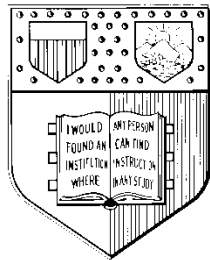


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Private Wealth and Public Goods: A Case for a National Investment Authority

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Private Wealth and Public Goods: A Case For A National Investment Authority

Robert C. Hockett & Saule T. Omarova*

Much American electoral and policy debate now centers on how best to reignite the nation's economic dynamism and rebuild its competitive strength. Any such undertaking presents an extraordinary challenge, demanding a correspondingly extraordinary institutional response. This Article proposes precisely such a response. It designs and advocates a new public instrumentality—a National Investment Authority (“NIA”)—charged with the critical task of devising and implementing a comprehensive long-term development strategy for the United States.

Patterned in part after the New Deal-era Reconstruction Finance Corporation, in part after modern sovereign wealth funds, and in part after private equity and venture capital firms, the NIA is an inherently hybrid, public-private entity that combines the unique strengths of public instrumentalities—their vast scale, lengthy investment horizons, and explicit backing by the public's full faith and credit—with the micro-informational advantages of private market actors. By creatively adapting familiar tools of financial and legal engineering, the NIA overcomes obstacles that ordinarily impede or discourage private investment in critically necessary and even transformative public infrastructure goods. By channeling presently speculative private capital back into the real economy, moreover, the NIA plays an important role in enhancing the resilience and stability of the U.S. and global financial systems.

The Article makes original contributions not only to contemporary policy debates over how to revive America's productive prowess and bring its financial system back into the service of the real economy, but also to current theoretical understandings of “public goods,” “market failures,” and how to provide or address them. It offers an account of what it calls “collective goods”—a broader category than orthodox public goods—as solutions to collective action problems that pervade decentralized markets, hence as goods that can be supplied only through exercises of collective agency. Our NIA proposal operationalizes this theoretical insight by elaborating a specific institutional form that such collective agency can take.

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I. INTRODUCTION	102
II. FINANCING COLLECTIVE GOODS: A REVISED CONCEPTUAL FRAMEWORK	108
A. <i>Public Goods and Public Action: Rethinking the Theoretical Link</i>	108
1. <i>The Standard Account of Public Goods: A Brief Recap</i>	109
2. <i>A Revised Account: Collective—including Public—Goods as Solutions to Collective Action Problems</i>	110
B. <i>Public-Private Provision of Collective Goods: Rethinking Solutions</i>	112
1. <i>Collective Goods and Controllability Problems</i>	112
2. <i>Collective Goods and Capturability Problems</i>	114
3. <i>Synthesizing Capturability</i>	115
C. <i>The Missing Link: Rethinking the Goals and Architecture of Public Finance</i>	118
III. PUBLIC INVESTMENT AS A POLICY TOOL: INSTITUTIONAL EXPERIENCE	122
A. <i>Credit Mobilization: The Reconstruction Finance Corporation</i>	122
B. <i>Asset Management: Sovereign Wealth Funds</i>	127
IV. REIMAGINING PUBLIC INVESTMENT: A NATIONAL INVESTMENT AUTHORITY	133
A. <i>Purposes and Functions of the NIA: An Overview</i>	133
B. <i>Credit Mobilization: The National Infrastructure Bank</i>	137
C. <i>Asset Management: The National Capital Management Corporation</i>	139
V. INSTITUTIONAL DESIGN: KEY CONSIDERATIONS.....	144
A. <i>Organizational Issues and Accountability Mechanisms</i>	145
1. <i>Organizational Lines</i>	145
2. <i>Personnel Issues</i>	146
3. <i>Accountability Mechanisms and Political Legitimacy</i>	148
B. <i>Funding and Operational Issues</i>	150
VI. CONCLUSION.....	154

I. INTRODUCTION

Much American electoral and policy debate now centers on how best to reignite the nation's economic dynamism and rebuild its competitive strength. Some of the rhetoric heard in this debate has exposed deep fault lines in the country's social and political fabric. Decades of systematic erosion suffered by domestic industrial capacity and a corresponding loss of well-paid manufacturing jobs, a shrinking social safety net, a steady dismantling of the regulatory state and a decline in overall government capacity—these are among the many structural factors that have brought rising economic inequality and dysfunctional political dynamics to contemporary America.

This Article rests on the premise that, ultimately, the solutions to all of these problems depend on the ability of the United States to address its most pressing public policy challenge: the challenge of ensuring structurally balanced, sustainable, and socially inclusive long-term economic development.¹ Only by continuously facilitating the long-

1. This Article builds on the broad theoretical and institutional vision developed in our prior research. See generally Robert C. Hockett & Saule T. Omarova, *The Finance Franchise*, 102 CORNELL L. REV. 1143 (2017) [hereinafter Hockett & Omarova, *Finance Franchise*] (presenting a comprehensive revisionist account of modern finance as fundamentally publicly supplied and disseminated); Robert C. Hockett & Saule T. Omarova, *Public*

term growth of its “real” economy (not merely short-term speculative finance), and by more widely spreading the benefits of such growth, can America rebuild its true strength as an economy and as a polity.

This is an extraordinary challenge, demanding a correspondingly extraordinary institutional response beyond the familiar menu of corporate tax breaks and government subsidies to private business ventures. This Article proposes precisely such a response. It designs and advocates a new, though not entirely unprecedented, public institution. This new federal instrumentality, which we call a National Investment Authority (NIA), would be charged with the critical task of devising and implementing an ongoing and comprehensive long-term development strategy for the United States.

Patterned in part after the New Deal-era Reconstruction Finance Corporation, in part after modern sovereign wealth funds, and in part after private equity and venture capital firms, the NIA we envision is 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 harness and channel more private capital and expertise than is presently possible into ambitious publicly beneficial projects.² In effect, the NIA will operate as an economy-wide public-private partnership³ with one especially distinctive feature: it will reverse the usual model of “public money, private management” by drawing freely invested private money to publicly-managed investment vehicles.

This reversal of roles is the key to unlocking the full efficiency- and productivity-enhancing potential of the public-private partnership form. Placing a public actor with a long-term, national view in charge of managing investments is prerequisite to remedying a well-known and widely-criticized P3 dynamic, whereby the government bears disproportionately high implicit costs in financing certain projects by virtue of its redirecting large future revenue streams to private partners.⁴ On a deeper level, making a

Actors in Private Markets: Toward a Developmental Finance State, 93 WASH. U. L. REV. 103 (2015) [hereinafter Hockett & Omarova, *Public Actors*] (introducing and elaborating the concept of a “developmental finance state” and discussing its earlier incarnations and future potential); Robert C. Hockett & Saule T. Omarova, “Private” Means to “Public” Ends: Governments as Market Actors, 15 THEORETICAL INQUIRIES L. 53 (2014) (developing a systematic taxonomy of roles government instrumentalities take on in their capacities as endogenous market actors).

2. See *infra* Parts IV, V (discussing the operation and structure of the proposed NIA).

3. The term “public-private partnership” (P3 or PPP) refers to a broad universe of diverse and context-specific arrangements designed to provide certain critical public infrastructure goods. Many traditional P3 projects, however, involve little more than government outsourcing of various project-related functions to private parties, which inevitably raises the familiar spectrum of issues related to distorted incentives and gross misuse of public resources by private contractors. 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); U.S. GOV’T ACCOUNTABILITY OFF., GAO-10-728, WASTEWATER INFRASTRUCTURE FINANCING: STAKEHOLDER VIEWS ON A NATIONAL INFRASTRUCTURE BANK AND PUBLIC-PRIVATE PARTNERSHIPS (2010).

4. See EDWARD D. KLEINBARD, WE ARE BETTER THAN THIS: HOW GOVERNMENT SHOULD SPEND OUR

public instrumentality the fund manager and the principal decision-maker will fundamentally transform the partnership's strategic outlook and identity as an investor and magnify its ability to deliver economy-wide benefits.⁵

In essence, the new institutional arrangement envisioned in this Article will enable private investors to enjoy reasonable financial rewards for participating in the production of many currently under-provided collective goods, including nationwide networks of high-speed rail, regional air and water cleaning and preservation programs, systems of ongoing adult education and technical training, and other cutting-edge public infrastructures.⁶ These goods constitute temporally extended, socially desirable benefits that no private participant in a decentralized market economy can rationally attempt to supply—and whose provision accordingly requires some form of sustained collective action.⁷

The NIA envisioned here will facilitate this kind of sustained collective action on a currently unattainable scale. By creatively adapting familiar tools of financial and legal engineering, it will remove or mitigate many risks and incapacities that presently prevent private investment in publicly beneficial goods. In most cases, we expect the NIA's public infrastructure projects to generate benefits that can be reasonably estimated in monetary terms: direct revenue streams, increased tax revenues, public budget savings, or general productivity gains.⁸ These monetizable public benefits will serve as the basis for determining reasonable returns for private investors in the NIA-managed funds.⁹

Of course, the NIA will also work to provide many socially desirable collective goods—for example, the far-reaching societal benefits of a less stressed, more economically secure, better connected and socially engaged population—whose full social value cannot, and should not, be monetized. In these cases, the returns to investors will not, as a technical matter, aim at capturing some proportion of such inestimable pecuniary gains but will instead represent a reasonable financial reward for participating in the provision of these publicly important non-pecuniary benefits.

In all cases, the intended effect of this “structuring” will be to transform what is ordinarily an individually irrational action into a rational investment opportunity. Unleashing the uninhibited flow of such newly enabled “patient” private capital into publicly beneficial socio-economic infrastructure, in turn, will allow the NIA to (1) take advantage of the superior micro-informational efficiency of decentralized private markets, while (2) sidestepping inherently contentious and politicized fiscal policy decisions.¹⁰ It

MONEY 287 (Oxford Univ. Press 1st ed., 2015) (discussing high implicit costs of using the standard P3 model to finance public infrastructure); see *supra* note 3 and accompanying text.

5. See *infra* Parts IV–V (providing a specific institutional design for a revival of public investment).

6. See *infra* Part II (providing a more complete and coherent conceptual framework for understanding “public goods”).

7. For a definition and detailed explanation of our term “collective goods”—a category that includes, but is not exhausted by, the familiar class of “public goods”—see *infra* note 26 and accompanying text; see also *infra* Part II.A.2.

8. For a detailed discussion of how the NIA will enable private capturability of currently under-supplied public benefits, see *infra* Parts II.B.3, IV.C, V.B.

9. For a definition and discussion of “monetizability,” see *infra* note 59 and accompanying text. For examples of the kinds of project we have in mind, see *infra* Parts II.C, IV.A.

10. On the importance, and the limits, of private actors' role as sources of informational and thus allocative efficiency, see Hockett & Omarova, *Public Actors*, *supra* note 1.

will also free up more public capital for the direct public provision of a greater range of non-monetizable collective goods.¹¹

The wide variety of projects the NIA will seek to undertake necessitates that the structure, level, and sources of funding for the payment of investor returns will have to be determined on a case-by-case basis.¹² If properly designed and implemented, the NIA should be able to finance its operations primarily, if not entirely, from internally generated revenues. It is important to emphasize, however, that there are compelling economic and policy reasons for supplementing these internally generated funds—*if* and *as* necessary—with public resources. After all, tax revenues are traditionally viewed as the principal method of financing important public infrastructures that otherwise would not be supplied. Channeling some of this financing through the hybrid NIA structure would simply make a more efficient use of public money by leveraging its impact.

There is also another, independently significant policy reason for supporting the NIA's operations, regardless of whether this involves partial public funding.¹³ A vital benefit of the NIA model, as we envision it, is that it will significantly enhance the resilience and long-term stability of the U.S.—and, by extension, the global—financial system.¹⁴ “Getting financial regulation right” is not merely a technocratic exercise: it involves important normative choices regarding the principal purposes and social functions of finance. A self-referential financial system, in which disproportionate growth on the part of secondary markets encourages heavy speculative trading in financial instruments, is bound to experience socially destructive asset price bubble-and-bust cycles.¹⁵ By contrast, reorienting the financial system toward its primary social function—allocating credit to its most productive and beneficial long-term non-financial uses—will likely alter its present dysfunctional dynamics.¹⁶

In other words, as we have argued elsewhere, the task of preventing excessive accumulations of risk and leverage in the financial system (what we call the credit modulation task) is inextricably linked to the task of preventing the misallocation of capital (what we call the credit allocation task).¹⁷ From this perspective, the NIA will perform the critical role of an endogenous financial market stabilizer. By offering yield-hungry private institutional investors a flexible new “safe” asset class, the NIA will diffuse potentially destabilizing demand for privately-issued substitutes and channel it into non-speculative,

11. It merits emphasizing that we envision the NIA not as a replacement for but as a supplement to direct public investment in collective goods.

12. We discuss these issues in greater detail *infra* Parts IV, V.

13. Again, as we show later in the Article, there are various ways for the NIA to meet its obligations to private investors in its securities and fund products. Although much depends on the ultimate design and actual performance of the proposed institutional arrangements, we generally do not expect the NIA to require significant ongoing funding through tax appropriations. For more on these issues, see *infra* Parts IV, V.B.

14. See *infra* Part IV (discussing reimagining public investment).

15. For historical descriptions and analyses of these dynamics, see ROBERT ALIBER & CHARLES P. KINDLEBERGER, *MANIAS, PANICS, AND CRASHES: A HISTORY OF FINANCIAL CRISES* (Palgrave Macmillan 7th ed., 2005).

16. See Hockett & Omarova, *Finance Franchise*, *supra* note 1; Hockett & Omarova, *Public Actors*, *supra* note 1.

17. For a fuller articulation of the conceptual and practical links between credit modulation and credit allocation, see *id.*

longer-term productive investments.¹⁸ Thus, in addition to introducing a highly desirable new institutional asset class,¹⁹ the NIA will continuously divert private capital from the so-called “shadow banking” sector and redirect it to more truly productive sectors. To the extent shadow banking remains a significant source of potential systemic instability, shrinking its size and prominence is an important financial crisis prevention measure. From this perspective, and given the exorbitant economic losses resulting from systemic financial crises, establishing the NIA would likely be a bargain even if it were funded entirely from the public purse.²⁰

Fortunately, that will not be necessary under our proposal. The NIA envisioned in this Article is not a disguised “nationalization” or “socialization” of finance, nor is it a covert “privatization” of public infrastructure. It is, rather, a supplemental modality of *collective* action designed to facilitate more effective and remunerative *individual* action—a public instrumentality aimed at broadening spheres of both public and private opportunity. In that sense, it is a pragmatic and market-friendly—without being market-fetishizing—institutional solution to some of the country’s currently most pressing and fundamental economic and political challenges.²¹

18. There is a growing literature on “safe assets,” and government liabilities as “safest of the safe.” See Hockett & Omarova, *Finance Franchise*, *supra* note 1; see also Markus Brunnermeier & Valentin Haddad, *Safe Assets*, FED. RES. BANK N.Y. (Oct. 17, 2014), http://www.newyorkfed.org/medialibrary/media/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), 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*, INT’L MONETARY FUND (Mar. 20, 2001), <https://www.imf.org/external/pubs/ft/supply/2001/eng/032001.PDF>.

19. The NIA securities and fund products are especially likely to generate consistently high demand from such important buy-side actors as public and private pension funds, university endowments, non-profit foundations, SWFs, and other social-mission-driven investment vehicles. See *infra* notes 225–226 and accompanying text.

20. Putting a specific number on the aggregate economic losses resulting from a major financial crisis is notoriously difficult. Current estimates of total economic loss caused by the 2008 financial crisis range from about \$13 trillion to \$25 trillion. See Eduardo Porter, *Recession’s True Cost Is Still Being Tallied*, N.Y. TIMES (Jan. 21, 2014), <https://www.nytimes.com/2014/01/22/business/economy/the-cost-of-the-financial-crisis-is-still-being-tallied.html>.

21. In that sense, our proposed NIA might be viewed as a more comprehensive, systematic and coherent national application of an approach currently pursued, on a much more limited and localized scale, through so-called “social impact bonds” (SIBs). SIBs are multi-stakeholder partnerships managed through performance-based contracts. *From Potential to Action: Bringing Social Impact Bonds to the US*, MCKINSEY & COMPANY 13 (May 2012), <https://www.mckinsey.com/~media/mckinsey/industries/social%20sector/our%20insights/from%20potential%20to%20action%20bringing%20social%20impact%20bonds%20to%20the%20us/from%20potential%20to%20action%20bringing%20social%20impact%20bonds%20to%20the%20us.ashx>. A SIB’s goal is to use private investments to scale up proven public programs targeting various specifically identified social problems (chronic homelessness, youth delinquency, high rates of recidivism among former prison inmates, etc.), with the government committing to repay private investors’ money if such programs meet predetermined measurable goals. *Id.* at 12. For more on SIBs, see *infra* notes 66–67.

Notwithstanding the superficial resemblance of some SIB goals to our NIA’s goals, it is important to emphasize that SIBs are qualitatively different from, and thus do not represent a meaningful alternative to, the NIA regime that we lay out in this Article. SIBs are better analogized to government contracts that follow the traditional P3 model that vests managerial authority in private partners. See *supra* notes 3–4 and accompanying

By bridging certain now obsolete and debilitating organizational and conceptual divides, the NIA will fill a critical gap in the existing architecture of American public finance.²² 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 under their mandates, thereby adding much needed functionalities to the public sector. It will serve as a separate institutional base from which to conduct a more cohesive and comprehensive, targeted allocation of both continuing public and newly attracted “patient” private capital to firms and activities that facilitate sustained and sustainable growth on the part of the national economy.

In advancing its NIA proposal, this Article makes a significant practical contribution to contemporary policy debates over how to overcome imbalances in the domestic economy, ensure long-term “real” economic growth and financial stability, and improve the institutional structure of the federal government. In the course of justifying its institutional proposal, the Article also makes a *theoretical* contribution. It develops a conceptually more satisfactory, functional account of publicly salient goods that includes not only orthodox public goods, but also publicly provided solutions to certain collective action problems. We refer to this broader class of publicly salient goods as “*collective goods*”.²³ This move enables us to accomplish three things: (1) to identify a much broader range of goods that the public must play at least some role in providing than the canonical public finance literature has recognized; (2) more precisely to specify and more fully to elaborate the causes of many such goods’ chronic under-supply; and (3) to envisage novel methods of channeling private capital toward a system-wide provision of such goods.²⁴

Finally, the Article offers an added layer of normative significance. It operationalizes a broader vision of the temporally-extended sovereign public as an indispensable leader in modulating and allocating finance capital in a manner that ensures stable and sustainable long-term economic development. In so doing, the Article aims to shift the dominant discourse, and our collective attitudes more generally, away from the entrenched dichotomies of public versus private, governments versus markets, and politics versus economics. This comprehensive shift from “either/or” to “both/and”—from categorical distinction to deliberate hybridity—is key to solving our most pressing public policy challenges.

