to be withdrawn, through the normal bank check-clearing mechanism, as spending on infrastructure projects takes place. Should third parties who receive checks in payment, or other new customers, choose to bank with the NIB, then NIB customer deposits as a whole would subsequently refill. Accordingly, the NIB would also be subject to rules and requirements of the Federal Insurance Deposit Corporation, and the Office of the Comptroller of the Currency.

Q: What interest is charged on loans, and why is a Federal Guarantee needed?

A: The NIB would charge a rate of interest on infrastructure loans similar to the long-term Federal bond rate (currently about 2%/year). That's a much lower rate than the private capital markets charge for P3 projects (currently from 8-12%/year). The lower lending rate would reduce project expenses, and thus raise the benefit-cost ratio of infrastructure projects funded by the NIB. Yearly loan interest charges (a very rough estimate is 2% on $4 trillion in loans, or $80 billion per year) would fund the NIB's operations, with money to be set aside for loan-loss provisions, and a dividend to be paid back to Government. In the rare event of a default on a loan that cannot be met through NIB loan-loss provisions, a Federal Guarantee on all NIB loans would step in to cover the loss.

Note that: because interest earnings should be sufficient funds to pay dividends to Government of up to $10 billion per year to offset what the Budget originally provided for the differential, **no new Federal Debt would be created by the operations of the NIB! Nor would any new Federal taxes need to be raised as well!**

Q: Who will be permitted to apply for loans from the NIB?

A: Currently, states and local governments own 87 percent of America's publicly held infrastructure (see Glossary of Terms below), so it makes sense for states and local governments to have a lead role in determining which public infrastructure projects will be built with NIB funding. (Meanwhile, the private sector would continue to seek funding from private banks for improvements to the fixed assets it owns – electric power generation, telecommunications, seaports, and the like.)

However, if there is an acute public need in a particular field or geographic area (e.g., to: define authority across state lines, propel scientific research, create jobs, reduce poverty, improve education standards, or prevent a devastating reduction in economic activity due to infrastructure failure), then the NIB could assist in the creation of a public/private entity to supply infrastructure that the marketplace has failed to deliver. Three examples are: affordable housing, especially in areas where new labor input is needed; complete broadband connectivity to customers in rural and disadvantaged communities; or funding for critical commuter rail in the Northeast Corridor, where 20% of the nation's GDP is produced.

Q: How will states and local governments repay their loans?

A: Numerous studies have shown that well-targeted public infrastructure projects: improve private productivity, super-charge economic growth, create greater numbers of better-paying jobs, lower income inequality, and thus accelerate income tax receipts. (Studies are based on hard economic evidence, compared to unrealized claims attributed to some enacted policies, i.e., economic growth purported to arise from Tax Cut Acts.)

As an example, just look at the performance of FDR's Reconstruction Finance Corporation in transforming our nation's economy. Through its significant financing of the New Deal, manufacturing, and WWI operations, the RFC:

- Raised non-farm employment by 75% between 1939-1957;
- Raised median unskilled wages, by a factor of four, from 1933-1957, which compressed wages from the bottom up, lowering income inequality by one third;
- Vastly stimulated Federal tax receipts, by a factor of five, from 1941-1945 (aided by structural changes in the tax system);
- Raised the efficiency of the economy (see Glossary for a graph of Total Factor Productivity) which, along with increased aggregate demand from workers, prompted businesses to borrow and make investments of their own;
- Promoted increased lending by commercial banks, by shoring up bank balance sheets and lending directly to manufacturers and small businesses, so as to top up bank loans. A measure of the scale of the RFC is that, by 1940, outstanding RFC loans were greater than the total of all commercial bank loans combined;
- All of which led to unprecedented economic growth, averaging 5.5 percent per year from 1933-57 (compared to 1.8 percent per year over the 10-years ended in 2018).

Meanwhile, more than 99% of all RFC loans were repaid, and the RFC, like other banks before it, wound up its books in the black.

Related to the above, the ability of state and local government to repay their infrastructure loans would be directly aided by NIB operations that seek to: strengthen local capacity to manage project design, delivery, and procurement procedures; diversify risk; enhance public transparency of the loan process; and ensure that all parties are held accountable.

Q: What types of infrastructure loans would be emphasized?

