White Paper in Support of a National Investment Authority

Robert Hockett & Saule Omarova

Cornell Law School, June 2017

Introduction

Since the financial turmoil of 2007-09, policy discussion in the United States has focused increasingly on how to restore America's past productive glory. Decades of erosion to domestic infrastructure and industrial capacity, a corresponding loss of well-paying jobs, and a steady decline in apparent government readiness to tackle big problems – these are among the many factors that have brought persistent economic underperformance, widening income and wealth inequality, and seemingly ever-angrier social and political dynamics to contemporary America.

The solutions to these inter-related problems ride on the ability of the United States to address what we consider to be its single most pressing public policy challenge: the challenge of ensuring structurally balanced, long-term sustainable, socially inclusive economic development in an economy that first "developed" over a century ago.[1] Thinking of "development" and "reconstruction" as processes that only pre-modern, "lesser developed," or recently war-ravaged countries must undergo, we believe, is a mistake – a mistake that has vitiated academic and policy discussion for too long.

National development and reconstruction are forever, and must be forever proactively pursued. Only by continuously facilitating the continuous growth, diversification, and modernization of its "real" economy (as distinguished from its secondary financial markets), and by broadly spreading the benefits of such growth and development, can a nation rebuild, restore, and retain over time its true strength as an economy, as a society, and as a polity.

The project of continuous and inclusive reconstruction and development represents an extraordinary challenge, and demands a correspondingly extraordinary institutional response. This White Paper proposes precisely such a response – an instrumentality specifically charged with coherently fostering and overseeing the continuous and inclusive economic development of the United States. This new instrumentality, which we call a National Investment Authority ("NIA"), will be charged with the critical task of initially devising, regularly updating, and continuously implementing a comprehensive and inclusive long-term developmental strategy for the United States.

Patterned in part after Treasury Secretary Alexander Hamilton's original national development institutions, in part after the Hoover and Roosevelt era Reconstruction Finance Corporation ("RFC"), in part after modern sovereign wealth funds, and in part after contemporary private equity and venture capital firms, the NIA will be an inherently hybrid, public-private entity. By exploiting the unique advantages of the federal government as a market actor – its vast scale, high risk tolerance, lengthy investment horizons, and direct backing by the full faith and credit of the United States – the NIA will help channel private capital and expertise toward publicly beneficial, well diversified, long-term growth-underwriting projects. It will operate as an economy-wide public-private partnership ("PPP")[2] with a radically innovative new twist: it will reverse the usual PPP model of "public money, private management" by drawing freely invested private money to publicly-managed investment vehicles.

Our proposed new arrangement will enable private investors to capture reasonable gains from the provision of currently under-provided, transformative public goods: including, for example, nationwide networks of clean energy provision and state-of-the-art transportation, regional air and water cleaning and preservation programs, systems of ongoing adult education and technical training, and other cutting-edge public infrastructures. By creatively adapting familiar tools of financial and legal engineering, the NIA will remove or mitigate incapacities and risks that currently impede private investment in public goods.

An additional benefit brought by the NIA will be its enhancing the resilience and long-term stability of our financial system. "Getting financial regulation right" is no mere technocratic exercise: it involves critical normative decisions concerning the purposes and social functions of finance. A self-referential financial system, in which disproportionate growth on the part of secondary markets naturally encourages speculative trading in already existent financial instruments rather than patient investment in new productive capacity, inevitably experiences recurrent and highly destructive asset price boom-and-bust cycles – i.e., hyperinflations and debt-deflations.[3] By contrast, reorienting the financial system back toward its primary social function – reliably channeling credit to its most productive non-financial uses – will correct our financial system's regrettably still dysfunctional dynamics.[4]

The NIA we design and propose here amounts to a modality of *collective* action meant to facilitate more effective and remunerative *individual* action. It is a pragmatic and market-friendly institutional solution to the country's heretofore misdiagnosed and unaddressed primary challenge. By bridging now-obsolete and debilitating organizational and conceptual divides, the NIA will fill a critical gap in the current architecture of American public finance.

Functionally situated between the Federal Reserve System (the "Fed"), and the U.S. Department of the Treasury (the "Treasury"), the NIA will discharge tasks that neither the central bank nor the fiscal authority can legitimately perform without overstretching their mandates. It will serve as a separate institutional platform from which to conduct a more cohesive and well-targeted allocation of patient public and private capital toward startups and infrastructures that promise continuous, diversified, and inclusive growth on the part of the national economy. [5]

The paper proceeds as follows. Part 1 briefly explains why an institution like the proposed NIA is required. Part 2 outlines the basic design of the proposed institution. Part 3 addresses the main implementation issues to which the NIA will give rise.

1. *A National Investment Authority: Why*

Continuous development of the national economy amounts to a systemically critical, chronically under-supplied "public good." In that sense, it is precisely the kind of good that requires some form of collective facilitation or inducement to optimal provision.

1.1. "Public Goods": A Brief Reminder

The familiar economist's account of public goods fixates on these goods' "non-rivalrousness" and "non-excludability."[6] The first is that attribute pursuant to which a good's use by one party does not diminish its availability to other parties. The second attribute is that pursuant to which neither a good nor the benefits that it yields can be retained exclusively by one party. Goods with these characteristics tend to go under-provided by private participants in decentralized market economies. Because the gains from the act of providing these goods can be only incompletely captured at best, profitdriven private actors rationally tend not to supply them in quantities sufficient to meet public demand.

The orthodox response to this so-called "public goods problem" is to "socialize" the production and distribution of public goods. In effect, the problem is inarticulately recognized as a collective action problem pursuant to which multiple individually rational decisions (in this case, decisions not to supply what one cannot profit by supplying) aggregate into a collectively irrational outcome (in this case, one in which people in principle could, but in practice do not, produce what they all wish to have).[7]

The solution to this as to any collective action problem lies in collective *agency* – i.e., in action taken by some public instrumentality in the name of us all.[8] The relevant instrumentality typically is presumed to be the fiscal authority – the treasury – which can forcibly collect payments from potentially "free-riding" citizens and use the proceeds to finance the production of non-excludable public goods.

This familiar account of public goods is helpful in illuminating the public goods problem, but is incomplete. It leaves needlessly obscure the critical link between public goods and collective action problems, and accordingly overlooks entire subclasses of what should be thought public goods.[9] The undue narrowness of the orthodox account also precludes it from recognizing the existence of certain *systemically important* public goods that cannot be efficiently provided either by private parties *or* via *familiar fiscal policy channels*.

A more complete and coherent understanding of public goods requires that we think of them in functional terms – as solutions to collective action problems. This turns out to encompass both public goods in the narrower, orthodox sense and many additional goods that are now chronically underprovided – both of which our NIA aims to enable individuals collectively to provide.

1.2. "Public Goods": A Friendly Amendment

Collective action problems arise when it is not individually rational to attempt to supply what is collectively beneficial. This suggests that the relevant "master principle" for policy purposes is the distinction between (1) goods that can be supplied by persons acting in their individual capacities, in un-concerted fashion, and (2) goods that can be supplied only by persons acting in their collective capacities, in concerted fashion.

Situations in which goods can be only collectively supplied include not only cases in which no individual can *capture the benefits* generated by a good – the focus of public goods orthodoxy – but also cases in which no individual can *control the environment* sufficiently to supply the good in the first place. The undersupply of these forms of environmental stability stems from what can be called a "controllability" problem, which constitutes a distinct kind of public goods problem. Our proposal is accordingly designed to address *two* kinds of collective action challenge – what we call "capturability" problems of the kind on which orthodoxy fixates, and "controllability" problems, which orthodoxy overlooks.

With respect to controllability, our aim is to maintain stability among what we have elsewhere called "systemically important prices and indices," or "SIPIs."[10] These are prices that figure pervasively in the formation of other prices, or that are widely employed as benchmarks in other pricing or trading decisions.[11] Examples include certain energy and commodity prices, housing prices, prevailing wage rates, money rental (or "interest") rates, and such popular benchmarks and indices as Libor, the Dow-Jones Industrial Average, and the S&P500.[12]

People acting in their individual capacities cannot control SIPIs. Yet SIPI stability is necessary if patient capital investment in the real economy, as distinguished from speculation on price movements in the financial economy, is to be individually rational. SIPI stability accordingly poses a collective action problem. Hence our NIA is in part meant to exercise collective agency on behalf of us all in maintaining SIPI stability – i.e., in assuring a stable systemic backdrop against which investments of patient capital in the real economy can look less like Russian Roulette.

