Mixed Public and Private Ownership of Productive Firms as a Necessary Condition for the Optimization of Firm Performance

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ABSTRACT

This paper introduces a new theoretical model demonstrating that mixed public and private ownership of productive firms is a necessary condition for the optimization of firm performance. The new model suggests that the proportion of public to private ownership of firms should be precisely calibrated to an optimal equilibrium that balances political risk with the benefits of government ownership.

This paper proposes that government transactions in the equity securities of productive firms could be structured as (1) an innovation in fiscal policy, whereby the government purchases equity securities as a method of economic stimulus, and (2) as an innovation in tax policy, whereby government receives equity securities in lieu of (or as a supplement to) traditional income-based taxation. Furthermore, the shareholders of a firm are granted unique economic rights, voting rights, inspection rights, and litigation rights that are unavailable to any other party. The unique rights that would be attached to government's standing as a shareholder (by virtue of its ownership of the equity securities of a firm) would form an alternative basis of legal authority for the government to regulate the operations and governance of productive firms.

This paper demonstrates how mixed public and private ownership of productive firms would (1) optimize firm performance through the resolution of collective action problems that negatively affect the monitoring of firm governance, (2) improve the efficacy of bargaining in firm policymaking regarding the use and allocation of firm resources, and (3) mitigate systemic risk by diversifying the broader economy's institutional sources of access to capital. Adoption of the proposed policies would cause a paradigmatic shift in the role of the government in economic activity and would create more dynamism in the government's capacity to facilitate optimization, influence economic behavior, and improve outcomes more generally.

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INTRODUCTION

The central proposition of this paper is that mixed public and private ownership of productive firms is a necessary condition for the optimization of firm performance. This paper introduces a theoretical framework which demonstrates that, in order for the organization of firms to be optimal, the allocation of the ownership of firms must be in a proportion that achieves an optimal equilibrium between public and private ownership which balances political risk with the benefits of government ownership. It is assumed that political risk has a positive correlative relationship with the proportion of government ownership because the proportion of government ownership

governs the degree to which government can exert control over a firm.[1] Government acquisitions and dispositions of the equity securities of productive firms would have the effect of recalibrating the degree of political risk arising from government ownership as a means to achieve an optimal equilibrium.

Government acquisitions in the equity securities of firms can be structured as innovations in fiscal policy and in tax policy and serve as a form of economic stimulus. This innovation contemplates the implementation of in-kind tax assessments of equity securities as an alternative to income-based taxation, expanding upon the existing parameters of public policy formulation to create more dynamism in government's capacity to influence economic behavior and facilitate optimization. Successful implementation of this policy contemplates significant changes to hegemonic assumptions about the role of government in economic activity more generally and requires a shift in the paradigm governing the existing relationships between government, firms, and investors.

The rationale for why partial government ownership of firms is a necessary condition for the optimization of firm performance is that partial government ownership provides a solution to specific collective action problems in firm governance that are a systemic source of inefficiency.[2] Firms are shared resources that are jointly owned by their shareholders. Such joint ownership creates collective action problems that disincentivize private shareholders from efficiently monitoring the governance of a firm. This inefficiency causes productive firms to generate non-optimal economic outcomes.[3] In contrast, partial government ownership of firms would empower government to improve monitoring mechanisms in firm governance. To do so, the government would use the unique legal standing conferred to shareholders under existing law as the legislative source of government's regulatory authority. This alternative basis of regulation would not otherwise be possible but for the government's rights as a shareholder of such firms.[4]

For example, partial government ownership of firms would expand the

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[1] Matthew R. Shahabian, *The Government as Shareholder and Political Risk: Procedural Protections in the Bailout*, 86 N.Y.U.L. REV. 351, 354 (2011) (discussing political risk arising from government ownership of firms); Velasco*, supra* note 3, at 416-17 (discussing shareholder control rights).

[2] ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION 2 (Cambridge University Press 1990) (discussing free-rider problems in situations where "one who cannot be excluded from obtaining the benefits of a collective good once the good is produced has little incentive to contribute voluntarily to the provision of that good").

[3] *Id.* In this case, the shareholders of a firm cannot be excluded from the benefits of shareholder monitoring, but also have little individual incentive to voluntarily exercise their rights to monitor because of the individual time, effort and expense.

[4] Julian Velasco, *The Fundamental Rights of the Shareholder*, 40 U.C. DAVIS L. REV. 407, 411, 413, 416-17 (2006) (discussing the fundamental rights unique to shareholders under existing law).

government's legal standing to prosecute misconduct by firm managers on the basis of litigation rights derived from its legal status as a shareholder.[5] The government would have the legal standing to prosecute certain causes of action, such as breaches of fiduciary duty, which would otherwise be outside of its authority to prosecute. Furthermore, as a result of collective action problems in firm governance disincentivizing the prosecution of such misconduct, such misconduct would otherwise go unprosecuted but for the government's intervention.[6] The government's prosecution of misconduct on the basis of its shareholder rights would, at least in part, shift the burden of prosecution away from private shareholders to the government. This shift would help mitigate these collective action problems and would function as a layer of insurance for the benefit of investors.

The shareholders of a firm are conferred unique litigation rights, inspection rights, voting rights, proxy solicitation rights, and economic rights that are unavailable to any other party under existing law.[7] Partial government ownership of firms would create a new and expanded suite of policy tools for the government to influence economic behavior and facilitate the optimization of economic outcomes on the basis of these shareholder rights. Government regulation under this new paradigm could be conducted internally, within the context of the existing norms of firm governance, as opposed to externally, through the implementation of new restrictive legislation that may operate to increase compliance costs. This policy would enable the government to achieve the same regulatory goals in a manner that is more efficient and less destabilizing to existing methods of conducting business as compared to external forms of restrictive regulation.

Mixed public-private ownership of firms on a macroeconomic scale is not without precedent. For example, a study of the pooled regression data of firms with mixed public-private ownership offers empirical evidence that partial government ownership has a positive impact on firm performance. This study shows that there exists a certain threshold of government ownership that produces optimal firm performance.[8] In another case, the United States purchased equity securities of General Motors ("GM") to bailout the company under the Troubled Asset Relief Program ("TARP"). This innovative bailout is credited as a key component of economic recovery in the aftermath of the 2008-2009 financial crisis.[9] These cases provide empirical

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[5] *Id.* at 421 (discussing the litigation rights derived from equity ownership).
[6] *Id.*; *see also* Ostrom, *supra* note 1, at 2.
[7] Velasco, *supra* note 3, at 413–21 (describing the fundamental rights of shareholders).
[8] *See* Qian Sun et al., *How Does Government Ownership Affect Firm Performance? Evidence from China's Privatization Experience*, 29 J. BUS. FIN. & ACCT. 1, 22–23 (2002) (discussing the performance results of state-owned firms in China with mixed public-private ownership).
[9] Austan D. Goolsbee & Alan B. Krueger, *A Retrospective Look at Rescuing and Restructuring General Motors and Chrysler*, 29 J. ECON. PERSP. 3, 22 (2015)

support for the proposition that partial government ownership of productive firms (in a proportion reflecting an optimal equilibrium balancing the benefits of government ownership with political risk) is a necessary condition for the achievement of optimal firm performance.

Part one of this paper discusses the components of the theoretical framework which should govern the partial government ownership of firms, as well its underlying assumptions. Further, Part One illustrates the mechanics of implementing the partial government ownership of firms through innovations in fiscal policy and tax policy. Part Two describes how the government can leverage its shareholder rights to improve the quality of firm governance and economic function more generally. Part Three explores some instances of mixed public-private ownership of firms that have historically arisen: (1) as a byproduct of movements to privatize firms that had been traditionally wholly state-owned; (2) during World War II as a result of seizures of the assets of enemy combatants; and (3) in response to the 2008-2009 financial crisis as a means to stabilize the economy and stimulate economic recovery. As this paper will demonstrate, partial government ownership of productive firms, in a proportion precisely calibrated to equal an optimal equilibrium between public and private ownership that balances political risk with the benefits of government ownership, is a necessary condition for the optimization of firm performance.

I. THE STRUCTURAL MECHANICS OF A POLICY BY WHICH THE GOVERNMENT ACQUIRES THE EQUITY SECURITIES OF PRODUCTIVE FIRMS AND UNDERLYING ASSUMPTIONS

This section outlines how a policy by which the government acquires the equity securities of productive firms should be structured. At minimum, the proportion of the government's ownership should be calibrated such that the amount of the government's ownership is equal to an optimal equilibrium between public and private ownership that balances political risk with the benefits of government ownership. As demonstrated herein, government ownership benefits firm performance in a manner that would be unavailable but for its ownership stake. However, the achievement of an optimal balance between public and private ownership is a necessary condition for the optimization of firm performance because changes in the proportion of government ownership operates to mitigate the amount of political risk arising from government ownership. A relatively larger proportion of government ownership gives rise to increased political risk whereas a relatively smaller proportion of government ownership gives rise to decreased political risk.[10]

Political risk is the composite of: (1) the risk that government will use its leverage as a shareholder to interfere with a firm in a manner that reduces

(describing economic recovery in the aftermath of the rescue of General Motors under the TARP program).

[10] See Shahabian, at 354 (2011) (discussing political risk arising from government ownership of firms).

the value of the firm; and (2) the costs of uncertainty as to how government will use its ownership stake in a firm and its impact on accurately pricing of a firm's value.[11] Government ownership generates political risk because the government's interests may not align with the interests of the private shareholders of a firm, whose interests are predominantly financial in nature.[12] In contrast, the government's interest in managing its portfolio is primarily political and not wholly financial. Furthermore, to the extent that there is inadequate signaling prior to government action, investors would be unable to accurately price the value of a firm since such investors are uncertain as to how the firm will be affected by such government action in the absence of such signaling.[13]

Political risk operates to create a chilling effect on investment. This chilling effect would increase the cost of capital because investors would be incentivized to demand a higher rate of return to compensate for such political risk.[14] However, the proportion of government ownership is the variable element in the calculation of political risk. The government can change the level of political risk by increasing and decreasing its proportion of ownership in a firm because the government's ability to exert control and influence firm policy corresponds to the proportion of its ownership stake. As a result, political risk has a positive functional relationship with the proportion of government's ownership stake. Specifically, the greater the proportion of the government's ownership stake, the greater the political risk since the government would have more authority to influence policy on the basis of its shareholder voting rights.[15]

In contrast, government ownership would also provide unique benefits to shareholders that, but for such government ownership, would otherwise be unavailable. First, government ownership would improve the effectiveness of monitoring mechanisms by expanding government's legal standing to prosecute misconduct on the basis of its shareholder litigation rights.[16] Second, legal standing conferred by government ownership would empower the government to insure investors against risk of loss through the socialization of costs relating to the prosecution of firm managers for misconduct.[17] Third, shareholder inspection rights would empower the government to improve monitoring by enabling public access to firm records that may otherwise be unavailable.[18] Fourth, government ownership would empower government to improve the quality of bargaining in firm governance by enabling government to integrate the costs of externalities in firm policymaking through shareholder voting and the shareholder proposal and proxy

[11] *Id.* at 363.
[12] *Id.* at 364.
[13] *Id.*
[14] *Id.*
[15] Velasco*, supra* note 3, at 416–17 (discussing shareholder voting rights).
[16] *Id.* at 421 (discussing shareholder litigation rights).
[17] *Cf. id.* (discussing shareholders' ability to bring derivative actions).
[18] *See id.* at 420–21 (discussing shareholder information rights).

solicitation processes. Finally, government ownership, arising from government acting as a "liquidity provider of last resort," would mitigate risk of systemic failure in the private capital markets through the institutionalization of an alternative source of liquidity that operates independently from, and is not dependent on the viability of, the private banking system.[19]

The determination of the optimal proportion of government ownership requires a balancing of the cost of the political risk of government ownership with the characteristic value of the benefits provided by such government ownership. If the perceived cost of political risk is higher than the anticipated value of the benefits of government ownership, then the cost of capital to a firm would correspondingly increase—investors would be incentivized to demand higher rates of return because of the more significant risk associated with government ownership.[20] In contrast, if the anticipated cost of political risk is less than the perceived value of the benefits of government ownership, then the cost of capital to a firm would correspondingly decrease—investors would be incentivized to demand lower rates of return because the value of government ownership outweighs political risk.[21] However, the factors underlying this cost-benefit analysis are not static. Increases and decreases in the proportion of the government's ownership would also effect corresponding changes in political risk since political risk has a positive functional relationship to the proportion of government ownership.