A: The NIB would consider loans for everything from:

- large scale integrated projects that span across sectors (like a rail/truck-ferry/power-corridor improvements along a major trucking highways),
- or across states (like new urban transit systems for the nation's Capital and along the Northeast Corridor, or a new water system connecting the entire nation),
- to the very latest technologies (like national integrated passenger high speed/magnetic levitation rail), and include:
- bundled urban re-development plans (to transform cities into modern, productive, energy-efficient, educational, and cultural centers),
- regional development (promoting high-potential production centers in the South, North, East, and West),
- rural development (through high-speed internet connectivity, affordable housing, and sustainable agriculture and improved local production techniques),
- to the very latest in cutting edge science (like climate change technologies, healthcare research, or fusion energy).

Just like the FDR New Deal, WWII, and Kennedy Space Program mobilizations that came before, every new infrastructure deal could be put on the table for consideration. The NIB would have the scale – a revolving fund of $4 trillion – and the technical and mobilization capacity to make all new growth possibilities happen.

Q: How will competing project loans be evaluated?

A: Based on an engineering, economic, and environmental cost-benefit analysis of each project over the project's lifetime. A 2017 study commissioned by the Treasury Department illustrates how cost-benefit analyses are computed. That study identified 40 top-ranking transportation and water projects across America that would cost a total $350 billion and, for every $1 invested, would return up to $7 back into the economy over the project's lifetime. The NIB would use a similar cost-benefit methodology, taking into account the project's:

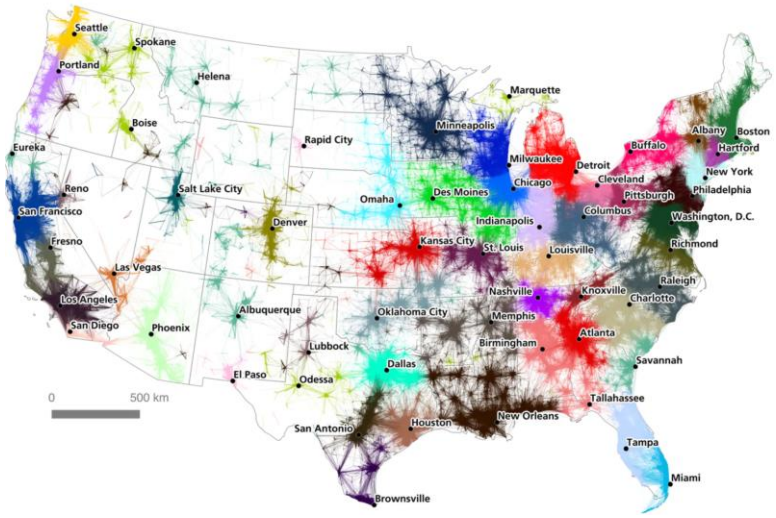
- promotion of economic growth, jobs creation, provision of Davis Bacon wages, and employment in disadvantaged communities,
- design strategy for bundling projects, correctly sizing them, and managing projects so as to "dig, build, expand, or improve only once,"
- environmental, public health, and safety benefits such as: reducing greenhouse gases, removing hazardous materials, and ensuring structural soundness, and
- specific criteria like reducing traffic congestion, ensuring a sound electricity grid, building affordable housing, and completing broadband access.

By using these selection methods, loans will first go into the infrastructure that is needed the most, as measured by maximizing economic growth and social welfare, and thus will be insulated from political considerations.

Q: Where will the infrastructure projects be placed?

A: So, just as important as determining which infrastructure projects will be built first, is the determination of where the infrastructure will be built. For that, we turn to demographers who have constructed maps of where Americans live, work and spend their free time. See one example map below: the darker areas indicate denser populations living

in cities, satellite cities, towns and suburbs, and their commuting movements. Within the patterns, are economically inter-connected corridors, e.g., Birmingham-Atlanta-Charlotte-Raleigh, or San Diego-Los Angeles-Fresno-San Francisco where infrastructure investments would pay off the fastest. On other maps, you can see proposed grid plans for high speed rail that connect all economic centers all over America.



Clearly, a strategic infrastructure plan is needed, so as to maximize economic growth from infrastructure investment. The NIB Bill proposes that states and municipalities organize themselves into mega-planning commissions, so as to identify pipelines of projects that are demographically and economically interconnected, and to coordinate infrastructure development across jurisdictional lines. Such commissions would be instrumental in seeking public feedback, on the tradeoffs of alternative projects in public discussions.

Q: How will the National Infrastructure Bank (NIB) be incorporated?

A: The NIB will be incorporated under Title 31 of the United States Code, known as the "Government Corporation Control Act (GCCA)" (just as the Reconstruction Finance Corporation used to be, and the Federal Deposit Insurance Corporation and Export Import Bank are now). Furthermore, it will chartered as a bank under Title 12 of the Code, known as the "Banks and Banking Act," just as all other commercial banks are chartered.