In the case of capturability, our aim is to render patient capital investment once again rational not so much by maintaining stable background conditions as by enabling individuals to reap reasonable portions of reward for their patient investments that cannot be individually, but can be collectively, parceled. Many goods, for example, yield benefits that materialize over time-horizons that exceed human lifespans. Cases in point include certain kinds of public infrastructure that take long to develop or construct, technological advances rooted in long-term R&D investment, the long-term synergistic knowledge and cultural benefits of widespread higher education, and such ultra-long-term projects as space exploration or medical research.[13]

Considerations of this kind argue for public provision or facilitation of patient capital: provision or facilitation by an "investor" that is inter-generationally composite and perhaps partly made up of investors who are willing to be more patient if guaranteed some portion – some "time slice" – of projected returns.[14] In theory, this could be done partly by a fiscal authority, as sometimes it has been.[15] But the political nature of fiscal authorities can render this theoretically elegant solution less effective in practice.

We think the way to remedy this problem is to treat the provision of trans-temporal public goods as a perpetual, hybrid public-private project. This can be done through two mutually complementary means: First, establishment of an institution whose public managers see with the eyes of a perpetual, transgenerational entity in actively managing, channeling, and rewarding privately supplied capital. And second, developing a distinct kind of financial engineering that synthesizes flows of individually capturable benefits from public goods whose benefits ordinarily cannot, absent such synthesis, be individually captured.

Our proposed NIA seeks to accomplish these goals. Its exercises of *collective* agency are meant to open the door to entire new classes of productive and profitable *individual* agency. This idea is not new to American governance. As we show elsewhere, it lay at the core of Hamilton's institutional design for the then-new American economy. It also animated the mission of the Hoover and Roosevelt era RFC, which during the 1930s and 1940s was by far the world's largest corporation, with a balance sheet dwarfing that of the Fed and of Wall Street. There is more of all this in our scholarly work. Here we now turn to our proposed modern equivalent.

2. *The National Investment Authority: Mandate and Operational Structure*

We have offered a brief diagnosis of America's current economic and political malaise. We have traced it to a gap in the everyday understanding of "economic development," and to corresponding gaps both in our understanding of "public goods" and in our institutions of public finance. That has led us to call for an NIA that will work in coordination with the Fed and the Treasury. We now turn to filling-in that abstract characterization of the NIA by outlining its principal mission and operational modalities.

2.1. Purposes and Functions of the NIA: Overview

The NIA will be a new federal instrumentality that systematically conducts a wide range of financial market activities. These will be explicitly geared to the provision of public goods as defined in the previous Section. The mission is to develop, regularly update, and continuously implement a perpetual economic development strategy for the United States. The NIA will thus amount to a 21st-century version of both Alexander Hamilton's national development bank and the Hoover/Roosevelt era RFC, with the caveat that it views "development" and "reconstruction" as perpetual processes rather than temporary exigencies.

For purposes of operational efficiency, we envisage an institutional subdivision of the NIA into two specialized arms, roughly corresponding to our public goods "controllability" / "capturability" dichotomy above. One arm of the NIA, which we call the National Infrastructure Bank ("NIB"), will focus on pursuing a wide range of credit-mobilization strategies along the lines of the RFC and some of its surviving offspring, including the GSEs.[16]

The other arm of the NIA, which we call the National Capital Management Corporation ("NCMC" or, more colloquially, "Nicky Mac"), will function as an asset manager, in a manner broadly similar to the way in which sovereign wealth funds operate.[17] In each case, the NIA's operating arms will proactively utilize well-established modalities of finance and transact directly in "private" financial markets.

The NIB's primary mode of operation will involve originating, guaranteeing, and maintaining secondary markets for loans to public and private parties undertaking publicly beneficial infrastructure projects. The general idea of establishing some form of "public infrastructure bank" to finance major infrastructure projects is of course not a new one.[18] In contrast to existing proposals, however, the NIB we envision is embedded in a broader and more comprehensive institutional framework dedicated to the formulation and implementation of a continuous and inclusive national development strategy. The scope of the NIB's projects and activities will accordingly extend beyond the finance of traditional infrastructure. By combining its operations with those of the NCMC, the NIB will be able to pursue more ambitious and longer-term developmental goals than simply helping local governments raise money for user-fee generating roads and bridges.

An even more ambitious operating arm of the NIA, we envisage the NCMC as a hybrid between a sovereign wealth fund ("SWF") and a large private equity or venture capital firm. Like the RFC and a typical SWF, the NCMC will be set up as a large, publicly owned, high-profile asset manager. Unlike a SWF, however, it will not simply invest public money in stocks and bonds traded in secondary markets looking for capital appreciation. Instead it will actively solicit, pool, and manage private investors' money along the lines of traditional private equity business models.[19] In a crucial departure from that model, however, the NCMC-managed funds' investment strategies will focus not on short- to medium-term turn-around profits, but on taking long-term equity stakes in potentially growth- and productivity-enhancing public and private projects.

In addition to performing their primary market-levering and market-making roles, both the NIB and NCMC will also play a secondary, but nonetheless critically important, market-preserving role:[20] Securities and other instruments issued by NIB and NCMC will constitute an important new "safe" asset class, a higher-yielding alternative to U.S. Treasury securities.

The availability of this new asset class should significantly alter the dynamics of contemporary financial markets. By attracting large institutional investors' demand away from more speculative privately issued assets, the NIB and NCMC will dissipate, at least in part, a powerful structural incentive for private financial institutions to *supply* such risky assets. In that sense, the NIA, through both of its operating arms, will function as a critically important institutional mechanism for enhancing systemic financial stability, itself a crucial pubic good.[21]

Organizationally, the NIA can be structured in a variety of ways. One possibility would be to mimic the organizational structure of the Federal Reserve System, which comprises twelve regional Federal Reserve Banks – separately incorporated entities with mixed public-private ownership – overseen by an independent federal agency, the Board of Governors of the Federal Reserve System.[22] In direct parallel to that model, the NIA would also constitute a "system" with an independent federal agency – the NIA Governing Board (the "NIA Board") – at the top. The five- or seven-member NIA Board would be appointed by the President. The Board members would have to meet certain statutory qualifications relating to their professional expertise in relevant aspects of finance, law, economics, investment management, or public administration.

The Chair and the Vice-Chair of the NIA Board would be appointed by the President from among the members of the NIA Board and confirmed by the Senate. The NIA Board members would be appointed for staggered 10- or 12-year terms, to ensure a nontrivial degree of autonomy and strategic continuity in their decision-making. The NIA Board members would be removable by the President only for good cause, which would further enhance the NIA's operational independence from any incumbent administration.

The NIA Board would be charged with formulating a coherent strategy of national economic development, identifying specific developmental priorities over various time horizons, and continuously monitoring the implementation of the strategy by its operating arms – the NIB and NCMC. The NIA Board would directly regulate and supervise the activities of both the NIB and NCMC, each of which would have a separate organizational and legal identity.

For reasons discussed below, we propose to organize the NIB and NCMC as special federally chartered corporations, with the NIA (acting on behalf of the federal government) as their sole voting shareholder. Each of the NIB and NCMC would be governed by its own Executive Board in accordance with the specially tailored principles laid out in their respective corporation charters.

The differences in the strategic focus and core business models of the two corporations, however, would determine important differences in how the NIB and NCMC organize and run their operations.

2.2. Credit Mobilization: The National Infrastructure Bank

As the credit-mobilization arm of the NIA, the NIB will seek to lever private capital by pledging the public's superior risk-absorbing capacity to support investment in critical public infrastructure goods. The NIB will operate through a combination of well-established means, including direct federal grants, loans, guarantees, insurance, securitization, and secondary market-making. In this sense, the NIB will operate along the historically familiar lines of what we elsewhere call the market-*levering* model.[23] Its primary mission – at least initially – will be to amplify and optimize our currently sub-optimal system of public-private cooperation in the field of infrastructure finance. From that perspective, an NIB can be viewed as an infrastructure-specific analogue to the RFC and its surviving offspring, the SBA, the FHA, and the home finance GSEs.