The Article proceeds as follows: Part II elaborates the key theoretical and practical considerations that motivate and inform the NIA’s proposed institutional design. It offers a novel and analytically superior alternative to the standard account of the “public goods”

text. More importantly, SIBs are localized, specifically targeted, *ad hoc* arrangements that cannot be effectively scaled up to address high-risk, long-term national or regional developmental challenges. The NIA is envisioned specifically with that strategic goal in mind and, for that reason, operates on a qualitatively different level than SIBs do. *See infra* Parts IV, V (outlining principal purposes and functions of the proposed NIA and addressing specific issues of institutional design and operation that are likely to arise in connection with the proposed scheme).

22. *See infra* Part ILC (explaining the need for institutional hybridity in the architecture of public finance and advocating an explicitly hybrid public investment authority).

23. *See infra* Part II.A (replacing the needlessly fragmented standard account of “public goods” with a more generally applicable theory of “collective goods,” understood as solutions to collective action problems).

24. *See infra* Part II (elaborating key theoretical and practical considerations that motivate and inform the NIA proposal).

problem and its solution. Part III describes historical and contemporary antecedents and variants of the kind of institution we aim to design. It examines the experience of a remarkable New Deal-era institution, the Reconstruction Finance Corporation (RFC), and the key lessons that can be drawn from the operations of modern sovereign wealth funds. Part IV outlines the principal purposes and functions of the proposed NIA. Part V addresses specific issues of institutional design and operation that are likely to arise in connection with the proposed scheme.

II. FINANCING COLLECTIVE GOODS: A REVISED CONCEPTUAL FRAMEWORK

We begin by laying out the theoretical and practical considerations that inform and frame our argument for establishing a National Investment Authority—a new public institution with an explicit mandate to promote structurally balanced, long-term growth on the part of the national economy.

We view this form of ongoing development as a systemically critical, chronically under-supplied *collective good*. Extending outward from the orthodox theory of public goods, we offer a more comprehensive and unified account of publicly salient goods pursuant to which canonical public goods are supplemented and then classified as what we call “collective goods”—i.e., solutions to collective action problems that pervade decentralized market economies.²⁵ Our broadened account of publicly salient goods makes clear that, contrary to textbook assumptions, taxing and spending—i.e., traditional fiscal policy tools—are not the only means of providing the goods that require at least some form of public provision. Rethinking and clarifying (or extending) the received understanding of public goods equips us to devise a fuller menu of institutional responses to the challenge of continuous national development—a menu that includes, but also goes well beyond, the options presently used to fund vital infrastructures.

A. Public Goods and Public Action: Rethinking the Theoretical Link

Orthodox treatments of public finance purport to show why certain publicly beneficial goods tend to be privately under-provided in decentralized market economies. The standard account, however, understates the full range of such goods: orthodox “public goods” do not exhaust the class of goods that require some form of public provision. We accordingly offer an enriched account of publicly beneficial goods that embraces both those that are included in, and many that are excluded from, most orthodox accounts of public goods. Roughly speaking, on our account the class of publicly salient goods is coextensive with the class of solutions to society-wide collective action problems, hence with what we shall call “collective goods.” This class includes, but is not exhausted by, the class of canonical “public goods.”

25. As we explain below, whether we ultimately decide to call *both* orthodox public goods *and* what we call “collective goods” in future “public goods” or “collective goods,” or whether instead we just speak of public goods and collective goods as two distinct but equally salient categories of goods that require public provision, is ultimately a matter of indifference to us. What matters most is that we remain clear about the need of public or collective action in supplying both.

1. The Standard Account of Public Goods: A Brief Recap

The standard account of public goods found in economics texts fixates on two attributes of such goods: their “non-rivalrousness” and their “non-excludability.”²⁶ The first is that attribute pursuant to which a good’s use by one party does not diminish its availability to other parties.²⁷ Abundant air in an unpolluted environment is a typical example: one person’s breathing does not ordinarily prevent or obstruct another’s breathing. The second attribute, non-excludability, is that pursuant to which neither a good nor the benefits realized through its use can be retained exclusively by one party.²⁸ An attractive melody or readily imitated new way of performing some task are typical examples: one person cannot easily prevent others from humming her melody, nor can she readily keep others from imitating her superior method of performing some task, once these are learned.

Public goods with these characteristics, familiarly, exhibit an endemic tendency to be under-provided by private participants in decentralized market economies. Because the gains—even the monetarily quantifiable ones—that can be had by providing these goods can be only incompletely captured at best, the orthodox thinking goes, profit-motivated private actors will rationally tend not to supply them in quantities sufficient to meet public demand.²⁹ This can appear “tragic” in light of these goods’ non-rivalrous characters: many people stand to benefit by their provision, yet agents’ capacity to exploit these goods’ non-excludability to “free-ride” means no one is adequately incented to supply them.³⁰

The standard response to this canonical “public goods problem” is to “socialize” the production and distribution of public goods.³¹ In effect, the problem is vaguely recognized to constitute a collective action problem, pursuant to which multiple individually rational decisions (in this case, decisions not to supply what one cannot profit by supplying)

26. 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 air constitutes a pure public good. Non-rivalrous but excludable goods are typically called “club goods,” and goods that are both rivalrous and excludable are simply called “private goods.” See generally Francis M. Bator, *The Anatomy of Market Failure*, 72 Q. J. ECON. 351 (1958), https://courses.cit.cornell.edu/econ335/out/bator_qje.pdf; Paul A. Samuelson, *The Pure Theory of Public Expenditure*, 36 REV. ECON. & STAT. 387 (1954), 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* (2008); RICHARD A. MUSGRAVE, *THE THEORY OF PUBLIC FINANCE: A STUDY IN POLITICAL ECONOMY* (1959).

27. See *supra* note 26 and accompanying text.

28. *Id.*

29. See, e.g., *supra* note 26 and accompanying text. It should be noted here that one portion of what cannot be captured is uncapturable because it cannot be measured in monetary terms—it is what we’re calling “unmonetizable”—while another portion is presently uncapturable even when monetizable. Our discussion of “capturability” below focuses on the latter portion. See *infra*, note 59 and accompanying text.

30. For more on the “tragic”—in the classical Greek sense—aspect of collective action problems in general, see Robert Hockett, *Recursive Collective Action Problems: The Structure of Procyclicality in Financial, Monetary, and Macromarkets*, 3 J. FIN. PERSP. 1 (2015) [hereinafter Hockett, *Recursive Collective Action Problems*]. For more on the notion of “free-riding” and collective action problems, see MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* (1965) [hereinafter OLSON, *LOGIC OF COLLECTIVE ACTION*].

31. See, e.g., Samuelson, *supra* note 26.

aggregate into a collectively undesired outcome (in this case, one in which people in principle could, but in practice do not, produce what they all wish to have). The solution to this as to any collective action problem lies squarely in *collective agency*—i.e., in public action taken by some public instrumentality.³²

The relevant instrumentality typically is presumed to be the fiscal authority—the treasury—which can forcibly collect payments from potentially “free-riding” citizens and then use the proceeds to finance the production of non-excludable public goods.³³ Various familiar kinds of infrastructure and other services relied on by private market participants—including primary education, national defense, and law enforcement—are widely viewed as public goods in the orthodox sense.³⁴ Although few believe that such things can be adequately provided by private producers alone, many assume that the fiscal organ of government is the best, if not the only, public instrumentality to do the job.³⁵

The standard account of public goods is helpful in illuminating the need for public provision of some goods, at least as a first approximation, but it is incomplete. It fails to track, even when it implicitly presupposes, the critical link between such goods and *collective action problems*, and accordingly overlooks entire subclasses of what educated laypersons probably think of when they hear the term “public goods.”³⁶ While many writers on public goods seem at least vaguely to recognize public goods problems as having something to do with collective action problems,³⁷ the precise analytical relation between the two notions is generally left unexplored. Specifically, the fact that solutions to all collective action problems can be thought of as rationally privately underprovided, publicly beneficial goods goes unremarked. As a result, the orthodox economists’ use of the phrase “public goods” is suggestive but under-inclusive: it needlessly confines its scope to one particular subset of the fuller class of relevant phenomena.

The unduly narrow understanding of canonical public goods in the orthodox literature also precludes it from recognizing the existence of a range of systemically important publicly beneficial goods that cannot be efficiently provided even via canonical fiscal policy channels. Accordingly, a proper understanding of these systemically important public goods yields significant implications not only for theory, but also for public policy and institutional design.

2. A Revised Account: Collective—including Public—Goods as Solutions to Collective Action Problems

A more complete and coherent alternative to the orthodox understanding of public goods is to specify the relevant category of goods not by reference to putatively essential characteristics (like non-rivalrousness or non-excludability) but in more functional terms, as solutions to collective action problems. This turns out to encompass both public goods in the narrower, orthodox sense and many additional publicly beneficial goods that tend to

32. See Hockett, *Recursive Collective Action Problems*, *supra* note 30.

33. See, e.g., *supra* note 26 and accompanying text.

34. *Id.*

35. *Id.*

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

37. See OLSON, *LOGIC OF COLLECTIVE ACTION*, *supra* note 30 (recognizing the relationship between public goods and collective action issues).

be chronically underprovided by individually rational private market participants. We can accordingly label these “collective goods.”³⁸

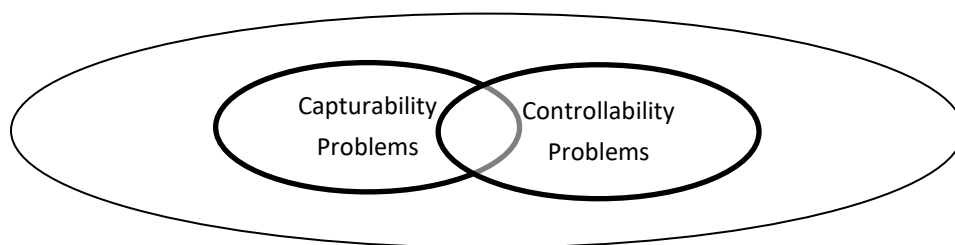
Collective action problems associated with the provision of goods generally arise when it is not individually rational to attempt to supply what is collectively beneficial. This suggests that the relevant “master principle” for policy purposes is the distinction between (1) goods that can generally be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

Situations in which specific goods can be only collectively, not individually, supplied include not only cases in which no individual can *capture the benefits* generated by a good, but also cases in which no individual can *control the environment* fully enough to supply the good in the first place. The orthodox account of public goods defines the term solely by reference to the first case. But, benefit uncapturability is not the only reason that some collectively necessary goods are individually under-provided by rational actors in decentralized market economies.

At least as important a reason that some publicly beneficial goods might be only collectively, not individually, supplied is the individual uncontrollability of some prerequisite factor or factors in the action environment. A case in point would be the stability of some systemically significant price or index upon which broader economic stability, and hence the rationality of some forms of private investment, depends.³⁹ The undersupply of these forms of stability stems from what can be called the “controllability” problem, which constitutes a distinct kind of collective action/public goods problem.

Schematically, our extension of the standard account of public goods might be depicted as follows:

Figure 1: Collective Goods Problems



The principal limitation of the standard account is its tendency to reduce all public goods problems, in essence, to capturability problems.⁴⁰ Little, if anything, is said explicitly about collective action, and nothing at all is said about controllability. In our revised framework, capturability problems and controllability problems constitute two equally salient species of collective action problem that can only be solved through

38. See *supra* note 25 and accompanying text.

39. See Robert C. Hockett & Saule T. Omarova, *Systemically Significant Prices*, 2 J. FIN. REG. 1 (2016) [hereinafter Hockett & Omarova, *Systemically Significant Prices*] (elaborating the principal characteristics that render some prices and indices systemically significant).

40. In fact, as noted above, it reduces it to capturability problems in connection with non-rivalrous goods alone, meaning the category is even narrower on the standard account.

exercises of collective agency.⁴¹ The temporal dimension of both species, moreover, is important: the longer it takes for the good to be realized, the less individually capturable and controllable it will be. The solution to either of these two kinds of collective action problem, therefore, constitutes what might *colloquially* be thought a public good—a socially desired good that no individual can rationally attempt to provide.⁴² But because established technical usage precludes that colloquial understanding, we'll call this broader class of publicly beneficial, privately undersupplied goods "*collective goods*."

B. Public-Private Provision of Collective Goods: Rethinking Solutions

Enriching the standard account of public goods in the manner that we've just proposed enables us both to notice more goods in need of at least partly public provision than have thus far been widely discussed, and to envision additional means of supplying such goods—hybrid means that strategically combine public and private, collective and individual roles.

1. Collective Goods and Controllability Problems

Many collective goods cannot be privately supplied primarily because of limitations on individual capacities. The returns promised by many private investment decisions, for example, ride upon background conditions that are not individually controllable. To the extent that such conditions are *collectively* controllable, not controlling them practically guarantees the emergence of collective action "tragedies"—problems whose solutions will constitute collective goods.⁴³

Perhaps the most salient case in point is the long-term stability of what we have elsewhere called "systemically important prices and indices," or "SIPIs."⁴⁴ 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.⁴⁵ Familiar examples include certain energy and commodity prices, housing prices, prevailing wage rates, money rental (or "interest") rates, and such widely used benchmarks and indices as LIBOR, the Dow-Jones Industrial Average, and the S&P 500.⁴⁶

It is not difficult to see why private investors might withhold, or less productively and more speculatively deploy, funds in the absence of SIPI stability. Wildly fluctuating wage rates, housing prices, or energy prices raise fears of lagging or surging—hence deflationary

41. In the diagram above, capturability and controllability problems overlap, because at least some problems of either type also constitute problems of the other type. Indeed, in a certain trivial sense, all controllability problems are capturability problems: you cannot, unaided, capture the benefits offered by what you cannot make happen in the first place. Nevertheless, the analytical distinction between controllability and capturability is important because, in the former case, it is the question of control that comes up first and renders the capturability issue moot.

42. The diagram above shows capturability and controllability only filling some of the space representing collective action/collective goods problems because there might be other species of collective action/collective goods problem. For present purposes, we need not address that question, nor need we address how much overlap there might be between capturability and controllability.

43. See generally *supra* note 30 and accompanying text.

44. See Hockett & Omarova, *Systemically Significant Prices*, *supra* note 39, at 1.

45. *Id.*

46. *Id.*

or inflationary—aggregate demand. Both of these discourage long-term productive investment in primary markets while encouraging short-term speculation on price movements in secondary markets.⁴⁷ Similar dangers attend volatile benchmarks like LIBOR and indices such as the S&P 500.⁴⁸

Traditional fiscal and monetary policy instruments—sometimes supplemented by other actions like wage-price freezes, minimum wage laws, or finance-regulatory measures—can be used to provide for at least *some* stability in connection with *some* SIPIs.⁴⁹ Interest or inflation rate targeting by central banks and tax policy as determined by legislatures and implemented by treasuries are familiar cases in point. These are needlessly blunt instruments, however, and in many cases are difficult to employ in the name of stability in some markets without producing instability in other markets. Some of them, moreover, require ad hoc legislation which is difficult to secure. Deep political divisions in the U.S. only exacerbate these problems and have hampered the potential efficacy of both fiscal and traditional monetary policy tools as levers for delivering systemically important price stability.⁵⁰ And, in the case of many SIPIs, little if *anything* is done by *any* public instrumentality about them.⁵¹

Resolving the non-controllability problem in a more comprehensive and targeted manner, then, requires the institution of new channels for providing necessary SIPI stability. Elsewhere, we have already proposed one such channel: expanded open market operations by the central bank, aimed at preventing extreme fluctuations in certain financial asset prices.⁵² This solution would employ a powerful form of collective agency—in the form of a public instrumentality—to counteract certain collectively suboptimal forms of behavior on the part of individual market participants.

More generally, our earlier proposal offers a qualitatively new mode of collective

47. *Id.* See also Hockett & Omarova, *Public Actors*, *supra* note 1.

48. Hence the frequent references to such prices—and to various crises and scandals surrounding them—in news media. See Hayley Richardson, *HSBC Embroiled in New Price-Fixing Scandal*, NEWSWEEK (Feb. 24, 2015), <http://europa.newswweek.com/hsbc-embroiled-new-price-fixing-scandal-309156?rx=us>; Terrence McCoy, ‘YESssssssss’: The Brazen Messages Among Bankers that Produced a \$4.3 Million Fine, WASH. POST (Nov. 13, 2014), <https://www.washingtonpost.com/news/morning-mix/wp/2014/11/13/the-gleeful-messages-exchanged-by-bankers-that-produced-a-4-3-billion-fine/>; Jonathan Berr, *Banks Pay Fines, but Show Little Sign of Reform*, CBS MONEYWATCH (Nov. 12, 2014, 5:33 PM), <http://www.cbsnews.com/news/banks-pay-fines-but-show-little-sign-of-reform/>; Kate Gibson, *In Rare Admission of Guilt, Wall Street Banks Say They Rigged Markets*, CBS MONEYWATCH (May 20, 2015, 11:20 AM), <http://www.cbsnews.com/news/in-rare-admission-of-guilt-wall-st-banks-admit-they-rigged-markets/>; Jane Onyanga-Omara & Kevin McCoy, *Banks Fined \$4.3 Billion in Foreign Exchange Probe*, USA TODAY (Nov. 12, 2014), <http://www.usatoday.com/story/money/business/2014/11/12/forex-investigation-settlements-announced/18885767/>.

49. Thus suggesting at least some tacit appreciation that the stability of some SIPIs can amount to a public good.

50. To put it simply, the U.S. fiscal policy is effectively a dead letter in this respect, and monetary policy is expected to achieve too much.

51. See Hockett & Omarova, *Systemically Significant Prices*, *supra* note 39, at 19.

52. See Hockett & Omarova, *Public Actors*, *supra* note 1, at 140–44. This solution, to which we refer as “OMO Plus,” contemplates a large public instrumentality (e.g., a central bank) engaging in active market-making with a specific view toward maintaining stability of particular systemically important asset prices. The purpose of OMO Plus is not to ensure any specific artificial level of prices, but to prevent extreme spikes and dips in the relevant prices that are not driven by economic fundamentals and thus indicative of speculative or otherwise irrational actions by private market participants.

goods provision through hybrid public-private means. Combining the efforts of public and private actors in pursuit of vitally important collective benefits levers the relative strengths of both public and private. It offers a more efficient and effective solution to such seemingly perennial controllability-related problems as booms and busts in financial markets. The same hybrid approach also opens a range of novel solutions to problems stemming from non-capturability.

2. Collective Goods and Capturability Problems

Systemically significant price instability is problematic in its own right, particularly in discouraging long-term investment in productive economic enterprise. But it is also important in contributing to shortages of a related, yet separately appreciable publicly salient good: so-called “patient capital.” For present purposes, we use this term to denote capital deployed to finance projects of long-term maturity, including maturities that exceed, sometimes significantly, the length of an ordinary human life.⁵³

The extensive literature on the longstanding problem of American investor “short-termism” tends to treat the shortage of patient capital as largely a matter of exogenously given changes of taste and, therefore, primarily a cultural or social-psychological phenomenon.⁵⁴ While cultural or social-psychological change might play some role in investor short-termism, it is not necessary to posit such factors to explain what has been happening. Moreover, alternative explanations—explanations rooted in collectively changeable circumstance—can account for such cultural or social-psychological developments themselves.