Generally, as government ownership in a firm increases, political risk also increases because the government would be able to exert greater control over the firm as a result of increases in its equity stake.[22] However, it can be inferred that political risk only incrementally increases as the government's ownership stake increases, unless government ownership reaches specific inflection points: (1) the point where government obtains a plurality of voting control; and (2) the point where government obtains majority voting control.

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[19] *See* Steven L. Schwarcz, *Systemic Risk*, 97 GEO. L.J. 193, 198-99 (2008) (discussing the implications of systemic risk); *see also* Stephen H. Axilrod & Henry C. Wallach, *Open Market Operations*, *in* MONEY: THE NEW PALGRAVE DICTIONARY OF MONEY AND FINANCE 288, 288 (John Eatwell et al., eds., 1989) (discussing the role of private banks as primary dealers in open market operations and the conduct of monetary policy); Lawrence J. Christiano et al., *Nominal Rigidities and the Dynamic Effects of a Shock to Monetary Policy*, 113 J. POL. ECON. 1, 3, 42 (2005) (discussing the effects of changes in money supply on the cost of capital and the production of output); Lawrence J. Christiano et al., *The Effects of Monetary Policy Shocks: Evidence from the Flow of Funds*, 78 REV. ECON. & STAT. 16, 16 (1996) (also discussing the effects of changes money supply on the cost of capital and the production of output).

[20] *See* Shahabian*, supra* note 9, at 364. If investors would be incentivized to demand a higher rate of return to compensate for increases in political risk, it can be inferred that investors would be incentivized to demand a relatively lower rate of return in the event of decreases in political risk or in the event of increases in the utility of government ownership.

[21] *See id.*

[22] *Cf.* Velasco*, supra* note 3, at 416–17 (discussing shareholder control rights).

At these inflection points, political risk sharply increases because of the unique influence that would be afforded to the government at these ownership thresholds based on its ability to exercise its shareholder control rights.[23]

Changes in broader economic conditions may correspondingly affect the utility of the government ownership. For example, systemic failure in private capital markets resulting from an economic crisis may require the government, acting as a liquidity provider of last resort, to increase its ownership stake in order to achieve optimization.[24] In conditions of market failure, the only available source of liquidity is the government.[25] Government purchases of equity securities would function as a method of providing liquidity to firms in the absence of private institutional sources of financing.[26]

Another source of political risk is the potential conflict of interest arising from the government's equity ownership stake in firms. In the event that the government is a shareholder in some, but not all similarly situated firms operating in a particular industry, firms that lack a government ownership stake may be at a competitive disadvantage as compared to firms that are partly owned by the government. Presumably, there is the risk that partially owned government firms may be more likely to receive financial assistance as compared to wholly privately owned firms.[27] Consequently, the management of firms that are partly owned by the government may experience a corollary "moral hazard" since such firms may be incentivized to take excessive risks to maximize profits by assuming the government will bail them out in the event of an economic crisis.[28] Furthermore, the government's dual role as both a market participant, arising from its capacity as a shareholder, and as a regulator, arising from its sovereign capacity, raises conflict of interest concerns. The government may be incentivized to enact laws that favor government owned firms to the detriment of firms that are wholly privately owned.

In order to control political risk arising from potential conflicts of interest, the government's acquisition and disposition of equity securities should be conducted on a class basis, as opposed to a firm-specific basis. This limitation would help to ensure that the government would not be able to unduly influence competition. Since the government would own an equity stake in a class of all similarly situated firms operating in a particular industry, no single firm would have a competitive advantage over any other similarly situated firm solely by virtue of the government's equity holdings. The government's portfolio would be diversified such that its holdings would not favor any single firm over its similarly situated competitors. The potential for

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[23] *See id.*
[24] *Cf.* Schwarcz, *supra* note 18, at 198–99 (discussing systemic risk arising from the potential failure of the private banking system).
[25] *Id.* at 231.
[26] *See* Shahabian *supra* note 9, at 364.
[27] *See* Barbara Black, *The U.S. as Reluctant Shareholder: Government, Business and the Law*, 5 ENTREPRENEURIAL BUS. L.J. 561, 564 (2010) (discussing moral hazards associated with government ownership).
[28] *Id.*

moral hazard would be reduced since the axiomatic diversification of the government's portfolio would operate to decrease the government's incentive to bail out any single firm to the particular detriment of other competing firms. Conducting the government's acquisitions in this manner would operate to preserve competition among similarly situated firms and mitigate political risk derived from potential conflicts of interest arising from government ownership.

Constraining government's ability to exert control over the operations of a firm such that government control is limited to that of an ordinary shareholder *pari passu* with other similarly situated shareholders is also significant as a means to mitigate political risk. If the government is able to exert control over the operations of a firm in excess of other similarly situated shareholders, then the degree of political risk associated with such government ownership would be amplified. In this case, the government could negatively affect the value of a firm in a manner that is disproportionate to its stake in the firm.[29] Limiting the government's control to that of an ordinary shareholder would preserve existing rules that dictate institutional methods of firm governance and ensure shareholder equality. Ultimately, this will reduce uncertainty and reify the government's role as a "passive shareholder." As long as the government's ability to exert control is limited to that of an ordinary shareholder, the capacity for government to influence the operations of a firm would be tethered to the degree of its equity holdings, generating outcomes that are relatively predictable and consistent with existing institutional governance norms.[30]

Relying upon Keynesian economic principles, the amount of the government's equity holdings should increase during economic downturns and decrease during peaks in the economic cycle as a means to counteract the ebbs and flows of private investment.[31] According to Keynes, the appropriate remedy for downturns in the trade cycle, to be embodied in the policy of government, is to increase the inducement to invest and to stimulate the propensity to consume.[32] Government transactions in equity securities would operate as a means to offset fluctuations in private investment. Since private investment has been demonstrated to increase under a strong economy and

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[29] *See* Shahabian, *supra* note 9, at 363 (defining the potential that government could influence the operations of a firm in a manner that would negatively affect the value of a firm as a component of political risk).

[30] *See* Velasco*, supra* note 3, at 416–17. Conventional governance norms dictate that, in the absence of some other contractual agreement or extraordinary provisions in the charter documents of a firm, shareholder control rights are allocated by the proportion of ownership. In order to mitigate political risk and preserve existing norms, the amount of control that government could exert over the operations of a firm should be similarly constrained by its proportion of ownership.

[31] *See* JOHN M. KEYNES, THE GENERAL THEORY OF EMPLOYMENT, INTEREST AND MONEY 313–15 (Harcourt, Brace & World 1936) (discussing the trade cycle and the effects of fluctuations in investment).

[32] See *id.* at 325, 377.

decrease during an economic downturn, the amount of the government's holdings should decrease during a strong economy and increase during an economic downturn.[33] Government purchases of the equity securities of productive firms could function as a novel form of economic stimulus designed to supplement traditional forms of economic stimulus under Keynesian economic theory.[34] In this manner, the government's transactions in the equity securities of firms would operate as an innovation in fiscal policy used to maintain stability in capital markets.

The desirability of government investment is governed by Ricardian equivalence. Under Ricardian equivalence, "[g]overnment bonds will only be perceived as net wealth only if their value exceeds the capitalized value of the implied stream of future tax liabilities."[35] Thus, a policy program pursuant to which the government acquires the equity securities of productive firms would satisfy the conditions of Ricardian equivalence only if the real return on public investment (meaning the proceeds received from dividends or dispositions of government equity holdings) exceeds the initial acquisition value of such securities (meaning the cost basis of the securities). If the real rate of return on government investment is greater than the real acquisition price of the equity securities, then such a policy program would operate as a source of real wealth. These proceeds of government investment could then be used to fund expenditures, seed new investments, service debt, or provide for decreases in taxes. Accordingly, careful management of the government's portfolio to comply with the conditions of Ricardian equivalence is critical in order to maintain optimization.

The exact contours of how such a policy program would actually manifest is a political question. Government acquisitions of equity securities could be conducted as: (1) fiscal policy, through governmental purchases of newly issued equity securities designed to stimulate the economy; or (2) tax policy, through the collection of newly issued equity securities as in-kind taxation. It is likely that a hybrid system of broad in-kind taxation implemented on a macroeconomic scale (designed to capture the benefits of government ownership with regard to a large class of firms) combined with a narrowly tailored fiscal policy (designed to use purchases of equity securities as a method of stimulating specific areas of the economy targeted for growth) is likely the best policy method. A hybrid policy would allow for both broad regulatory coverage and sufficient flexibility to counteract fluctuations in private investment under a broad range of rapidly changing economic conditions.

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[33] *Id.*

[34] *Id.*

[35] *See* Robert J. Barro, *Are Government Bonds Net Wealth?*, 82 J. POL. ECON. 1095, 1095 (1974) (analyzing the effect of government bonds on net wealth).

A. Government Purchases of the Equity Securities of Productive Firms as Innovation in Fiscal Policy

Fiscal policy is a mechanism by which government expenditures is used as a means to stimulate the economy during downturns in the economic cycle. Under Keynesian economic theory, fiscal policy is traditionally conducted through government expenditures in public works.[36] Alternatively, this paper proposes that fiscal policy can also be conducted through strategic government purchases of the equity securities of productive firms. This would create new tools to stimulate the economy by creating a novel institutional mechanism for systematically increasing the amount of capital available to productive firms in the event private capital markets cannot supply sufficient liquidity. Fiscal policy conducted through government acquisitions of equity securities would mitigate systemic risk by creating an alternative source of access to capital that operates independently from the private banking system.[37] Cash proceeds received by firms in exchange for governmental purchases of equity securities would operate to increase the amount of working capital held by such firms, which would stimulate the production of output as demonstrated herein.

