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White Paper: A National Investment Authority

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Executive Summary

The contemporary American economy presents a troubling paradox. On the one hand, capital and yield-hungry investors are sufficiently plentiful in the financial system to generate recurrent and devastating asset price bubbles and busts. On the other hand, capital and “patient” investors are so scarce in the nonfinancial and infrastructure sectors that the U.S. has steadily fallen behind its competitors in cutting-edge industries and high-quality infrastructure. The explanation for this paradox is not hard to find. Unlike during the nation’s most dynamic and prosperous periods in the past, there is at present no public instrumentality tasked with devising and implementing any ongoing national development strategy, or with directing the capital needed to implement it.

No private actor or group of such actors is up to this task. Individual time horizons are too short, and individual capacity to bear long-term risks and capture fair shares of public goods too miniscule, to render such efforts individually rational. Against such a backdrop, it is reasonable for investors to speculate upon price movements in secondary markets rather than invest patiently in primary markets – hence to fuel asset price bubbles and busts rather than real growth. The nation’s economy is accordingly caught in a classic collective action problem – a situation in which multiple acts of individual rationality aggregate into a collectively irrational outcome. Only informed exercises of collective agency can address such problems.

This White Paper proposes a form that such agency should take. It calls for a new National Investment Authority (NIA), operationally situated between the Federal Reserve and the Treasury, for the specific purpose of mobilizing private capital in pursuit of long-term investments in both vital infrastructure and the real economy. The NIA reintroduces in modern guise the Hamiltonian national development program of the late 18th century and the Hoover/Roosevelt-era Reconstruction Finance Corporation (RFC) of the mid-20th century. Like those earlier programs, it combines the public and private sectors in partnership. Also like those earlier programs, it reverses the ill-fated latter-day “P3” model of “*public capital, private management*” in favor of the historically more successful model of “*public management, mixed public-and-private capital.*”

The Paper first lays out the key theoretical and practical justifications for establishing an NIA. It then unpacks the proposal in detail by addressing the specific legal, administrative, and operational choices that will have to be made in connection with its implementation. We lay out and assess the full range of plausible options in connection with each such choice, then conclude and look forward.

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Introduction

Since the financial turmoil of 2007-09, a distinct strand of policy discussion in the United States has queried how best to restore America's past productive success. 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 factors now recognized to have brought persistent economic underperformance, widening income and wealth inequality, and seemingly ever more bitter social and political animosities to contemporary America. All of this has occurred, ironically, as superabundant private capital has fueled repeated asset price bubbles and busts in the financial sector.

The solutions to these mutually reinforcing problems ride on the ability of the United States to address its single most pressing policy challenge: the challenge of redirecting capital from over-glutted secondary markets toward capital-starved infrastructural and primary markets, and to do so in a way that provides structurally balanced, long-term sustainable, socially inclusive development of the nation's economy.¹ Thinking of primary market and infrastructural "development" and "reconstruction" as historically discrete tasks that only pre-modern, "lesser developed," or recently war-ravaged countries must undertake is a dangerous mistake that has vitiated both academic discussion and policy planning for too long.

National development and reconstruction are not "one-off" projects but always forward-looking, enduring processes in need of continuous financing. Without continual growth and regeneration, even once "new" and "strong" polities and economies grow old and enfeebled. Only by deliberately channeling capital toward the continuous development, diversification, and modernization of its "real" economy, and by broadly spreading the benefits of such growth and development across its full population, 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 financing sustained and inclusive economic reconstruction and development represents an extraordinary challenge, and demands a correspondingly extraordinary institutional response. This White Paper proposes in detail precisely such a response – a new federal instrumentality specifically charged with coherently fostering, financing, and overseeing the long-term development of the infrastructure and "real" economy of the United States. This new instrumentality, which we call a National Investment Authority ("NIA"), will be charged with the critical task of devising, regularly updating, and carefully financing and implementing a dynamic and

comprehensive American development strategy.

The proposed NIA will be an inherently hybrid, public-private entity. Patterned in part after Treasury Secretary Alexander Hamilton's original national development-finance 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 spearhead and lead a nationwide network of public-private partnerships. Importantly, however, it will reverse the presently familiar "public-private partnership" ("P3") model of *"public money, private manager"* in favor of the original Hamiltonian/RFC model of *"public management, public-&-private money."* The NIA will deliberately exploit the unique advantages of the federal government as a market actor and long term planner – its vast scale, high risk tolerance, lengthy investment horizons, and direct backing by the full faith and credit of the United States – to attract private capital and expertise toward publicly beneficial, partly public- long-term projects that will underwrite real and inclusive growth on the part of the nation's economy.