For patient capital to be abundant, patience itself must be rational. That means either or both of two things: (1) the lifetime investment environment must be reasonably reliable and potentially remunerative to the private investor in question, and (2) the “investor” itself must be sufficiently long-lived as to be able to reap gains that take decades—sometimes even longer than a human lifespan—to realize fully.

With respect to the private investor of ordinary lifespan, the time-horizon question is partly reducible to that concerning the price stability of the macro-environment, as discussed above.⁵⁵ Providing stable SIPs over the investing life of the investor will widen the investor’s perceived opportunity horizon to prospects beyond the immediate. However, with respect to the longer-lived “investor”—e.g., society taken as a temporally extended whole—the time-horizon question raises a distinct challenge. This challenge is rooted less

53. The “patient capital” problem can be viewed as a special case of the “speculative-versus-productive-investment” problem. In both cases, the worry is that investors do not part with their money long enough to allow certain projects to be brought to completion. The patient capital problem is simply a version of the same problem in the context of particularly long-term projects.

54. See, e.g., Robert C. Pozen, *Curbing Short-Termism in Corporate America*, GOVERNANCE STUD. AT BROOKINGS (May 2014), https://www.brookings.edu/wp-content/uploads/2016/06/Brookings_ShortTermismfinal_may2014.pdf; Roger L. Martin, *Yes, Short-Termism Really is a Problem*, HARV. BUS. REV. (Oct. 9, 2015), <https://hbr.org/2015/10/yes-short-termism-really-is-a-problem>; Brendan Duke et al., *5 Steps to Address Corporate America’s Short-Termism Problem*, CTR. FOR AM. PROGRESS, (Sept. 29, 2016, 10:34 AM), <https://www.americanprogress.org/issues/economy/news/2016/09/29/145040/5-steps-to-address-corporate-americas-short-termism-problem/>.

55. See *supra* Part II.B.1.

in individual incapacity to alter the environment—i.e., controllability—than in group-members’ individual incapacities to reap certain gains—i.e., capturability.

The benefits yielded by many goods cannot be fully captured by private investors precisely because they are yielded over very long time-horizons that exceed biological lifespans. Examples include certain kinds of public infrastructure that take decades to develop or construct, technological advances rooted in patient and persistent R&D investment, the only quite gradually accumulating synergistic knowledge and cultural benefits of widespread higher education, and such ultra-long-term projects as space exploration or medical research. Not only do projects of this sort take long to complete, they also yield benefits that materialize over even longer horizons. In all such cases, it makes sense for the overlapping generations who constitute “a public” at a given moment to act collectively to finance the supply of the goods in question, for the sake both of themselves and of their descendants.⁵⁶

Considerations of this kind argue for public provision or facilitation of patient capital—that is, provision by an “investor” that is inter-generationally composite, perhaps partly made up of investors who are willing to be more patient if guaranteed some portion of projected future returns.⁵⁷ In theory, this could be done partly by a fiscal authority, as sometimes it has been.⁵⁸ But the political salience of fiscal authorities, including the U.S. Treasury, often can render this theoretically elegant solution far from effective in practice. The usual vagaries of the legislative appropriation process and the constant short-term pressures of the electoral cycle, moreover, produce strong political incentives for immediate-term rather than “long game” thinking.

One way to remedy this problem is to treat the provision of trans-temporal collective 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, direct or indirect, from collective goods whose benefits ordinarily cannot, absent such synthesis, be individually captured.

3. Synthesizing Capturability

Our proposed approach to the capturability problem exploits the fact that what begins

56. 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 generally* Lynn A. Stout, *The Corporation as Time Machine: Intergenerational Equity, Intergenerational Efficiency, and the Corporate Form*, 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.

57. Such return may, for example, consist of a guaranteed bond coupon with a regular growth-associated equity-yield add-on. *See infra* Part IV.

58. 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. 47 (1927); Frank P. Ramsey, *A Mathematical Theory of Saving*, 38 ECON. J. 543 (1928); James A. Mirrlees, *An Exploration in the Theory of Optimum Income Taxation*, 38 REV. ECON. STUD. 175 (1971).

as privately non-excludable or non-capturable can often be legally—hence publicly—made excludable or capturable, at least when the good in question is monetizable.⁵⁹ Capturability, like ownership itself, is ultimately a matter of public legal right: the right to exclude, to extract rents, or to “keep for one’s self.” But this means that private capturability can be publicly enabled. The public can effectively convert what are initially pure public goods into what might be called *mixed public-private goods*—and thereby enable their greater provision.

Intellectual property law is an obvious example of this strategy. It is a readily recognizable case of the public provision of private capturability, done precisely in order to encourage the private provision of socially useful inventions, works of art, and other intangible public goods that yield positive externalities. What seems to be not as readily recognized, however, is that the same approach can be used to attract private financing for publicly usable infrastructures that are at present funded solely by the public.

It is commonly thought that private funding can be secured only to finance the construction of facilities—such as bridges, turnpikes, or electrical power stations—that generate direct revenues, through the imposition of “user fees,” that can then compensate private investors.⁶⁰ In these cases, the user fees effectively function as carefully targeted taxes. Despite its practical popularity, this “private funding, public tax-derived compensation” model is not the only, or even the most viable, method of financing public infrastructure. It is inherently limited to projects directly amenable to immediate user-fee charges, which not only constitute at best a small part of desirable infrastructure, but also can yield socially undesirable distributive consequences over time. It also serves to entrench an erroneous belief that infrastructure that cannot easily generate user fees is inherently incapable of attracting private financing on a large scale.

In fact, however, the problem can be more comprehensively and efficiently solved via legal crafting of private rights to portions of public benefits produced by the infrastructure in question. Just as property law, contract law, and adjacent bodies of law make property—indeed, multiple forms of property—out of mere possession, so too can contract and complementary bodies of law carve out private parcels from many forms of presently undifferentiated, yet monetizable public benefit.⁶¹

59. A brief word on monetizability and its relation to what we call capturability will be helpful here. In our view, public infrastructures of various sorts yield benefits that can often be partly, but not wholly, understood and measured in pecuniary terms. A well-educated populace, for example, is likely to be a more productive, hence more materially wealthy populace, and its growing wealth will be at least roughly quantifiable via some such measure as gross domestic product (GDP). But the same populace also is likely to grow more cultivated and refined, to find value in or derive enjoyment from a wider variety of activities and pursuits, and in that sense to be gradually enriched in ways that are not readily measured in monetary terms. Put simply, it is hard to put a “money value” on civilization itself. The same can be said with respect to income and wealth inequality. Societies with less skewed distributions tend in the long run to be more politically stable and economically prosperous even in absolute, let alone *per capita*, terms than plutocracies, but more equal societies also appear to enjoy more intangible benefits as well. When we speak of “capturability,” then, we presuppose monetizability, and in that sense, allude only to benefits of the first type. We do not, however, consider benefits of the second type any less important than benefits of the first type, nor do we consider them less in need of collective provision—including via the NIA we propose below. It is important to remain mindful of this distinction throughout the subsequent discussion, especially that of different funding mechanisms for the NIA’s operations. See *infra* Part V.B.

60. See, e.g., *supra* note 26 and accompanying text (discussing the orthodox understanding of “public goods”).

61. See *supra* note 59 (describing the relationship between capturability and monetizability).

The familiar example of a public roadway can be used to illustrate both how private capturability can be synthesized, and how much more can be captured through synthesis than through user-fees alone. Part of the benefit yielded by a roadway is its use, and so some of its benefit can be legally captured and “privatized” through the user-fee mechanism. But another part of the benefit yielded by the roadway will be the impetus that its construction and use lend to local, regional, and even national economic growth. The construction does so by occasioning the employment of labor and materials. The roadway’s use can do so by lessening travel times and fuel consumption, or by facilitating more commerce between previously less inter-accessible localities. Textbook economics recognizes such positive externalities, but tends to overlook that they can be effectively “internalized,” at least in part,⁶² via the parceling capacities of publicly developed law and contract. All that’s required is some creative financial engineering, which of course is contractual—hence legal—engineering.⁶³

Thus, to the extent that it is possible to predict with some accuracy the impact of new infrastructure projects on local or regional economic growth—hence employment rates, wage rates, and tax revenues—public authorities undertaking such projects should be able to offer private investors an equity-like share in those variable returns. For example, a 2% increase in growth or a 3% increase in public revenues might be translated contractually into a corresponding added return on a private investment with guaranteed principal, effectively replicating a bond with an equity strip.⁶⁴

If this form of private financing of public projects came to be widely employed, there would not only be more private capital flowing away from mere speculation to real public infrastructure investment, there would also quickly emerge an industry—a segment of the existing industry of securities analysts—devoted to modeling potential returns on various subspecies of this type of investment.⁶⁵ Macroeconomic models would then be developed and refined, and the prices of publicly issued securities valued by analysts using such models would, in turn, become helpful guides to public investment authorities in comparatively valuing and choosing among various publicly beneficial projects.⁶⁶

62. Not all positive externalities are monetizable and hence amenable to internalization. *See supra* note 59.

63. Indeed, all financial instruments commonly viewed as products of “financial” engineering—most notably, derivatives contracts—are fundamentally products of “legal” engineering. The very concept of a financial “instrument” is a legal creation. Anyone doubting this should think about what “negotiability” means in connection with negotiable instruments, what “legal tender” means in connection with money, and so on.

64. This is a deliberately simplified example of how privately capturable benefits of a long-term investment in public infrastructure can be synthesized. For a more detailed discussion, see *infra* Part IV.

65. *See* Sinead Hasson, *So What Does a Market Analyst Do, Exactly?*, THE GUARDIAN (Dec. 18, 2012), <https://www.theguardian.com/careers/why-consider-career-in-market-analysis> (describing the roles of market analysts).

66. Social Impact Bonds, or SIBs, provide a useful, albeit limited and only tangentially relevant, example of how this approach to capturing private benefits generated by publicly beneficial projects is currently being experimented with in practice. *See supra* note 21 (describing SIBs). In a typical SIB structure, private investors finance the delivery of specified social services to target populations by selected non-profit providers in accordance with predetermined performance criteria. *Id.* If such criteria are fully met, the relevant unit of government repays private investors’ money (plus some return on capital) and takes over the operation of the scaled-up programs. *Id.* If the program fails to achieve the predetermined measurable “outcomes”—such as, e.g., reducing recidivism rates among a target population of former inmates below a certain level, or producing budget savings through a decline in the use of public hospitals or shelters by homeless people in a particular area—the investors are not repaid. *See* MCKINSEY & COMPANY, *supra* note 21, at 14 (diagramming basic SIBs). Full

Using the law to synthesize means of privately capturing portions of long-term, widely spread public benefits can thus facilitate both a significant growth of private investment in public projects and better public decision-making about such projects.⁶⁷ In addition to those benefits, this approach also would operate to redirect presently wasteful and destabilizing “speculative” private investment toward more materially productive and socially beneficial ends. A simple act of *collective* agency will open the door to entire new classes of productive and remunerative *individual* agency. The next question is what institutional form that collective agency should take.

C. The Missing Link: Rethinking the Goals and Architecture of Public Finance

As noted above, the standard, unduly narrow account of publicly beneficial goods generally assigns the task of providing them to the state, which it views as acting through familiar fiscal and monetary authorities. In effect, the orthodox view is that the state is the sole default financier of publicly beneficial projects that are financially unattractive to profit-driven private investors. Our enriched account of publicly beneficial goods and the challenges that their provision presents, focusing on our broader category of collective goods, takes issue with this assumption along two principal lines.

First, we argue that the provision of many canonical public goods can be rendered financially attractive to private investors, through targeted legal and financial structuring of capturable private gains.⁶⁸ Second, we maintain that effective implementation of this hybrid financing strategy necessitates the creation of a hybrid public instrumentality—a public investment authority—that straddles the space between traditional fiscal and monetary authorities.

The collective goods we have in mind can be taxonomized along two key dimensions:

discussion and analysis of the strengths and weaknesses of SIBs is beyond the scope of this Article. For our purposes, SIBs are important primarily as tangible indicators of both (a) existing interest on the part of private investors in new asset classes that combine financial returns with a promise of generating social benefits, and (b) the general feasibility of, and growing practical experience with, translating intangible social benefits into financial returns earned by private investors. More fundamentally, the emergence of SIBs reflects an important shift in public consciousness toward fuller recognition of the need to harness private “risk capital” for the provision of essential collective goods. See *infra* note 67 and accompanying text.

67. It is instructive, for example, that, the proponents of SIBs—multi-stakeholder public-private partnerships for the performance-based delivery of specific social services to target populations (chronically homeless, former prisoners, disadvantaged youth, etc.)—typically credit these arrangements with both increasing the flow of private “risk capital” into the provision of public services and improving the efficiency with which such services are delivered. See Annie Dear et al., *Social Impact Bonds: The Early Years*, SOC. FIN. 13–17 (July 2016), <http://socialfinance.org/social-impact-bonds-the-early-years/>. It is not clear, however, how successful SIBs are in delivering these promised results in practice. See, e.g., Hanna Azemati et al., *Social Impact Bonds: Lessons Learned So Far*, 9 COMMUNITY DEV. INV. REV., Apr. 2013, at 23. To date, SIBs do not appear to have “gain[ed] meaningful traction” in the U.S. See Lindsay Beck et al., *Social Impact Bonds: What’s in a Name?*, STAN. SOC. INNOVATION REV. (Oct. 12, 2016), https://ssir.org/articles/entry/social_impact_bonds_whats_in_a_name. This fact reflects, among other things, certain built-in shortcomings of SIBs as an asset class meant to appeal to a broad swath of capital market investors. *Id.* By contrast, as discussed below, the NIA would be able to offer precisely this kind of universally appealing and potentially desirable new asset class. See *infra* Part III. More generally, to the extent that the NIA envisioned here is a coherent, comprehensive, and strategically-oriented institutional structure for the nationwide channeling of private capital into large-scale collective goods, its potential to deliver a wider range of efficiency-maximizing benefits is also incomparably higher than that of any SIB.

68. See *supra* Part II.B.3.

(1) a temporality dimension, and (2) a capturability/monetizability dimension. Existing modes of private finance are geared primarily to the provision of goods that yield direct revenues (e.g., “user fees”) within a relatively short timeframe after an investment has been made. However, where goods yield only indirect economic benefits (e.g., economic growth-driven tax revenues) or non-monetizable benefits, or where benefits of all kinds accrue only over the long term, controllability and capturability problems currently render private investment financially irrational. In such cases, an exercise of collective agency is necessary to make private investment potentially profitable and hence financially rational. The following table presents, in simplified form, this basic taxonomy of collective goods:

Table 1: Collective Goods Taxonomy

	Directly Monetizable Benefits	Indirectly Monetizable Benefits	Non-Monetizable Benefits
Short-Term Investment	C / I	C	C
Long-Term Investment	C	C	C

In the table, “I” indicates that the good in question can be individually produced or supplied, while “C” indicates that the good in question can be collectively facilitated or supplied. The table visually underscores the fact that, at present, private parties invest only in collective goods capable of generating direct revenues and reaching profitability relatively quickly. What we are proposing is an instrumentality that will render it individually rational for private finance to take part in the provision of goods represented not merely by a single cell, but by all cells in the table.⁶⁹

That instrumentality, or the new public investment authority, would be an institutional hybrid in at least two senses. First, it would deliberately utilize private market means to organize and channel private capital into publicly beneficial infrastructural projects. In that sense, it would be creating and managing a nation-wide public-private partnership for the ongoing provision of systemically important collective goods that otherwise tend to be under-provided. These forms of investment capitalize simultaneously on (1) the long time-horizon and related collective action advantages enjoyed by public instrumentalities, and (2) the micro-informational advantages offered by decentralized markets of private investors.⁷⁰

The very nature of its activities would also mean that this new institution would be performing certain important functions currently assigned by default either to the treasury or to the central bank. Mobilizing presently “speculative” private capital to supply publicly

69. See *infra* Part IV.A (discussing specific examples of infrastructure projects the NIA will target with a view toward enabling the public-private provision of collective goods).

70. For a detailed discussion of this division of labor and its advantages, see Hockett & Omarova, *Finance Franchise*, *supra* note 1; Hockett & Omarova, *Public Actors*, *supra* note 1.

beneficial goods in their broadest sense—namely, collective goods, which include not only critical physical and social infrastructure but also long-term SIPI stability—will provide a more carefully targeted and politically palatable alternative to both direct government spending by the fiscal authority and traditional interest rate management by the central bank.

The second sense in which the public investment authority would be a hybrid is the way in which it closes a gap between treasury and central bank functions as these operate in most developed economies, including the United States. Decades of political battles over the federal budget have effectively rendered traditional fiscal policy impotent in addressing the ongoing need for large-scale investment in public infrastructure. Moreover, elected officials themselves often must be “short-termist” in light of the election cycle. In the consequently polarized and uncertain political climate of the U.S., the Treasury has very little capacity to make the significant long-term financial commitments needed to direct and sustain long-term economic growth.

The Fed, as the country’s central bank, has acted partly to fill the resultant void, developing monetary policies that effectively replicate some of the currently missing elements of traditional fiscal policy.⁷¹ But the Fed lacks the tools to engage in more nuanced targeting of the kind associated with active developmental policy.⁷² And even its tentative efforts at policy innovation have brought controversy as representing a significant departure from traditional central bank mandates.

The establishment of a dedicated public investment authority, which we call the National Investment Authority (NIA), is a pragmatic, structural solution to this seemingly intractable “monetary-cum-fiscal policy” dilemma. The two institutional pillars of treasury and central bank are simply insufficient to support sustained and inclusive economic development. There is a critical policy gap between their two mandates, and neither existing institution can grow over the gap without compromising its core mission, inviting great controversy, or both. The NIA can step into this void, publicly marshalling private funds to supply systemically important collective goods that cannot be supplied by private actors unable to overcome controllability and capturability problems.

Functionally situated between the Treasury and the Fed, the NIA will serve as a separate institutional base from which to conduct a more cohesive and targeted allocation of patient public and private capital toward specific economic activities likely to facilitate and enhance inclusive and sustainable long-term growth on the part of the national economy. Like the Fed in its open market operations, the NIA will act within markets, using the modalities of finance to fulfill its critical mandate. By attracting and mobilizing presently “speculatively” directed private capital, it will also exert a significant stabilizing effect on the entire financial system. Like the Treasury (in its ideal, if not in its current form), the NIA will fine-tune and narrowly target its operations to stimulate or curb investment activity in precisely those sectors that require it most.