Increasing the availability of and expanding access to liquidity would operate to stimulate the production of output by lowering a firm's marginal factor cost of capital.[38] A critical factor in the determination of the quantity of goods and services that an economy can produce is the quantity of inputs—such as capital, labor, raw materials, land and energy—that producers in the economy use.[39] Inputs in the production process are referred to as factors of production.[40] All else being equal, the greater the quantities of the factors of production used in the production process, the more goods and services are produced.[41] The "Production Function" is the equation that depicts the functional relationship between the production of output and the factors of production.[42]

Under the Production Function, increases in a firm's capital (K) generate corresponding increases in the production of output (Y).[43] The Production Function is expressed mathematically as follows:

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[36] *See* Keynes, at 116–17.

[37] *See* Schwarcz, *supra* note 18, at 198–99 (discussing systemic risk arising from the potential failure of the private banking system and the proposed role of government as a "liquidity provider of last resort" in the absence of alternative private sources of financing).

[38] *See* Christiano et al. (2005), *supra* note 18, at 3; Christiano et al. (1996), *supra* note 18, at 16 (discussing the effects of changes in money supply on the cost of capital and the production of output).

[39] *See* ANDREW B. ABEL & BEN S. BERNANKE, MACROECONOMICS 63–64 (5th ed. 2005).

[40] *Id.*

[41] *Id.*

[42] *Id.*

[43] *Id.*

FIGURE 1: PRODUCTION FUNCTION[44]

Y = A*f (K, N), *where*:
Y = real output produced in a given period of time;
A = a number measuring overall productivity;
K = capital stock;
N = the number of workers employed in the period; and
f = a function relating output (Y) to capital (K) and the number of workers (N).

Given that a firm's liquidity preference (meaning a composite of a firm's demand for money to be used as working capital plus the amount held by a firm in reserve that is not used towards production as a precautionary measure intended to mitigate risk) is a component in the calculation of capital (K), changes in the cost of money (*i*) would likewise have a corresponding effect on the amount of output produced (Y) because changes in the demand for money (as precipitated by changes in the cost of money (*i*), the firm's income (I) or by shifts in the liquidity preference curve more generally) cause changes in capital (K).[45]

A firm's liquidity preference has a negative functional relationship with the production of output because a firm's liquidity preference represents the amount of capital held by a firm in reserve that is not used towards production. Decreases in a firm's liquidity preference corresponds to decreases in the interest rate on money (and would lead to an increase in output since a greater proportion of a firm's capital will be used towards production). In contrast, increases in a firm's liquidity preference correspond to increases in the interest rate on money (and would lead to a decrease in output since a lesser proportion of a firm's capital will be used towards production). Furthermore, shifts in the Liquidity Preference Function caused, in part, by fluctuations in a firm's perception of risk in response to changes in economic conditions over time will also affect a firm's liquidity preference. Increases in a firm's perception of risk will increase liquidity preference (and would lead to an increase in output since a greater proportion of a firm's capital will be used towards production). Decreases in a firm's perception of risk will decrease liquidity preference (and would lead to a decrease in output since a lesser proportion of a firm's capital will be used towards production). Based on these observations, the Production Function can be restated mathematically as follows:

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[44] *Id.*

[45] *See* Christiano et al. (2005), *supra* note 18, at 3 (discussing how a decline in the interest rate on money lowers marginal costs).

FIGURE 2: PRODUCTION FUNCTION (RESTATED) [46]

Y = A*f (K - L (i, I), N), *where*:
Y = real output produced in a given period of time;
A = a number measuring overall productivity;
K = capital stock;
I = interest rate (otherwise known as the cost of money);
I = income;
L = the demand for money as a function relating to the interest rate (*i*) and income (I);
N = the number of workers employed in the period; and
f = a function relating output (Y) to capital (K), the demand for money (*L*), and the number of workers (N).

Under the Restated Production Function (Fig. 2), the amount of output, Y, that a productive firm can produce during any period of time depends on the size of its capital stock, K, minus the amount of its liquidity preference, D^M, and the number of workers employed, N. Assuming that all other factors remain constant, changes in the production of output, Y, correspond to changes in income, I, and the interest rate, *i*, as well as shifts in the liquidity preference function, L. Specifically, as a firm's liquidity preference increases, the amount of its capital stock that it employs towards production decreases. This results in a decrease in the production of output. In contrast, as a firm's liquidity preference decreases, the amount of its capital stock that it employs towards production increases. This results in an increase in the production of output. Therefore, it is demonstrated that a firm's liquidity preference, and the continued availability and accessibility of liquidity to productive firms more generally, is crucial in determining the level of output (Y).[47]

According to Christiano, et al., the increase in the production of output (Y) observed after a decrease in the interest rate on money (*i*) is caused by a decrease in the factor costs of production resulting from a reduction in the marginal factor cost of capital (K).[48] Increasing the supply of money through purchases of the equity securities of firms has the effect of decreasing the cost of money (*i*), which in turn has the effect of reducing the marginal factor cost of capital (K) and increasing the production of output (Y).[49] Further,

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[46] *See* N. GREGORY MANKIW, MACROECONOMICS 556 (7th ed. 2010) (providing the mathematical formula depicting the demand for money); *see also* Abel & Bernanke, *supra* note 37, at 61–62 (providing the mathematical formula depicting the Production Function).
[47] *See* Christiano et al., (2005), *supra* note 18, at 3, 29 (discussing how a decline in the interest rate on money increases the production of output by lowering marginal costs).
[48] *Id.*
[49] *Id.*

purchases of the equity securities of firms has the effect of increasing the income (I) of the firm, which also has the effect of reducing the marginal factor cost of capital (K) and increasing the production of output (Y).[50] Additionally, government purchases can have the effect of reducing a firm's perception of risk, thereby increasing the production of output (Y). In this manner, fiscal policy conducted through government purchases of equity securities would be effective as an economic stimulus because such a policy would operate to increase the production of output (Y) by decreasing the firm's cost of capital (K) through the reduction in the cost of money (*i*) and the increase in its income (I) (which, under the Restated Production Function, is indicated by a decrease in the firm's liquidity preference (L (*i, I*)) and results in an increase in output since a relatively larger proportion of a firm's capital is employed towards production as compared to relatively higher levels of liquidity preference).[51]

According to Keynes, fiscal policy is a response by government to counteract downturns in the trade cycle.[52] The trade cycle is the cyclical movement in an economic system whereby:

> [T]he forces propelling it upwards at first gather force and have a cumulative effect on one another but gradually lose their strength until they tend to be replaced by forces operating in the opposite direction; which in turn gather force for a time and accentuate one another, until they too, having reached their maximum development, wane and give place to their opposite.[53]

Derived from the concept of the trade cycle is "the phenomenon of the economic crisis—the fact that the substitution of a downward for an upward tendency often takes place suddenly and violently, whereas there is, as a rule, no sharp turning-point when an upward is substituted for a downward tendency."[54] The cyclical character of the trade cycle is due to fluctuations in the marginal efficiency of capital, which in turn generates fluctuations in private investment and affects the level of employment.[55]

Any fluctuation in investment not offset by a corresponding change in the propensity to consume will result in a fluctuation of employment and a sudden collapse in the marginal efficiency of capital. A sudden collapse in the marginal efficiency of capital is the predominant cause of the onset of an economic crisis because it is a primary factor in determining levels of investment.[56] The sudden collapse in the marginal efficiency of capital comes

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[50] *Id.* at 3.
[51] *Id.*
[52] *See* Keynes, *supra* note 30, at 325.
[53] *Id.* at 313–14.
[54] *Id.* at 314.
[55] *Id.* at 313.
[56] *Id.* at 315.

because "doubts suddenly arise concerning the reliability of the prospective yield of capital."[57] "[T]he dismay and uncertainty as to the future which accompanies a collapse in the marginal efficiency of capital naturally precipitate a sharp increase in liquidity preference—and hence a rise in the rate of interest."[58] A collapse in the marginal efficiency of capital tends to be associated with a rise in the rate of interest and a decline in investment.[59] Further, "the reduction of working capital, which is necessarily attendant on the decline in output on the downward phase, represents a further element of disinvestment and, once the recession has begun, this exerts a strong cumulative influence in the downward direction."[60]

The appropriate remedy for downturns in the trade cycle, to be embodied in the policy of the government, is to increase the inducement to invest and to stimulate the propensity to consume.[61] In consideration of these factors, a core tenet of Keynesian economic theory is that "comprehensive socialization of investment" provides the only means of "securing an approximation to full employment" in response to downturns in the trade cycle.[62] Under the Keynesian economic model, this "socialization of investment" manifests as increased government expenditures in public works.[63] Government investment in public works is presumed to increase the amount of employment and thereby stimulate the propensity to consume because "increased employment for investment must necessarily stimulate the industries producing for consumption and thus lead to a total increase of employment which is a multiple of the primary employment required by the investment itself."[64] As a general rule, "when the real income of the community increases or decreases, its consumption will [also] increase or decrease but not so fast."[65]

The novelty of a fiscal policy conducted through government purchases of productive firms' equity securities is to create a new method of economic stimulus that supplements and expands upon the traditional Keynesian economic model. Instead of limiting the conduct of fiscal policy to only government investment in public works, this paper articulates an alternative form of fiscal policy conducted through government transactions in the equity securities of firms.[66] One benefit of a fiscal policy conducted though government transactions in the equity securities of firms is that purchases of equity securities are relatively expedient transactions. The effect of stimulus arising from government purchases of equity securities would be immediate because

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[57] *Id.* at 317.
[58] *Id.* at 316.
[59] *See id.*
[60] *Id.* at 318.
[61] *See id.* at 325, 377.
[62] *Id.* at 378.
[63] *See id.* at 116–17.
[64] *Id.* at 118.
[65] *Id.* at 114.
[66] *Id.* at 378.

the proceeds received from public investment would instantly become available to be used as working capital in the operations of a firm.

Further, the government would also have the ability to tailor the focus of its investments to meet specified economic objectives (either by investing in all productive firms as a whole, or investing in only public firms or subgroups of similarly situated firms operating in certain sectors targeted for economic growth). The increase in a firm's income provided by government purchases of equity securities operates as an economic stimulus because when real income increases or decreases, consumption will also increase or decrease."[67] Furthermore, as demonstrated by the Restated Production Function, such increase in a firm's supply of working capital operates to lower the firm's marginal costs, thereby stimulating the production of output.[68]

The transaction costs incurred by financial intermediaries in the disbursement of capital would be reduced because firms would be able to obtain liquidity directly from the sovereign source, which results in a greater proportion of such liquidity being used towards production. The manner in which firms could use the proceeds received from government purchases of their equity securities is diverse. For example, such working capital could be used for hiring new workers, paying existing workers, purchasing new physical capital equipment, manufacturing new inventory, issuing dividends to shareholders, satisfying debts and other obligations, placing purchase orders with third party suppliers, pay rents, or fund operational and administrative expenses. Alternatively, such working capital could also be used to make loans to or investments in other businesses, to invest in research and development, or for other investment purposes.