The GSE experience is particularly instructive here thanks to the shared nature of the problems currently plaguing U.S. infrastructure finance on the one hand, and those that plagued U.S home-loan markets before the establishment of FHA and Fannie Mae in the 1930s.[24] Before the establishment of FHA and Fannie Mae under the RFC umbrella, U.S. mortgage markets were localized, small-scale, and illiquid. That raised borrowing costs for homebuyers and prevented the emergence of a well-functioning national market for mortgage finance.[25]

Fannie Mae remedied these inefficiencies by making a secondary market in newly FHA-standardized mortgage instruments and thereby lowering both private lenders' risks and borrowers' costs.[26] By creating a nation-wide market backed by the full faith and credit of the United States, it was able to pool and ensure risk on a much larger scale than could be done by any private lender at the time.[27] The system worked stably and well for its first sixty years, before Fannie was converted to private shareholder ownership not long before the 2008 crash.

The NIB will perform a similar function in today's fragmented and illiquid market for infrastructure finance. This it will do by pooling municipal bonds and their associated default and liquidity risks.[28] Like the early Fannie Mae, the NIB will be initially capitalized by the federal government.[29] State or municipal contributions might also, but need not, be required or solicited.[30]

To lever public money, the NIB will issue series of medium- to long-term bonds, or some mix of debt and non-voting preferred stock.[31] It will commit to pay out returns associated with particular issuances on the strength of (1) user fees and dedicated revenues that could feasibly be levied for the purpose; (2) dedicated pools of collateral, in the manner of the European-style "covered" bonds; and (3) the ultimate full faith and credit of the U.S.[32]

The federal government's full faith and credit backup is a particularly potent factor in this respect. Explicitly backed by the U.S. government, the NIB will be a much larger and more powerful market actor than any private municipal-bond-pooling entity, just as Fannie Mae has always dwarfed all non-federal competitors in the secondary home mortgage markets.

It is reasonable to expect that NIB bonds will attract great interest from large institutional investors – pension funds, investment companies, investment banks, foreign central banks, and SWFs – who will view these bonds as close substitutes for U.S. Treasury securities and GSE-issued "agency securities." As discussed above, this is a factor of considerable significance not only for purposes of financing infrastructure projects but also from the perspective of systemic financial stability.

To enhance the appeal of this new asset class to institutional investors, it will be desirable to grant NIB bonds the same regulatory and discount window treatment that U.S. Treasury securities, agency securities, and some forms of commercial paper currently receive under the applicable risk-based capital adequacy and Fed discounting regimes, respectively.[33] For example, allowing banks and other financial institutions to apply a 20% risk-weight factor to NIB bonds in their portfolios for purposes of calculating regulatory capital will significantly increase demand for, and lower the NIB's cost of issuing, these instruments.

The NIB will use the funds raised through its bond issuances to purchase and pool revenue bonds and project bonds issued by municipalities, public utilities, and other government instrumentalities seeking financing to fund infrastructure projects. The NIB can also purchase and pool qualifying bonds issued by private entities for the purposes of financing publicly beneficial infrastructure projects.[34] It is important that the NIB impose strict eligibility criteria on prospective securities in order to ensure the commercial viability of its core business model. Strict adherence to these criteria will help ensure continuously high demand for NIB bonds from large institutional investors.

Many jurisdictions outside the U.S. are already pursuing similar schemes to finance infrastructure.[35] The European Investment Bank ("EIB") operates much in the manner described above and attracts billions of dollars' worth of private capital to fund European infrastructure projects.[36] The EIB has proved quite effective in tapping the global capital markets as well, selling its bonds to the same pension funds, SWFs, and other financial intermediaries that routinely buy U.S. Treasuries and other global "blue chip" securities – while shying away from U.S. municipal bonds.[37] By tapping into this same market demand, the NIB can channel large quantities of global capital into rebuilding U.S. public infrastructure.

In future, the NIB might develop the capacity not only to pool municipal and other bonds as a secondary purchaser, but also to originate loans for particular infrastructure-related projects.[38] For instance, it might start by extending loans to federal agencies charged with infrastructure-provision – e.g., the Federal Highway Administration – and then radiate incrementally outward by lending directly to states or municipalities in need of further infrastructure funding.

In its lending activities, the NIB will target and prioritize projects that have some national socio-economic significance but face difficulty in securing low-cost financing in traditional markets. Developing its capacities along these lines, the NIB might well ultimately evolve from a pure credit-mobilization vehicle into a full-service project- and infrastructure-finance institution backed by the full faith and credit of the U.S. and, therefore, capable of accomplishing far greater tasks than could any private market actor.

2.3. Asset Management: The National Capital Management Corporation

In contrast to the NIB's focus on credit-mobilization techniques along the lines of the RFC and its housing-finance subsidiaries, NCMC's defining strategy is active asset management deployed as a means of facilitating projects that can potentially transform and "leapfrog" the national economy. NCMC will aim to provide infrastructure that *leads or revolutionizes* markets, in socially beneficial ways, rather than *following* existing markets' immediate dictates. In that sense, NCMC will be providing a truly systemic public good that at present is severely under-supplied.

For example, NCMC might not merely seek to ensure that petroleum is available nationwide but might act systematically to convert the national energy system from petro- to renewable- and hydrogen-based.[39] It might also act not merely to repair or restore existing rail lines or roadways, but to bring high-speed rail networks to well-defined regions like upstate New York, whose multiple small cities could be integrated into more productive metropoles. Given its ambitious reach, NCMC would not rely upon NIB-style debt financing alone but would tap into *more ambitious*, less risk-averse capital of the sort that typically comes from equity investors. To this end, NCMC will operate like an investment management company sponsoring and running one or more private equity funds.[40]

In direct parallel to private equity ("PE") firms, NCMC will act as the sponsor and general partner of each individual fund it sets up.[41] As the fund's general partner, NCMC will contribute some capital of its own, but the greater part of the fund's capital will originate with private investors who become passive limited partners in the same fund. As with many private equity funds, NCMC will require that limited partners agree to "lock up" all or some part of their investment dollars with the fund for some set minimum period of time. NCMC will manage the resultant pool of assets much as any private fund manager would do, assembling a portfolio of promising investment projects which, while involving some risk of not panning out in some cases, will be sufficiently diversified to minimize risk.

Individual investments in the fund's portfolio can be structured in various ways, depending on the nature of the selected projects and NCMC's managerial judgment. For example, the NCMC-managed fund might invest in a mix of assets, including municipal revenue bonds, participating preferred stock of a private company that builds and operates a particular infrastructural project, or equity interests in a special purpose entity set up by several municipalities for a common infrastructure-related purpose. As the fund's manager, NCMC would choose an optimal mix of investments, based on their public significance and commercial viability.

The compensation and profit-sharing structure of the NCMC funds will also track the traditional private equity fund model. Just like any private fund manager, NCMC will charge both a fixed annual management fee and a contingent performance fee known as "carried interest," or "carry."[42] To enhance the attractiveness of the NCMC funds as a new asset class, however, it will be desirable to offer some additional incentives to private investors.

The U.S. government backup can operate as a particularly strong "sweetener" in this respect. Thus, the government might guarantee the return of all or a substantial part of private investors' principal upon the expiration of a specified lock-up period. It might also guarantee a certain minimum rate of return on private parties' investments – either for the duration of the lock-up period, for some shorter period of time, or even for as long as the investor keeps its interest in the fund.

The ultimate sources of the returns generated by NCMC-managed funds will vary depending on the specific natures of the infrastructure projects in which they invest. For example, an ambitious project of intercity light rail construction or a network of hydrogen- or electrically-powered vehicle recharging stations could generate returns through user fees or targeted taxes. Limited partners in the NCMC funds with portfolios containing such direct revenue-producing investments would participate in these easily tracked returns.

In addition to this already familiar method of compensating private investors in public goods, the NCMC will actively utilize advanced financial and legal engineering techniques to synthesize privately payable "equity strips" that reflect otherwise non-capturable public gains from the provision of public goods. Reaping the benefits of scale economies and recapturing positive externalities associated with the state-wide, region-wide, or nation-wide provision of public goods – including the positive effects of NCMC-financed infrastructure projects on employment and income tax revenues – will bolster NCMC's ability to offer or guarantee stipulated returns to private investors in its funds.[43]

Just like real equity returns, these synthetic equity payouts will vary depending on estimates of local, regional, or national macroeconomic impacts of NCMC funds' projects. If, for example, experts calculate that a particular fund's investments will generate an additional 3% in local or regional economic growth over a specified period of time, NCMC would translate the projected gain into a corresponding added return for the fund's limited partners. This method of synthesizing privately capturable profits will add another source of revenue – on top of project-specific user-payment schemes for projects amenable to this form of cost-recovery. It will allow the NCMC to compensate, and further incentivize, those private parties who assist in the funding of economy-transformative infrastructure renewal and expansion.[44]

The profit-sharing component might also be structured in layers, as we describe elsewhere. Under this approach NCMC would present private investors with attractive new investment opportunities that could (1) replicate bonds in their guarantee of principal and possibly some modest rate of return, (2) then offer carry-free equity bands, essentially entitling investors to all net profits, and (3) then offer one or more equity bands entitling investors to predetermined percentages of net profits, possibly capped by specified ceilings.