A successful NIA will accordingly relieve current pressures on the Fed and the Treasury, making their jobs significantly easier. It will enable the Fed to engage in

71. See, e.g., Daniel Alpert et al., *The Way Forward*, NEW AM. (2011), <https://www.newamerica.org/economic-growth/policy-papers/the-way-forward/>.

72. Thus, as dramatic housing and other asset price instabilities over the late 1990s and early 2000s have painfully demonstrated, monetary policy is too blunt an instrument.

traditional monetary policy without risking an under- or over-issuance of credit-money economy-wide.⁷³ And, it will enable the Treasury to sidestep needlessly contentious budgetary decisions by making and executing these decisions itself—profitably and hence less controversially—with assistance from private investors.⁷⁴

The idea that a stable and robustly growing national economy rests upon three, rather than two, distinct functional pillars is not new. The U.S.’s first Treasury Secretary, Alexander Hamilton, advocated, received, and made effective use of a treasury balance sheet through the issuance of Treasury Securities and the collection of excises.⁷⁵ He also advocated, received, and made effective use of both monetary and development bank balance sheets through the establishment and effective operation of the First Bank of the U.S.—an institution that combined central banking and development banking functions.⁷⁶ This vision and its realization laid the foundations for the early American republic’s “market revolution” and “growth miracle.”⁷⁷ It was a clear case of coherent public action facilitating more productive and remunerative private action.

From the late Jacksonian era until 1913, both the central banking and development banking elements of the Hamiltonian model ceased to be part of the country’s institutional landscape.⁷⁸ The nation’s economy experienced highly destructive boom-and-bust cycles throughout the period, discouraging untold quantities of long-term investment, until reliance on pure private finance proved definitively limiting of future sustainable growth with the crises of 1893 and 1907.⁷⁹ The establishment of the Fed in 1913 restored one half of Hamilton’s Bank of the U.S.—the half that conducted monetary policy—but left the other half unrestored.

Apart from the age of the Reconstruction Finance Corporation from the early-1930s to the mid-1950s, the U.S. has lived with this gaping hole in the institutional structure originally envisioned by Hamilton.⁸⁰ The Treasury and the Fed have attempted, at various junctures, to take action partially substituting for the missing policy forms. And a few surviving subsidiaries of the old RFC—notably the Small Business Administration (SBA), the Federal Housing Administration (FHA), and the Federal National Mortgage Association (Fannie Mae)—have struggled to take up the slack. Yet, this fragmented patchwork of embattled bodies with limited mandates hardly makes up for the lack of a strong public institution charged with the task of implementing a comprehensive and coherent national strategy of ongoing economic development.

The limits of resting the entire edifice of modern public finance on just two

73. This occurred, for example, during the Volcker-led contraction of 1982–83 and the Greenspan-led expansion of 1995–2007. In our previous work, we note these as cases that demonstrate the centrality of good credit-allocation to effective credit-modulation. See *supra* note 1 and accompanying sources.

74. See *infra* Parts IV, V.

75. For a detailed discussion of the nature and significance of Hamilton’s program of national development, see Hockett & Omarova, *Public Actors*, *supra* note 1, at 108–14.

76. *Id.*

77. See, e.g., CHARLES SELLARS, *THE MARKET REVOLUTION: JACKSONIAN AMERICA 1815–1846* (1993); DANIEL W. HOWE, *WHAT HATH GOD WROUGHT: THE TRANSFORMATION OF AMERICA 1815–1848* (2009).

78. See RON CHERNOW, *THE HOUSE OF MORGAN* (1991); JEAN STROUSE, *MORGAN: AMERICAN FINANCIER* (2014).

79. *Id.*; see also, ROBERT F. BRUNER & SEAN D. CARR, *THE PANIC OF 1907: LESSONS LEARNED FROM THE MARKET’S PERFECT STORM* (2009).

80. For more on the RFC’s role, see *infra* Part III.A.

institutional pillars have manifested themselves beyond the economic sphere. The absence of a public instrumentality enabling a broad flow of private investment into the real economy is one of the deep-seated factors that underwrites worsening socio-economic rifts among citizens. The resulting political-economic dynamic has gradually nullified fiscal policy itself, thereby leaving an increasingly overburdened Fed to cope with the ever-growing list of national socio-economic problems.⁸¹ Restoring the still-missing third pillar of the original Hamiltonian triad—a public investment authority—is, therefore, a task of the utmost importance not only to our economy but also to our polity.

This is, of course, a challenging undertaking. Yet, it will significantly benefit from the accumulated practical experience, both in the United States and abroad, of large-scale public mobilizations of private capital and active public investments in private financial markets. This institutional experience provides invaluable guidance in designing a modern American public investment authority.

III. PUBLIC INVESTMENT AS A POLICY TOOL: INSTITUTIONAL EXPERIENCE

It is well-established that government instrumentalities often act in private markets as indispensable buyers, sellers, lenders, and investors and, in doing so, make, move, amplify, and backstop such markets.⁸² For purposes of designing the NIA—a new federal instrumentality that would mobilize and channel private capital toward the nationwide provision of systemically important collective goods—two specific examples of dedicated public investment vehicles are particularly instructive. One important precursor of our NIA is the Reconstruction Finance Corporation, which played a pivotal role in rescuing the American economy from the post-1929 depression. Another, more recent, experience relevant to the NIA proposal comes from a diverse group of sovereign wealth funds—state-owned portfolio investment vehicles that actively utilize financial asset management as a tool of public policy.

A. Credit Mobilization: The Reconstruction Finance Corporation

Probably the most direct and instructive domestic precedent for the NIA proposed in this Article is the Reconstruction Finance Corporation (RFC or the Corporation), a remarkable New Deal era institution that played a critical role in bringing the U.S. economy out of the Great Depression.

The RFC was established amidst mass bank failures, home foreclosures, business bankruptcies, and surging unemployment—in short, during that self-reinforcing “downward spiral” which later came to be known as the Great Depression.⁸³ It was explicitly modeled after the War Finance Corporation (WFC), formed in 1918 to facilitate the financing of industrial expansion in strategically sensitive industries.⁸⁴ The WFC made direct loans, backed by the full faith and credit of the United States, both to banking

81. Alpert et al., *supra* note 71.

82. For a taxonomy of states’ market-actor roles, see Hockett & Omarova, *Public Actors*, *supra* note 1, at 122–36.

83. See JOHN KENNETH GALBRAITH, *THE GREAT CRASH 1929* (1954) (detailing the origins of the Great Depression); WILLIAM E. LEUCHTENBERG, *FRANKLIN ROOSEVELT AND THE NEW DEAL 1932–1940* (1963).

84. See JAMES STUART OLSON, *HERBERT HOOVER AND THE RECONSTRUCTION FINANCE CORPORATION 1931–1933*, at 12–13, 41–42 (1977) [hereinafter OLSON, HERBERT HOOVER], (detailing the design of the WFC).

institutions and to strategically and economically important industrial enterprises: public utilities, power plants, mining and chemical firms, railroads, and agricultural concerns among them.⁸⁵ After the war, the WFC continued to oversee the smooth transitioning of the American economy back to peacetime production.⁸⁶ The government finally began winding-down the WFC in 1924, a process that took about six years. Ironically, it was just as this process was reaching completion that prominent officials—notably, Fed Chairman and former WFC board member Eugene Meyer—began urging President Hoover to revive the WFC to address the deteriorating post-Crash American economy. This Hoover effectively did in December of 1931 when he called upon Congress to establish a “Reconstruction Finance Corporation.”⁸⁷

President Hoover signed the legislation formally establishing the RFC into law in January of 1932.⁸⁸ The Corporation began by essentially replicating the WFC in its structure and operations. Like the WFC, it was an independent, government-owned agency managed by a bipartisan, seven-member board.⁸⁹ Also like the WFC, it operated thirty-three offices nationwide, which invited and evaluated loan applications from banks, credit unions, mortgage loan companies and railroads.⁹⁰ There was a problem with simply replicating the WFC’s *modus operandi*, however. Whereas during the war the nation’s challenge had been scaling the credit supply up to accommodate war-heightened *demand*, in the post-crash environment of the 1930s the challenge was to induce banks and businesses to make use of the federally augmented credit *supply*.⁹¹

In effect, the newly instituted RFC confronted a formidable collective action problem.⁹² It simply was not rational for any individual producer to borrow money to finance production, when no individual producer could single-handedly stimulate

85. *Id.*; JAMES S. OLSON, SAVING CAPITALISM: THE RECONSTRUCTION FINANCE CORPORATION AND THE NEW DEAL 1933–1940 131 (1988) [hereinafter OLSON, SAVING CAPITALISM]. The WFC also purchased government bonds, which the Fed was not permitted to do.

86. Worried that domestic productive activity might slow to the point of inducing slump once war expenditures wound-down, and that returning veterans might glut the national labor market, Congress in 1919 authorized the WFC to extend export loans to American manufacturers in order to maintain production and domestic employment. OLSON, HERBERT HOOVER, *supra* note 84, at 41–42.

87. OLSON, SAVING CAPITALISM, *supra* note 85, at 131.

88. See Reconstruction Finance Corporation Act, 15 U.S.C. § 601 et seq (repealed 2010) [hereinafter RFC Act]. Additional legislation authorized regional Federal Reserve Banks to make direct loans to businesses but that did little good in practice. The Fed seemed to be too uncomfortable with such an unfamiliar role. The RFC accordingly became the principal federal development finance agency. OLSON, SAVING CAPITALISM, *supra* note 85, at 131.

89. See RFC Act § 3 (elaborating the structure of the RFC). No more than four board members could be members of any one political party, and one of them always would be the Treasury Secretary, who served as a member *ex officio*.

90. See RFC Act (specifying the RFC’s functions); OLSON, SAVING CAPITALISM, *supra* note 85 and accompanying text (explaining the functions of the RFC).

91. By 1935, for example, banks were lending barely half (\$20 billion) of what they had lent in 1931 (\$38 billion). OLSON, SAVING CAPITALISM, *supra* note 85, at 87. See also OLSON, HERBERT HOOVER, *supra* note 84, at 24–32 (detailing challenges that faced the RFC). In effect, the RFC in 1932 faced the same “pushing on a string” problem that the Fed would face later from 2009 to about 2013—how to induce investment in the face of a post-crisis environment lacking in consumer demand. OLSON, SAVING CAPITALISM, *supra* note 85, at 132–34; OLSON, HERBERT HOOVER, *supra* note 84, at 24–32. For more on the “pushing on a string” problem, see Alpert et al., *supra* note 71.

92. See *supra* note 36 and accompanying text (defining collective action problems).

consumer demand for its products in a post-crash, debt-deflationary environment.⁹³ In this situation, collective agency would have to act first on the demand side, not the (credit-) supply side, of the economy if the aim was to jumpstart renewed economic activity. The RFC would accordingly have to do more than simply stand ready to supply credit: it would have to undertake demand—and employment—enhancing investment itself.⁹⁴ President Hoover, however, was neither temperamentally nor ideologically prepared to take that additional step in the direction of public involvement in economic activity.⁹⁵

With the coming of the Roosevelt administration in March of 1933, the RFC was transformed from an anachronistic replay of the WFC into a more active public-private development-finance institution. It began by purchasing preferred equity stakes in troubled banks, pursuant to authority newly granted by Title III of the Emergency Bank Act of 1933.⁹⁶ This was the first case of a public instrumentality taking ownership stakes in privately owned firms—here, in the name of recapitalizing institutions whose equity had been wiped out by asset losses.⁹⁷ At this early stage, however, it remained primarily a defensive measure, aimed at protecting the nation's banking and payments infrastructure from serious risk of complete liquidation.⁹⁸

The RFC also began actively operating on the demand side of the economy, by collaborating with and financing demand-stimulating activities undertaken by other New Deal agencies. Once demand in previously depressed sectors of the economy began to pick up, the RFC commenced large-scale direct lending to municipalities, school districts, commercial businesses, railroads, farmers and farm co-ops, production credit associations, joint-stock land banks, livestock credit corporations, and local banks and other lending institutions.⁹⁹ Acting in effect as “the capital bank for the New Deal,”¹⁰⁰ at its peak the RFC had a balance sheet that dwarfed the combined balance sheets of Wall Street banks. Consistently profitable, it plowed the proceeds of its repaid loans and interest back into further investment in every year of its operation.¹⁰¹

Several factors appear to explain the RFC's growth and success. First, it focused on collective action challenges that the private sector was incapable of addressing, so as ultimately to entice private sector actors into renewed economic activity. Second, it financed the wide range of demand-stimulating actions taken by other New Deal agencies—then supported resulting increases in aggregate demand through generous

93. For an evocative account of the problem at the time, see MARRINER ECCLES, *BECKONING FRONTIERS* (1951). See also OLSON, *SAVING CAPITALISM*, *supra* note 85, at 159.

94. See OLSON, *HEBERT HOOVER*, *supra* note 84, at 116–19.

95. *Id.*

96. OLSON, *SAVING CAPITALISM*, *supra* note 85, at 25–41. President Hoover had considered this measure in early 1933 but ultimately did not pursue it. *Id.*

97. OLSON, *SAVING CAPITALISM*, *supra* note 85, at 25–41.

98. *Id.*

99. *Id.* at 42–46. Importantly, the RFC's lending activity was done pursuant to orthodox actuarial principles. By the end of its first three years of operation, the RFC had extended some \$8 billion in loans to businesses and another \$2.6 billion to government agencies, \$3.2 billion of which had already been repaid with nearly \$300 million in interest. OLSON, *SAVING CAPITALISM*, *supra* note 85, at 51. The RFC loans were distributed over every Congressional district in the country, thereby avoiding regional and partisan divisions in Congress over RFC investment activities. *Id.* at 44, 90–91.

100. *Id.* at 44.

101. *Id.* at 42–46.

supply-side lending. Third, the sheer *scale* of the RFC's operations significantly contributed to its success.¹⁰² Fourth, the RFC greatly benefitted from visionary leadership, the members of which had both significant private sector business or legal experience and demonstrable track records of actual innovating, planning, and building.¹⁰³ Fifth, the RFC used a variety of modes by which both to supply finance (not only through lending, but also through equity investing) and to finance itself (not only through federal funding, but also through private capital-raising and retained earnings). The first three factors sound in collective goods provision as we define it above in Part II.A,¹⁰⁴ while the last two factors sound in hybridity as described in Part II.B.¹⁰⁵

It is the last factor—the use of varying modes of finance—where the RFC showed itself most innovative. On the asset side of the balance sheet, the RFC both lent and made equity investments. Thus, by mid-1934 it had purchased well over \$1 billion in preferred stock and capital notes issued by depository institutions alone, such that it owned stock in half of the nation's banking institutions.¹⁰⁶ A similar program for purchasing preferred stock in life insurance firms followed.¹⁰⁷ By 1934, the RFC held voting rights in thousands of American firms, and was by far the single largest investor in the country.¹⁰⁸ Its typical *modus operandi* was to purchase as much preferred stock as there was common stock outstanding, thereby doubling the firm's capital and conferring upon RFC a controlling

102. In its first several years of operation, the RFC directly and indirectly disbursed billions of dollars—an enormous sum at the time—to state, local, and federal relief agencies (including the National Recovery Administration), public works authorities (including the Public Works Administration, the Rural Electrification Administration, and the Tennessee Valley Authority (TVA)), agricultural and commodity price-support authorities (including the Agricultural Adjustment Administration and the Commodity Credit Corporation), and a host of intermediate federal credit institutions charged with refinancing troubled home and farm mortgage loans (including the Home Owners' Loan Corporation, the FHA, Fannie Mae, and the Farm Credit Administration). Later, the RFC channeled increased funding to railroads, commercial and agricultural enterprises, and private lending institutions in order to compensate for continuing skittishness of traditional lenders—thereby preventing supply side shortages from malnourishing demand side “green shoots.” See JESSE H. JONES, FIFTY BILLION DOLLARS: MY THIRTEEN YEARS WITH THE RFC (1932–1945) (1951) (discussing operations of the RFC).

103. The RFC's key personnel during the early years of the Roosevelt administration constitutes a virtual “Who Is Who” of figures who later gained public renown through their roles in other posts. Among them were the RFC's Chairman Jesse Jones, a Texas entrepreneur with an eighth-grade education who had virtually single-handedly built downtown Houston. Others included Adolf Berle (one of the giants of corporate law and scholarship), Thomas Corcoran and Benjamin Cohen (the drafters of the Securities Act of 1933, the Securities Exchange Act of 1934, the Public Utility Holding Company Act of 1935, and the legislation instituting the FHA and the TVA), Clifford Durr (later distinguished Commissioner on the Federal Communications Commission and lawyer for Rosa Parks), Jerome Frank (of later “Legal Realist” fame), and such other New Deal luminaries as Paul Freund, Richard Quay, Stanley Reed (later Solicitor General, then Supreme Court Justice), and Frank Watson (later General Counsel for the Federal Housing Authority), among others. See OLSON, SAVING CAPITALISM, *supra* note 85, at 60 (discussing the RFC's leadership).

104. See *supra* Part II.A (discussing link between public goods and public action).

105. See *supra* Part II.B (discussing public-private provision of collective goods). What we call “hybridity,” the New Dealers called variously “state capitalism,” “cooperative planning,” or the idea of a “business-government commonwealth.” See OLSON, SAVING CAPITALISM, *supra* note 85, at 68, 84, 111 (discussing “state capitalism”). For more on the essential hybridity of the RFC and other New Deal programs, see PAUL CONKIN, THE NEW DEAL 37–39 (1991).

106. OLSON, SAVING CAPITALISM, *supra* note 85, at 81, 88. See also JONES, *supra* note 102 (discussing the RFC's operations).

107. OLSON, SAVING CAPITALISM, *supra* note 85, at 102; JONES, *supra* note 102.

108. OLSON, SAVING CAPITALISM, *supra* note 85, at 124; JONES, *supra* note 102.

interest.¹⁰⁹

The RFC did not hesitate to employ its power as stockholder and lender to make demands upon benefitting firms in connection with dividend policy, management personnel, and executive compensation. Indeed, amendments made to its enabling legislation in 1933 mandated as much.¹¹⁰ From the perspective of RFC leadership, this was a matter of financial prudence: the Corporation's debt and equity injections were not to be used to over-compensate firm insiders or reward those who had mismanaged firms in the first place.¹¹¹ Some RFC leaders had plans to go further by using the institution's enormous market power to facilitate a fundamental restructuring of the U.S. financial system and broader economy.¹¹² The Roosevelt administration deliberately steered clear of turning the RFC into a "central planner," however, and carefully limited its mission to the solution of true collective goods problems.¹¹³ What this meant in practice was that the RFC generally left competent managers free to run their own firms and restricted itself to offering capital, advice, and occasional interventions where dividend or salary policies seemed opportunistic.¹¹⁴

Importantly, the RFC also purchased assets as a means of maintaining price stability in certain sensitive markets, in effect engaging in an expanded form of open market operations of a kind we have advocated elsewhere.¹¹⁵ The prices it targeted included many SIPs,¹¹⁶ including the prices of various commodities, agricultural products, and precious metals to whose prices commodity prices were sensitive.¹¹⁷ The RFC also purchased large quantities of railroad bonds, not only to save important railroad companies from bankruptcy, but also to preserve the balance sheets of firms heavily invested in what at the time was a major asset class.¹¹⁸ It also used massive purchasing programs to preserve another important asset class—municipal bonds—and to keep municipal borrowing costs from skyrocketing during a time of heavy recovery spending.¹¹⁹

On the liability side of the balance sheet, the RFC was initially capitalized by Congressional appropriation.¹²⁰ It quickly became apparent, however, that it also could

109. OLSON, SAVING CAPITALISM, *supra* note 85, at 124.

110. *Id.* at 126.