The supply cost of government investment is important because higher supply costs impede the efficacy of fiscal policy as a method of stimulus. The use of government purchases of equity securities as a vehicle for stimulus is efficient. The portion of the supply cost of producing new equity securities that is incurred by an issuing firm is relatively low since it is limited to the transaction costs associated with the issuance of new securities. The remainder of the supply cost of producing new equity securities is incurred by existing shareholders in the form of dilution (and which is incorporated into the calculation of the cost of political risk in the market pricing of the security). All things being equal, this dilution is presumed to have a chilling effect on investment unless the cost of dilution (as a component of political risk) is equal to or less than the value of the benefits of government ownership to the investor.[69] However, because of the low supply cost needed to issue

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[67] *Id.* at 114.

[68] *See* Christiano et al. (2005), *supra* note 18, at 3.

[69] *See* Velasco, *supra* note 3, at 421–23 (discussing the litigation rights appurtenant to equity ownership). Based upon the authority of its legal standing as a shareholder, shareholder litigation rights would empower the government to prosecute firm misconduct for the benefit of investors. Per the theoretical framework introduced herein, it is inferred that the value of this regulatory insurance at least mitigates the cost of dilution caused by government ownership.

equity securities, fiscal policy intended to stimulate economic activity conducted through government purchases of equity securities would have a more immediate effect relative to expenditures in public works (which have a delayed effect because of higher supply costs).

The utility of government investment is also impacted by the degree to which government investment crowds out private investment in a manner that generates less net wealth. The private sector's ability to generate returns on investment in excess of what would be generated by government investment fluctuates, in part, because systemic risks in private capital markets can cause market failures that inhibit private financial firms from making investments that they would otherwise make.[70] Government investment conducted through acquisitions of equity securities would operate to fill gaps in the availability of financing in the event that financing becomes inaccessible as a result of failure in private capital markets. Government purchases and dispositions of the equity securities of firms would operate to offset fluctuations in private investment and help to maintain continued stability in capital markets.

The structure of how firms are able to obtain liquidity is also significant. By structuring access to liquidity as equity purchases instead of as loans, government purchases of equity securities would enable firms to increase their working capital without assuming significant ongoing liabilities. Debt service decreases the rate of return and would jeopardize the utility of government investment under conditions of Ricardian equivalence. Further, in contrast to traditional Keynesian forms of fiscal policy through government expenditures in public works, fiscal policy conducted through governmental purchases of equity securities would generate a measurable and alienable return because the market value of such securities could be readily compared to their cost basis. This would provide a more precise barometer of whether such fiscal policy has been successful (as judged by whether the returns on investment satisfy Ricardian equivalence) as compared to expenditures in public works under traditional Keynesian forms of fiscal policy (whose value is more difficult to quantify with absolute precision).[71]

Further, drawing a distinction between credit and equity transactions as vehicles of providing financing is essential for several reasons. First, financing in the form of credit invokes Ricardian equivalence problems because the expectation of the future cost of paying back financial assistance structured as loans increases the present liquidity-preference of the firm and has a chilling effect on production.[72] Second, since the costs of financing in the form of equity sales are borne by existing shareholders and not the firm itself, the costs of equity financing would not impact the liquidity-preference of the

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[70] *See* Schwarcz, *supra* note 18, at 204 (discussing the effect of market failure on the availability of investment capital).

[71] *See* Barro, *supra* note 34, at 1095 (noting the impact of government bonds on net wealth).

[72] *See* Barro, *supra* note 34, at 1113.

firm and would not have the same chilling effect on production (notwithstanding any unmitigated chilling effects on investment caused by political risk arising from shareholder dilution).[73] Third, the manner in which access to liquidity is structured assumes a significant role in determining the level of production because the differential impact of the costs of each kind of financing creates disparate effects upon the production of output.[74] Credit is not as effective of a vehicle for stimulating output, when compared with equity financing, because increases in a firm's liquidity-preference precipitated by the cost burden of ongoing debt liabilities exert a chilling effect upon production. In contrast, equity financing is a more effective vehicle for economic stimulus because the potential chilling effects upon investment caused by political risk arising from shareholder dilution would be mitigated, in part, by the value of the benefits conferred to the investor by virtue of government ownership.[75]

Ultimately, the long-term success of any fiscal policy as a method of economic stimulus is measured by whether the conditions of Ricardian equivalence are met.[76] Under Ricardian equivalence, a fiscal policy pursuant to which the government acquires the equity securities of productive firms would generate net wealth only if the return on government investment exceeds the acquisition value of such equity securities.[77] In light of this condition of Ricardian equivalence, fiscal policy conducted through government purchases of equity securities needs to be constrained such that the amount of government investment is limited to an amount equal to an optimal proportion that balances political risk with the benefits of government ownership. Further, in light of the Keynesian prescription that fiscal policy should be used as a tool to counteract downturns in the economic cycle caused by negative fluctuations in private investment,[78] an increase in the amount of government investment needs to be narrowly tailored to manifest as a precise countercyclical measure designed to carefully counteract the ebbs and flows of private investment. A fiscal policy conducted through government purchases of equity securities would create a new institutional mechanism for mitigating shortfalls in private investment in a manner that is relatively expeditious, less burdensome, and capable of greater precision.

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[73] *See* Velasco, *supra* note 3, at 421–24 (discussing the litigation rights appurtenant to equity ownership, per footnote 68).
[74] *See* Abel & Bernanke, *supra* note 37, at 333–34 (showing how, under well-established economic principles, increases in costs discourage economic growth by causing negative corresponding shifts in aggregate supply and output).
[75] *See* Velasco, *supra* note 3, at 421–23 (discussing the litigation rights appurtenant to equity ownership, per footnote 68).
[76] *See* Barro, *supra* note 34, at 1095 (discussing once again the impact of government bonds on net wealth).
[77] *Id.*
[78] *See* Keynes, *supra* note 30, at 313–15.

B. Government Assessments of the Equity Securities of Productive Firms as an Innovation in Tax Policy

An alternative policy mechanism through which the government could acquire the equity securities of productive firms would be to require such firms to issue securities to the government as a novel form of in-kind tax assessment. This innovation in tax policy would operate as a means to counteract corporate tax avoidance strategies by enabling the government to obtain value from a firm's economic performance in a manner that is unaffected by a firm's tax accounting methodology. A tax shelter is generally defined as a:

> (1) tax motivated; (2) transaction unrelated to a taxpayer's normal business operations; that (3) under a literal reading of some relevant legal authority; (4) produces a loss for tax purposes in excess of any economic loss, [is structured to avoid or defer income recognition, converts ordinary income into preferentially treated capital gain or otherwise achieves any other favorable tax treatment]; (5) in a manner inconsistent with legislative intent or purpose.[79]

Tax shelters are unfavorable from the perspective of public policy because they enable firms to claim "tax benefits that are questionable in light of congressional intentions and basic good sense, but that have sufficient authority so that fraud is not involved."[80] The typical tax shelter "has little or no motivation behind it other than hoped-for tax benefits" and are based on interpretations of legitimate authority that are inconsistent with legislative intent.[81] The issuance of equity securities to the government as a form of in-kind tax assessment, in contrast to traditional forms of taxation (such as taxes on income or capital gains tax), would enable government to obtain value from a firm's economic performance in a manner which cannot be avoided through the use of tax shelters and which cannot be obtained through conventional modes of taxation.

Regulators have primarily relied upon legislation as a means to counteract tax avoidance. Through the use of "targeted legislation," in the event that "statutes or regulations are being read hyper-technically to facilitate tax avoidance, one possible remedy is to amend the authority to clarify that offending interpretations are impermissible, at least in the context of particular transactions."[82] However, such targeted legislation is often ineffective as a means to remedy tax avoidance for several reasons. First, the difficulty in regulatory draftsmanship may render technical fixes impossible. Second,

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[79] *See* Erik M. Jensen, *Legislative and Regulatory Responses to Tax Avoidance: Explicating and Evaluating the Alternatives*, 57 ST. LOUIS U.L.J. 1, 3 (2012) (examining statutory and regulatory developments in American anti-avoidance law).
[80] *Id.* at 3.
[81] *Id.*
[82] *Id.* at 12.

targeted legislation only addresses a narrow scope of transactions and is not adaptive enough to respond to the emergence of new avoidance strategies. Third, targeted legislation is prospective in nature and does not affect transactions that have already been consummated. Lastly, targeted legislation adds to the complexity of and creates incoherence in, the laws governing taxation.[83]

In contrast, innovations in tax policy effectuated through in-kind collections of the equity securities of productive firms would create a new scheme of mitigating tax avoidance that improves upon existing methods.[84] First, the difficulty in regulatory draftsmanship may render technical fixes of income-based taxation schemes under targeted regulation impossible. Tax policy effectuated through in-kind collections of equity securities would be more simplistic—firms would be required to issue an equity stake to the government as taxes by virtue of their minimum contacts to the state and its markets. Second, targeted legislation only addresses a narrow scope of transactions and is not adaptive enough to respond to the emergence of new avoidance strategies. Tax policy effectuated through in-kind collections of equity securities would more broadly capture value from a firm's economic performance in a manner which cannot be avoided through the use of tax shelters. Third, targeted legislation is prospective in nature and does not affect transactions that have already been consummated. Tax policy effectuated through in-kind collections of the equity securities would capture value from a firm's past economic performance because such value is factored into the price of the security itself. Lastly, targeted legislation may add to the complexity of, and create incoherence in, current tax laws. Tax policy effectuated through in-kind collections of equity securities would likely exist independently from existing taxation schemes.[85]

Tax policy conducted through the collection of equity securities would create a novel method of in-kind tax assessment that would enable the government to directly benefit from the economic growth of productive firms as the value of such equity securities appreciate in value over time. The system of in-kind taxation contemplated herein is a fluid concept because of the broad spectrum of variation in which such a tax policy could manifest. Collections of equity securities could be structured as: (1) elective assessments, in lieu of monetary taxation; (2) as mandatory assessments levied on either a transactional or temporal basis; or (3) as a combination of elective and mandatory assessments. Assessments could be scheduled in a variety of ways, such as a predetermined equity ownership percentage, a fixed number of securities, or at a variable rate indexed to market capitalization. In addition, special rules can be implemented to limit government control resulting from such assessments, such as caps on the maximum permissible percentage of governmental ownership, repurchase rights, redemption rights, or

[83] *See id.* at 14–17.
[84] *Id.* at 3.
[85] *Id.* at 14–17.

drag-along rights. Further, assessments can be made on a differential class basis, such as by only levying in-kind tax assessments upon firms that are listed for trading on national public stock exchanges. In this manner, innovations in tax policy effectuated through in-kind collections of equity securities would add more flexibility in the formulation of tax policy generally and improve upon existing methods of corporate taxation.