This is, of course, only a sketch of what the arrangement might look like. The viability of such a tiered profit-sharing model and its precise structure would have to be determined through financial cost-benefit analysis, taking into account all relevant considerations.[45] If properly structured and priced, NCMC funds should be an attractive new asset class available to broad swaths of large institutional investors searching for "safe" assets with higher yields. As noted earlier, it is difficult to over-estimate the significance of creating this new asset class for protecting systemic financial stability.

As the NCMC matures and grows both its expertise and its assets under management, it will broaden the range of projects it can undertake and strengthen its capacity to act in a truly entrepreneurial, forward-looking manner as befits a PE-like market actor. From this perspective, it is easy to imagine the potential for creating a more seamlessly integrated network of public-private venture capital and small business financing.

Thus, various federal venture capital funds and other federal agencies and programs targeting innovative start-ups – for example, the Telecommunications Development Fund ("TDF")[46] and the Small Business Administration ("SBA"), which began as an RFC subsidiary[47] – can be organizationally incorporated into the NCMC structure. The NCMC will also be well-positioned to establish close institutional collaboration and co-financing of innovative research projects with various specialized programs, such as the Defense Advanced Research Projects Agency ("DARPA")[48] and Advanced Research Projects Agency-Energy ("ARPA-E").[49]

Combining multiple federal agencies' financial, scientific, and organizational resources will increase their practical impact as the source of both "smart" *and* "patient" capital, that critical ingredient in the innovation game.[50] The NCMC – and, more broadly, the NIA – will act as the catalytic force behind, and the central node in, this developmental network.[51]

Of course, the degree of practical feasibility and potential efficacy of the NIA and its two operating arms will depend on getting numerous details of their institutional design right. As a practical matter, many of these details, and plans as to how best to proceed, can realistically be expected to take shape only in the process of implementing our broadly outlined proposal. With that caveat in mind, it will nevertheless be helpful to take a preliminary look at some of the key likely features of the NIA's institutional design.

3. The National Investment Authority: Implementation

The preceding discussion invites further inquiry into the NIA's and its two operating arms' organizational structures, internal governance, and public accountability. One might also ask more about the proposed entities' business models. Without claiming to provide full answers to all of these questions, this Part addresses some of the key issues and challenges likely to arise in designing and instituting the NIA.

3.1. Organizational and Personnel Matters

The RFC and SWF experiences offer useful lessons for structuring our proposed NIA. That experience shows that one of the crucial elements of an effective accountability regime is a clear articulation of the public investor-entity's legal mandate and core mission.[52] A direct and deliberate normative framing allows both for effective downstream operationalization of the entity's policy objectives and for robust measurement of its performance and operation.

Establishing a formal organizational hierarchy with clearly delineated lines of authority and functional divisions further bolsters the entity's institutional coherence and ability to achieve its aims.[53] Periodic public reporting of performance results, regular internal and external audits, and reliance on independent advisory or supervisory boards adds another layer of accountability. Finally, individual funds' institutional robustness is "sustained by resourcing each element in the investment process and governance chain with an appropriate time and resources budget."[54]

In short, the SWF experience shows that the institutional strength and coherence of any public investment authority critically affects its operational transparency, public accountability, and political legitimacy. In the context of our proposed NIA system, this lesson has to be applied at the level of each entity: the NIA itself, the NIB, and NCMC.

As discussed above, the NIA Board, an independent federal agency, would have the statutory authority and duty both to identify key national development priorities and to formulate a public investment strategy in accordance with those priorities. To enable the NIA to perform effectively in practice, the SWF experience suggests it is critical to grant it an explicit and unambiguous statutory mandate to develop and implement, on an ongoing basis, a comprehensive program of structurally balanced, sustainable, and socially inclusive economic development. A strong and normatively clear legal mandate is an indispensable foundation of the NIA's political legitimacy – a particularly sensitive issue for SWFs and all other public instrumentalities that act in private markets – and its operational efficiency.[55]

The NIB and NCMC would for their part best be organized as federally chartered government-owned corporations. The U.S. has a long history of chartering special government corporations, many of which operate under unique sets of privileges and constraints.[56] Flexibility in crafting such special privileges and constraints weighs strongly in favor of chartering both NIB and NCMC as such corporations.[57]

This option will allow each of the entities to offer salaries in excess of federal-employee compensation limits and, therefore, attract and retain highly qualified personnel – one of the most critical factors that would determine the level of the NIA's success.[58]

This form of chartering will also free NIB and NCMC from many formal constraints and requirements of the administrative process and shield them from excessive bureaucratic interference. Another significant advantage of this organizational choice is that it can give both NIB and NCMC a greater degree of insulation from direct political pressure.[59] That should encourage the emergence and maintenance of a more focused and mission-oriented institutional culture.

Each of the NIB and NCMC should be governed by its own Executive Board in accordance with the specially tailored principles laid out in its charter.[60] The NIB's and NCMC's Executive Boards should be supported by well-compensated and technically competent professional staffs.[61]

Personnel issues are an important organizational factor in ensuring the NIA's viability. Because the NIA would seek to fulfill its explicitly public – hence, unavoidably political – mission through credit allocation and asset management, it has to combine strong strategic policy-making capabilities with deep technical expertise in financial markets and investments. Expertise in public policy and macroeconomic planning, for example, would be particularly important at the level of NIA leadership. Technical financial-analysis skills and investment management expertise, on the other hand, would be the heightened priority for NIB and NCMC personnel.

There are generally two types of consideration that must be taken into account with respect to the personnel and internal governance of the NIB and, especially, NCMC. On the one hand, it is important to ensure that the NCMC's internal organizational hierarchy enables it to make efficient, internally coherent, coordinated, and timely decisions. To the extent that it runs a *bona fide* asset management business, it has to be structured like one: a relatively lean, well-disciplined, and cohesive team of professionals under the command of the Chair of the NCMC's Executive Board – a high-profile, well-respected, and experienced investment management expert.[62]

On the other hand, both the NCMC and the NIB are federal instrumentalities, which means that their actions must reflect and serve the interests of the public as a whole. Their internal organizational structures and decision-making processes accordingly should not be focused solely on business efficiency: they should also reflect these entities' practical commitment to the public interest, thereby enhancing their legitimacy.

A workable compromise between these two considerations might be to allow some meaningful public input in the appointment process. One route would be to replicate, in modified form, the regional Federal Reserve Banks' current governance structure and establish three classes of Executive Board members.[63] Members of one class – one of whom would be appointed as the Chair – would be selected by the NIA Board. Members of the second class would be selected by private sector business groups: the investment management industry in the case of NCMC, and the broader financial industry in the case of NIB. Members of the third class would be selected by public interest groups, including representatives of the scientific and research communities. All members of the NIB's and NCMC's Executive Boards would have to meet certain statutory criteria specifying relevant expertise.[64]

3.2. Accountability Mechanisms

Accountability is a critical factor in ensuring the NIA's political legitimacy and, ultimately, long-term success. As both the RFC and the SWF experience suggest, the NIA's legitimacy would depend not only on its financial performance but also on the procedural integrity of its operations.

To ensure that the NIA is publicly accountable for its actions, it is important to establish clear lines of internal and external communication, reporting, and auditing. It is also critical that both the NIB and NCMC have clear and enforceable procedural rules for making and vetting investment decisions along the entire organizational chain of command, from the frontline credit analysis and fund management teams all the way up to the Executive Boards. These rules will help to ensure that the entities' business activities are properly insulated from undue influence both by private sector interests and by political incumbents.

With respect to transparency, it would be easy to mandate that the NIA Board submit annual reports to Congress, outlining the basic principles of its developmental program, explaining any changes in or adjustments to its objectives over various time horizons, and describing and analyzing specific actions that the NIA – including the NIB and NCMC – might be taking to implement its strategic objectives.[65] The Chair of the NIA Board, along with the Chairs of the NIB's and NCMC's respective Executive Boards, could also be required to provide annual Congressional testimony on the national development policy.