111. *Id.* at 112, 125. *See also* JONES, *supra* note 102, at 156–58. Examples included the Prudence Company of New York, the Continental Illinois Bank and Trust Company of Chicago, and the Maryland Casualty Company of Baltimore.

112. Notably, Berle, Corcoran, the attorney Harold Rosenwald, and the economist Rexford Tugwell were convinced that Wall Street had "run amok" in the period leading to 1929, and thus could never be allowed to resume its former position at the apex of American finance. OLSON, SAVING CAPITALISM, *supra* note 85, at 112–13; JONES, *supra* note 102, at 156–58.

113. OLSON, SAVING CAPITALISM, *supra* note 85, at 121–25; JONES, *supra* note 102, at 156–58.

114. OLSON, SAVING CAPITALISM, *supra* note 85, at 124; JONES, *supra* note 102, at 156–58.

115. We refer to this generalization of the central bank's open market operations as the "OMO Plus" strategy. *See supra* note 52 (elaborating "OMO Plus.").

116. *See supra* notes 44–48 and accompanying text.

117. The RFC effectively embraced and acted upon Irving Fisher, Frank Pearson, and George Warren's theory of the "commodity dollar." *See* OLSON, SAVING CAPITALISM, *supra* note 85, at 105–10.

118. *Id.* at 96–101.

119. A conspicuous case in point was a \$75 million bond issue attempted by the City of New York in 1934, which only Chase was willing to purchase at a 6% interest rate. When the RFC offered to purchase the bonds at a lower rate, Chase agreed to purchase them at 3.75%. *Id.* at 123.

120. *See* RFC Act § 2 (discussing Reconstruction Finance Corporation Act provisions); OLSON, SAVING

spend from the proceeds of its repaid loans, imparting to it the character of a revolving credit fund.¹²¹ The RFC also was authorized to issue bonds, notes, and other obligations, thereby augmenting its budget with private capital injections while also offering private investors a new class of safe asset.¹²² Many specialized subsidiary institutions of the RFC—including Fannie Mae, the Commodity Credit Corporation, and the Export-Import Bank—were also authorized to issue bonds and, later, equity.¹²³

As mentioned earlier, some in the RFC's leadership had larger and longer-term ambitions for the institution, which would have entailed yet more innovative financing. Adolf Berle, for example, envisaged the RFC as managing, in conjunction with the Fed, a new, parallel system of public "capital credit banks," one in each Federal Reserve Bank district. These would have functioned essentially as public "venture capital" firms that extended medium-term loans to, and discounted commercial paper issued by, qualifying startup firms. Another RFC officer, W.E. Dunn, proposed a sibling institution that would invest in a wide range of marketable securities—including equity—issued by qualifying firms, to be financed through the issuance of preferred stock. In effect, this would have been a public-private private equity firm jointly managed by the RFC, the Fed, and the Treasury Department—with private investors as passive holders of preferred shares.¹²⁴ Carrying the RFC vision this far, however, proved a step too far in the 1930s, as none of these proposals made it out of committee in Congress.¹²⁵

In the end, the same forces that prevented adoption of these plans also brought about the gradual wind-down of the RFC following the Second World War.¹²⁶ As a powerful government market actor, the RFC had always engendered suspicion and fear among some political figures who viewed it as a "necessary evil," a temporary emergency measure that was otherwise inconsistent with America's capitalist economy. The RFC's ultimate wind-down, at a time when the crises of depression and war were growing increasingly distant, can be seen as the victory of this view over more progressive New Dealers' vision of the RFC as a new form of state capitalism employing a malleable tool of modern economic governance.¹²⁷

Our NIA proposal taps into this latter view, as well as into the RFC experience that it helped to shape. In this sense, the RFC serves as a vital source of institutional learning. Another such source is the experience of sovereign wealth funds, the 21st century version of state capitalism going global.

B. Asset Management: Sovereign Wealth Funds

The term "sovereign wealth fund" (SWF) refers to a diverse group of special-purpose

CAPITALISM, *supra* note 85, at 42–44.

121. OLSON, SAVING CAPITALISM, *supra* note 85, at 42–44.

122. *Id.* at 16.

123. *Id.* at 143–53, 202–03.

124. *Id.* at 155.

125. *Id.* at 157.

126. During the war, when inadequate aggregate demand once again ceased being a problem, the RFC reverted to acting much as its predecessor the WFC had acted during the First World War—as a source of additional credit to strategically sensitive industries. OLSON, SAVING CAPITALISM, *supra* note 85, at 157.

127. The latter view's legacy, however, continues in the work of RFC's many surviving descendants, including Fannie Mae, the FHA, the SBA, and the EXIM Bank.

government-owned portfolio investment vehicles.¹²⁸ While there is no universally accepted definition of the term, the category generally excludes traditional state-owned enterprises and central banks.¹²⁹ Countries as diverse as Norway, China, Kuwait, and Singapore have established SWFs using public funds from such different sources as balance-of-payments surpluses, official foreign currency operations, the proceeds of privatizations, fiscal surpluses, or receipts from exports of natural resources.¹³⁰ In addition to their sources of funding, SWFs differ vastly in size, legal mandates, investment strategies, internal governance, and external accountability.¹³¹ They pursue a wide variety of domestic policy objectives, including macroeconomic stabilization, cross-generational wealth preservation, and socio-economic development.¹³² These policy goals shape individual SWFs' investment decisions and portfolio allocation strategies.¹³³

Although SWFs have been in operation since the 1950s, the phenomenon reached its current prominence in the early 21st century.¹³⁴ SWFs' total assets grew exponentially from 2003 onward, mainly as a result of the unprecedented commodity price boom of the period, and reached over \$7 trillion by mid-2016.¹³⁵ As large institutional investors in global financial markets, SWFs function much like their private counterparts and competitors—including insurance companies, pension funds, and mutual funds—that employ sophisticated technical expertise to build diversified portfolios of primarily publicly-traded financial instruments.

Unlike pension funds and insurers, however, state-financed SWFs have no explicit third-party liabilities, which enables them to make long-term investments in illiquid assets.¹³⁶ Longer investment horizons and higher risk tolerance make SWFs a crucial source of patient capital in notoriously short-sighted private markets.¹³⁷ In fact, recent trends in SWFs' investment strategies indicate a growing share of physical infrastructure,

128. Anna Gelpern, *Sovereignty, Accountability, and the Wealth Fund Governance Conundrum*, 1 ASIAN J. INT'L L. 289, 289 (2011).

129. *Id.* at 292–94; Massimiliano Castelli & Fabio Scacciavillani, *SWFs and State Investments: A Preliminary General Overview*, in RESEARCH HANDBOOK ON SOVEREIGN WEALTH FUNDS AND INTERNATIONAL INVESTMENT LAW 9, 10–12 (FABIO BASSAN ED., 2015).

130. See *What is a SWF?*, SOVEREIGN WEALTH FUND INST., <http://www.swfinstitute.org/sovereign-wealth-fund/>. The bulk of SWFs come from Asia and Middle East. Larry Cata Backer, *Sovereign Wealth Funds (SWFs) in Five Continents and Three Narratives: Similarities and Differences*, in BASSAN, *supra* note 129, at 83.

131. Castelli & Scacciavillani, *supra* note 129, at 10.

132. Abdullah Al-Hassan et al., *Sovereign Wealth Funds: Aspects of Governance Structures and Investment Management* 5–6 (IMF, Working Paper No. 13/231, 2013). Many SWFs, especially in resource-rich countries in Asia and Africa, pursue multiple policy objectives. *Id.*

133. *Id.* at 6. For example, stabilization funds generally tend to invest in short-term highly liquid assets, while savings funds focused on cross-generation wealth preservation invest in a broader array of longer-term, and thus riskier, financial assets. Individual SWFs may pursue multiple investment strategies or shift their investment focus over time.

134. See Gelpern, *supra* note 128, at 291. The term “sovereign wealth fund” was coined by Andrei Rozanov in 2005. Andrei Rozanov, *Who holds the wealth of nations?* 15 CENT. BANKING J. 52 (May 20, 2005).

135. Al-Hassan et al., *supra* note 132.

136. See, e.g., Paul Rose, *Sovereign Fund Selling, Market Volatility and Systemic Risk: Connections and Regulatory Possibilities* 1 (Ohio State Pub. Law, Working Paper 357, 2016) (referring to SWFs as “gentle giants” of global financial markets).

137. Castelli & Scacciavillani, *supra* note 129, at 13, 22–23; Peter Kunzel et al., *Investment Objectives of Sovereign Wealth Funds: A Shifting Paradigm* 5 (IMF, Working Paper WP/11/19, 2011).

private equity, and other long-term assets in their portfolio allocations.¹³⁸ In that sense, SWFs play an important role in providing a wide range of systemically important collective goods in the countries “hosting” their investments.¹³⁹

SWFs nevertheless constitute a uniquely politically salient class of institutional investor, for two primary reasons: (1) they are state-owned and controlled, and (2) they actively and deliberately invest in foreign assets.¹⁴⁰ The visibly hybrid nature of a SWF—a publicly-owned and financed vehicle for investing in private financial markets—has generated fears of disguised political “meddling” across state borders and thus invites heightened scrutiny of SWF activities.¹⁴¹ Underneath the commonly voiced concerns about host countries’ sovereignty and national interests “endangered” by SWFs’ cross-border activities, there is often a deeper form of discomfort with the basic premise that ostensibly private financial markets constitute a legitimate arena of endogenous state action.¹⁴² To many, the entire SWF phenomenon is based on an institutional contradiction: SWFs “match, mimic, and approximate the management structure and governance practices” of private institutional investors in global financial markets, and yet their ultimate goals are a product of political deliberation and go beyond pure profit maximization.¹⁴³

That SWFs’ hybridity is seen as an internal contradiction is, of course, a product of a particular worldview—a view patterned by putatively stark categorical distinctions between states and markets, politics and economics, public and private. In reality, governments often pursue public policy goals via private-market means.¹⁴⁴ The dominance of neoliberal ideology in recent decades, however, seems to have rendered this well-established modality of state action inherently suspect and even presumptively illegitimate.¹⁴⁵ This widely internalized suspicion of anything that blurs the putative public-private divide explains why SWFs remain under constant pressure to defend their legitimacy, as a matter of both domestic and international politics. Importantly, SWFs’ legitimacy depends not only on their financial performance but also on the degree to which their design and internal governance guarantee the integrity of their portfolio management

138. Clare O'Brien & Tania Mattei, *Sovereign Wealth Funds: Evolving Perceptions and Strategies*, BLOOMBERG BNA (Jan. 22, 2013), <https://www.bna.com/sovereign-wealth-funds-evolving-perceptions-and-strategies-by-clare-obrien-tania-mattei-and-naveen-thomas/>.

139. See *supra* Part II.B.

140. See Fabio Bassan, *Sovereign Wealth Funds: A Definition and Classification*, in BASSAN, *supra* note 129, at 44.

141. See Gelpern, *supra* note 128, at 291–92. The scrutiny is particularly intense and politicized when a SWF acquires ownership of foreign companies or assets in sectors considered strategically important for the host country. See Efraim Chalamish, *Global Investment Regulation and Sovereign Funds*, 13 THEORETICAL INQ. L. 645, 648–49 (2012). Political controversy surrounding SWFs’ emergency investments in large U.S. financial institutions during the financial crisis of 2008–09 is one example of this dynamic. See, e.g., Larry Cata Backer, *Sovereign Investing in Times of Crisis*, 19 TRANSNAT’L L. & CONTEMP. PROBS. 3, 16–17 (2010–11).

142. See, e.g., Larry Cata Backer, *Sovereign Wealth Funds as Regulatory Chameleons*, 41 GEO J. INT’L L. 425 (2010) (arguing that SWFs are instruments for states to project their political power through private markets).

143. GORDON L. CLARK ET AL., SOVEREIGN WEALTH FUNDS: LEGITIMACY, GOVERNANCE, AND GLOBAL POWER 8 (2013); Gelpern, *supra* note 128, at 290 (arguing that SWFs “harbor internal tensions”).

144. See *supra* Part III.A.; Hockett & Omarova, *Public Actors*, *supra* note 1. The RFC, discussed above, offers a particularly relevant example in this respect. See *supra* Part III.A.

145. See, e.g., David Singh Grewal & Jedediah Purdy, *Introduction: Law and Neoliberalism*, 77 L. & CONTEMP. PROBS. 1 (2015) (arguing that neoliberalism systematically puts capitalist market imperatives over democratic imperatives).

and insulate their investment decisions from undue interference by elected officials.¹⁴⁶

Not surprisingly, much of the public and academic debate over SWFs to date has centered on issues of organizational and investment transparency and accountability.¹⁴⁷ Accountability, however, is a multi-faceted and context-specific phenomenon, especially in the widely diverse universe of SWFs.¹⁴⁸ Thus, some SWFs are set up as separate legal entities (public trusts or government-owned corporations),¹⁴⁹ while others are merely accounts directly managed by the home-country ministry of finance and/or central bank.¹⁵⁰ Just like private investment funds, all SWFs are fully accountable to their owners—home governments—for their portfolio performance.¹⁵¹ At the same time, they are also accountable—in various degrees and to various domestic and international audiences—for maintaining institutional independence from their government-owners.¹⁵² Depending on individual funds' design and circumstances, some of the relevant public accountability mechanisms are formalized and legally enforceable, while others operate as informal and/or voluntary standards.¹⁵³

Perhaps the best-known example in this respect is the Norwegian Government Pension Fund-Global (NGPF-G). One of the world's largest SWFs, NGPF-G "is widely recognized as a remarkably transparent and well-governed financial institution."¹⁵⁴ It operates pursuant to a special act of the Norwegian parliament, which delegates overall responsibility for the fund's performance of its stated mission to the Ministry of Finance.¹⁵⁵ Technically, NGPF-G is a deposit account held at Norges Bank, the Norwegian central bank, and managed by its specialized arm, Norges Bank Investment Management

146. CLARK ET AL., *supra* note 143, at xiii.

147. See Ronald J. Gilson & Curtis J. Milhaupt, *Sovereign Wealth Funds and Corporate Governance: A Minimalist Response to the New Mercantilism*, 60 STAN. L. REV. 1345 (2008); Yvonne C. L. Lee, *The Governance of Contemporary Sovereign Wealth Funds*, 6 HASTINGS BUS. L. J. 197 (2010); Paul Rose, *Sovereign Wealth Fund Investment in the Shadow of Regulation and Politics*, 40 GEO. J. INT'L L. 1207 (2009).

148. See Barbara S. Romzek, *Public Services and Accountability*, in MARK BOVENS ET AL., THE OXFORD HANDBOOK OF PUBLIC ACCOUNTABILITY 307, 307 (2014) ("Accountability is necessarily contextually based [. . .]."). Although commentators tend to focus much of their attention on transparency of SWF's internal decision-making and portfolio allocation, such transparency is fundamentally "a tool for measuring accountability." Bassan, *supra* note 140, at 56.

149. For example, the best-known U.S. version of a SWF, Alaska Permanent Fund, is established under the state's Constitution and managed by the legislatively-created Alaska Permanent Fund Corporation (APFG), a public corporation and government instrumentality in Alaska's Department of Revenue. APFG is governed by the six-member Board of Trustees appointed by the state governor for staggered terms. ALASKA CONST. art. IX, § 15; ALASKA STAT. § 37.13.040 (2014); ALASKA STAT. § 37.13.050 (1982).

150. Thus, Norway's SWF, the Norwegian Government Pension Fund-Global (NGPF-G), is a deposit account established by the Ministry of Finance at Norges Bank, Norway's central bank. See *Government Pension Fund Global-The Fund*, NORGES BANK, <https://www.nbim.no/en/the-fund/> (last visited Mar. 11, 2018).

151. The specific criteria for assessing their performance may vary. Thus, some SWFs are required to generate legislatively-specified absolute returns on their portfolio, while others use benchmarks for their portfolio performance.

152. Professor Gelpert, for example, analyzes the SWFs' accountability along four principal axes: public internal accountability (to domestic public audiences), private internal accountability (to specific groups of domestic stakeholders), public external accountability (to global citizenry), and private external accountability (to private market counterparties abroad). See Gelpert, *supra* note 128, at 294–306.

153. See Al-Hassan et al., *supra* note 132, at 9–10.

154. CLARK ET AL., *supra* note 143, at 78.

155. See *Governance Model*, NORGES BANK, <https://www.nbim.no/en/the-fund/governance-model/> (last visited Mar. 11, 2018).

(NBIM).¹⁵⁶ NBIM is directly responsible for the fund's investments and performance, and reports through a formal chain to Norges Bank's governor and board and ultimately to the Ministry of Finance. The latter issues mandatory policy guidelines and quantitative rules regarding strategic asset allocation, which NBIM follows in implementing the fund's core objectives.¹⁵⁷ NGPF-G is subject to independent audits, complies with extensive public disclosure requirements, and regularly reports to the legislature.¹⁵⁸

Norway's SWF typically does not cause alarm among foreign politicians when it invests in their economies. Yet, NGPF-G is often seen as "a template for substantially transparent but *politically instrumental* funds that also seek to maximize wealth."¹⁵⁹ It is among a small number of SWFs with an explicit legal mandate to pursue ethical investment policies.¹⁶⁰ Thus, the Ministry of Finance guidelines prohibit NGPF-G from investing in foreign companies that commit serious violations of human rights, promote war and conflict, cause severe environmental damage, foster corruption, or otherwise violate fundamental ethical norms.¹⁶¹ A special Council of Ethics, consisting of five outside experts appointed for fixed terms, advises the Ministry and continuously monitors the fund's portfolio for specific investments inconsistent with ethical guidelines.¹⁶² Norges Bank has the authority, upon recommendation from the Council of Ethics or the Ministry of Finance, to block specific companies from NGPF-G's portfolio. Norges Bank's decision-making is subject to strict procedural requirements, including the requirement to give affected companies an opportunity for a fair hearing.¹⁶³ In addition to negative screening and exclusions, NBIM utilizes its shareholder rights to encourage portfolio companies to conduct their business affairs in a more ethical and socially responsible manner.¹⁶⁴

In spite (or maybe because) of its overall success, the NGPF-G model of socially responsible investing has attracted its share of criticism.¹⁶⁵ A detailed assessment of Norway's SWF experience, however, is beyond the scope of this article. The principal relevance of this case for our purposes is that it illustrates the crucial efficiency and

156. *Id.*

157. *Id.* See also CLARK ET AL., *supra* note 143, at 67. This level of formalization of the decision-making hierarchy sets Norway apart from most countries that typically delegate broad powers to determine the fund's investment strategy to the fund's own governing body.