The proposed new arrangement will enable private investors to capture reasonable gains from the provision of currently under-provided, transformative collective goods: 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, networks of mixed public-private "startup" finance funds, and other cutting-edge public infrastructures. To this end, the NIA will creatively adapt familiar tools of financial and legal engineering in ways that remove or mitigate incapacities and risks that currently limit or impede purely private investment in such goods.

An important additional benefit brought by the NIA will be its direct impact on enhancing the resilience and long-term stability of the U.S. – and, by extension, global – financial systems. Our currently 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 in the real economy, unavoidably falls prey to recurrent and highly destructive asset price boom-and-bust cycles – i.e., hyperinflations and debt-deflations. By contrast, publicly enabling the financial system to reorient itself back toward its primary social function – reliably channeling credit to its most productive primary market and infrastructural uses – will correct our financial system's notorious recent dysfunctions.² It will also offer new classes of "safe asset" that yield reasonable returns.³

The NIA we design and propose here is neither a "public takeover" of "private finance" nor a

“privatization” of “public infrastructure.” Rather, like most well-considered public sector initiatives, it is a modality of *collective* action meant to facilitate more effective and remunerative *individual* action. It is a pragmatic and market-employing institutional solution to the country’s heretofore misdiagnosed and still unaddressed primary challenge: redirecting abundant capital from over-inflated secondary markets to chronically under-financed infrastructure and primary markets. By bridging now-obsolete and debilitating organizational and conceptual divides, the NIA will fill a critical gap in the current architecture (not to mention the mindset) 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 critical public tasks that neither the monetary authority nor the fiscal authority alone 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 economic growth.

The paper proceeds as follows. Part 1 briefly explains why an NIA is required. Part 2 sketches the basic design of the NIA. Part 3 addresses the main implementation challenges likely to arise in connection with our proposal. The paper then concludes.

1. *A National Investment Authority: Why*

Continuous development of the national economy amounts to a systemically critical, chronically under-supplied collective good. It is in this sense precisely the kind of good that requires some form of collective facilitation or inducement to optimal provision. This justification for an NIA goes beyond, even while it includes, the orthodox “public goods” explanation typically given for public action.

1.1. “Public” Goods: A Brief Reminder

Economic orthodoxy justifies public investment by reference to an account of what it calls “public goods.” We endorse such justifications but find them under-inclusive and thus in need of some supplementation.

The familiar account of public goods fixates on their “non-rivalrousness” and “non-excludability.”⁴ Per the first attribute, a good’s use by one party does not diminish its availability to other parties. Per the second attribute, neither the good nor the benefits that it yields can be retained exclusively. Because the gains that accrue to providing such goods can be only incompletely captured at best,

orthodoxy tells us, profit-driven private actors tend rationally 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 such goods. In effect, the problem is implicitly 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 a society in principle could, but in practice does not, produce what its members all wish to have).⁵ The solution to this as to any collective action problem lies in an exercise of collective *agency* – i.e., in action taken by some public instrumentality in the name of us all.⁶ 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 and their public provision is helpful but incomplete. It leaves needlessly obscure the critical link between public goods and collective action problems, which are more pervasive than the orthodox public goods problem. It accordingly overlooks entire classes of good that the consuming – *and investing* – public requires but no private instrumentality can rationally supply. The undue narrowness of the orthodox account also precludes it from recognizing the existence of certain *systemically important* collective goods that cannot be efficiently provided either by private parties *or* via familiar *fiscal policy channels*.

1.2. *Collective Goods: A Conceptual Refinement*

A more complete and coherent understanding of goods that cannot be adequately supplied by the private sector requires we think of such goods 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.

Collective action problems are collectively irrational outcomes of individually rational decisions when the latter are aggregated.⁷ What we shall call “collective *goods* problems” accordingly arise when it is not individually rational to attempt to supply what is beneficial to all. 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. Our NIA proposal is designed to address both the “capturability” problem on which public goods orthodoxy fixates, and the “controllability” problem that orthodoxy overlooks. The solution to either kind of problem is what we call a collective good, and the NIA described below is designed to supply a full menu of such goods. To drive home the necessity of an institution like the NIA in a manner accessible to intuition, it might be helpful to close with a few brief examples of the kind of problem we have in mind.