II. THE UNIQUE BENEFITS OF PARTIAL GOVERNMENT OWNERSHIP OF PRODUCTIVE FIRMS AS A NECESSARY CONDITION FOR THE OPTIMIZATION OF FIRM PERFORMANCE

The optimization of firm performance requires, at minimum, (1) effective bargaining within the governing processes determining the communal use of the resources of the firm to generate reliable information regarding the optimal use of such resources[86] and (2) the optimal alignment of legal rights and economic incentives within the firm to enable effective monitoring of the use and allocation of such resources.[87] Partial government ownership of productive firms is a necessary condition for the optimization of firm performance because such government ownership would improve upon the configuration of incentives in firm governance. It would also empower the government to leverage its shareholder rights to resolve collective action problems in the monitoring of firm managers and improve the quality of bargaining in firm decision-making.

Methods of firm governance arising from forms of economic organization characterized by wholly private or wholly public ownership are inefficient for two important reasons. First, effective bargaining is a mechanism that is required in order to optimize decisions over the use of communal resources.[88] The concentration of power over firm resources produces ineffective bargaining in governance decisions because firm insiders can make unilateral decisions regarding the use of firm resources without a meaningful check upon the sufficiency and fairness of such policies.[89] Second, the arrangement of legal rights in firms characterized by wholly private or wholly public ownership are inefficient because (1) transaction costs inhibit the regulation of firm activities purely on the basis of private market operations[90] and (2) the regulation of firm activities purely on the basis of government

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[86] *See* Ostrom, *supra* note 1, at 14–16 (describing how bargaining generates the reliable information about time and place variables that is necessary for the optimization of the use of communal resources).

[87] *See* R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 1, 16 (1960) (noting how an optimal arrangement of legal rights "may bring about a greater value of production than any other").

[88] *See id.*

[89] *See* Ostrom, *supra* note 1, at 15-16.

[90] *See* Coase*, supra* note 87, at 16 (discussing how transaction costs inhibit the regulation of business activities on the basis of private market operations).

control generates outcomes that are prone to error.[91] Further, collective action problems create disincentives for private investors to monitor the managers of the firm since such private investors have the incentive to "free ride."[92] Mixed private and public ownership of firms would remedy inefficiencies evident under wholly publicly-owned and wholly privately-owned forms of economic organization in a manner that is not possible without such mixed ownership. Under this policy, the government would be empowered to rely on the unique rights conferred by equity ownership as an alternative legal basis of authority for government to influence firm governance and regulate firm behavior; provided, however, the government would also be constrained from exerting too much control over a firm's operations.

Identifying the optimal alignment of legal rights is important as a prerequisite condition for the optimization of firm performance.[93] For example, according to the Coase theorem, in situations where the business operations of a firm (Firm A) generates some externality that causes harm to some other person or entity (Firm B), restraining the activities of Firm A to protect against harm to Firm B would also cause harm to Firm A because the reciprocal effect of such restraint would have a negative effect on the business of Firm A.[94] In deciding whether Firm A should be allowed to harm Firm B or if Firm B should be allowed to harm Firm A, "the problem is to avoid the most serious harm."[95] According to Coase:

> The problem which we face in dealing with actions which have harmful effects is not simply one of restraining those responsible for them. What has to be decided is whether the gain from preventing harm is greater than the loss which would be suffered elsewhere as a result of stopping the action which produces the harm. In a world in which there are costs of rearranging the rights established by the legal system, the courts, in cases relating to nuisance, are, in effect, making a decision on the economic problem and determining how resources are to be employed.[96]

Assuming that transaction costs are nil, Firm A and Firm B will bargain to rearrange their legal rights in private market transactions whenever this would lead to an increase in the value of production.[97] Further, "[w]ith costless market transactions, the decision of the courts concerning liability for damage would be without effect on the allocation of resources."[98] In contrast,

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[91] *See id.* at 18 (discussing how the regulation of business activities on the basis of government control generates outcomes that are prone to error).
[92] *See* Ostrom, *supra* note 1, at 14-15 (describing the free rider problem in connection with the monitoring of the use of communal resources).
[93] *See* Coase, *supra* note 87, at 16 (1960).
[94] *See id.* at 2.
[95] *Id.*
[96] *Id.* at 27.
[97] *Id.* at 15.
[98] *Id.* at 10.

if transaction costs are greater than zero, Firm A and Firm B will bargain to rearrange their legal rights in private market transactions if the increase in the value of production is greater than the costs of entering into such transactions.[99] However, if the increase in the value of production from bargaining is less than transaction costs, the delimitation of legal rights (e.g., injunctive relief or liability to pay damages) would have a significant effect on the allocation of resources and would incentivize the discontinuation of the business activity found liable as the source of harm.[100]

Given this incentives arrangement, the specific method by which the use and allocation of resources are regulated is significant because "one arrangement of rights may bring about a greater value of production than any other."[101] Transaction costs play a significant role in the efficacy of each distinct arrangement of rights and determine whether the optimal arrangement of rights can be achieved purely through private market operations. If transaction costs are greater than the gain in productive value yielded by a rearrangement of rights, the arrangement of rights solely through private market transactions becomes unfeasible, and an alternative form of economic organization will be needed in order to achieve optimization.[102] According to Coase:

> [U]nless this is the arrangement of rights established by the legal system, the costs of reaching the same result by altering and combining rights through the market may be so great that this optimal arrangement of rights, and the greater value of production it would bring, may never be achieved.[103]

The regulation of business activities purely through private market operations produces non-optimal economic outcomes because transaction costs inhibit the degree to which rights can be re-configured through private bargaining.[104] Optimization requires "an alternative form of economic organization which could achieve the same result at less cost than would be incurred by using the market."[105]

In contrast, firms that are wholly owned by the government, whereby government unilaterally prescribes an arrangement of legal rights through legislative action, is an alternative to organization achieved through private bargaining. According to Coase, "instead of instituting a legal system of rights which can be modified by transactions on the market, the government may impose regulations which state what people must or must not do and

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[99] *Id.* at 15–16.
[100] *Id.* at 16.
[101] *Id.*
[102] *Id.*
[103] *Id.*
[104] *Id.*
[105] *Id.*

which have to be obeyed."[106] The advantage of economic organization through government control is that government can lower transaction costs by unilaterally establishing legal rights through policy implemented and solely determined by government's legislative power. The exercise of legislative power does not require bargaining with co-equal market participants and is enforceable through government's sovereign coercive power.[107] However, economic organization effected through government control does not systematically produce optimal economic outcomes and is prone to error.[108] According to Coase:

> It is clear that the government has powers which enable it to get things done at a lower cost than could a private organization (or at any rate one without special governmental powers). But the governmental administrative machine is not itself costless. It can, in fact, on occasion be very costly. Furthermore, there is no reason to suppose that the restrictive and zoning regulations, made by a fallible administration subject to political pressures and operating without any competitive check, will necessarily always be those which increase the efficiency with which the economic system operates. Furthermore, such general regulations which must apply to a wide variety of cases will be enforced in some cases in which they are clearly inappropriate. From these considerations it follows that direct governmental regulation will not necessarily give better results than leaving the problem to be solved by the market or the firm. But equally there is no reason why, on occasion, such governmental administrative regulation should not lead to an improvement in economic efficiency.[109]

It can be inferred that the likelihood of the achievement of optimization through economic organization effected by means of government control is probabilistic rather than deterministic.[110] While it may be possible for the optimal arrangement of rights to be realized through government control, optimization is not guaranteed as a systematic product of this form of economic organization. Optimization through government control is contingent upon government making prudent economic decisions without the systematic checks afforded by effective bargaining between parties in the context of an adversarial negotiation.[111]

Implementing the optimal form of economic organization is required in

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[106] *Id.* at 17.
[107] *Id.*
[108] *Id.* at 18.
[109] *Id.* at 17–18.
[110] *Id.* at 18.
[111] *See* Ostrom, *supra* note 1, at 10 (discussing how "[w]ithout valid and reliable information, a central agency could make several errors in decisions regarding the use and allocation of communal resources").

order to resolve collective action problems in firm governance. Collective action problems are generally symbolized by the "tragedy of the commons." The tragedy of the commons is emblematic of "the degradation of the environment to be expected whenever many individuals use a scarce resource in common."[112] Each individual receives a direct benefit from the use of the resources of the commons and suffers delayed costs from the deterioration of the commons.[113] This incentivizes each individual to use more of the resources of the commons than would be optimal since "one who cannot be excluded from obtaining the benefits of a collective good once the good is produced has little incentive to contribute voluntarily to the provision of that good."[114] A root cause of collective action problems represented by the tragedy of the commons is the "free rider problem." According to Ostrom:

> Whenever one person cannot be excluded from the benefits that others provide, each person is motivated not to contribute to the joint effort, but to free-ride on the efforts of others. If all participants choose to free-ride, the collective benefit will not be produced. The temptation to free-ride, however, may dominate the decision process, and thus all will end up where no one wanted to be. Alternatively, some may provide while others free-ride, leading to less than the optimal level of provision of the collective benefit.[115]

When faced with a collective action problem, each individual's dominant strategy is to free-ride; assuming that each individual chooses their dominant strategy, they produce a result that is not a "Pareto-optimal" outcome since the collective benefit is not optimized.[116] The conditions for a Pareto-optimal outcome are met when there is no other outcome strictly preferred by at least one individual that is at least as good for the other individuals. Cooperation between individuals is necessary in order to allocate resources in an optimal fashion.[117]

Configuring an optimal arrangement of rights to use common resources requires the optimization of the manner in which such rights are enforced and the optimization of the manner in which such rights are formulated. As discussed earlier, one method for the delimitation of rights is through government control. Under this form of economic organization, the government would unilaterally make decisions as to the use and allocation of common resources and leverage the coercive powers of government to ensure cooperation by monitoring and punishing noncompliance.[118] However, there is no

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[112] *See* Ostrom, supra note 1, at 2.
[113] *Id.*
[114] *Id.* at 6.
[115] *Id.*
[116] *Id.* at 4–5.
[117] *Id.* at 5.
[118] *Id.* at 9.

systematic guarantee that the decisions made by the government would generate optimal outcomes because such judgments are prone to error and are not subject to the systematic checks offered by an adversarial negotiation.[119] According to Ostrom:

> The optimal equilibrium achieved by following the advice to centralize control, however, is based on assumptions concerning the accuracy of information, monitoring capabilities, sanctioning reliability and zero costs of administration. Without valid and reliable information, a central agency could make several errors.[120]

Since economic organization configured purely through the application of government control generates outcomes that are systematically prone to error, the delimitation of legal rights under government control over the use and allocation of common resources is not optimal.[121]