158. Gelpert, *supra* note 128, at 301.

159. Backer, *supra* note 130, at 87 (emphasis added).

160. Other SWFs with similar express mandates include the French Pension Reserve Funds and the New Zealand Superannuation Fund. See Benjamin J. Richardson & Angela Lee, *Social Investing without Legal Imprimatur: The Latent Possibilities for SWFs*, in BASSAN, *supra* note 129, at 390.

161. See *Guidelines for Observation and Exclusion from the Government Pension Fund Global*, MINISTRY FIN. (Feb. 9, 2016), https://www.regjeringen.no/contentassets/7c9a364d2d1c474f8220965065695a4a/guidelines_observation_exclusion2016.pdf. The Guidelines specify separate product-based (tobacco, weapons) and conduct-based criteria for excluding companies from the fund's portfolio. *Id.*

162. *Id.* §§ 4–5.

163. *Id.* §§ 6, 8.

164. CLARK ET AL., *supra* note 143, at 77–82.

165. See Larry Cata Backer, *Sovereign Investing and Markets-Based Transnational Rule of Law Building: The Norwegian Sovereign Wealth Fund in Global Markets*, 29 AM. U. INT'L L. REV. 1, 45 (2013) (arguing that the NGPF-G's strategy represents "the transposition of national policy onto the operations of companies over which the Norwegian state has no legal claim to control").

accountability-enhancing effects of institutionalizing the normative outcomes of democratic deliberation. An effective regime of procedural accountability, in turn, has the potential to generate what may be called a legitimacy surplus for the SWF, allowing it to pursue a broader range of substantive public policy goals than it otherwise could do.¹⁶⁶

The Norwegian fund is not the only SWF proactively and deliberately using its investment portfolio as a tool of public policy. The Ireland Strategic Investment Fund (ISIF), for example, operates under an explicit statutory mandate “to invest on a commercial basis in a manner designed to support economic activity and employment in Ireland.”¹⁶⁷ ISIF is managed and controlled by Ireland’s National Treasury Management Agency (NTMA) and seeks to position itself as a unique source of patient debt and equity capital for domestic companies that otherwise may have limited access to financing.¹⁶⁸ ISIF’s “double bottom-line” approach—“investment return and Irish economic impact”—allows it to make traditionally risky private equity, venture capital, and “turnaround” investments.¹⁶⁹ Importantly, the fund measures the economic impact of its portfolio investments from the perspective of Ireland’s long-term macroeconomic development, with an explicit recognition of the economy-wide productivity-enhancing effects of investments in both infrastructure and research and development.¹⁷⁰

In sum, SWFs offer an intriguing example of modern governments proactively using financial portfolio management strategies, developed in private markets, to advance a wide variety of public goals. By utilizing public instrumentalities’ comparative advantages vis-à-vis private market actors, SWFs are able to serve as a significant source of patient capital, at least where such patience is aligned with their investment strategies and domestic policy objectives. SWFs also provide collective goods more directly, by investing in publicly usable infrastructure and risky start-up businesses at home and abroad.

Furthermore, SWFs offer valuable lessons from the perspective of designing viable hybrid public-private institutions. This hybridity creates inevitable tensions in the SWF model, which elevates the importance of effective internal governance and accountability mechanisms for SWFs’ legitimacy both as political and as market actors. SWFs’ continuing struggle for legitimacy, however, may also be viewed as a reflection of the inherent limits of this particular institutional model. The greatest potential advantages of a sovereign investor—its vast scale, lengthy investment horizons, and direct backing by the public’s full faith and credit—underlie the unique ability of public instrumentalities to solve fundamental collective action problems that pervade decentralized private markets. A more deliberate and assertive use of these unique powers—along the lines of the RFC’s actions

166. See Gelpert, *supra* note 128, at 302–03 (discussing the intimate link between NGPF-G’s domestic legitimacy and its ethical investment strategy abroad).

167. *Ireland Strategic Investment Fund*, NAT’L TREASURY MGMT. AGENCY, <http://www.ntma.ie/business-areas/ireland-strategic-investment-fund/> (last visited Mar. 11, 2018).

168. According to the official description, “[w]ith €8 billion available to deploy, the Fund differs from other pools of capital in a number of key respects. It has a long investment time horizon and therefore can act as a permanent or patient source of long-term capital. It has flexibility up and down the capital structure and can therefore meet changing capital needs and gaps in the marketplace.” *Id.*

169. See *Your Investment Proposal*, IR. STRATEGIC INV. FUND, <http://www.isif.ie/how-we-invest/your-investment-proposal/> (last visited Mar. 11, 2018) (explaining that the Fund requires all transactions to generate both risk-adjusted commercial returns and economic impact in Ireland).

170. See *Economic Impact*, IR. STRATEGIC INV. FUND, <http://www.isif.ie/how-we-invest/economic-impact/> (last visited Mar. 11, 2018) (explaining the economic impact of the Fund).

as the nation's "capital bank" in the 1930s—could generate far greater systemic public benefits than those currently produced by SWFs.

The NIA proposal advanced in this Article aims at creating precisely that kind of an ambitious public instrumentality.

IV. REIMAGINING PUBLIC INVESTMENT: A NATIONAL INVESTMENT AUTHORITY

Our search for a workable institutional solution to a wide range of collective goods, hence collective action problems is fundamentally framed and informed by the theoretical and practical considerations discussed above.¹⁷¹ In essence, we envision the NIA as an institutional embodiment of a broader concept: a sovereign public deliberately engaging in the allocation and modulation of finance capital aggregates, for the purpose of facilitating continuous and sustainable, socially inclusive economic development.

Designing such a novel and ambitious institution is an inherently difficult exercise, perhaps more a thought-experiment than a legislative blueprint. It is, nevertheless, a necessary and rewarding thought-experiment. This Part commences the experiment by outlining the principal mission and functional modes of the proposed NIA. The organizational details and certain critical institutional design challenges are then addressed in Part V.

A. Purposes and Functions of the NIA: An Overview

We envision the NIA as a new federal instrumentality that conducts, in a systematic and coordinated manner, a wide range of financial market activities explicitly aimed at the continuous provision of broadly-defined—and currently under-supplied—collective goods.¹⁷² The NIA's overarching goal would be to spur and sustain balanced and inclusive long-term development on the part of the national economy. Like its institutional precedents, the NIA would seek to channel the sovereign public's full faith and credit—the ultimate financial resource—to mobilize and support the flow of private capital toward investments in critical public infrastructure.¹⁷³ In that sense, it would amount to a 21st century version of both Alexander Hamilton's national development bank and Roosevelt's RFC.

Our taxonomy of collective goods, discussed above, provides the basis for identifying three principal types of public infrastructure projects that the NIA will target.¹⁷⁴

The first, and most intuitively graspable, group includes projects that are expected to generate directly monetizable revenues through various forms of user fees or surcharges, but are not expected to produce significant profits within a sufficiently short timeframe to attract private financing. The long lead time to profitability is the key reason why many of these projects do not currently get funded in private markets. Toll roads and bridges, ports and airports, clean energy plants and water treatment facilities, and regional and national systems of high-speed rail and electric car recharging systems are examples of this type of

171. See *supra* Parts II, III (describing the financing of public goods and using public investment as a policy tool).

172. For a reminder of the nature and scope of the "collective goods" category, see *supra* Parts II.A, II.B.

173. See generally Hockett & Omarova, *Finance Franchise*, *supra* note 1.

174. For our taxonomy of collective goods, see *supra* Part II.C.

project.

The second category of public infrastructure the NIA will target includes projects that are expected primarily to generate indirectly monetizable benefits: e.g., increases in local, state, or national tax revenues; public budget savings; or overall gains in economic productivity. To the extent that these projects are not expected to yield profits through the imposition of direct user fees, private investors are rationally averse to funding them. As discussed above, however, the key public benefits they produce can be quantified and translated into monetary returns to private investors.¹⁷⁵ By utilizing advanced means of legal and financial engineering, the NIA will turn these collective goods into rationally attractive investment opportunities for its private partners. Examples of this type of project include toll-free roads and bridges, adult education and job-retraining programs, and local and regional networks of R&D centers.

Finally, the third category of NIA projects will generate primarily non-monetizable public benefits. Examples of such projects include establishing and maintaining public parks and nature preserves, free science centers and museums for children and adults, and affordable athletic and recreational facilities for underserved communities. Provision of these collective goods is often left to cash-strapped local and state government authorities. As a market actor with a uniquely systemic and long-term investment outlook, a large and diverse portfolio of assets, and direct access to the full faith and credit of the United States, the NIA will be well-positioned to attract private capital into these projects.¹⁷⁶

Of course, this brief typology of NIA projects does not imply that all investments in the NIA's portfolio will, or should, fall neatly and exclusively into a single category outlined above. Most public infrastructure projects the NIA will undertake will likely produce a range of short-term and long-term benefits: some directly monetizable, some indirectly monetizable, and some non-monetizable. Rather than offer a definitive set of portfolio guidelines for the NIA, this typology merely provides a helpful framework for understanding the basic organizational design and operative features of the proposed NIA.

For purposes of operational efficiency, we propose an institutional separation of the NIA into two specialized arms. One arm of the NIA, which we call the National Infrastructure Bank (NIB), would focus on pursuing a wide range of credit-mobilization strategies along the lines of the RFC and some of its surviving offspring, including the housing finance GSEs.¹⁷⁷ The other arm of the NIA, which we label the National Capital Management Corporation (NCMC or, more colloquially, "Nicky Mac"), would function as an asset manager, in a manner broadly similar to SWFs discussed above.¹⁷⁸ In each case, the NIA's operating arms would explicitly and proactively utilize well-established modalities of finance and transact directly in private financial markets. In doing so, the NIA would perform a critical market-levering function by expanding, amplifying, and optimizing private markets and boosting their ability to produce long-term public benefits.¹⁷⁹

The NIB's primary mode of operation would involve originating, guaranteeing, and

175. See *supra* Parts II.B.3, II.C.

176. See *supra* Parts II.B, II.C.

177. See *supra* Part III.A.

178. See *supra* Part III.B.

179. See Hockett & Omarova, *Public Actors*, *supra* note 1, at 117–18, 131–34 (defining and explaining the concept of “market-levering”).

maintaining secondary markets for loans to public and private parties undertaking publicly beneficial infrastructural projects. The general idea of setting up a public bank to finance major physical infrastructure projects is not a new one.¹⁸⁰ In contrast to existing proposals, however, the NIB we envision is embedded in a broader and more comprehensive institutional framework for the implementation of a development policy nationwide. As a result, the scope of its activities and the projects it is designed to finance would be expanded beyond financing traditional physical infrastructure. By combining its operations with those of the NCMC, the NIB would 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 would operate as a hybrid between an SWF and a large private equity or venture capital firm. Just like a typical SWF, the NCMC would be set up as a very large and high-profile publicly-owned asset manager. Unlike a SWF, however, it would not simply invest public money in stocks and bonds traded in secondary markets in search of capital appreciation. Instead, the NCMC would actively solicit, pool, and manage private investors' money, along the lines of the traditional private equity business model.¹⁸¹ In a crucial departure from that model, the NCMC-managed funds' investment strategies would focus not on short to medium-term turn-around profits, but on taking long-term equity stakes in potentially economic growth- and productivity-enhancing public and private projects.

In addition to performing their primary market-levering and market-making roles, both NIB and NCMC would also play a secondary, but nonetheless critically important, market-preserving role.¹⁸² Thus, it is well-known that large institutional investors around the globe are constantly seeking instruments that are nearly as low-risk as U.S. Treasury bonds while offering higher returns. This "search for yield" raises potentially destabilizing demand for complex financial instruments structured to generate high short-term returns while hiding the true extent of underlying longer-term risk.¹⁸³ Securities and other instruments issued by NIB and NCMC would constitute an important new legitimately "safe" asset class, a higher-yielding alternative to U.S. Treasury bonds.¹⁸⁴ The availability of this new asset class can significantly alter the dynamics of contemporary financial markets. By draining large institutional investors' demand away from riskier and more

180. See, e.g., Nation Building Here at Home Act, H.R. 4352, 112th Cong. (2012); National Infrastructure Bank Act, S. 1926, 110th Cong. Act (2007); National Infrastructure Bank, H.R. 3401, 110th Cong. (2007); National Infrastructure Development Act, H.R. 3896, 110th Cong. (2007); OFFICE OF MGMT. & BUDGET, BUDGET OF THE UNITED STATES GOVERNMENT, FISCAL YEAR 2016 (2016), <https://www.gpo.gov/fdsys/pkg/BUDGET-2016-BUD/pdf/BUDGET-2016-BUD.pdf>; 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/>.

181. See *infra* Part IV.C.

182. For a discussion of market-levering, market-making, and market-preserving roles played by public instrumentalities in private markets, see Hockett & Omarova, *Public Actors*, *supra* note 1, at 122–36.

183. This "search for yield" fueled many an asset bubble in recent decades, including the "junk bond" craze of the 1980s and the mortgage-backed securities (MBS) bubble in the early to mid-2000s. During that last episode, high-risk MBSs and related products were structured specifically to get the highest credit ratings indicating their supposedly "riskless" status, while paying interest at rates higher than U.S. government bonds. As long as there is demand for such "magical" assets, private financial intermediaries will supply them—and crises will follow. *Id.* at 153 n.176.

184. See *supra* note 18.

speculative short-term assets, the NIB and NCMC would 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, would function as a critically important institutional mechanism for enhancing systemic financial stability, itself a fundamental collective good.¹⁸⁵

Organizationally, the NIA can be structured in a variety of ways. One choice 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.¹⁸⁶ 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.¹⁸⁷ The five or seven-member NIA Board would be appointed by the President. The NIA 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.¹⁸⁸ 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 an important 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 the 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, NIB and NCMC. The NIA Board would directly regulate and supervise the activities of both 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.¹⁸⁹ 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.¹⁹⁰

The differences in the strategic focus and core business models of the two

185. Systemic financial stability is a public good insofar as it addresses the non-controllability problem, discussed above. *See supra* Part II.B.1.

186. BD. OF GOV. OF FED. RES. SYS., THE FEDERAL RESERVE SYSTEM: PURPOSES & FUNCTIONS 9–15 (2016), https://www.federalreserve.gov/aboutthefed/files/pf_complete.pdf. The third institutional component of the Federal Reserve System is the Federal Open Market Operations Committee. *Id.* at 1.

187. In certain contexts throughout the discussion, we will sometimes refer to the NIA Board and its staff simply as “NIA,” to indicate an intra-systemic reference to the non-operating top entity in the NIA system, as distinguished from the NIB and NCMC.

188. It is important to define statutory expertise-related criteria for nomination to the NIA Board sufficiently broadly, given the fact that the fundamental goal of the NIA—facilitating sustainable and inclusive long-term socio-economic development nationwide—cannot be reduced to the narrowly technocratic economic risk-return analysis in the traditional sense. For more, see *infra* Part V.

189. *See infra* Part V.A.

190. For a discussion of issues related to these entities’ internal structure and governance, see *infra* Part V.A. The present discussion focuses on their core mission and outlines broadly their respective business models.

corporations, however, would determine important differences in how the NIB and NCMC organize and run their operations.

B. Credit Mobilization: The National Infrastructure Bank

As the credit-mobilization arm of the NIA, the NIB would seek to lever private capital by pledging the public's superior risk-absorbing capacity to support investment in critical public infrastructure goods. NIB would operate through a combination of well-established means, including direct federal grants, loans, guarantees, insurance, securitization, and secondary market-making. In that sense, NIB would operate along the historically familiar lines of what we call the market-levering model.¹⁹¹ Its primary mission—at least, initially—would be to amplify and optimize the currently sub-optimal system of public-private cooperation in the arena of infrastructure finance. From this perspective, an NIB can be viewed as an infrastructure-specific analogue to the RFC and its surviving offspring, the home finance GSEs.

The GSE experience is particularly instructive here because of the similarity of the problems currently plaguing the U.S. infrastructure finance market to those that plagued U.S. home-loan markets before the creation of the FHA and Fannie Mae in the 1930s.¹⁹² Before the New Deal reforms, U.S. mortgage markets were localized, small-scale, and illiquid, which raised borrowing costs for homebuyers and prevented the emergence of a well-functioning national market for mortgage finance.¹⁹³ Fannie Mae remedied these inefficiencies by making a secondary market in newly-standardized mortgage instruments and thereby lowering both private lenders' risks and borrowers' costs.¹⁹⁴ 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.¹⁹⁵

The NIB would perform a similar function in today's fragmented and illiquid market for infrastructure finance, by pooling municipal bonds and their associated default and liquidity risks.¹⁹⁶ Like the early Fannie Mae, the NIB would be initially capitalized by the federal government.¹⁹⁷ State or municipal contributions might also, but need not, be

191. For a discussion and analysis of the market-levering mode of public participation in financial markets, see Hockett & Omarova, *Public Actors*, *supra* note 1, at 131–34.

192. See HEIDI CREBO-REDIKER & DOUGLAS REDIKER, FINANCING AMERICA'S INFRASTRUCTURE: PUTTING GLOBAL CAPITAL TO WORK (2008), http://www.voltairenet.org/IMG/pdf/Financing_America_Infrastructure.pdf (describing the currently problematic state of infrastructure in the United States).

193. See Hockett & Omarova, *Public Actors*, *supra* note 1, at 133–34 (describing the importance of liquidity); 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, 105 (2005) [hereinafter Hockett, *Hamiltonian Means*].

194. The FHA played the key role in standardizing the currently popular 30-year mortgage loans. See Hockett & Omarova, *Public Actors*, *supra* note 1, at 133–34; Hockett, *Hamiltonian Means*, *supra* note 193, at 68–75.

195. See Hockett & Omarova, *Public Actors*, *supra* note 1, at 150–52; Hockett, *Hamiltonian Means*, *supra* note 193, at 73–75.

196. See CREBO-REDIKER & REDIKER, *supra* note 192.

197. 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

required or solicited.¹⁹⁸ To lever public money, the NIB would issue series of medium- to long-term bonds, or some mix of debt and non-voting preferred stock.¹⁹⁹ It would 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.²⁰⁰

The federal government’s “full faith and credit” backup is a particularly potent factor in this connection. Explicitly backed by the U.S. government, the NIB is likely to be a much larger and more powerful market actor than any private municipal-bond-pooling entity, in the same way 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 would view these bonds as close substitutes for U.S. Treasury bonds and GSE-issued “agency securities.” As discussed above, this is a factor of potentially extraordinary significance not only for purposes of financing infrastructure projects but also from the perspective of systemic financial stability.²⁰¹

To enhance the appeal of this new asset class to institutional investors, it would be desirable to grant NIB bonds the same regulatory and discount window treatment that U.S. Treasury bonds, agency securities, and some forms of commercial paper currently receive under the applicable risk-based capital adequacy and the Fed’s discounting regimes, respectively.²⁰² 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 their regulatory capital, should significantly increase demand for, and lower the NIB’s cost of issuing, these instruments.²⁰³

The NIB would use the funds raised through its bond issuances to purchase and pool

capitalization is a matter of some disagreement among different proposals’ authors. *See id.* at 2.