As noted before, two kinds of collective action problem concern us: controllability and capturability. With respect to controllability, our aim is to maintain stability among what we have elsewhere called “systemically important prices and indices,” or “SIPIs.”⁸ 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.⁹ 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&P500.¹⁰

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 fleeting price movements in the financial economy, is to be individually rational. SIPI stability accordingly poses a collective action problem if, as we believe to be uncontroversial, patient capital investment in the real economy is desirable. 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.

Turning from controllability to 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 investments, for example, yield benefits that materialize over time-horizons that exceed human lifespans. But individuals cannot, of course, fully capture such benefits.¹¹

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.¹² In theory, this could be done partly by a fiscal authority, as sometimes it has been.¹³ But the political nature of fiscal authorities can render this theoretically elegant solution practically unavailable.

The way to remedy this problem is to treat the provision of trans-temporal goods as what’s known in financial parlance as a “perpetual,” hybrid public-private investment. This can be done through two mutually complementary means: First, establishment of an institution whose public managers see with the eyes of a 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 goods whose benefits ordinarily cannot, absent such synthesis, be individually captured.

These are the things we propose in the form of the NIA. 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, however rare it might be in the current environment. It lay at the core of Treasury Secretary Hamilton’s institutional design for the then-new American economy. It also animated the mission of the Reconstruction Finance Corporation, which during the 1930s and 1940s was by far the world’s largest corporation, with a balance sheet exceeding those of the Fed and of Wall Street combined. There is much more on this in our scholarly work.¹⁴ Below, we outline 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 orthodox “public goods” and in our existing 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 laying out 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 collective goods, as

defined in the previous Section. The NIA's two-fold mission will be (1) to devise, regularly update, and dynamically implement a long-term economic development strategy for the United States, and (2) to finance the pursuit of that strategy.¹⁵

For purposes of operational efficiency, we envisage an institutional subdivision of the NIA into two specialized arms, roughly corresponding to our collective 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 government-sponsored enterprises ("GSEs").

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 ("SWFs") or private equity ("PE") firms operate. 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.¹⁶ 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 physical 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, the NCMC will be a hybrid between an 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 in search of capital appreciation. Instead it will actively solicit, pool, and manage private investors' money along the lines of traditional private equity business models. In a crucial departure from that model, however, the NCMC-managed funds will also work to provide many socially desirable collective goods.

In addition to performing their principal market-levering and market-making roles, both the NIB

and NCMC will also play a secondary, but nonetheless critically important, market-preserving role.¹⁷ 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 public good.¹⁸

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.¹⁹

In direct parallel to that model, the NIA would 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 for staggered 10- or 12-year terms, to ensure a nontrivial degree of autonomy and strategic continuity in decision-making. The Chair and 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 removable by the President only for cause, which would further enhance the NIA’s operational independence of any incumbent administration. All of 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 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.²⁰ 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 Small Business Administration (“SBA”), the Federal Housing Administration (“FHA”), and the home-finance GSEs.

The GSE experience is particularly instructive here, mainly because the problems currently plaguing U.S. infrastructure finance are similar to those that plagued U.S. home-loan markets before the 1930s.²¹ 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.²²

Fannie Mae remedied these inefficiencies by making a secondary market in newly FHA-standardized mortgage instruments and thereby lowering both private lender risks and borrower costs.²³ By making 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.²⁴ 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. It will do so by pooling municipal bonds and their associated default and liquidity risks.²⁵

Like the early Fannie Mae, the NIB will be initially capitalized by the federal government.²⁶ State or municipal contributions might also, but need not, be required or solicited.²⁷

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.²⁸ 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.²⁹

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. It is reasonable to expect that NIB bonds will attract great interest from large institutional investors – pension funds, investment companies, insurance companies, foreign central banks, and SWFs – who will view them as close substitutes for U.S. Treasury securities and GSE-issued “agency securities.” To enhance the appeal of this new asset class to institutional investors, it will be desirable to grant NIB bonds the same regulatory and Fed 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.³⁰

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.³¹ 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.³² 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.³³ 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.³⁴

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. 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.³⁵ 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 metropolises. 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.³⁶

In direct parallel to private equity ("PE") firms, NCMC will act as the sponsor and general partner of each individual fund it sets up.³⁷ 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."³⁸ 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.