Similarly, the privatization of common resources would also not produce optimal outcomes. Under wholly private ownership of common resources, individuals who are allocated an interest in such common resources are presumably incentivized to invest in monitoring and sanctioning activities because the efficiency with which they manage such resources impacts their returns on ownership.[122] However, if transaction costs related to monitoring and sanctioning activities are more costly than returns on ownership, then these transaction costs operate to disincentive investment in monitoring and sanctioning activities.[123] As a result, delimiting legal rights solely through private market transactions is not optimal because transaction costs systematically give rise to outcomes that do not provide sufficient monitoring and sanctioning over the use and allocation of common resources in a significant array of situations.[124]

The delimitation of legal rights over the use and allocation of common resources solely through private market transactions or solely through government control both yield non-optimal economic outcomes. In light of these defects, the optimization of the delimitation of legal rights over the use and allocation of common resources is not manufactured solely by archetype. Rather, it is the product of careful institution building through a "process that requires reliable information about time and place variables as well as a broad repertoire of culturally acceptable rules" that "enable individuals to achieve productive outcomes in situations where temptations to free-ride and shirk are ever present."[125] The mechanics of how decisions over the use and

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[119] *Id.* at 10.
[120] *Id.*
[121] *Id.*
[122] *Id.* at 12–13.
[123] *Id.* at 13.
[124] *See* Coase, *supra* note 87, at 16.
[125] *See* Ostrom, *supra* note 1, at 14–15.

allocation of firm resources are made is instructive as to how collective action problems over the use and allocation of common resources can be resolved. According to Coase:

> [T]he firm represents such an alternative to organising production through market transactions. Within the firm individual bargains between the various cooperating factors of production are eliminated and for a market transaction is substituted an administrative decision. The rearrangement of production then takes place without the need for bargains between the owners of the factors of production. A landowner who has control of a large tract of land may devote his land to various uses taking into account the effect that the interrelations of the various activities will have on the net return of the land, thus rendering unnecessary bargains between those undertaking the various activities. Owners of a large building or of several adjoining properties in a given area may act in much the same way. In effect, using our earlier terminology, the firm would acquire the legal rights of all the parties and the rearrangement of activities would not follow on a rearrangement of right by contract, but as a result of an administrative decision as to how the rights should be used.[126]

Bargaining plays a significant role in generating optimal policy over the use and allocation of a firm's resources. Bargaining is the mechanism that yields the "reliable information about time and place variables" that is essential for optimization.[127] For example, in a "self-financed contract enforcement game," bargaining between parties to determine the communal rules governing the use and allocation of resources serve as a check on the sufficiency and fairness of the information proffered by each party.[128] If one party suggests a contract based on incomplete or biased information, the other party can indicate an unwillingness to agree. This conveys that the policy proposed is either insufficient or unfair.[129] After further bargaining and signaling, a mutually acceptable agreement governing the use and allocation of resources will embody a policy that reflects an equilibrium that is Pareto-optimal (assuming that all parties in the negotiation have similar leverage).[130] Since bargaining operates as a systemic check upon the sufficiency and fairness of proposed policies, the absence of effective bargaining within the institutional decision-making framework of a firm becomes a source of disutility. This is because, akin to economic organization effected through government control, the decisions of a firm that are not subject to bargaining

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[126] *See* Coase, *supra* note 87, at 16.
[127] *See* Ostrom, *supra* note 1, at 14–15.
[128] *See id.* at 15–16.
[129] *See id.* at 16.
[130] *Id.*

would be prone to error and only probabilistically achieve optimization.[131]

Economic organization through the use of the firm is adopted "whenever the administrative costs of the firm [are] less than the costs of the market transactions that it supersedes and the gains which would result from the rearrangement of activities [are] greater than the firm's costs of organising them."[132] Firms are effective as a form of economic organization because they are capable of reducing transaction costs by unilaterally setting policy over the use and allocation of resources under their ownership (similar to the delimitation of rights over the use and allocation of common resources effectuated through government control).[133] Further, since the firm owns the resources, the temptation to free ride is muted because the efficiency with which such resources are managed will still have an impact on the firm's returns from its use of such resources.[134]

In order for a firm to make policy that is Pareto-optimal, the decisions it implements with regard to the use and allocation of its resources need to be the product of effective bargaining. Otherwise such decisions will be prone to error.[135] Bargaining operates as an "invisible hand" shifting policy outcomes towards optimization because it is a systemic check on the sufficiency and fairness of a proposed policy.[136] The challenge is to formulate an archetypal organizational structure for the governance of the firm that reduces administration costs to "less than the costs of the market transactions that it supersedes" while also creating a systematic mechanism for improving the level of effective bargaining within the institutional decision-making of the firm.[137]

Firms organized as corporations (or as limited liability companies) are designed to minimize transaction costs while also providing a mechanism for internal bargaining within the context of the institutional governance norms of the firm.[138] For example, with regard to certain fundamental corporate matters (such as a business combination or amendment to the firm's charter documents, or policies proposed in a firm's proxy statements), the shareholders of a firm must approve of these policies.[139] If a proposed policy is insufficient or unfair, shareholders can withhold approval, which, analogous to a self-financed contract enforcement game, is a signal that the

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[131] *See id.* at 10.
[132] Coase, *supra* note 87, at 17.
[133] *See id.* at 16.
[134] *Id.*
[135] *See* Ostrom*, supra* note 1, at 10.
[136] *Id.* at 16.
[137] Coase, *supra* note 87, at 16–17.
[138] *See id.* at 16 (regarding the reduction of transaction costs in the use and allocation of firm resources); *see also* Velasco*, supra* note 3, at 416–17 (discussing the control rights of shareholders of a firm).
[139] *See* Velasco*, supra* note 3, at 416–18; *see, e.g.*, DEL. CODE ANN. tit. 8, § 251(c) (2011).

proposed policy is not Pareto-optimal.[140] Assuming that that the firm's managers cannot unilaterally effectuate policy without the approval of non-affiliated shareholders, the disapproval of a policy by a firm's shareholders will cause the firm to recalibrate its proposed policy so that the policy better reflects an equilibrium that is Pareto-optimal.[141]

The organization of firms as corporations (or as limited liability companies) bears significant utility as a means to solve collective action problems over the use and allocation of common resources. Such ownership structures, and their legally prescribed governance norms, are uniquely designed to both minimize transaction costs while also institutionalizing mechanisms that improve the effectiveness of bargaining in the context of firm policymaking. However, since the firm itself is a collective resource jointly owned by its shareholders, collective action problems regarding the use and allocation of a firm's resources need to be resolved to achieve optimization.

The monitoring of firm governance in wholly privately-owned firms suffers from collective action problems since each individual shareholder receives a direct benefit from the activities of the firm, but suffers delayed costs from the deterioration of the governance of the firm. This creates disincentives for each individual shareholder to invest in monitoring.[142] With regard to monitoring the management of the firm, shareholders are incentivized to free-ride because "[w]henever one [shareholder] cannot be excluded from the benefits that others provide, each [shareholder] is motivated not to contribute to the joint effort, but to free-ride on the efforts of others."[143] When faced with a collective action problem relating to firm governance—such as organizing the prosecution of the firm's managers for misconduct—each shareholder's dominant strategy is to free-ride.[144] Moreover, if each shareholder chooses their dominant strategy, they produce a result that is not Pareto-optimal since the collective benefit is not optimized and the disincentives governing collective action make it more likely for misconduct to go unprosecuted.[145] Thus, in order for the performance of firms to be optimized, the incentives underlying firm governance need to be realigned to resolve these collective action problems.[146]

Further, the cost of externalities usually does not factor into the determination of firm policy because private investors in wholly privately-owned firms have a strong profit-seeking motive and firm managers are obligated to represent the interests of such shareholders. Disassociating the cost of externalities from firm policymaking creates a bias that increases inefficiency. As illustrated by the Coase theorem, the cost of externalities is a variable that

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[140] *See* Ostrom, *supra* note 1, at 15–16.
[141] *Id.*
[142] *Id.* at 6 (discussing collective action problems in the monitoring of common resources).
[143] *Id.*
[144] *Id.* at 4.
[145] *Id.* at 5–6.
[146] *Id.* at 6.

must be subject to effective bargaining and must be factored into the institutional processes determining the use and allocation of resources in order to achieve optimization.[147] Thus, for the use and allocation of resources to be optimized on a macroeconomic scale, a systematic mechanism for enabling more effective bargaining in firm governance to account for the cost of externalities must be incorporated into the institutional processes governing firm policymaking.

Government ownership of the equity securities of firms would confer upon the government certain rights that are unique to the legal status of shareholders. By relying on shareholder rights as the legal basis for the exercise of regulatory authority, the government would be empowered to remedy systemic defects in firm policymaking and resolve collective action problems in firm governance in a manner that is not possible without government ownership. Further, the technical innovations made possible by using government transactions in the equity securities of productive firms in the formulation and implementation of tax policy and fiscal policy would enable the government to be more dynamic in its capacity to influence firm policymaking, monitor firm governance, stimulate output, and facilitate optimization generally. Therefore, in light of the unique benefits enabled by government ownership, partial government ownership of productive firms, narrowly tailored to balance political risk with the benefits of government ownership, is a necessary condition for the optimization of firm performance.

A. Exercise of Government Shareholder Rights Would Improve Firm Performance by Arguing the Government's Legal Standing to Monitor Firm Managers and Improve Quality Firm Governance

Government acquisitions of the equity securities of productive firms would empower the government to improve the effectiveness of monitoring mechanisms by expanding government's legal standing to prosecute misconduct on the basis of its shareholder litigation rights. The legal status of shareholders confers certain rights and privileges that are uniquely held by the shareholders of a firm.[148] For instance, the right to seek judicial enforcement and redress for breaches of management's fiduciary duties to the firm and its shareholders.[149] On the basis of their unique legal status, shareholders are empowered to monitor the behavior of firm managers using special causes of action that are unavailable to those who do not have legal standing as

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[147] *See* Coase, *supra* note 87, at 2, 27 (noting how effective bargaining in connection with the allocation of the cost of externalities is necessary for the optimization of economic performance).

[148] *See* Velasco, *supra* note 3, at 421 (discussing the litigation rights appurtenant to equity ownership); *see also* Melvin A. Eisenberg, *Corporate Law and Social Norms*, 99 COLUM. L. REV. 1253, 1265 (1999) (discussing management's fiduciary duties).