198. The existing proposals generally do not envision state or municipal contributions to the infrastructure bank’s capital.

199. 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.

200. “Covered bonds” are collateralized bond instruments, 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* EUROPEAN COVERED BOND COUNCIL, ECBC FACTBOOK 2014, at 106 (2014).

201. *See supra* notes 182–185 and accompanying text.

202. The Fed’s discounting regime, pursuant to which the central bank monetizes certain eligible forms of commercial paper, is embodied at 12 U.S.C. § 372 (2011). 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. pt. 325 (2015). *See also infra* note 203.

203. In highly simplified terms, capital regulation requires individual banks and other financial institutions to maintain equity levels above a specified minimum percentage of risk-weighted assets. In this scheme, the risk weight assigned to each individual asset on a financial institution’s balance sheet becomes an important determinant of how much equity that institution must ultimately show on the other side of its balance sheet. Assigning a lower 20% risk weight to a particular type of bond, for example, effectively reduces the equity the financial institution would otherwise have to maintain as a loss-absorbing cushion against the bond’s full value. For an overview of the operation and evolution of capital adequacy rules, see, e.g., MICHAEL BARR ET AL., FINANCIAL REGULATION: LAW AND POLICY 259–332 (2016).

revenue bonds and project bonds issued by municipalities, public utilities, and other government instrumentalities seeking financing to fund infrastructure projects.²⁰⁴ The NIB could also purchase and pool qualifying bonds issued by private entities for the purposes of financing publicly beneficial infrastructure projects.²⁰⁵ 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 would help to ensure continuously high demand for NIB bonds from large institutional investors.

Tellingly, many jurisdictions outside the U.S. are already pursuing similar arrangements to finance their infrastructure.²⁰⁶ Thus, 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.²⁰⁷ The EIB has proved quite effective in tapping the global capital markets, selling its bonds to the same pension funds, SWFs, and other financial intermediaries that routinely buy U.S. Treasury bonds and other global "blue chip" securities—while shying away from U.S. municipal bonds.²⁰⁸ By tapping into this same market demand, the NIB would channel potentially large quantities of global capital into rebuilding U.S. public infrastructure.

In the 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.²⁰⁹ 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 would be required to 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 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.

C. Asset Management: The National Capital Management Corporation

In contrast to NIB's focus on credit-mobilization techniques, along the familiar lines of the RFC and the housing-finance GSEs, NCMC's defining strategy is active asset management as a means of facilitating projects that can potentially transform and

204. See *supra* note 180 for proposals cited.

205. 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 V.

206. See, e.g., CREBO-REDIKER & REDIKER, *supra* note 192 (describing infrastructure financing schemes typically used outside the U.S.).

207. *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 EUROPEAN INV. BANK, <http://www.eib.org/> (last visited Mar. 11, 2018).

208. See, e.g., CREBO-REDIKER & REDIKER, *supra* note 192 (discussing the EIB's success in tapping global capital markets).

209. See, e.g., *id.* (discussing some of these strategies).

“leapfrog” the national economy. NCMC would aim to provide infrastructure that leads or revolutionizes markets over the long haul, in socially beneficial ways, rather than following existing markets’ immediate dictates. In that sense, NCMC would be providing a truly systemic collective good that at present is severely under-supplied.

For example, NCMC might not merely seek to ensure that fossil fuels are available nationwide but might act systematically to convert the national energy system from fossil- to renewable- and hydrogen-based.²¹⁰ It might also act not merely to repair or restore existing rail lines or roadways, but to install high-speed rail networks in well-defined regions, like upstate New York, whose multiple small cities could be integrated into more productive metropolises. Given its ambitious reach, NCMC could not rely on NIB-style debt financing alone but would have to tap into more ambitious, less risk-averse capital of the sort that typically comes from equity investors. To this end, NCMC would operate like an investment management company sponsoring and running one or more private equity funds.²¹¹

In direct parallel to private equity (PE) firms, NCMC would act as the sponsor and general partner of each individual fund it sets up.²¹² As the fund’s general partner, NCMC would contribute some capital of its own, but the greater part of the fund’s capital would come from private investors that become passive limited partners in the same fund. As with many private funds, NCMC would 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.²¹³ NCMC would 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, would be sufficiently diversified to minimize risk.²¹⁴

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 interest 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.²¹⁵

The compensation and profit-sharing structure of the NCMC funds would also track

210. 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, 110th Cong. (2008); H.R. 2212, 115th Cong. (2017); Clean Energy Investment Bank Act, S. 2730, 110th Cong. (2008).

211. For more on how private equity funds operate, see, e.g., 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).

212. 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.

213. *See supra* note 211 and accompanying text (discussing these issues in greater detail).

214. *Id.*

215. For more on the process for selecting individual investments by the NCMC, see *infra* Part V.A.3.

the traditional private equity fund model.²¹⁶ Just like any private fund manager, NCMC would charge both a fixed annual management fee and a contingent performance fee known as “carried interest” or “carry.”²¹⁷ To enhance the attractiveness of the NCMC funds as a new asset class, however, it would be desirable to offer some additional incentives to private investors. The U.S. government backup is a particularly strong potential “sweetener” in this respect. Thus, the government could guarantee the return of all or a substantial part of private investors’ principal upon the expiration of a specified lock-up period. The government could 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 the NCMC-managed funds would vary depending on the specific natures of the infrastructure projects in which they invested. 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, targeted taxes, or both. Limited partners in the NCMC funds with portfolios containing such direct revenue-producing investments would participate in these easily tracked returns.²¹⁸

In addition to this well-established method of compensating private investors in public goods, the NCMC would actively utilize advanced financial and legal engineering techniques for synthesizing privately payable “equity strips” that reflect otherwise non-capturable public gains from the provision of collective goods.²¹⁹ Reaping the benefits of scale economies and recapturing positive externalities associated with the nationwide provision of collective goods—including the positive effects of NCMC-financed infrastructure projects on employment and income tax revenues—would bolster the federal government’s ability to offer or guarantee stipulated returns to private investors in NCMC funds.²²⁰

Just like real equity returns, these synthetic equity payouts could vary depending on the estimates of local, regional, or national macroeconomic impacts of NCMC funds’ projects. If, for example, experts calculate that a particular fund’s investments would generate an additional three percent in local or regional economic growth over a specified period of time, the NCMC would translate that projected gain into a corresponding added

216. For a detailed overview of typical compensation arrangements in private equity firms, see CENDRWOSKI & PETRO, *supra* note 211.

217. 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).

218. See *supra* Part II.A.1.

219. See *supra* Part II.B.3, ILC.

220. Even conservative macroeconomic models indicate that the positive employment, GDP-growth, and consequent income tax revenue increases generated by significant infrastructure investments would largely, if not wholly, offset project costs, particularly in a low interest-rate environment. See Robert C. Hockett & Robert H. Frank, *Public Infrastructure Investment, Renewed Economic Growth, and the U.S. Fiscal Position* (Cornell Legal Studies Research, Paper No. 2-04, 2012), 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* (Cornell Legal Studies Research, Paper No. 12-10, 2012), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2029239.

return for the fund's limited partners. This method of synthesizing privately capturable profits would add a potentially significant source of revenues—instead or on top of project-specific user-payment schemes for projects amenable to this form of cost recovery. It would allow the government to compensate, and further incentivize, those private parties who assist in the funding of economy-transformative infrastructure renewal and expansion.²²¹

The profit-sharing component might also be structured in layers. The NCMC could relinquish all carry due to it on the first tier of the fund's profits. This might mean, for example, that NCMC would not receive its performance-based fee until the fund's profits exceed the threshold of 20% of private assets under management, so that all of the initial gains would go to private fund investors.²²² If the fund generates profits above that threshold, these extra amounts could be divided under the established “two and twenty” formula. If the fund's profits exceed the next, significantly higher threshold—for example, 80% of private assets under management—it might make sense to increase NCMC's “carry” to 80% or even perhaps 100% of such top-tier gains.²²³ In effect, under this approach NCMC would present private investors with attractive new investment opportunities that would (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 in connection with particular projects or portfolios of such projects.²²⁴ Moreover, offering all of these risk-minimizing benefits might not be necessary with respect to each individual NCMC fund, especially where the fund invests in projects with strong revenue-generating potential or targets investors with high risk-tolerance. The NCMC should not simply socialize the risk of infrastructure investments while generating gratuitous windfalls for its private partners. At the same time, however, additional government guarantees and profit-sharing benefits could be effective in attracting certain types of relatively risk-averse capital or funding certain types of projects. For these reasons, each individual NCMC fund's risk and profit-sharing structure would need to be determined on a case-by-case basis.

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

221. This ability to replicate private returns from the provision of systemically important collective 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 the imposition of such fees.

222. All of the calculations in this type of a tiered profit-sharing structure could be made on either a cumulative or an annual basis. We do not aim to develop a precise prescription for these types of choices, which should be properly left to financial management experts.

223. Although not exactly identical, this type of a profit-sharing arrangement would, in effect, function as a “collar”: a structured financial instrument that puts a “floor” under the holder's potential losses but also puts a “cap” on the holder's potential gains above a certain level.

224. 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.

higher yields.²²⁵ This is especially likely to be so in the case of public and private pension funds, university endowments, nonprofit foundations, SWFs, and other social mission-driven investment vehicles. By offering a profitable, explicitly public interest-driven alternative to investing in private equity funds, the NCMC would enable these institutional investors to achieve their financial objectives without compromising their broader social missions or their constituents' aspirations. As noted earlier, it is difficult to overestimate the significance of creating this new asset class for protecting systemic financial stability: by channeling much of the flow of yield-hungry capital away from complex, high-risk financial instruments, it would help to lower the risk of another financial market bubble and bust.²²⁶

As the NCMC matures and grows both its expertise and its assets under management, it could potentially 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. But it would do so with an explicit view to important socially beneficial ends, as befits a public market actor. Again, for example, if a state, regional, or even national consensus were to emerge that a massive shift to hydrogen- or electrically-powered automobiles would be desirable in the long run, but the near-term private establishment of broad networks of hydrogen or electrical refueling stations is stymied by familiar collective action problems, NCMC would be well-positioned to take the lead in effecting the needed change.

The same logic would apply to a much broader range of development-oriented strategic decisions. For instance, were we to decide as a society that the current global distribution of Ricardian comparative advantage²²⁷ operates to the unnecessary disadvantage of our manufacturing capacity, NCMC could lead a concerted effort to rectify the resulting structural imbalances, in part by channeling funds into new technology or other innovative ventures.²²⁸ Relatedly, it could take the lead role in creating, or significantly scaling up, a system of "reskilling and lifelong education" necessary to address potential labor displacement and other structural imbalances caused by technological progress.²²⁹ Reaching even further into the deep layers of critical social infrastructure, the NCMC could, for example, systematically promote employee-ownership of private firms, in order to render Americans less wage- or salary-dependent in an era when yields to capital systematically exceed returns to labor.²³⁰

225. See *supra* notes 182–185 and accompanying text.

226. *Id.*

227. For more on Ricardian comparative advantage and associated premises that figure into orthodox trade theory, see ANDREA MANESCHI, *COMPARATIVE ADVANTAGE IN INTERNATIONAL TRADE: A HISTORICAL PERSPECTIVE* (1998) (defining, discussing, and analyzing the changes in countries' comparative advantages in international trade throughout history).

228. See generally GARY P. PISANO & WILLY C. SHIH, *PRODUCING PROSPERITY: WHY AMERICA NEEDS A MANUFACTURING RENAISSANCE* (2012) (arguing that the U.S. government needs to preserve and enhance the country's manufacturing capacity by directly investing in its scientific and technological foundations). For instance, if cheaper foreign labor is what drives manufacturing capacity overseas, the U.S. might use NCMC to subsidize the wholesale adoption of robotic and 3D printing technologies throughout the economy, while requiring recipient firms to issue new shares in themselves to the citizenry in return.

229. Zia Qureshi, *The Not So Dire Future of Work*, PROJECT SYNDICATE (Oct. 19, 2017), <https://www.project-syndicate.org/commentary/future-of-work-labor-market-reform-by-zia-qureshi-2017-10>.

230. See THOMAS PIKETTY, *CAPITAL IN THE TWENTY-FIRST CENTURY* (2014) (tracking historical patterns

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—such as, for example, the Telecommunications Development Fund (TDF)²³¹ and the Small Business Administration (SBA)²³²—could be organizationally incorporated into the NCMC structure. The NCMC would 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)²³³ and Advanced Research Projects Agency-Energy (ARPA-E).²³⁴ Combining multiple federal agencies' financial, scientific, and organizational resources would increase their practical impact as the source of "smart and patient" capital, that critical ingredient in the innovation game.²³⁵ The NCMC and, more broadly, the NIA would act as the catalytic force behind, and the central node in, this developmental network.²³⁶

Of course, the degree of practical feasibility and potential efficacy of the NIA and its two operating arms, NCMC and NIB, would critically 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 be nevertheless helpful to take a preliminary look at some of the key potential features of the NIA's institutional design.

V. INSTITUTIONAL DESIGN: KEY CONSIDERATIONS

The preceding discussion of the purposes and functions of the NIA and its two operating arms, NIB and NCMC, is bound to invite further inquiry into the proposed framework's feasibility. Some of the more immediate questions that come to mind concern these institutions' organizational structure, internal governance, and public accountability. A related set of questions might focus on fleshing out some of the details of the proposed entities' business models, especially with respect to the NCMC. Without claiming to

of wealth concentration since the late 19th century); Hockett, *Hamiltonian Means*, *supra* note 193.

231. 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) (defining the Telecommunications Development Fund). TDF's strategy focuses on equity investments in telecommunications start-ups.

232. SBA was established in 1953 to facilitate small business formation and growth via the so-called "three Cs" of capital, contracting, and counseling. See *About the SBA*, U.S. SMALL BUS. ADMIN., <https://www.sba.gov/about-sba> (last visited Mar. 11, 2018).

233. DARPA, established in response to the Soviet Union's launch of Sputnik in 1957, is widely credited with the development of many currently ubiquitous technologies. See *About DARPA*, DARPA, <http://www.darpa.mil/about-us/about-darpa> (last visited Mar. 11, 2018).

234. ARPA-E, modeled after DARPA, was created in 2007 for the purpose of financing and facilitative transformational energy research. See ARPA-E, <https://arpa-e.energy.gov/> (last visited Mar. 11, 2018).

235. 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.").

236. 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").

provide full answers to all of these questions, this Part explores some of the key issues and challenges likely to arise in designing the NIA.

A. Organizational Issues and Accountability Mechanisms

The SWF experience, discussed above, offers a particularly useful set of lessons for structuring the proposed NIA.²³⁷ That experience shows, for example, that one of the crucial elements of an effective accountability regime is the clear articulation of the public investor-entity's legal mandate and core mission.²³⁸ A direct and deliberate normative framing allows both for an effective downstream operationalization of such entity's overarching policy objectives and for a more robust measurement of its actual 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 implement its goals.²³⁹ Thus, an explicit assignment of roles and responsibilities to the individual SWF's relevant units—its governing bodies, executives, asset managers, etc.—creates a procedural framework for the exercise of investment discretion by designated professionals acting in accordance with the fund's core mission.²⁴⁰ Periodic public reporting of performance results, regular internal and external audits, and reliance on independent advisory or supervisory boards add another layer of procedural and substantive accountability. Finally, individual SWFs' institutional robustness is "sustained by resourcing each element in the investment process and governance chain with an appropriate time and resources budget."²⁴¹

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

1. Organizational Lines

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 an overarching public investment strategy in accordance with such priorities.²⁴² To enable the NIA to perform effectively in practice, it is critical that it be granted 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.²⁴³

237. See *supra* Part III.B.

238. See CLARK ET AL., *supra* note 143, at 158.

239. See *id.* at 140, 158–59.

240. *Id.*

241. *Id.* at 159.

242. See *supra* Part IV.A.

243. See generally *supra* notes 154–166 and accompanying text.

Both the NIB and the NCMC would be organized as federally chartered government-owned corporations. The federal government has a long history of chartering special government corporations, many of which operate under a unique set of privileges and constraints.²⁴⁴ Flexibility in crafting such special privileges and constraints weighs strongly in favor of chartering both NIB and NCMC as government corporations.²⁴⁵ This option would allow each entity 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.²⁴⁶ It would also relax many of the formal constraints and requirements of the administrative process and shield these bodies from excessive bureaucratic interference.²⁴⁷ Another significant advantage of this organizational choice is that it could give both NIB and NCMC a greater degree of insulation from direct political pressure.²⁴⁸ It would also encourage the emergence of a more focused and mission-oriented institutional culture.

2. Personnel Issues

The NIB and NCMC each would be governed by its own Executive Board in accordance with the specially tailored principles laid out in their respective corporation charters.²⁴⁹ The NIB's and NCMC's Executive Boards would be supported by well-compensated and technically competent professional staff.²⁵⁰

244. 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).

245. See generally KEVIN R. KOSAR, CONG. RESEARCH SERV., RL30365, *FEDERAL GOVERNMENT CORPORATIONS: AN OVERVIEW* (2011) [hereinafter KOSAR, *FEDERAL GOVERNMENT CORPORATIONS*] (describing the administrative flexibility provided by the government corporation form).

246. *Id.* Government corporations are generally subject to the Government Corporation Control Act, 31 U.S.C. § 9101 et seq. Congress can, and often does, exempt individual government corporations from that statute's provisions. KEVIN R. KOSAR, CONG. RESEARCH SERV., RS22230, *CONGRESSIONAL OR FEDERAL CHARTERS: OVERVIEW AND ENDURING ISSUES 6* (2013) [hereinafter KOSAR, *CONGRESSIONAL OR FEDERAL CHARTERS*].

247. See Froomkin, *supra* note 244, at 613 (noting significant variations in routine government oversight of federally chartered government corporations).

248. See KOSAR, *FEDERAL GOVERNMENT CORPORATIONS*, *supra* note 245, at 10–11 (describing the limited administrative and congressional oversight of federal government corporations).

249. 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, *FEDERAL GOVERNMENT CORPORATION*, *supra* note 245, at 8–10 (describing the “positive and negative” aspects of various corporate governance structures).