Q: Who monitors/audits the NIB?

A: Like other public agencies, the NIB will be fully transparent, maintaining financial statements using generally recognized accounting principles, conducting internal and external annual audits, and reporting to: the Congress, the General Accounting Office, and the Comptroller General. Similarly, it will have an independent Special Inspector General that: checks on the Bank's loan selection process and efficacy of all infrastructure loans made; ensures there are no conflicts of interest; and reports directly to the Office of the Inspector General. Finally, because it is a deposit money bank, the NIB will also be compliant with, and report to, the Federal Deposit Insurance Corporation and the Office of the Comptroller of the Currency.

Q: What is the governance structure of the NIB?

A: The NIB will be run by a Board of 25 Directors – mostly experienced engineers, but including Labor, State and Local, Economic Development, and other relevant experts –to be

nominated by Congress and appointed by the President, and who will sit for staggered 5 year terms. Directors will appoint from among themselves a Chair and Vice-Chair, who will assemble a staff with experience in: engineering, banking, economics, management, heavy construction, government regulation, and other scientific fields; and who will assess for Board consideration and approval: the feasibility, riskiness, productivity, and cost effectiveness of all loan applications.

Q: How will NIB infrastructure loans be coordinated with the work of Federal Government Departments?

A: Currently, the Federal Government and States share responsibility for the ownership, funding, and regulatory control of public infrastructure. The Federal Government spends about $45 billion per year on the infrastructure that it owns – such as Veterans hospitals and the air traffic control system – and about $80 billion per year on matching grants for state and local infrastructure – mostly for highways and urban transit. Meanwhile, Federal regulations on safety (everything from air and water quality control to commercial bank deposit insurance) and natural monopolies (e.g. power generation, and telecommunications) form an even greater sphere of the Federal Government's influence over infrastructure.

All of the above are administered through the Departments of – Transportation, Energy, Housing and Urban Affairs, Federal Aviation Administration, United States Army Corp of Engineers, National Aeronautics and Space Administration, Nuclear Regulatory Commission, Environmental Protection Agency, Bureau of Reclamation, and Federal Communications Commission – each enforcing their respective sets of laws passed by Congress and administrative rules.

The National Infrastructure Bank will maintain expertise, and work alongside, all Federal agencies and, over time, if deemed desirable, can assume their roles in funding publically owned infrastructure projects. Most importantly, however, the NIB will form a Technical Advisory Service to share information among loan applicants on: best project design and implementation practices (including from the Global Infrastructure Forum), US regulatory and institutional requirements, effective risk-allocation policies; and to assist loan applicants in moving projects through the regulatory process. Along the way, the NIB will report to Congress on Federal institutional hurdles that slow infrastructure project approvals (e.g., the current 6-year review period for building a new road).

Q: How will the NIB and local governments work with private firms to deliver Inclusive, Green, Sustainable, Resilient, and Technology-Driven Infrastructure?

A: In several ways. First, in the design phase, the NIB will work with regional mega-planning commissions in identifying sets of infrastructure projects that best address local economic and social needs. Second, in the project implementation phase, the NIB could assist with best value procurement practices (see Glossary below), and local project management enhancement. And third, the NIB could assist local governments in integrating their approved policies (e.g., to promote sustainable urban development, or protect the environment) into infrastructure loans, as desired.

Q: The NIB is expected to create $4 trillion in new money. Will that interfere with the policies of the Federal Reserve (FED) to control inflation and reduce its balance sheet?

A: Actually, the operations of the NIB would complement those of the FED quite nicely. The FED is currently in the process of reducing its balance sheet by $2 trillion, and will do so by selling its Treasuries to commercial banks in exchange for dollars (or accepting dollars for expiring Treasuries), and then taking those dollars out of circulation. As a consequence, interest rates will rise. If the FED operates too quickly, private sector borrowing could falter on account of the higher interest rates, and a recession could occur. However, if the NIB simultaneously creates aggregate demand by lending money into the real economy as infrastructure loans, this could offset the negative effects of the FED's balance sheet reduction. Similarly, if NIB operations cause the economy to overheat, and CPI inflation to rise, the FED could accelerate the pace of its balance sheet reduction to cool the economy back down.

Q: Similarly, would the operations of the NIB interfere with Fiscal Policy over the foreseeable future?