Again, 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.³⁹

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 investor returns, 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.⁴⁰

The profit-sharing component might also be structured in layers, as we describe elsewhere.⁴¹ 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.⁴² 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”)⁴³ and the Small Business Administration (“SBA”)⁴⁴ – 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”)⁴⁵ and Advanced Research Projects Agency-Energy (“ARPA-E”).⁴⁶

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.⁴⁷ The NCMC – and, more broadly, the NIA – will act as the catalytic force behind, and the central node in, this developmental network.⁴⁸

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 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, public accountability, and business operations. 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 cases offer useful practical lessons for structuring the proposed NIA. Historical experience shows, for example, that institutional robustness and effective accountability are among the key determinants of success where any large-scale public investment scheme is concerned.⁴⁹

One of the crucial elements of institutional strength and effective accountability is a clear articulation of the public investor-entity’s legal mandate and core mission. 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. 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."⁵⁰

In short, the actual practical experience – both historical and contemporary – 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, 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.

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 constraints and privileges.⁵¹ Flexibility in crafting such special privileges and constraints weighs strongly in favor of chartering both NIB and NCMC as such corporations.⁵²

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.⁵³

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.⁵⁴ 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.⁵⁵ The NIB's and NCMC's Executive Boards should be supported by well-compensated and technically competent professional staffs.⁵⁶

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, the NCMC's internal organizational hierarchy should enable 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 NCMC's Executive Board Chair – a high-profile, well-respected, and experienced investment management expert.⁵⁷

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.⁵⁸ 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.⁵⁹

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.⁶⁰ 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.⁶¹ 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, discussed above, should significantly alleviate this concern. It is also helpful to remember here that, as a direct financial market participant, the NIA will regularly receive all of the familiar market signals: if its investment choices are corruption-driven and economically indefensible, private investors will simply not invest in NIA instruments. Moreover, to the extent the NIA presents a competitive threat to private financial institutions, the latter will no doubt act as external monitors of the NIA's operational integrity and performance.

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.⁶²

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.⁶³ Direct

regional presence could also significantly strengthen the NIA's political influence and legitimacy.⁶⁴

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.⁶⁵ 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).⁶⁶

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.⁶⁷

3.3. Funding and Operational Considerations

In addition to matters of organizational structure and accountability, a complete NIA proposal has to address several key issues in connection with the institution's day-to-day business operations.

One salient operational question is who will be making the specific lending and investing decisions. We believe that, at least at the outset, investment decisions and investing activity should 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 opening 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. It is accordingly preferable to begin with something more like the RFC model.⁶⁸

This does not, however, rule out the NCMC's partnering with private-sector actors in financing particular projects. It might well happen, for example, that certain pioneering start-up firms are able to attract private venture capital funding up to some percentage of initial requirements. In such cases, NCMC might join – even form, lead, or both – syndicates of investors.

This is, in fact, a common form of project finance outside the United States, where international development banks – the World Bank, the Asian Development Bank, the Inter-American Development Bank, etc. – form syndicates of mixed public and private investors.⁶⁹ An initial investment by one of these public institutions confers an imprimatur of sorts on the relevant project, catalyzing much more investment from additional private sources.

Another potentially salient question is how the NIA will fund its operations. 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 to fund itself. As happened with the RFC, once the NIA builds a portfolio of assets generating interest, dividend, and fee revenues, it will no longer require Congressional appropriations.

The scale and scope of the NIA's investment operations will be key here: the larger and more diverse its overall project portfolio, the more flexibility the NIA will have in utilizing various streams of operating revenues to fulfil its obligations to private investors. A larger and more visionary NIA is accordingly also more likely to be self-funding.

It may make sense, in this connection, to consolidate the RFC's remaining offspring with the NIA. Thus, GSEs such as Fannie Mae, Freddie Mac, and perhaps even Sallie Mae might be brought under the NIB as distinct funds,⁷⁰ while the SBA might be brought under NCMC. Pooling these entities' activities and revenue streams would potentially magnify their impact and optimize their operations, as well as streamline the federal government structure.

In some situations, the NIA's operations might nevertheless require some form of public funding, either as a temporary bridge-gap measure or as a recurring variable supplement to the institution's own resources. This might be especially likely, for example, in connection with the NIA's investments in certain critical public infrastructure projects whose full societal benefits cannot be easily quantified or monetized.⁷¹

To the extent necessary, such supplemental public funding could come from a variety of sources. It might, for example, be advisable to establish a protocol under which local, regional, or national economic growth attributable to NIA investment activity results in an earmarking of corresponding tax revenue increases, some of which goes directly to NIA. Another possible backstop would 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 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.⁷² Against that backdrop, linking Fed profits to the NIA, whose mission is both complementary to that of the Fed and much broader than building highways, looks all the more intuitively natural.