The NIA Board should be subject to annual audit by the Government Accountability Office (the "GAO"), which conducts audits of federal agencies.[66] In addition, each of the NIB and the NCMC should be subject to annual independent audits of their financial performance and operations. Given the nature of their activities, it may be advisable to set up a special panel to conduct these audits. The special audit panel would include representatives of the GAO and of all major public accounting firms.

As for the integrity of investment decisions, establishing a clear and reliable process for selecting specific projects for NIA financing is of particular importance. The underlying concern here is the ever-present potential for corruption, cronyism, and misuse of funds under these entities' control for the benefit of political incumbents.

Extensive reporting requirements, regular external audits, and various internal controls at the level of each entity in the NIA system should significantly alleviate this concern. Nevertheless, it is vital to put in place robust procedural safeguards with respect to the selection of investments, especially for NCMC's portfolio.

One method might be to require the NIB and NCMC to select individual projects for inclusion in their asset portfolios through public auctions. Any public or private entity with an economically viable plan for providing currently under-provided public goods, discussed above, would have a fair and equal opportunity to apply for the NIA funding. A specially designated committee of the NCMC or the NIB, as appropriate, would conduct a thorough analysis of each proposed project and choose the ones that meet their pre-formulated and transparent internal requirements.[67]

To assist the NIB and NCMC with project selection, it would be desirable to establish an Investment Advisory Committee comprising outside experts in financial management, macroeconomic analysis, urban planning, and other relevant fields. Given its broad collective expertise, the Investment Advisory Committee would be in a position to help the

NCMC and NIB to conduct more comprehensive assessments of investment opportunities. It would also serve as an additional means of ensuring NCMC's and the NIB's public accountability.

To the extent that a significant part of the proposed NIA's mission is to promote sectorally and geographically balanced economic growth, its organizational structure should reflect an explicit focus on regional, as well as national, development. Thus, in another parallel to the Federal Reserve System, it would be important to establish NIA regional offices that work closely with local business communities and public authorities on region-specific needs.

It would make sense to delineate the NIA's regional districts in a manner that maps neatly onto the existing map of Federal Reserve Districts, to maximize potential synergies from close collaboration between regional NIA offices and the corresponding Federal Reserve Banks.[68] Direct regional presence could also significantly strengthen the NIA's political influence and legitimacy.[69]

Finally, to enhance the NIA's external accountability, Congress could establish a special Public Advisory Council (the "Council") specifically charged with representing an explicitly public interest-oriented perspective in the conduct of national developmental policies.[70] The Council would comprise individuals who are independent of both the industry and regulators and who have relevant expertise, a group that would include academic experts and certain public figures (not holding any official post).[71]

The Council would play a primarily advisory and evaluative role, providing an independent perspective on substantive policy issues faced, and strategic decisions made, by the NIA in the course of fulfilling its developmental mandate. The Council would submit mandatory annual reports to Congress, containing its assessments and criticisms – and non-binding recommendations for improvement – of the NIA's articulation and performance of national developmental policy goals. Establishing an institutional channel for inserting public interest into the NIA's political accountability and decision-making structure would serve as a powerful check against the strong pull of industry influence.[72]

3.3. Operational Issues and Business Considerations

In addition to matters of organizational structure and accountability, designing an NIA also requires that some attention be paid matters of initial funding, day-to-day operating, and related business considerations.

Funding for the NIA's operations could come from several sources. During the initial, "start-up" period immediately following its chartering, the NIA will likely rely in part upon Congressional appropriation. This was the RFC's initial funding model, until it became sufficiently profitable as a business enterprise in its own right as no longer to require appropriations.[73] Also as in the case of the RFC, once the NIA builds a portfolio of assets generating interest, dividend, and fee revenues, it will no longer need Congressional appropriations.[74]

A backstop to self-funding might be to designate a certain portion of the Fed's annual profits for contribution to the NIA's budget. This stream of funds would serve to smooth potential fluctuations in the NIA's internally generated returns and to augment its ability to continue financing publicly beneficial economic ventures even during times of economic slowdown. Currently, the Fed turns over significant amounts of its annual profits to the Treasury. In January 2016, it sent $97.7 billion to the Treasury, plus an additional $19.3 billion from its capital surplus account to finance the 5-year highway construction program.[75] Linking Fed profits to the NIA, whose mission is both complementary to that of the Fed and embraces all manner of infrastructure *including* highways, looks all the more intuitively natural against that backdrop.

It probably also makes sense, in this connection, to consolidate the RFC's remaining offspring with the NIA, which in a sense is the RFC's reincarnation. Thus, GSEs such as Fannie Mae, Freddie Mac, and perhaps even Sallie Mae might be brought under the NIB as distinct funds,[76] while the SBA for its part might be brought under NCMC as a specific venture capital fund.

As for how the NIA conducts its actual investment activities over the lifecycles of its investments, several questions will have to be answered. One is the question of who will be making the specific lending and investing decisions. Another is whether, how, and under what conditions various investments should be "exited."

With respect to the first question, it is probably best, at least at the outset, for investment decisions and investing activity to be done "in house." Some readers would perhaps find it tempting to "outsource" at least some of this activity to pre-existing private sector investment professionals. We think this would set the wrong "tone" inasmuch as private sector financial professionals' top priorities always are, understandably enough, profitability and fee-maximization. And this is to say nothing of likely public perceptions of rent-seeking and cronyism. Better, then, to begin with something more like the RFC model.[77]

This does not, however, rule out the NIA's project financing arm – NCMC's – partnering with private sector sources of finance in particular cases. It might well happen in some instances, for example, that a pioneering start-up firm is able to attract private VC funding up to some percentage of initial requirements. In some such cases, NCMC might join – even form, lead, or both – syndicates of investors.

This is not as unusual as it might at first sound. Indeed it is very common, in the so-called "developing" world in particular, for international development banks such as the World Bank, the Asian Development Bank, the Inter-American Development Bank and other such "IDIs" to form syndicates of mixed public and private investors.[78] Indeed, often an initial investment by one of these institutions confers an imprimatur of sorts on the relevant project, catalyzing much more investment from additional sources.[79]

As for the "exit" question, here the answer will probably vary with kinds of investment. In the case of the NIB, things are relatively simple: inasmuch as the buying and selling decisions are made with a view to influencing prices, buying and selling will be done according as the relevant prices continue to require raising or lowering. In the case of NCMC, durations of investments and "exits" therefrom will vary according to type. Some large and enduring infrastructure projects, for example, might be best "spun off" into separate public authorities on the model of the TVA or the Delta Regional Authority, or into carefully regulated, privately-owned utilities, once completed.

Cutting-edge new firms that pioneer the development of new industries with NCMC funding, for their part, might simply pay off their debts to NCMC once up and self-sustainably running. Other such firms that NCMC at first owns might be sold off in IPOs once they are able to manage on their own. And still others might be owned in part by NCMC during their early stages, the shares subsequently sold off on the market or conveyed to NIB.

Again, there are many possibilities here, all of them varying with the particulars of specific imaginable cases. The guiding principle should be one of pragmatism: NCMC will invest in the ways that seem best suited to financing the provision of a great variety of public goods, and will "exit" any particular venture, when its ongoing presence is no longer needed, in whatever manner seems best for the venture itself and for NCMC's ongoing mission.

Where returns to *private* investors in NIA organs are concerned, as suggested earlier these would come from a variety of sources that vary with the kinds of project financed. Variable returns on investments in the NIB, were private investors permitted to participate, would presumably vary with NIB's returns themselves. Returns on investments through NCMC, as noted earlier, would be composite, including a guarantee of principal and interest on the one hand, a variable equity sliver on the other.

In the case of projects that did not prove profitable or generate local, regional, or national economic growth, investment in NCMC would be a bit like investment in U.S. Treasury securities; the return would simply be the coupon. In the case of projects that did prove profitable or generate economic growth, the equity sliver would be proportional to the profit or the growth rate, and funded out of the profit or the augmented tax take as noted above.