A: The Congressional Budget Office projects that, under current laws, the Federal Budget will incur deficits totaling $10 trillion over the next ten years, and thus will need to issue net, new Treasury securities totaling $10 trillion. NIB capitalization would not interfere with that process, because the NIB will only take in EXISTING Treasuries, and, except for rolling over existing Treasuries, is precluded from purchasing new ones. However, should the NIB wish to extend its capitalization by borrowing from capital markets (as its statute allows), and should that borrowing compete with open market operations to finance the budget, then the Federal Finance Bank (created for this purpose) could take offsetting measures to smooth out the government securities market.

Q: How does the NIB compare to other current infrastructure bank proposals?

A: Currently there are four proposals in Congress to create infrastructure banks, authorities, or trust funds, as outlined below:

- Rep. Rosa DeLauro (D-CT-3) - National Infrastructure Development Bank Act of 2019 (H.R.658, 61 co-sponsors) calls for appropriation of $5 billion per year for five years, and leveraging that possibly up to $500 billion from interest-subsidized, tax-free "American Infrastructure Bonds," to fund up to half of the cost of infrastructure projects. The other half must come from dedicated revenue sources (including public-private partnerships) that securitize the infrastructure project obligations, with no government guarantees provided. See Appendix I for a line-by-line comparison of the NIB and the DeLauro Bill.
- Sen. Mark Warner (D-VA) Reinventing Economic Partnerships and Infrastructure Redevelopment Act (REPAIR, S. 1535, 7 co-sponsors) would provide $710 billion over 20 years in loans to public-private partnerships, to be repaid from tolls, user fees, or other dedicated revenue. Because each loan would impose a Federal

"contractual obligation to fund the investment," while loans are exempt from advanced budget authorization, it appears that, with no new taxes or expenditure cuts, loans under REPAIR would be financed by increasing the National Debt.

- Rep. Peter DeFazio (D-OR-4) A Penny for Progress (HR 1664) would provide $500 billion for transportation infrastructure, to be funded by the issuance of 30-year bonds, to be repaid by raising the gasoline tax by 1.5 cents in 2017, and indexing it thereafter. Rebuilding America's Airport Infrastructure (HR 1265) would generate user fees to fund airport renovations by removing a cap on passenger facility charges. And Full Utilization of the Harbor Maintenance Trust Fund Act (H.R. 2396) would provide $18 billion to dredge coastal and inland harbors, to be paid back by increasing port user fees. (Separately, DeFazio and 27 Progressive Democrats re-introduced the Wall Street Tax Act of 2019 (H.R.1516), which imposes a 0.1% excise tax on sales of stocks and derivatives, which the Joint Committee on Taxation estimates could add revenues of $777 billion over 10 years.)
- Rep. John Yarmuth (D-KY-3) A Bill to create an Infrastructure Bank (not yet introduced in 116th Congress) would authorize the Federal Government to sell $300 billion in 40-year "Rebuild America Bonds" to finance repair of aging infrastructure. The bonds would earn 2 percentage points more than 30-year Treasuries, to attract investment by pension funds.

All four proposals suffer from the following disadvantages *vis a vis* the NIB: they are too small to fund 100% of America's infrastructure needs; most rely on the issuance of new bonds, which will be costly, raise the level of the Federal Debt, and/or compete with government securities market operations to fund the ongoing Federal deficit; and, to the extent they do not provide a government guarantee, they may not attract pension money that requires a AAA bond rating.

By comparison, the National Infrastructure Bank has none of these disadvantages. Rather, it:

- Has the scale - $4 trillion to start, with room to expand later if needed – to finance ALL of America's infrastructure needs,
- Utilizes existing Federal debt to capitalize the Bank,
- Relies on normal deposit-money bank operations to create working cash to fund infrastructure projects,
- Creates no new Federal debt, and requires no new taxes,
- Does not rely on unpredictable user fee models to securitize loans, and
- Follows a model that worked successfully – 4 times in the past – to build almost all of our nation's infrastructure.

The reality is that only a sufficiently large National Infrastructure Bank, dedicated to long-term lending for infrastructure, that does not raise Federal debt, is proven capable of rebuilding American infrastructure.

Glossary of Terms

Infrastructure – Economists define infrastructure as large, capital-intensive natural monopolies such as: highways; mass transit; water and sewer lines; airports; seaports; and rail, electric-power, and telecommunications systems (the latter-four are generally privately owned). The US National Accounts defines infrastructure as capital assets that are government-owned, including highways, roads, bridges, schools, airports, and public parks. At present, states and municipalities account for 87% of all publicly-owned infrastructure, with the Federal Government owning the remaining 13%.