Of course, the question of how the NIA's investments will be funded is closely related to the question of whether, how, and under what conditions those investments should be "exited." This is a salient question primarily for the NCMC. Ideally, the proceeds from divestment of the NCMC-managed funds' assets should serve as the primary source of repayment to private investors. Specific methods of such divestment, however, will vary depending on the type, duration, and other characteristics of individual investments.

Some large and enduring infrastructure projects, for example, might be best "spun off" into separate public authorities similar to the Tennessee Valley Authority 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, on the other hand, might simply pay off their debts to NCMC once up and self-sustainably running. Other such firms in the NCMC funds' portfolios 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 cases. The guiding principle should be one of pragmatism: NCMC will invest in the ways 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 is best for the venture itself and for NCMC's ongoing mission.

Conclusion

We have proposed and provisionally designed a new public instrumentality – a National Investment Authority – whose mission is situated between those of the Fed and the Treasury. In explaining why such an instrumentality is needed, we have extended the traditional understanding of public goods and explained why neither the Treasury, the Fed, nor public or private financing alone

is up to the task of supplying the full range of what we call “collective goods.” What is needed is an institution that combines the comparative advantages of public action and private action, as well as of the fiscal authority and the monetary authority, in supplying such goods.

Underlying our proposal is the conviction that America faces not merely a “recovery” challenge, but a longer term “reconstruction” and “development” challenge. We have argued that these terms denote not merely temporary or exigent circumstances, but forms of action in which societies must collectively engage for as long as they “live.” Treating development in this way requires that collective goods be supplied in quantities that optimize the range of productive opportunities open to individual citizens. Our proposed NIA, which combines public management and private capital in a manner that levers the comparative advantages of both, is the optimal means of supplying those goods.

Because such goods’ undersupply is the source of our current dysfunctions, our NIA is the means of restoring full health to our economy and society. It is the “missing institution” whose absence accounts for our current travails. The NIA is neither a public takeover of “private” finance nor a “privatization” of public infrastructure. It is a means by which all of us can collectively supply what no one of us can individually supply, yet which each of us requires in living a productive and rewarding life in communion with others. 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.

Endnotes

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. (forthcoming 2018) [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. 1143 (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 For more on these dynamics, see Daniel Alpert, Robert Hockett, & Nouriel Roubini, *The Way Forward: Moving from the Post-Bubble, Post-Bust Economy to Renewed Growth and Prosperity* (New America Foundation, 2011), available at <https://www.newamerica.org/economic-growth/policy-papers/the-way-forward/>; DANIEL ALPERT, *THE AGE OF OVERSUPPLY* (2013); sources cited *supra*, note 1.

³ There is a growing literature on “safe assets,” and government liabilities as “safest of the safe.” For a summary and discussion of safe assets and the literature analyzing them see *Finance Franchise*, *supra* note 1, at 1170-1171.

⁴ 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.” 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_gje.pdf; 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.

⁵ See Robert Hockett, *Recursive Collective Action Problems*, 3 J. FIN. PERSP. 1 (2015).

⁶ *Id.*

⁷ *Id.*

⁸ See Robert Hockett & Saule Omarova, *Systemically Significant Prices*, 2 J. FIN. REG. 1 (2016).

⁹ *Id.*

¹⁰ *Id.*

¹¹ 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.

¹² 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.

¹³ 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).

¹⁴ See sources cited *supra*, note 1.

¹⁵ For a more detailed discussion of the proposed NIA, see *NIA*, *supra* note 1.

¹⁶ 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/>.

¹⁷ 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.

¹⁸ Systemic financial stability is a public good insofar as it addresses the non-controllability problem, discussed above. See *supra* Part 1.2.

¹⁹ See BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, THE FEDERAL RESERVE SYSTEM: PURPOSES & FUNCTIONS 9-15 (2016). The third institutional component of the Federal Reserve System is the Federal Open Market Operations Committee. *Id.* at 1.

²⁰ For an analysis of the market-levering mode of public participation in financial markets, see *Public Actors*, *supra* note 1 at 131-134; “Private” Means to “Public” Ends, *supra* note 1.