Additional inducements to private investors, akin to those currently offered to buyers of Treasuries and Agency securities, will probably also be in order. Hence, earnings on these investments should be untaxed, and the instruments should be treated as government-issued securities for purposes of the Securities Act of 1933. Similarly, investment in these securities should be exempt from portfolio regulation under Section 24 (Seventh) of the National Bank Act of 1863, while the securities themselves should receive zero risk weightings for capital-regulatory – and perhaps regulatorily-recognized collateralization – purposes.[80]

A potentially thorny question is whether to permit the development of a private secondary market in NIA investments. On the one hand, permitting this would presumably allow for more primary investments, as a secondary market enables easy exit and thereby lowers perceived risk. Moreover, deep secondary markets can perform useful "price-discovery" functions, enabling NIA management to lever the knowledge of millions of disaggregated private investors and market analysts in determining the likelihood of success of certain projects.

On the other hand, exit can also be had by conferring on every investor a put – in essence, an unconditional principal redemption right – or through establishment of another fund to purchase from those wishing to sell, rather as Fannie in its first, pre-privatization decades stood as the sole secondary market purchaser or FHA-insured mortgage loans. And private secondary markets' "price-discovery" functions for their part are compromised when excess speculative activity inflates prices far above, or deflates prices far below, anything approximating "fundamental" or sustainable value over certain temporal intervals. We also mustn't forget that even the primary markets in NIA investments will perform price-discovery functions, even if not quite as quickly as would secondary markets.

Our tentative conclusion with respect to secondary trading, is that we should proceed with caution, beginning with no more than a principal redemption right – exercisable at any state or nationally chartered bank[81] – to avoid investor lock-in and thereby induce greater willingness on the part of investors to purchase NIA-issued securities. During this opening period, as investor interest is gauged by investor purchasing and redeeming activity, greater clarity should emerge as to the prospective advantages and disadvantages of permitting private secondary market trading in NIA securities.[82] Also during this period, of course, a corollary entailment will be that NIA securities cannot serve as collateral in Repo or any other transactions, since they will not be assignable.

Conclusion

We have proposed, advocated, and provisionally designed a new public instrumentality – a National Investment Authority – whose mission is situated between those of the Treasury and of the central bank, the Fed. In explaining why such an instrumentality is needed, we have extended, somewhat, the traditional understanding of public goods, and explained why neither the Treasury, the Fed, nor public financing alone is up to the task of supplying the full range of such goods. What is necessary is an institution that combines the comparative advantages of public action with those of private action in the supplying of public goods.

Underlying our proposal is the conviction that America has been faced for some time not only with a "recovery" challenge, but with a longer term "reconstruction" and "development" challenge. We have argued that these terms must be thought of as denoting not merely temporary or exigent circumstances, but forms of action in which societies collectively engage for as long as they "live." Treating development in this way requires that precisely that broadened class of public goods we have characterized be supplied in quantities that maximize the range of productive opportunity open to individual citizens. Our proposed NIA, which combines public and private capital in a manner that levers the comparative advantages of public and private alike, is the means of optimally supplying those goods.

Because such goods' chronic undersupply is the source of our current political and economic dysfunctions, our proposed NIA is also the means of restoring health to our economy and to our polity. It is the "missing link" whose absence accounts for our current travails. The NIA does not represent a "public takeover" or "socialization" of finance. Rather, it is a means by which all of us can collectively supply what no one of us individually can supply, yet which each of us needs. In this sense its purpose is the purpose of democratic government itself. It is that purpose as pursued in the realm of productive market activity.

---

[1] This white paper reduces to their essentials the prompting considerations and basic design features elaborated in our forthcoming article, *Private Wealth and Public Goods: A Case for a National Investment Authority*, 43 J CORP. L. __ (2017) [hereinafter, *NIA*]. It also builds on the principles more fully articulated in our prior research. *See,* Robert C. Hockett & Saule T. Omarova, *The Finance Franchise*, 102 CORNELL L. REV. __ (forthcoming 2017) [hereinafter, *Finance Franchise*]; Robert C. Hockett & Saule T. Omarova, *Public Actors in Private Markets: Toward a Developmental Finance State*, 93 WASH. U. L. REV. 103 (2015) [hereinafter, *Public Actors*]; Robert C. Hockett & Saule T. Omarova, *"Private" Means to "Public" Ends: Governments as Market Actors*, 15 THEORETICAL INQUIRIES IN L. 53 (2014).

[2] The term "public-private partnership" ("P3" or "PPP") refers to a broad universe of diverse and context-specific arrangements. For summaries and assessments of recent P3 arrangements in Europe and elsewhere, see JEFFREY DELMON, PUBLIC-PRIVATE PARTNERSHIP PROJECTS IN INFRASTRUCTURE: AN ESSENTIAL GUIDE FOR POLICY MAKERS (2011); EDUARDO ENGEL ET AL., THE ECONOMICS OF PUBLIC-PRIVATE PARTNERSHIPS: A BASIC GUIDE (2014); E. R. YESCOMBE, PUBLIC-PRIVATE PARTNERSHIPS: PRINCIPLES OF POLICY AND FINANCE (2007); and DARRIN GRIMSEY & MERVYN K. LEWIS, PUBLIC PRIVATE PARTNERSHIPS: THE WORLDWIDE REVOLUTION IN INFRASTRUCTURE PROVISION AND PROJECT FINANCE (2007). In the U.S., P3 models for infrastructure financing are used mainly by individual states and municipalities. *See, e.g.*, George Carollo *et al., White Paper: Public-Private Partnerships for Infrastructure Delivery*, Stanford Collaboratory for

Research on Global Projects, 2013; GOVERNMENT ACCOUNTABILITY OFFICE, GAO-10-728, WASTEWATER INFRASTRUCTURE FINANCING: STAKEHOLDER VIEWS ON A NATIONAL INFRASTRUCTURE BANK AND PUBLIC-PRIVATE PARTNERSHIPS (2010).

[3] For historical analyses of these dynamics, see, CHARLES P. KINDLEBERGER & ROBERT ALIBER, MANIAS, PANICS, AND CRASHES: A HISTORY OF FINANCIAL CRISES (2005).

[4] *See Finance Franchise, supra* note 1.

[5] There is a growing literature on "safe assets," and government liabilities as "safest of the safe." *See*, Marcus Brunnermeier & Valentin Haddad, *Safe Assets*, Federal Reserve Bank of New York, Oct. 17, 2014, *available at* http://www.newyorkfed.org/aboutthefed/pdf/FAR_Oct2014.pdf; Gary Gorton et al., *The Safe-Asset Share*, 102 AM. ECON. REV. 101 (2012); Pierre-Olivier Gourinchas & Olivier Jeanne, *Global Safe Assets*, BIS Working Paper No. 399 (2012), *available at* http://www.bis.org/events/conf120621/gourinchas_presentation_new.pdf; Arvind Krishnamurthy & Annette Vissing-Jorgensen, *The Aggregate Demand for Treasury Debt*, 120 J. POL. ECON. 233 (2012); Garry J. Schinasi et al., *Financial Implications of the Shrinking Supply of U.S. Treasury Securities*, International Monetary Fund, (Mar. 20, 2001), *available at* https://www.imf.org/external/pubs/ft/supply/2001/eng/032001.PDF.

[6] The literature tends to distinguish between goods that bear both of these properties, which it calls "public goods," and goods that bear only the non-excludability property, which it calls "common pool resources." Fish stocks constitute a common pool resource, while the latter constitutes a pure public good. Non-rivalrous but excludable goods are typically called "club goods," while rivalrous and excludable goods are simply "private goods." *See generally* Francis M. Bator, *The Anatomy of Market Failure*, 72 Q. J. ECON. 351 (1958), *available at* https://courses.cit.cornell.edu/econ335/out/bator_qje.pdf; and Paul A. Samuelson, *The Pure Theory of Public Expenditure*, 36 REV. ECON. & STAT. 387 (1954), available at http://www.jstor.org/stable/1925895?seq=1#page_scan_tab_contents. *See also,* JOSEPH E. STIGLITZ & JAY K. ROSENGARD, THE ECONOMICS OF THE PUBLIC SECTOR (4th ed., 2015); HARVEY ROSEN & TED GAYER, PUBLIC FINANCE (2013); LAURENCE S. SEIDMAN, PUBLIC FINANCE (2009); RICHARD A. MUSGRAVE, THE THEORY OF PUBLIC FINANCE: A STUDY IN POLITICAL ECONOMY (1959).

[7] *See,* Robert Hockett, *Recursive Collective Action Problems*, 3 J. FIN. PERSP. 1 (2015).

[8] *Id.*

[9] Generally, a collective action problem is a situation in which multiple individually rational decisions aggregate into collectively undesired outcomes. *See id*.