Public Good -- In economics, a public good is one that can be accessed by any person, where that person's use does not reduce availability to others. Examples of public goods include: knowledge, official statistics, national security, clean air and water, flood control systems, lighthouses, street lighting, and the internet. **Social goods** are defined as public goods that could be delivered privately, but are usually delivered by the government for various reasons, including **social welfare**, and are generally funded via taxes. It may be possible to recoup the costs of some public goods (e.g., maintenance fees for lighthouses that service ships entering a port can be bundled with port fees), but not others (e.g., maintenance fees for street lighting cannot practically be assigned to any given beneficiary).

Money Creation – Money is created in the US and elsewhere by Central Banks (about 10% of their total money supply), and by commercial, deposit-money banks at the time they give out loans. For a complete explanation of how deposit-money banks create money, see Appendix II below. The proposal here is that the NIB will operate in the same way as any commercial bank, because it will be chartered as a depository. Thus, the NIB will create deposits, ready for use, equal to each infrastructure loan as it is made, subject to the limit that the sum of all loans will not exceed $4 trillion.

Outsourcing – is an agreement in which one company hires another company to be responsible for an existing internal activity. Government can outsource by handing over control of public services to private companies. Reasons for outsourcing include: reducing and controlling operating costs, and streamlining time-consuming activities, including by accessing world-class technologies. Generally, outsourcing contracts can be broken if the service provider is not performing as promised.

Procurement is the process of acquiring goods, services, or works from an external source, often via a tendering or competitive bidding process. **Best value procurement (BVP)** is a procurement system that looks at factors other than price, such as quality, expertise, or latest technological advance, when selecting vendors or goods. It incorporates a comparison of the costs and benefits of alternative project designs. **The Federal Acquisition Regulation (FAR)** is the principal set of rules in the Federal Acquisition Regulations System regarding government procurement in the United States. It governs the "acquisition process" by which agencies of the Federal government acquire goods and services by contract, with appropriated funds.

Public Private Partnership – A Public Private Partnership (P3) typically involves a private entity financing, constructing, and managing a public project in return for a promised stream of payments (directly from government or indirectly from users) over the projected life of the project. These contracts are generally of a very long duration (some lasting 75 years), and become broken only if the private entity goes into bankruptcy, or local government decides to buy out the remaining contract in order to bring the service back in-house (that occurs about one quarter of the time).

Total Factor Productivity (TFP) is calculated as the difference in the change in output to the change in a combination of inputs (labor hours, capital services, energy, materials, and purchased services). The TFP statistic thus describes the efficiency gains (or losses) associated with growth (or decline) in output that are not a result of changes in measured inputs. Efficiency gains are observed to occur most prominantly when a National Infrastructure Bank is in place, because new infrastructure improves private sector assets and makes their output more productive. That, in turn, makes it possible for economic growth to accelerate, even under conditions of full employment, without resulting in consumer price inflation. As measured, TFP grew by an average of 3.4% per year during the 1950s when the RFC was in place, slowed to about 2% per year from 1960-2004, and has hovered at only 0.3% per year since then (see Figure below).