250. 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

Personnel issues are an important organizational factor in ensuring the NIA's viability. Because the NIA would seek to fulfill its explicitly public—hence, explicitly 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 investment. Expertise in public policy and macroeconomic planning, for example, would be particularly important at the level of the NIA leadership. Technical financial-analysis skills and investment management expertise, on the other hand, would be the heightened priority for the 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 it runs a *bona fide* asset management business, the NCMC has to be structured like one: a relatively lean, well-disciplined, and cohesive team of professionals under the command of the Executive Board Chair. The Chair should be a high-profile, well-respected, and experienced investment management expert.²⁵¹

On the other hand, however, 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. Accordingly, their internal organizational structures and decision-making processes should not be focused solely on business efficiency: they should also reflect these entities' practical commitment to the public interest, thereby enhancing their legitimacy.²⁵²

A potentially workable compromise between these two considerations would 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 create three classes of Executive Board members.²⁵³ 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.²⁵⁴

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 unrealistic 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.

251. 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.

252. For a discussion of legitimacy as a crucial factor in the successful operation of hybrid public-private instrumentalities, see generally *supra* notes 140–146.

253. 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.

254. The "expertise" requirement should be drafted broadly, so as not to limit the pool of nominees to

3. Accountability Mechanisms and Political Legitimacy

Accountability is a critical factor in ensuring the NIA's political legitimacy and, ultimately, long-term success. As the SWF experience suggests, the NIA's legitimacy would depend not only on its financial performance, but also on the procedural integrity of its operations.²⁵⁵

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. These measures would help to enhance the overall transparency of the NIA's operations. It is also critical that both 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 would help to ensure that these 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 the NIA—including the NIB and NCMC—was taking to implement its strategic objectives.²⁵⁶ 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 would be subject to annual audit by the Government Accountability Office (GAO), which conducts audits of federal agencies.²⁵⁷ In addition, each of the NIB and the NCMC would 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 paramount importance. The main 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. 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.

financial industry professionals.

255. See generally *supra* notes 146–148 and accompanying text.

256. This reporting requirement would be different from, and in addition to, currently existing reporting requirements applicable to federal agencies and government corporations. See KOSAR, FEDERAL GOVERNMENT CORPORATIONS, *supra* note 245, at 7–8 (describing annual budget and management reporting requirements for government corporations).

257. About GAO, GAO, <http://www.gao.gov/about/index.html> (last visited Mar. 11, 2018).

Nevertheless, it is vital to put in place robust procedural safeguards with respect to picking investments, especially for the NCMC's portfolio. For example, both the NIB and the NCMC could be required 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 collective goods, discussed above, would have a fair and equal opportunity to apply for 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—formalized and transparent—internal requirements.²⁵⁸

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, investment banking, infrastructure finance, 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 conduct a more comprehensive assessment of investment opportunities. It would also serve as an additional mechanism of ensuring NCMC's and 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.²⁵⁹ Direct regional presence could also significantly strengthen the NIA's political influence and legitimacy.²⁶⁰

Finally, to enhance the NIA's external accountability, Congress could establish a special Public Advisory Council (Council) specifically charged with representing an explicitly public interest-oriented perspective in the conduct of national developmental policies.²⁶¹ 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).²⁶² The Council would play primarily an advisory and evaluative role, by providing an independent intellectual perspective on substantive policy issues faced, and strategic decisions made, by the NIA in the course of fulfilling its developmental mandate. The Council would

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

259. 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. Thus, the Northeast NIA District would coincide with Federal Reserve Districts 1, 2, and 3. For a map of the twelve Federal Reserve Districts, see *The Twelve Federal Reserve Districts*, BOARD OF GOVERNORS OF THE FED. RES. SYSTEM, <https://www.federalreserve.gov/otherfrb.htm> (last visited Mar. 11, 2018).

260. The RFC's experience is particularly instructive in this respect. See *supra* note 99 and accompanying text.

261. 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).

262. For a general discussion on the process for selecting members of such a Council, see *id.* at 661–63.

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. Importantly, 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.²⁶³

These are only several of many means that might be employed to ensure the NIA’s accountability and, thereby, buttress its political legitimacy. Given the primacy of public over private agents in the structure and operations of the NIA, however, it is nevertheless reasonable to expect politically prompted attacks on its legitimacy. Ongoing criticism will likely come from those who hold the familiar neoliberal article of faith that both public instrumentalities and the public they represent are incapable of economically beneficial action.²⁶⁴ This deeply internalized normative stance underlies familiar clichés to the effect that public instrumentalities are incurably prone to corruption and capture, lacking in organizational efficiency and financial expertise, and otherwise unworthy of trust.

Insofar as such blanket criticisms reflect programmatic habits of thought about “how things are,” it is pointless to attempt to counter them in the abstract. It is true that the corrupting influence of money on both public and private actors is an ever-present danger in capitalist market economies. It is also true that the NIA will likely face significant ongoing political resistance from powerful private interest groups, because the economic stakes involved in its decisions are apt to be high. That familiar fact, however, is no reason to abandon the quest for rebuilding the nation’s developmental strength. It is instead a reason to focus on continuously adjusting and improving the NIA’s institutional design and its mechanisms of public accountability.

It is also critical to keep in mind that political landscapes shift over time. As the NIA gradually builds a portfolio of successful infrastructure projects that begin to have visible impacts on people’s lives, it is quite likely to gain the support of ever more constituencies.²⁶⁵ The NIA’s early successes, therefore, will be critical to solidifying its political legitimacy.

B. Funding and Operational Issues

In addition to matters of organizational structure and public accountability, designing a new public institution like the NIA also requires attention to funding and other key aspects of its daily operations.

Funding for the NIA’s operations could come from a variety of sources. During the “start-up” period of its operation, the NIA will likely rely in part on an initial Congressional appropriation. This was the RFC’s source of funding until it became profitable, within its first year or two of operation, as a business enterprise in its own right.²⁶⁶ Also as in the case of the RFC, once the NIA builds a portfolio of assets generating interest, dividend, and fee revenues, it should not need Congressional appropriations. It should earn sufficient

263. See *id.* at 635–37.

264. See Grewal & Purdy, *supra* note 145.

265. That is precisely how things worked for the RFC, many of whose most important subsidiaries remain federal instrumentalities to this day. See *supra* Part III.A.

266. See *id.*

profits to cover its ongoing expenses. The scale and scope of the NIA's investment operations are key in this respect: 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. Accordingly, a larger and more visionary NIA is also more likely to be self-funding.

Of course, it is reasonable to expect that, at least in some situations, the NIA's operations might also 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 may be especially likely with respect to the NIA's investments in certain critical public infrastructure projects that yield only *very* long-term or even *non-monetizable* systemic benefits.²⁶⁷ Since these investments are not designed to generate easily monetizable, and thus privately capturable, public benefits, the NIA would require other sources of funding its payments to private investors in such projects. Below, we list several such potential sources of "exit" funding, only some of which might involve public funding. For now, the important point to emphasize is that, as discussed above, a theoretical possibility of partial public funding does not diminish the NIA's importance and efficacy as a hybrid, public-private national development agency that steers currently speculative capital toward more socially beneficial uses.²⁶⁸

To the extent that it might prove necessary, supplemental public funding could come from a variety of sources. For example, it might 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. This arrangement would be, in effect, a straightforward method of synthesizing the private capturability of public benefits associated with the NIA projects.²⁶⁹

Another potentially effective backstop to the NIA's 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 both to smooth potential fluctuations in the NIA's internally generated returns and to augment its ability to continue financing publicly beneficial ventures even during times of economic slowdown. It would also nicely track the NIA's functional location between Fed and Treasury. Currently, the Fed turns over significant amounts of its annual profits to the Treasury. Thus, in January 2016, the Fed sent \$97.7 billion to the Treasury, plus an additional \$19.3 billion from its capital surplus account to finance the five-year highway construction program.²⁷⁰ Linking Fed profits to the NIA, whose mission is complementary to those of the Fed and Treasury, and embraces *all* types of infrastructure, *including* highways, looks all the more intuitively natural against that

267. For a reminder of what "monetizability" means in the context of this discussion, see *supra* note 59 and accompanying text. See also *supra* Parts II.C (providing a taxonomy of collective goods) & IV.A (providing examples of the kinds of project in the NIA's portfolio).

268. See *supra* notes 6–22 and accompanying text.

269. See discussion *supra* Part II.B.3.

270. See Jim Puzanghera, *Federal Reserve Sends Record \$97.7-billion Profit to Treasury*, L.A. TIMES (Jan. 11, 2016, 10:53 AM), <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 annual remittances to the Treasury, see Press Release, Federal Reserve, Federal Reserve Board Announces Reserve Bank Income and Expense Data and Transfers to the Treasury for 2016 (Jan. 10, 2017), <https://www.federalreserve.gov/newsevents/press/other/20170110a.htm>.

backdrop.

It probably also makes sense, in this connection, to consolidate at least some of the RFC's remaining offspring with the NIA, in effect restoring the unity of the RFC's original mission under a new organizational roof. Thus, it might be desirable to bring the housing-finance GSEs—Fannie Mae and Freddie Mac—under the NIB as distinct subsidiary-entities.²⁷¹ As suggested above, the SBA might be brought under NCMC as a specific venture capital fund.²⁷² These entities' well-established revenue streams would then be levered to finance systemically important collective goods.²⁷³

It is important, in our view, that the NIA retain the power to make investment decisions and to manage its funds' portfolio assets on a day-to-day basis "in-house." Many SWFs tend to outsource a significant portion of these "technical" activities to private asset management firms, as a way of minimizing the operational burden on government personnel and allowing the fund's top leadership to focus on high-level portfolio strategies.²⁷⁴ Despite its tangible benefits, outsourcing these key functions could undermine the newly established NIA's ability to develop internal technical expertise and a strong mission-oriented culture—indispensable ingredients of successful institution-building. Keeping the investment management function in-house along the lines of the RFC model, on the other hand, would enhance the NIA's legitimacy as a capable market actor acting solely in the public interest.²⁷⁵ Once the NIA's internal asset-management and credit-allocation capabilities increase and mature, however, it might be less problematic to hire specialized private financial firms to manage some specialized asset portfolios.

Of course, none of this precludes the NIA from collaborating and partnering with private investment firms on particular projects. For example, if a pioneering start-up firm is able to attract private venture capital funding up to some percentage of initial requirements, NCMC might join—even form, lead, or both—a syndicate of investors. This is a common mechanism for leveraging public funds employed, for example, by the World Bank, the Asian Development Bank, the Inter-American Development Bank, and other international development institutions (IDIs).²⁷⁶ Indeed, private market actors often view an initial investment by one of these institutions as a positive signal, which catalyzes

271. Both Fannie Mae and Freddie Mac were placed into government conservatorship after their near-failure during the global financial crisis of 2008–2009. There is an ongoing, ideologically charged debate on the optimal ownership and governance structure for these entities, describing which is beyond the scope of our discussion. For a brief overview of the recent debate, see Susan M. Wachter & Patricia McCoy, *A New Coalescence in the Housing Finance Reform Debate?*, 4 PENN WHARTON PUB. POL. INITIATIVE ISSUE (June 2016), <https://publicpolicy.wharton.upenn.edu/issue-brief/v4n6.php>.

272. See *supra* note 232 and accompanying text.

273. In addition to bolstering the NIA's self-funding capacity, this type of organizational consolidation could visibly reduce the total number of federal government agencies, which would help to counter predictable "bureaucratic-proliferation" objections to the NIA proposal.

274. The Alaska Permanent Fund Corporation, for example, directly manages only about one-third of the Fund's investments and outsources the rest to private asset managers. See generally ALASKA PERMANENT FUND CORP., <http://www.apfc.org/home/Content/investments/managers2009.cfm> (last visited Mar. 11, 2018).

275. The practice of hiring private managers to run the NIA's funds would likely feed the familiar accusations and suspicions of cronyism and rent-seeking on the part of the new government entity. Avoiding or minimizing such harmful perceptions is an important consideration, especially during the early years of the NIA's operation.

276. For an overview of how the IDIs operate in conjunction with private institutions, see *About the World Bank*, THE WORLD BANK, <http://www.worldbank.org/en/about> (last visited Mar. 11, 2018).

additional flows of private capital into the relevant project.²⁷⁷ There is every reason to expect that the NCMC's use of syndication and other co-investment techniques would have the same salutary effects.

Given the expected variety of individual projects in the NCMC's portfolio, it is probably pointless, if not counterproductive, to attempt to identify any one single template for "exiting" them.²⁷⁸ Ultimately, the method of divesting a particular investment would depend on that investment's characteristics. As a general matter, however, there is a menu of multiple options available to the NCMC.

For example, many cutting-edge start-ups that successfully pioneer the development of new products or industries with NCMC funding would, in time, either repurchase the NCMC fund's stake, or be sold off in initial public offerings (IPOs). The NCMC might also sell its stakes in some individual portfolio companies, once they have reached a certain degree of financial and operational maturity, to private venture capital funds.

In the case of other portfolio assets, an IPO or private buy-out might be infeasible or undesirable as a matter of public policy. In some such cases—for example, upon completion of certain large and enduring public infrastructure projects—it might be judged best to spin the projects off into separate public authorities, like the RFC-era TVA or the Delta Regional Authority,²⁷⁹ or into privately-owned utilities subject to careful regulatory oversight.

Yet another option would be to roll some investments over into successor funds, thus allowing initial private investors to exit them and new ones to enter. This roll-over option would be particularly effective in connection with projects whose timeframe for generating steady returns exceeds the normal lifespan of a single fund.

In sum, the NCMC's guiding principle with respect to investment decisions should be one of pragmatism and context-sensitive flexibility. It will invest in the ways that seem best suited to financing the provision of a great variety of collective goods. It will "exit" any particular venture when its ongoing presence is no longer needed, in whatever manner seems best both for the venture itself and for NCMC's ongoing mission.

In some cases, as noted above, "exit" will involve paying investors out of tax revenues. The obvious case, discussed already, is that in which projects boost local or regional growth and investors receive some of the consequent rises in public revenue.²⁸⁰ The less obvious, and probably less frequent, case will be that in which projects do not yield immediately monetizable public benefits.²⁸¹ That, however, should not be seen as problematic, for several reasons. As a matter of principle, many public benefits are worth pursuing even when they are not directly or immediately monetizable. In this respect, using tax revenues to reward private investors for participating in the provision of such collective goods is no different from debt-financed direct government spending, a familiar and long-accepted method of supplying traditional public goods. As a political matter, however, it is generally easier to appropriate funds to pay debts that are already incurred (in this case, to NIA investors) than it is to raise funds *ex ante* for directly public-financed projects.

277. *Id.*

278. For examples of specific types of projects the NIA will undertake, see *supra* Part IV.A.

279. See, e.g., *About TVA*, TENN. VALLEY AUTH., <https://www.tva.gov/About-TVA> (last visited Mar. 11, 2018) (describing the Tennessee Valley Authority).

280. See *supra* Part II.B.3. See also *supra* notes 267–269 and accompanying text.

281. See *supra* note 59 and accompanying text (discussing monetizability and capturability).

Finally, as a matter of systemic stability, it bears repeating that the NIA's mission is not only developmental but also fundamentally macroprudential in character. The NIA is not a means of raising "scarce capital" from private investors;²⁸² it is rather a means of siphoning currently overabundant capital away from speculative secondary markets where it serves mainly to stoke short-term volatility and inflate asset price bubbles, toward newly available primary markets where it will finance real and sustainable growth.²⁸³ As we argued above, the long-term savings from averting financial crises and subsequent economic recessions alone would more than justify public funding of the NIA as a critically important stabilizing force in the financial system.²⁸⁴

This should serve as a powerful reminder that the NCMC's success in fulfilling its mission is not reducible to pure investor-return metrics. Its overall impact on the nation's financial, economic, and broader socio-political well-being goes far beyond simple bottom-line numbers. To strengthen the NCMC's ability to compete with private funds single-mindedly pursuing short-term private profits, it might prove necessary to provide additional inducements to investors in NCMC-managed funds. Such inducements could include, for example, special tax exemptions for all or some of the income investors earn on their investments in NCMC-managed funds. Such investments could also receive favorable accounting and regulatory treatment when held by banks, insurance companies, mutual or pension funds, or other regulated institutional investors.²⁸⁵ Finally, the NCMC could receive a significant boost from forging ties with and applying for certifications from the global community of socially responsible investors.²⁸⁶

Without a doubt, many additional important details would have to be worked out before the proposed NIA could commence its operations in practice. Most of these details, however, can be expected to emerge only in the process of instituting this new public instrumentality and implementing its national development strategy. For now, our primary goal has been to articulate the theoretical foundations and to outline the principal contours of the new institutional framework for conducting a national developmental policy.

VI. CONCLUSION

In this Article, we have proposed and outlined a preliminary design for a new public instrumentality—a National Investment Authority—functionally situated between the U.S. Treasury and the Fed. In explaining why such an instrumentality is needed, we have extended and updated the orthodox understanding of public goods by subsuming the latter under a broader category that we call "collective goods." We have also explained why none

282. As noted earlier, there is no such scarcity—quite the contrary. See *supra* Parts I & IV; see also Hockett & Omarova, *Finance Franchise*, *supra* note 1. On the move to "macroprudential" forms of financial regulation, see generally Robert Hockett, *The Macroprudential Turn: From Institutional "Safety and Soundness" to Systemic "Financial Stability" in Financial Supervision*, 9 VA. L. & BUS. REV. 201 (2015).

283. See *supra* notes 13–20 and accompanying text.

284. *Id.*

285. For instance, federal regulatory authorities could assign the NCMC instruments to the lowest risk-weight category for purposes of calculating financial institutions' capital adequacy ratios. See *supra* notes 197–98 and accompanying text. State insurance regulators could make similar adjustments to rules governing insurers' capital, reserves, and investments.

286. See, e.g., *About Us*, US SIF, <http://www.ussif.org/about> (last visited Mar. 11, 2018); GLOBAL SUSTAINABLE INV. ALLIANCE, <http://www.gsi-alliance.org/> (last visited Mar. 11, 2018).

of the existing institutions of public finance are capable of supplying the full range of such goods. Only a hybrid institution, which combines the comparative advantages of both public and private action, can ensure the uninterrupted and system-wide provision of critically important collective goods.

Our proposed NIA is precisely that kind of institution. Its core purpose is to facilitate continuous, structurally balanced, and socially inclusive national development—the ultimate collective good. The NIA utilizes innovative financial engineering tools to redirect presently speculative financial capital into productive non-financial enterprise. In that sense, the NIA’s development policy is not only a critical supplement to traditional fiscal and monetary policies, but also a powerful lever of long-term financial stability.

The NIA envisioned in this Article does not represent a “public takeover” or “socialization” of finance, nor is it an illicit “privatization” of public infrastructure. Rather, it is a means by which all of us can collectively supply what each of us needs, but cannot individually supply. That is precisely what government is for. In this sense, the NIA simply brings democratic self-government into the realm of productive market activity. Elaborating its possible institutional forms is, accordingly, a critical step on the road to democratizing finance.