[10] *See,* Robert Hockett & Saule Omarova, *Systemically Significant Prices*, 2 J. FIN. REG. 1 (2016).

[11] *Id*.

[12] *Id*.

[13] Some have argued, along similar lines, that the legal trust and the business corporation themselves can be helpfully viewed as intergenerational sharing mechanisms that facilitate long-term investment. *See,* Lynn A. Stout, *The Corporation as Time Machine*, 38 SEATTLE U. L. REV. 685 (2015). That argument, however, does not go far in an environment where (1) the managers of investible funds are beholden to investors; (2) investors are rationally impatient capitalists who do not think of subsequent shareholders as their descendants and accordingly demand quick returns; and (3) such returns are more easily generated through speculative market transactions than long-term productive

investments.

[14] Such return may, for example, consist of a guaranteed bond coupon with a regular growth-associated equity-yield add-on. *See infra* Parts 2 and 3.

[15] The "optimal taxation" literature in particular is focused upon this prospect. *See,* Frank P. Ramsey, *A Contribution to the Theory of Taxation*, 37 ECON. J. 145 (1927); Frank P. Ramsey, *A Mathematical Theory of Saving*, 38 ECON. J. 152 (1928); James A. Mirrlees, *An Exploration in the Theory of Optimum Income Taxation*, 38 REV. ECON. STUD. 175 (1971).

[16] *See NIA*, *supra* note 1.

[17] *Id.*

[18] *See, e.g.*, Nation Building Here at Home Act of 2012, H.R. 4352, 112th Cong. (2012), *available at* https://www.congress.gov/112/bills/hr4352/BILLS-112hr4352ih.pdf; National Infrastructure Bank Act of 2007, S. 1926, 110th Cong. (2007), *available at* https://www.congress.gov/110/bills/s1926/BILLS-110s1926is.pdf; National Infrastructure Bank Act of 2007, H.R. 3401, 110th Cong. (2007), *available at* http://www.gpo.gov/fdsys/pkg/BILLS-110hr3401ih/pdf/BILLS-110hr3401ih.pdf; National Infrastructure Development Act of 2007, H.R. 3896, 110th Cong. (2007), *available at* https://www.congress.gov/110/bills/hr3896/BILLS-110hr3896ih.pdf; *Fiscal Year 2016 Budget Overview*, OFFICE OF MGMT. & BUDGET, http://www.whitehouse.gov/omb/overview (last visited July 5, 2015); Joseph Weber, *Obama to Propose $50B in Infrastructure Projects*, WASH. TIMES (Sept. 6, 2010), http://www.washingtontimes.com/news/2010/sep/6/obama-propose-50b-infrastructure-projects/.

[19] *Id.*

[20] For a discussion of market-levering, market-making, and market-preserving roles played by public instrumentalities in private markets, see *Public Actors, supra* note 1 at 122-136.

[21] Systemic financial stability is a public good insofar as it addresses the non-controllability problem, discussed above. *See supra* Part 1.2.

[22] *See,* BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, THE FEDERAL RESERVE SYSTEM: PURPOSES & FUNCTIONS (2016) 9-15, *available at* https://www.federalreserve.gov/pf/pdf/pf_complete.pdf. The third institutional component of the Federal Reserve System is the Federal Open Market Operations Committee. *Id*. at 1.

[23] For a discussion and analysis of the market-levering mode of public participation in financial markets, see *Public Actors*, *supra* note 1 at 131-134. Also *"Private" Means to "Public" Ends*, supra note 1

[24] *See* HEIDI CREBO-REDIKER & DOUGLAS REDIKER, FINANCING AMERICA'S INFRASTRUCTURE: PUTTING GLOBAL CAPITAL TO WORK (2008), *available at* http://www.voltairenet. org/IMG/pdf/Financing_America_Infrastructure.pdf.

[25] See *Public Actors*, supra note 1 at 133-34; and Robert C. Hockett, *Jeffersonian Republic by Hamiltonian Means: Values, Constraints, and Finance in the Design of A Comprehensive and Contemporary American "Ownership Society,"* 79 S. CAL. L. REV. 45, 68-75 (2005) [hereinafter "*Hamiltonian Means*"].

[26] The FHA played the key role in standardizing the currently popular 30-year mortgage loans. *See* sources cited id.

[27] *See Public Actors*, supra note 1 at 150-152; and *Hamiltonian Means*, supra note 25

at 73-75.

[28] *See* Crebo-Rediker & Rediker, *supra* note 24.

[29] All of the current proposals for the creation of a public infrastructure bank similar to the NIB envisaged here require initial congressional capitalization of such a bank, although the precise level of such initial capitalization is a matter of some disagreement among different proposals' authors. *See* Crebo-Rediker & Rediker, *supra* note 24, at 2.

[30] Existing proposals generally do not envision state or municipal contributions to the infrastructure bank's capital.

[31] Preferred stock issued by the NIB would not have any voting or management rights and would function as passive investment instruments in private shareholders' hands.

[32] "Covered bonds" are a form of collateralized bond instrument, with the collateral in question typically guaranteed by a government entity. First developed in Prussia and Denmark during the late 18th century and reminiscent of Alexander Hamilton's "sinking fund" model of public finance, covered bonds have become increasingly popular in Europe over the past several decades as a form of financing public projects. *See, generally,* European Covered Bond Council, ECBC FACTBOOK 2014, *available at* http://ecbc.hypo.org/Content/Default.asp?PageID=501.

[33] The Fed's discounting regime, pursuant to which the central bank monetizes certain eligible forms of commercial paper, is embodied at 12 USC Sec. 372. The FDIC-administered capital-regulatory regime, pursuant to which some forms of safe and/or favored asset are risk-weighted at less than 100%, is embodied at 12 C.F.R. Part 325 (2015).

[34] To avoid favoritism and to minimize potential conflicts of interest in allocating public capital to private enterprise, the NIB would have to institute robust procedural mechanisms for selecting and monitoring individual projects for its portfolio. *See infra* Part 3.

[35] *See, e.g.,* Crebo-Rediker & Rediker, *supra* note 24.

[36] *Id.* The EIB was established in 1958 and is owned and operated by the EU member-states. Its mission is to foster, through a variety of public-private investment partnerships, the continued infrastructural development and economic integration of the European Union. For more on the institution and its history, see http://www.eib.org/.

[37] *See,* Crebo-Rediker & Rediker, *supra* note 24.

[38] *See id.*

[39] Something much like this is behind the 2008 Clean Energy Bank proposals of Senators Bingaman and Domenici and Representatives Inslee and Israel. See The 21st Century Energy Technology Deployment Act, S. 3233, available at https://www.govtrack.us/congress/bills/110/s3233; and H.R. 2212, available at https://www.govtrack.us/congress/bills/111/hr2212; and the Clean Energy Investment Bank Act, S. 2730, available at https://www.govtrack.us/congress/bills/110/s2730/text.

[40] For more on how private equity funds operate, see HARRY CENDROWSKI & LOUIS W. PETRO, PRIVATE EQUITY: HISTORY, GOVERNANCE, AND OPERATIONS (2012); EILEEN APPELBAUM & ROSEMARY BATT, PRIVATE EQUITY AT WORK: WHEN WALL STREET MANAGES MAIN STREET (2014).

[41] In this Article, we use the term "private equity" broadly, to refer both to traditional PE firms and their subset, venture capital firms. Distinctions typically drawn between these two segments of the private fund industry are not relevant for the purposes of our

discussion.

[42] In accordance with the private industry practice, the management fee could be set at the typical level of 2% of private assets under the NCMC's management. The carry charged by private asset managers typically equals approximately 20% of the relevant fund's profits. This common private fund compensation structure is colloquially known as the "two and twenty" system. *See,* Victor Fleischer, *Two and Twenty: Taxing Partnership Profits in Private Equity Funds*, 83 N.Y.U.L. REV. 1 (2008).

[43] Even conservative macroeconomic models indicate that the positive employment, GDP-growth, and consequent income tax revenue increases generated by significant infrastructure investment would largely, if not wholly, offset project costs in the low interest-rate environment. *See* Robert Hockett & Robert Frank, *Public Infrastructure Investment, Renewed Economic Growth, and the U.S. Fiscal Position, available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1987656; Robert Hockett, *White Paper in Support of the Nation Building Here at Home Act of 2012*, *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2029239

[44] This ability to replicate private returns from the provision of systemic public goods is even more critical for financing forward-looking infrastructure projects that are not likely to generate sufficient user fee revenues, or are otherwise not amenable to imposition of such fees.