²¹ See HEIDI CREBO-REDIKER & DOUGLAS REDIKER, FINANCING AMERICA’S INFRASTRUCTURE: PUTTING GLOBAL CAPITAL TO WORK (2008), *available at* https://static.newamerica.org/attachments/4145-financing-americas-infrastructure/Financing_America_Infrastructure.753d8202f1824f4eadc400a1b2e21b28.pdf.

²² See *Public Actors*, *supra* note 1 at 133-34; 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*”].

²³ The FHA played the key role in standardizing the currently popular 30-year mortgage loans. See sources cited *supra* note 22.

²⁴ See *Public Actors*, *supra* note 1 at 150-152; and *Hamiltonian Means*, *supra* note 22 at 73-75.

²⁵ See Crebo-Rediker & Rediker, *supra* note 21.

²⁶ 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 *id.*, at 2.

²⁷ Existing proposals generally do not envision state or municipal contributions to the infrastructure bank’s capital.

²⁸ 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.

²⁹ “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.

³⁰ 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).

³¹ 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 3.2.

³² See, e.g., Crebo-Rediker & Rediker, *supra* note 21.

³³ *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/>.

³⁴ See Crebo-Rediker & Rediker, *supra* note 21.

³⁵ 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>.

³⁶ 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).

³⁷ For present purposes 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.

³⁸ 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 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).

³⁹ 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

⁴⁰ 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.

⁴¹ See *NIA*, *supra* note 1; and *Public Actors*, *supra* note 1 at 156-157.

⁴² 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.

⁴³ 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.

⁴⁴ SBA was established in 1953 as an RFC subsidiary focused on facilitating small business formation and growth via the so-called “three Cs” of capital, contracting, and counseling. See *NIA*,

supra note 1; *About the SBA*, U.S. SMALL BUS. ADMIN., <https://www.sba.gov/category/navigation-structure/about-sba>.

⁴⁵ 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>. Also Hockett, *Hamiltonian Means*, *supra* note 22.

⁴⁶ ARPA-E, modeled after DARPA, was created in 2007 for the purpose of financing and facilitative transformational energy research.

⁴⁷ 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.").

⁴⁸ *See* Fred Block, *Swimming Against the Current: The Rise of a Hidden Developmental State in the United States*, 36 POL. & SOC'Y 169 (2008).

⁴⁹ *See NIA*, *supra* note 1.

⁵⁰ GORDON L. CLARK ET AL., *SOVEREIGN WEALTH FUNDS: LEGITIMACY, GOVERNANCE, AND GLOBAL POWER* 159 (2013).

⁵¹ *See* *Lebron v. Nat'l R.R. Passenger Corp.*, 513 U.S. 374 (1995). Currently existing federal government corporations include, for example, the Export-Import Bank and the Overseas Private Investment Corporation. For academic analyses of the functions and varied organizational structures of government corporations and quasi-governmental entities, *see, e.g.*, 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).

⁵² *See, generally*, Kevin R. Kosar, *Federal Government Corporations: An Overview*, Cong. Res. Serv. (June 8, 2011).

⁵³ *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).

⁵⁴ *See* Kosar, *supra* note 52, at 10-11.

⁵⁵ 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 53 at 8-10.

⁵⁶ 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.

⁵⁷ 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.

⁵⁸ 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.

⁵⁹ The "expertise" requirement should be drafted broadly, so as not to limit the pool of nominees to financial industry professionals.

⁶⁰ 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 53 at 7-8.

⁶¹ *See*, <http://www.gao.gov/about/index.html>.

⁶² These and other credit and asset allocation decisions would be subject to special internal and external audits.

⁶³ 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>.

⁶⁴ The RFC's experience is particularly instructive in this respect. *See* NIA, *supra* note 1.

⁶⁵ 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),

⁶⁶ For a fuller discussion of the process for selecting council members, see *id.* at 661-663.

⁶⁷ *See id.* at 635-637.

⁶⁸ 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. Those conditions, however, are not altogether absent today. For one thing, financial sector employment figures are still 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.

⁶⁹ For a good overview of how the IDIs operate in conjunction with private institutions, see <http://www.worldbank.org/en/about>.

⁷⁰ 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 questions.

⁷¹ When we speak of "capturability," we generally presuppose monetizability, but we do not consider non-monetizable public benefits to be per se less important, or less worthy of provision via the NIA, than monetizable ones. Investors in the NIA should be entitled to compensation insofar as they aid in the provision of such benefits too. For fuller discussion, *see* NIA, *supra* note 1.

⁷² *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>.