[149] *See* Velasco, *supra* note 3, at 421; *see also* Eisenberg, *supra* note 148, at 1265.

shareholders.[150] However, if the incentives for private shareholders to prosecute misconduct by firm managers are weak because the costs of litigation do not outweigh potential benefits to the shareholder, then it would be rational for such misconduct to go unprosecuted.[151] This would have a negative macroeconomic impact (considering all firms in the aggregate) due to the overall erosion in the effectiveness of monitoring mechanisms as a means to maintain a high quality of firm governance. In light of these disincentives, the litigation rights that would be conferred by partial government ownership would empower the government with the legal standing to prosecute causes of action for misconduct that are beyond the current scope of its regulatory authority and which may otherwise be unprosecuted without government intervention.[152]

In the typical case, the incentives governing whether any individual shareholder elects to file suit against the management of a firm for misconduct is dependent on the outcome of a cost-benefit analysis.[153] If the likely benefits of litigation outweigh its cost to the shareholder, then a lawsuit will likely be filed; provided, however, "[t]he usual economics of [shareholder] suits are that the individual shareholder will not gain enough from a successful resolution of the claim to make it worthwhile to incur the costs that a suit would entail."[154] Although shareholder representative litigation provides some remedy for collective action problems related to these costs of prosecuting misconduct, law firms representing plaintiffs in such cases have incentives to "file too quickly and too often, and to settle too cheaply."[155] This degrades the effectiveness of private shareholder litigation as a tool to monitor management and ensure better firm governance.[156]

The government, as opposed to private shareholders, has a strong interest in deterring misconduct to guard against the social costs imposed by misconduct.[157] The government has a strong interest because "regulatory intervention helps markets to achieve the maximization of social welfare rather than the welfare of individual investors . . . . Corporate governance regulation forces companies to commit credibly to a higher quality of

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[150] *See* Velasco, *supra* note 3, at 421; *see also* Eisenberg, *supra* note 148, at 1265.
[151] *See* Randall S. Thomas & Robert B. Thompson, *A Theory of Representative Shareholder Suits and its Application to Multijurisdictional Litigation*, 106 NW. U.L. REV. 1753, 1765 (2012) (discussing the costs of prosecuting shareholder suits and the effects on the frequency of litigation).
[152] *See* Velasco, *supra* note 3, at 422; *see also* Eisenberg, *supra* note 148, at 1265; Thomas & Thompson, *supra* note 151, at 1765.
[153] *See* Thomas & Thompson, *supra* note 151, at 1765.
[154] *Id.*
[155] *Id.*
[156] *Id.*
[157] *See* Marina Martynova & Luc Renneboog, *A Corporate Governance Index: Convergence and Diversity of National Corporate Governance Regulations* 5–6 (Tilburg Univ. Ctr., Discussion Paper No. 2010-17, 2010) (discussing the role of government regulation in ensuring a high quality of firm governance).

governance."[158] Without government regulatory intervention, "the separation of ownership and control leads to a divergence of interests between the managers and shareholders . . . . The managers may forgo the shareholders' wealth maximization objective and undertake actions which maximize their personal interests but not the value of the company."[159] Firm managers are able to leverage their control over firm resources for personal gain without effective monitoring by the firm's shareholders because collective action problems create disincentives for shareholders to individually bear the costs of monitoring.[160]

On the other hand, the government has a strong incentive to mitigate the negative macroeconomic effects of misconduct by firm managers.[161] Since the purpose of government regulation is to mitigate conflicts of interest, ensure better governance, and maximize social welfare, the government has the strongest incentive (relative to private shareholders) to prosecute misconduct by firm managers. The government's interest is in deterring misconduct on a macroeconomic scale. Government regulatory intervention is the most effective remedy for collective action problems in the monitoring of firm governance because the government has the strongest incentive to prosecute misconduct even if the costs to the government of prosecuting misconduct in an individual case outweighs the potential pecuniary benefits of such prosecution.[162]

Under existing law, the shareholders of a firm are conferred special litigation rights unavailable to any other party. Partial government ownership of firms would introduce a new regulatory device for monitoring firm governance on the basis of these special litigation rights.[163] Under the current set of governance norms, misconduct by firm managers will go unprosecuted if the costs of prosecuting such misconduct outweigh the potential benefits to the shareholder.[164] When considered in the aggregate, the costs of this misconduct has the effect of degrading the overall quality of firm governance on a macroeconomic scale.[165] Government acquisitions of the equity securities of productive firms would empower the government to improve the effectiveness of monitoring mechanisms by expanding government's legal standing to prosecute misconduct on the basis of its shareholder litigation rights.[166] This would resolve collective action problems in firm governance and

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[158] *Id.*
[159] *Id.* at 4.
[160] *Id.*
[161] *See id.* at 5–6.
[162] *Id.*
[163] *See* Velasco, *supra* note 3, at 421–22; *see also* Eisenberg, *supra* note 148, at 1277–78.
[164] *See* Thomas & Thompson, *supra* note 151, at 1765.
[165] *See* Martynova & Renneboog, *supra* note 157, at 4.
[166] *See* Velasco, *supra* note 3, at 421–22; *see also* Eisenberg, *supra* note 148, at 1277-78; Martynova & Renneboog, *supra* note 157, at 4; Thomas & Thompson, *supra* note 151, at 1764–65.

remedy defects in the present configuration of the incentives.

B. Exercise of Government Shareholder Litigation Rights Would Mitigate Collective Action Problems in the Monitoring of Firm Governance by Shifting the Costs of Prosecuting Misconduct from Private Investors to the Government

Government acquisition of the equity securities of productive firms would confer the government with the legal standing to insure investors against the risk of loss arising from misconduct by firm managers. This would be achieved by shifting the costs of prosecution from investors to the government.[167] By definition, passive shareholders do not have the power to control the activities of a firm. Given this separation of ownership and control, passive shareholders are generally not culpable for the unlawful conduct of a firm because the firm's operations are generally directed by the firm's managers. However, under the current mechanics of regulation, passive shareholders are negatively affected in the event that a firm is punished for misconduct because regulatory fines deplete the firm's working capital reserves.[168] These funds could otherwise be distributed to shareholders in the form of dividends or used in activities designed to increase the value of the firm. Further, news of regulatory action against a firm for misconduct may send a negative signal to the market, thereby causing the securities held by the firm's shareholders to diminish in value.[169] This loss is a premium that is paid by the existing shareholders of a firm, even though they are not specifically culpable for a firm's misconduct.[170]

Information asymmetry—meaning a difference in access to relevant knowledge about the operations of the firm—is a source of inefficiency in firm governance because of the moral hazard problem and the adverse selection problem.[171] Moral hazard is a problem that arises in the context of firm governance when the shareholders of a firm cannot perfectly monitor the behavior of the firm's managers, who act as agents on behalf of the shareholders.[172] Firm managers generally know more information about the manner in which they conduct the firm's operations than the firm's shareholders. Firm managers are able to act on the basis of information asymmetry in ways that the shareholders may otherwise deem undesirable because the lack of effective monitoring enables firm managers to act without recourse.[173]

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[167] *See* Velasco, *supra* note 3, at 421; *see also* Eisenberg, *supra* note 148, at 1277–78.
[168] *See* H. Kent Baker et al., *The Effect of Announcements of Corporate Misconduct and Insider Trading on Shareholder Returns*, 18 BUS. & PROF. ETHICS J. 47, 47–48 (1999).
[169] *Id.*
[170] *Id.*
[171] *See* N. GREGORY MANKIW, PRINCIPLES OF MICROECONOMICS 484–85 (5th ed. 2009) (describing inefficiencies arising from information asymmetry).
[172] *Id.* at 484.
[173] *Id.*

Adverse selection is a problem that arises when firm insiders know more about the attributes of the firm than its investors.[174] In these situations, investors run the risk that the firm is less valuable than as represented by firm insiders.[175]

By law, and pursuant to the limitations set forth in a firm's charter documents, a firm must "conduct or promote only lawful business or purposes."[176] However, when a firm engages in unlawful activities, those acts constitute *ultra vires* acts outside of the permissible purview of legitimate corporate action.[177] The term *ultra vires* represents some act or transaction on the part of a firm which is "beyond the legitimate powers of the [firm] as they are defined by the statutes under which it is formed, or which are applicable to it, or by its charter or incorporation papers."[178] Investors make systematic errors in their investment decisions because they must assume that the activities of a firm are lawful and will continue to be lawful given the limited scope of permitted firm activities that are prescribed under law (namely that the firm is only authorized to engage in lawful activities and that all other activities are *ultra vires*).[179] However, information asymmetry about the legality of the operations of the firm, coupled with collective action problems in monitoring, generate risks that are a systemic source of inefficiency in firm governance.[180]

The fiduciary duties governing the relationship between firm managers and the shareholders form the primary basis upon which shareholders exercise the legal authority to monitor the activities of management.[181] Particularly significant is the duty of obedience, which requires that "directors must keep within the scope of their chartered powers [and that] they are liable to the corporation for all *ultra vires* acts performed by them."[182] The duty of obedience is simply an application of the *ultra vires* doctrine to the activities and duties of firm managers.[183] According to Palmiter:

> The duty of obedience served mostly as a natural corollary to the ultra vires doctrine. Just as the corporation was prevented from acting beyond its powers, corporate actors were obligated not to perpetrate such

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[174] *Id.* at 485.
[175] *Id.*
[176] *See, e.g.*, DEL. CODE ANN. tit. 8, § 101(b) (2011) (codifying Delaware corporate law defining the permissible scope of legitimate firm activity).
[177] *See* Frank A. Mack, *The Law on Ultra Vires Acts and Contracts of Private Corporations*, 14 MARQ. L. REV. 212, 214–15 (1930).
[178] *Id.* at 212.
[179] *See* DEL. CODE ANN. tit. 8, § 101(b); *see also* Mack, *supra* note 174, at 212.
[180] *See* Mankiw, *supra* note 168, at 484.
[181] *See* William M. Lafferty et al., *A Brief Introduction to the Fiduciary Duties of Directors under Delaware Law*, 116 PENN ST. L. REV. 837, 841 (2012).
[182] *See* Mack, *supra* note 174, at 223.
[183] *See* Alan R. Palmiter, *Duty of Obedience: The Forgotten Duty*, 55 N.Y.L. SCH. L. REV. 457, 460 (2010).

> actions—and could be held liable if they did . . . . Corporations, from the beginning and still today, are to engage only in 'lawful business' and thus are not meant to engage in illegality. Thus, the original ultra vires doctrine not only set the boundaries of corporate power as established by corporate norms, it also recognized that the corporation is powerless to violate noncorporate norms—that is, external law. The obedience duty called on fiduciaries to not permit corporate illegality.[184]

Further, in *Gearhart Indus., Inc. v. Smith Int'l, Inc.*, the court recognized the duty of obedience as an enforceable fiduciary duty when it stated that "[t]he duty of obedience requires a director to avoid committing ultra vires acts, i.e., acts beyond the scope of the [authority] of the corporation as defined by its [articles of incorporation] or the laws of the state of incorporation."[185]

Government acquisitions of the equity securities would confer upon the government the legal standing to prosecute firm managers for the unlawful conduct of a firm as a breach of the fiduciary duty of obedience.[186] Under the fiduciary duty of obedience, firm managers would be personally liable for unlawful acts conducted by the firm because such unlawful acts are *ultra vires* and agents of the firm are not permitted to direct the firm to engage in any *ultra vires* acts.[187] According to Leacock:

> [T]he [ultra vires] doctrine has been held to apply, first where the company purports to act beyond its purposes as set out in its constitution, secondly, where the company purports to act in a way prohibited by statute and, finally, where the company purports to act through the agency of someone who lacks the requisite authority.[188]

Lawsuits prosecuted by the government against firm managers for the breach of the fiduciary duty of obedience would act as a layer of insurance for the benefit of shareholders because the burden of prosecution for misconduct would shift from private investors to the government. Since acts by a firm that are "prohibited by statute" are by definition *ultra vires* and firm managers are personally liable for such *ultra vires* acts as a breach of the

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[184] *Id.*

[185] Gearhart Indus., Inc. v. Smith Int'l, Inc., 741 F.2d 707, 719–20 (5th Cir. 1984) (quoting McCollum v. Dollar, 213 S.W. 259, 261 (Tex. Comm'n App. 1919)).