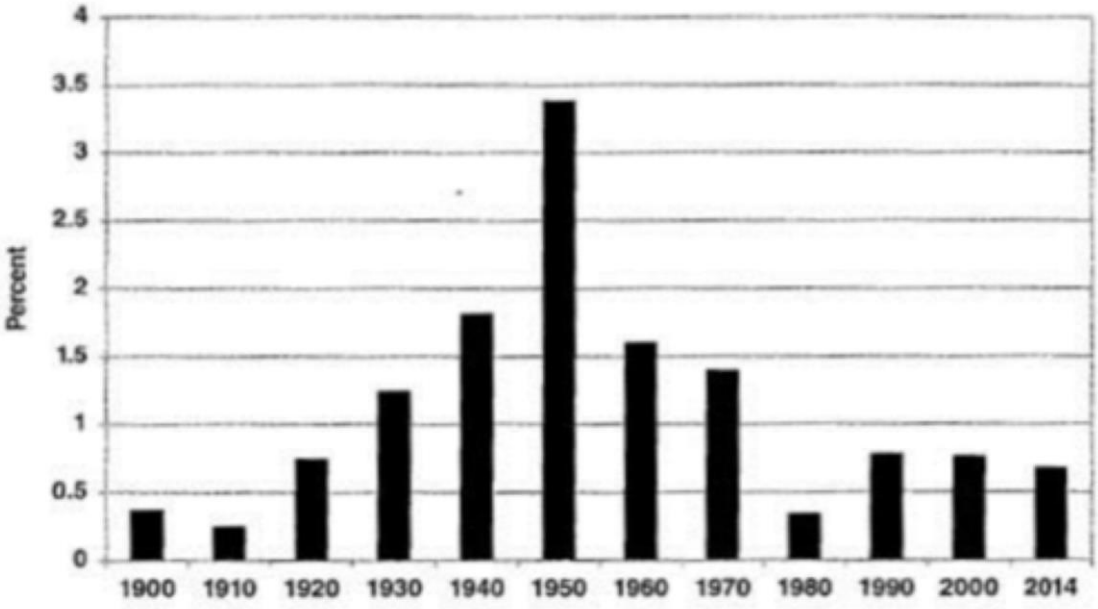


Figure 16–5. 10-Year Average Annual Growth in Total Factor Productivity, 1900–2014

Note: The average annual growth rate is over the ten years prior to year shown. The bar labelled 2014 shows the average annual growth rate for 2001–14.

Source: [The Rise and Fall of American Growth: The U.S. Standard of Living since the Civil War](), by Robert J. Gordon, Aug 29, 2017.

Credit Rating Agencies (CRAs) are companies that assigns credit ratings, which measure of debtor's ability to pay back debt principal and interest in a timely manner. Debt

instruments rated by CRAs include government bonds, corporate bonds, and municipal bonds (often tax-exempt, and often financing infrastructure projects), among others. The issuers of the obligations or securities may be companies, special purpose entities, or state and local governments. An investment grade of AAA indicates that a state or municipality has a low ratio of debt-to-revenue, as calculated by the CRA.

Appendix I – Summary of Differences Between this National Infrastructure Bank Act of 2019, and the Rosa DeLauro Bill (HR658)

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Characteristic	NIB Act of 2019	Rosa DeLauro Bill (HR658)
Bank Structure	Deposit-Money Bank, as a Public corporation	Lending Trust Fund, as a Public Corporation
Capitalization: Sources	Privately Held Treasuries (and Government Treasuries of Long Maturity if needed).	Appropriations. Under Pay-as-You-Go Act of 2010, this would require new taxes or expenditure cutbacks.
Amounts	$500 billion	$5 billion per year for 5 years = $25 billion
Exchanged For	Preferred stock in NIB paying 2% over Treasury interest. Via a stock purchase agreement that forms a mandatory obligation to fund from the budget, estimated at $10 billion per year.	Not applicable.
Maximum Ratio to Loans	1:8	1:25 (from earlier DeLauro Bill)
Loans: Maximum Outstanding	**$4 trillion**	**$500 billion**
Sourcing	Created by NIB at time of each loan disbursement, the same as any deposit-money bank (see Appendix II)	Borrowed from Capital Markets via American Infrastructure Bonds (AIBs), with proceeds placed in a Trust Fund
Interest Rates Charged	Treasury rates (about 2%)+ Risk Premium	Capital Market Rates (about 8-12%) + Risk Premium, Less Interest Subsidy for ¼ of AIBs
Borrowers: Predominently	Owner of Public infrastucture, or its Agency	Public Private Partnerships (P3s)
Requirement	Entity's financial ability to repay, factoring in expected growth in jobs, economy, and tax receipts.	Must charge user fees adequate to cover loan repayments.
Adequacy to Finance All Infrastructure Needs:	Sufficient to cover all infrastructure, for the unfunded half of $4.6 trillion identified by ASCE for (see Table 2); plus cost escalators; plus: affordable housing, Broadband access, population growth and migration, and improvements in rural, urban, and low-income areas.	Sufficient only to cover half of unfunded transportation needs. A 2014 Transportation Committee Report on ways to improve P3s found that "P3 projects have the potential to address only a small portion of the Nation's infrastructure needs."
Infrastructure Placement Strategy:	At least seven Regional Accelerator Planning Groups to identify pipelines of projects that connect, repair, and develop infrastructure including accross jurisdictions.	Accelerator groups to train for P3 applications.
Project Selection Strategy:	Prioritize all projects by cost benefit analysis, taking into account expected growth in jobs, wages, productivity, GDP, and tax receipts.	Select projects that repay loans with user fees.
Affect on Government Debt	No new debt. Debt to GDP reduced the fastest due to rapid growth and lower income inequality.	Some reduction.