[45] These would include the expected "cost of capital" and "return on investment" calculations that take account of the return-elasticity of investment demand – i.e., the sensitivity of demand for the instrument to the yield of the instrument.

[46] TDF is a federal venture capital fund created in 1996 for the general purpose of financing small businesses developing telecommunications technologies. *See* 47 U.S.C. 614 (2015). TDF's strategy focuses on equity investments in telecommunications start-ups. *See,* S. Jenell Trigg, *Telecommunications Development Fund: Making a Difference?* (2002), *available at* http://www.civilrights.org/publications/1996_telecommunications/section-714.html.

[47] SBA was established in 1953 to facilitate small business formation and growth via the so-called "three Cs" of capital, contracting, and counseling. *See* NIA, supra note 1. Also *About the SBA*, U.S. SMALL BUS. ADMIN., https://www.sba.gov/category/navigation-structure/about-sba.

[48] DARPA, established in response to the Soviet Union's launch of Sputnik in 1957, widely credited with the development of many currently ubiquitous technologies. *See, About DARPA*, http://www.darpa.mil/about-us/about-darpa.

[49] ARPA-E, modeled after DARPA, was created in 2007 for the purpose of financing and facilitative transformational energy research.

[50] MARIANA MAZZUCATO, THE ENTREPRENEURIAL STATE: DEBUNKING PUBLIC VS. PRIVATE SECTOR MYTHS 138 (2014) ("In the innovation game, it is critical that finance be 'patient', and be able to accept the fact that innovation is highly uncertain and takes a long time.").

[51] *See* Fred Block, *Swimming Against the Current: The Rise of a Hidden Developmental State in the United States*, 36 POL. & SOC'Y 169 (2008) (advancing the notion of a "developmental network state").

[52] *See NIA*, *supra* note 1.

[53] *Id.*

[54] *Id.*

[55] *Id.*

[56] *See* Lebron v. Nat'l R.R. Passenger Corp., 513 U.S. 374 (1995) (describing the history of Amtrak and other government-chartered corporations). Some of the examples of currently existing federal government corporations include the Export-Import Bank, the Overseas Private Investment Corporation, and the Government National Mortgage Association. For academic analyses of the functions and varied organizational structures of government corporations and quasi-governmental entities, see A. Michael Froomkin, *Reinventing the Government Corporation*, 1995 U. ILL. L. REV. 543 (1995); Anne Joseph O'Connell, *Bureaucracy at the Boundary*, 162 U. PA. L. REV. 841 (2014); Benjamin A. Templin, *The Government Shareholder: Regulating Public Ownership of Private Enterprise*, 62 ADMIN. L. REV. 1127 (2010).

[57] *See, generally,* Kevin R. Kosar, *Federal Government Corporations: An Overview*, Cong. Res. Serv. (June 8, 2011) (describing the administrative flexibility provided by the government corporation form).

[58] *Id.* Government corporations are generally subject to the Government Corporation Control Act, 31 U.S.C. § 1901 et seq. Congress can, and often does, exempt individual government corporations from that statute's provisions. Kevin R. Kosar, *Congressional or Federal Charters: Overview and Enduring Issues* 6, Cong. Res. Serv. (Apr. 19, 2013).

[59] *See,* Kosar, *id.*,at 10-11 (describing the limited administrative and congressional oversight of federal government corporations).

[60] We propose this board structure for the NIB and NCMC both because it mimics the governance structure of private business corporations and in recognition of the significant benefits of incorporating various perspectives and interests in the management of these entities. However, it is possible that a centralized management structure that concentrates decision-making power in the hands of a single administrator directly responsible to the NIA Board would be a more effective alternative. *See,* Kosar, *supra* note 58 at 8-10.

[61] The ability to hire the best and the brightest financial professionals away from the private sector will be key to the NIA's – and specifically NCMC's – success. Several factors are critical in this respect. Thus, each entity in the NIA structure – most importantly, the NCMC – would have to have sufficient financial resources to offer competitive compensation to its executive officers, asset managers, financial analysts, accountants, and other employees. Just as important, however, are various non-pecuniary factors like the entity's bold investment mandate and "elite" status in the federal government hierarchy, an opportunity for ambitious professionals to manage large pools of money while "doing good" for the country, a strong institutional culture that rewards properly channeled ambition and success, etc. While it is hardly realistic to out-compete Wall Street in terms of pay, the same is not necessarily true of other drivers of human behavior, such as professional ambition and civic spirit. Carefully utilizing these incentives could critically boost the NIA's human capital.

[62] As historical experience shows, the successes of many public institutions are often a reflection of their individual leaders' strength of character, personal ambition, and sense of mission. A strong, ambitious public investment entity of the NCMC's caliber needs a strong, charismatic leader committed to public service.

[63] To keep this classified Executive Board from becoming inefficiently large, it would be advisable to limit its overall size to six members – two in each class – with the Chair's

tie-breaking vote.

[64] The "expertise" requirement should be drafted broadly, so as not to limit the pool of nominees to financial industry professionals.

[65] This reporting requirement would be different from, and in addition to, currently existing reporting requirements applicable to federal agencies and government corporations. *See* Kosar, *supra* note 58 at 7-8 (describing annual budget and management reporting requirements for government corporations).

[66] *See*, http://www.gao.gov/about/index.html.

[67] These and other credit and asset allocation decisions would be subject to special internal and external audits.

[68] In the interests of greater efficiency, it may be preferable to have fewer NIA districts, each of which operates in a region comprising several Federal Reserve Districts. For example, the Northeast NIA District would coincide with Federal Reserve Districts 1, 2, and 3. For a map of the twelve Federal Reserve Districts, see https://www.federalreserve.gov/otherfrb.htm.

[69] The RFC's experience is particularly instructive in this respect. *See* NIA, *supra* note 1.

[70] For a discussion of the general model of such a council, see Saule T. Omarova, *Bankers, Bureaucrats, and Guardians: Toward Tripartism in Financial Services Regulation*, 37 J. Corp. L. 621 (2012),

[71] For a general discussion on the process for selecting members of such a Council, see id. at 661-663.

[72] *See id.* at 635-637.

[73] *See NIA*, *supra* 1.

[74] It might also be advisable to establish a protocol pursuant to which local, regional, or national economic growth attributable to NIA investment activity result in an earmarking of corresponding tax revenue increases, pursuant to which some of the increase goes directly to NIA.

[75] *See,* Jim Puzzanghera, *Federal Reserve Sends Record $97.7-billion Profit to Treasury,* L.A. Times (Jan. 11, 2016), *available at* http://www.latimes.com/business/la-fi-federal-reserve-profit-20160111-story.html. In January 2017, the amount remitted by the Fed was $92.7 billion. For the data on the Fed's remittances to the Treasury, see https://www.federalreserve.gov/newsevents/press/other/20170110a.htm.

[76] We say "perhaps even" Sallie Mae because, unlike Fannie and Freddie, Sallie Mae, which was privatized in late 2005, has not been brought back into government conservatorship after nearly failing. "Retaking" it would accordingly raise constitutional takings obstacles.

[77] One advantage that the RFC enjoyed in its time was the recent loss of employment by many investment professionals, along with a certain "national recovery spirit" in the early years of the New Deal. We think, however, that those conditions are not altogether absent today. For one thing, financial sector employment figures are still way down from their peak reached in 2007. For another thing, the nation still awaits real recovery, and we suspect that as quickly as NIA begins to realize its potential it will generate considerable motivation. Finally, as we noted above, compensation for NIA staff will be "respectable" by industry standards, particularly when combined with the esprit generated by beneficial public service.

[78] For a good overview of how the IDIs operate in conjunction with private institutions, see the World Bank webpage, available at http://www.worldbank.org/en/about.

[79] Id.

[80] We hesitate over collateralization purposes because we are undecided, as yet, over whether to permit the formation of a private sector secondary market in these securities.

[81] In effect, this means that NIA securities will be functionally "discountable," save that no literal discounting, as distinguished from mere selling at face value, will take place, since banks will simply purchase the securities and then either hold on to them as assets or redeem them with the NIA or the Fed.

[82] Another relevant consideration here will be whether there are sufficient, or too many, "safe assets" apart from NIA securities to sustain what we decide as a society to constitute the optimal amount of Repo trading. For more on this matter, see *Finance Franchise, supra* note 1.