Appendix II – How Money is Created by Deposit-money Banks

Last Updated: September 6, 2019

This Appendix provides a fuller explanation of how the National Infrastructure Bank (NIB) will take in privately-held US Federal debt in capitalization, and then provide money, in exchange for loans to finance infrastructure projects.

How Governments, Corporations, and Others Keep their Accounts – The explanation first requires a little knowledge of how governments, corporations, and others keep their books, and how loans are accounted for in these books. So, when any entity (including the US Government) borrows money, the lender hands over cash, and the borrower hands over a loan note of equal value (in Government's case, in the form of a Treasury Security). In their respective accounts, the borrower (e.g., Government) books the loan as a Liability, and the lender books the loan as an Asset. That's how debt can be a Liability and an Asset at the same time.

Deposit-money Banks Keep Similar Books – Banks, similarly, book their Treasury holdings as Assets, along with any cash or stocks they may own, as well as all the loans they provide to customers. The latter forms their largest Asset. The main difference between a bank's Balance Sheet, and that of any other corporation, is that banks are chartered under US National Banking Acts to take in deposits, which form their largest Liability. Banks typically earn their money on the difference in interest rates charged to borrowers, and those paid to depositors (both of these lines appear on a bank's Income Statement). Thus, the overall Balance Sheet of a bank (assuming everything from the future has been received or paid by year's end, i.e., there are no accruals) might look like the first two columns of Table 1 below:

(In millions of dollars)

Category	**Amount at End of Year**	**Affect on Books of a Subsequent Loan of $10 million**
Assets	2,000	
Cash on hand	30	
Bank's Deposits held at the FED	205	
Treasuries + Other Debt Securities	440	
Stocks and Derivatives	340	
Loans Provided to Customers	985	+ 10
Liabilities	2,000	
Customer Deposits	1,310	+ 10
Bank's Borrowings	430	
Bank's Stock Held by Outsiders	260	
NOTE: Assets = Liabilities		

Money Creation – So, Money is created in two ways:

- By the Federal Reserve (about 10% of the total money supply), for the purpose of indirectly controlling the money supply in order to fight inflation or deflation, and
- By commercial banks (the remaining 90%), when they give out loans.

Economists are divided on the theories describing how banks create money, but have boiled them down to three:[1] (1) The currently prevailing *financial intermediation theory* says that banks collect deposits and lend these out, except for a 10% cash reserve they must hold at the FED (just in case an unusual number of depositors ask to withdraw their money at once). (2) The older *fractional reserve theory* says that while individual banks do not create money, the banking system as a whole is able to do so through the process of multiple deposit expansion, called the "money multiplier".[2] And (3) the ***credit theory of money,*** outlined by Joseph Schumpeter a century ago, holds that each individual bank creates money through its accounting operations, and does so whenever an individual successfully applies for a loan.

There are three proofs that the credit theory of money is the correct model of commercial bank money creation: (a) A controlled test of bank accounting software showed that when a loan is made, a cash deposit of the same amount in the borrower's name, ready for use, is also made.[1] You can see an example of what that looks like in the third column of Table 1 above. Note that other customer deposits remain unchanged (are not used up), but rather total deposits (and hence the money supply) increases by the loan amount. (b) The Federal Reserve's expansion of the money supply following the 2007-08 financial crisis did not pass through to commercial banks by the full money multiplier, because there was no commensurate demand for credit from businesses and individuals. And, (c) the Federal Reserve stated that banks create money in this way: Alan Holmes, a former senior vice president of the New York Federal Reserve Bank, wrote in 1969, "in the real world banks extend credit, creating deposits in the process, and look for the reserves later."

How the National Infrastructure Bank will Lend – The proposal here is that the NIB will operate in the same way as any commercial bank, because it will be chartered as a deposit-money bank. Thus, the NIB will take in $500 billion in privately-held Treasuries as capital (an Asset), in exchange for an equal amount of preferred stock in the NIB (a Liability). Then, as each infrastructure loan is applied for and approved, the NIB will create a deposit in the borrower's name, ready for use, equal to the loan amount. The total amount of NIB loans outstanding at any given time will be subject to a limit of $4 trillion. That means the NIB will observe a capital-to-loan adequacy ratio of 1:8 (or 12.5%), for prudential purposes.

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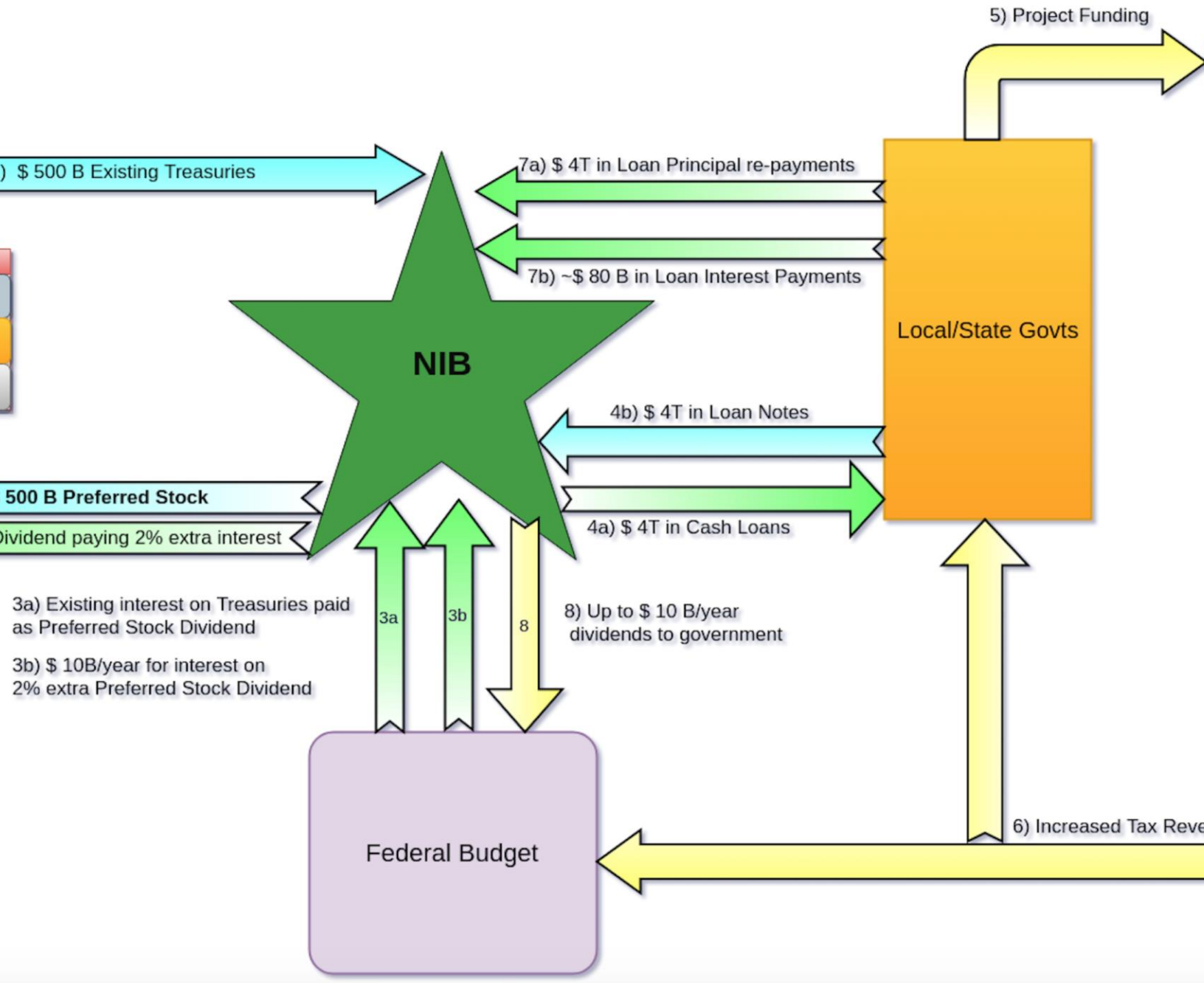
[1] A lost century in economics: Three theories of banking and the conclusive evidence, By Richard A.Werner, Centre for Banking, Finance and Sustainable Development, Southampton Business School, University of Southampton, United Kingdom. Available online 8 September 2015.

[2] Why Banks Don't Need Your Money to Make Loans, By Matthew Johnston, Updated Jul 6, 2019.


5) Project Funding
) $ 500 B Existing Treasuries
7a) $ 4T in Loan Principal re-payments
7b) ~$ 80 B in Loan Interest Payments
Local/State Govts
NIB
4b) $ 4T in Loan Notes
500 B Preferred Stock
Dividend paying 2% extra interest
4a) $ 4T in Cash Loans
3a) Existing interest on Treasuries paid as Preferred Stock Dividend
3b) $ 10B/year for interest on 2% extra Preferred Stock Dividend
3a
3b
8
8) Up to $ 10 B/year dividends to government
Federal Budget
6) Increased Tax Reve