[186] *See* Velasco, *supra* note 3, at 421; *see also Gearhart,* 741 F.2d at 719–20; Mack, *supra* note 174, at 223; Palmiter, *supra* note 180, at 460.

[187] *See* Palmiter, *supra* note 180, at 460; *see also Gearhart,* 741 F.2d at 719; Mack, *supra* note 174, at 223.

[188] Stephen J. Leacock, *Rise and Fall of the Ultra Vires Doctrine in United States, United Kingdom, and Commonwealth Caribbean Corporate Common Law: A Triumph of Experience Over Logic*, 5 DEPAUL BUS. & COM. L.J. 67, 69 n.15 (2006).

fiduciary duty of obedience,[189] shareholder litigation predicated upon breaches of the duty of obedience would function as an alternative regulatory enforcement mechanism that penalizes firm managers instead of passive investors. This would promote better governance in a manner that does not directly harm shareholders.

"The business judgment rule is a deferential standard of review [whereby] courts will generally refrain from unreasonably imposing themselves upon the business and affairs of a corporation when the board's decision can be attributed to some rational corporate purpose."[190] The business judgment rule can be asserted as a defense against claims alleging a breach of the duty of care and claims alleging a breach of the duty of loyalty.[191] However, the business judgment rule does not apply to claims alleging a breach of the duty of obedience because firm misconduct is prima facie *ultra vires* and firm managers are personally liable for the firm's *ultra vires* acts.[192] Whether management's decision can be attributed to some "rational corporate purpose" is immaterial when prosecuting breaches of the duty of obedience.[193] Therefore, prosecutions of breaches of the fiduciary duty of obedience as a cause of action are relatively more likely to be successful because the business judgment rule would not be available as a defense for misconduct.

Government regulation of firms internally (using existing legal frameworks governing the rights of shareholders) as opposed to externally (through the enforcement of external regulation) would incentivize investment. The internal regulation of firm governance on the basis of existing shareholder rights would provide a layer of insurance for the benefit of investors through the assumption by government of the costs of prosecution. Under external forms of regulation, penalties assessed by government regulators tend to negatively affect shareholders and discourage investment. because such penalties tend to negatively affect the value of the firm as a whole. In contrast, under internal forms of regulation, awards won by government on behalf of shareholders would incentivize investment because such awards would positively benefit shareholders as a class (either through damages directly awarded to shareholders or through increases in the market value of a firm obtained through the additional income received by the firm as monetary restitution for misconduct by management). Shareholders largely assume the burden of loss under the present regulatory scheme even though they are generally not culpable. Regulating firms internally on the basis of shareholder rights instead of externally on the basis of legislation is preferable because the risk of loss resulting from unlawful firm activities would

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[189] *See* Velasco, *supra* note 3, at 421; *see also Gearhart*, 741 F.2d at 719; Mack, *supra* note 174, at 223; Palmiter, *supra* note 180, at 460.
[190] Lafferty et al., *supra* note 178, at 841.
[191] *Id.*
[192] *See* Mack, *supra* note 174, at 223.
[193] *Id.*; *see also* Lafferty et al., *supra* note 178, at 841.

shift from the shareholders to the agents of the firm who are actually at fault for causing the firm to act in violation of law.

Government acquisitions of the equity securities of firms would entitle the government to unique rights conferred by its legal status as a shareholder.[194] Based on its litigation rights as a shareholder, the government would have legal standing to prosecute breaches of fiduciary duty and similar forms of misconduct that are presently outside of the scope of its regulatory authority.[195] Government prosecutions of breaches of fiduciary duty would operate as a supplemental form of corporate regulation. The agents of the firm who are specifically at fault (and not the shareholders or the firm itself) would be held accountable for losses related to a firm's unlawful conduct. In this manner, government would have greater capacity to improve monitoring and sanctioning activities in connection with firm governance and abate risks to investors related to information asymmetries.

C. Exercise of Government Shareholder Inspection Rights Would Improve the Monitoring of Firm Governance by Increasing Transparency in Firm Operations

Government acquisitions of the equity securities of productive firms would empower the government to improve monitoring and increase transparency by expanding government access to firm records that may otherwise be unavailable.[196] The inspection rights held by shareholders of a firm are the right to inspect certain books and records of the firm, particularly the firm's charter, bylaws, minutes of meetings of the Board of Directors, and shareholder lists.[197] For example, Delaware General Corporation Law Section 220(b) provides:

> Any stockholder, in person or by attorney or other agent, shall, upon written demand under oath stating the purpose thereof, have the right

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[194] *See* Velasco, *supra* note 3, at 411.

[195] *Id.* at 421.

[196] *See* ROBERT C. CLARK, CORPORATE LAW § 10.2.3 (1986) (discussing disclosure); Lucian Arye Bebchuk, *Federalism and the Corporation: The Desirable Limits on State Competition in Corporate Law*, 105 HARV. L. REV. 1435, 1438 (1992); Jeffrey J. Clark, *Recent Developments in Delaware Corporate Law: Compaq Computer Corp. v. Horton: A Straight Forward, Clarifying, Statutory Interpretation of Section 220(b) and (c)*, 20 DEL. J. CORP. L. 622, 626 (1995) (discussing proper purpose); Velasco, *supra* note 3, at 420–21 (discussing the information rights appurtenant to equity ownership); *see also* Randall S. Thomas, *Improving Shareholder Monitoring of Corporate Management by Expanding Statutory Access to Information*, 38 ARIZ. L. REV. 331, 332–33 (1996) (discussing the effectiveness of shareholders as monitors of corporate management).

[197] *See* Velasco*, supra* note 3, at 420–21 (discussing the information rights appurtenant to equity ownership); *see also* Clark, *supra* note 193, at 623; Bebchuk, *supra* note 193, at 1438; Thomas, *supra* note 193, at 332 (discussing the effectiveness of shareholders as monitors of corporate management).

> during the usual hours for business to inspect for any proper purpose, and to make copies and extracts from . . . [t]he corporation's stock ledger, a list of its stockholders, and its other books and records; and . . . [a] subsidiary's books and records[198]

In order for a shareholder to exercise its shareholder inspection rights, a shareholder must articulate a proper purpose for the demand. [199] For example, Section 220(b) of the Delaware General Corporation Law provides that "[a] proper purpose shall mean a purpose reasonably related to such person's interest as a stockholder."[200] If a corporation rejects a shareholder's demand for inspection, a judicial remedy is available in order to compel inspection. Section 220(c) provides:

> If the corporation, or an officer or agent thereof, refuses to permit an inspection sought by a stockholder or attorney or other agent acting for the stockholder . . . or does not reply to the demand within 5 business days after the demand has been made, the stockholder may apply to the Court of Chancery for an order to compel such inspection. The Court of Chancery is hereby vested with exclusive jurisdiction to determine whether or not the person seeking inspection is entitled to the inspection sought. The Court may summarily order the corporation to permit the stockholder to inspect the corporation's stock ledger, an existing list of stockholders, and its other books and records, and to make copies or extracts therefrom.[201]

When evaluating which purposes are deemed "proper" in support of compelling inspection, an investigation into suspected mismanagement may qualify.[202] Courts have held that "[t]here is no shortage of proper purposes under Delaware law . . . perhaps the most common . . . is the desire to investigate potential corporate mismanagement, wrongdoing, or waste."[203] An investigation into suspected mismanagement will be deemed to be a proper purpose so long as the shareholder demonstrates, by a preponderance of the evidence, that a "credible showing, through documents, logic, testimony or otherwise, that there are legitimate issues of wrongdoing."[204] The "credible basis" evidentiary standard entails "the lowest possible burden of proof."[205]

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[198] DEL. CODE ANN. tit. 8, § 220(b) (2011).
[199] *Id.*
[200] *Id.*
[201] DEL. CODE ANN. tit. 8, § 220(c).
[202] *See* Melzer v. CNET Networks, Inc., 934 A.2d 912, 917 (Del. 2007).
[203] *Id.*
[204] *See* Sec. First Corp. v. U.S. Die Casting & Dev. Co., 687 A.2d 563, 568 (Del. 1997).
[205] *See* La. Mun. Police Emps. Ret. Sys. v. Countrywide Fin. Corp., No. Civ.A. 2608-VCN, 2007 WL 2896540, at *10 (Del. Ch. Oct. 2, 2007).

In addition to investigations into potential mismanagement, wrongdoing, or waste, courts have also found a proper purpose in cases where a shareholder sought to ensure the correctness of financial statements, determine the value of the shareholder's shares, solicit other shareholders to join derivative litigation against managers of the firm, encourage other shareholders to seek appraisals, and acquire names before a planned proxy solicitation.[206]

Government acquisitions of the equity securities of productive firms would entitle the government to certain unique shareholder inspection rights. The government would have legal standing to inspect a firm's charter, bylaws, meeting minutes of the Board of Directors, shareholder lists, financial records, contracts, and similar books and records as long as the government's purpose is deemed to be "proper."[207] The diversity of the purposes held to be "proper" yields a similar diversity in the methods by which government could leverage its inspection rights to obtain records and improve monitoring.[208] The government's right to access the records of a firm using this method would not be possible without the legal status conferred as a direct result of its equity ownership.[209] Further, since the "credible basis" evidentiary standard entails "the lowest possible burden of proof," obtaining these records on the basis of government's inspection rights would be less burdensome than obtaining such information by using some other legal device, such as by obtaining a subpoena.[210]

The exercise of shareholder inspection rights by the government could be used as a novel investigative tool to successfully detect misconduct. For example, the right to access board minutes would enhance the government's ability to monitor firm managers and ensure that all necessary formalities are duly observed in connection with the authorization of firm actions. The minutes of meetings of the board function as a legal accounting of the major actions of a firm.[211] Such minutes serve as a record of the authorizations obtained for such actions, provide details as to what is discussed in such meetings, and set forth a timeline outlining when such actions were authorized.[212]

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[206] *See* Clark, *supra* note 193, at 626 (citing ERNEST L. FOLK III ET AL., FOLK ON THE DELAWARE GENERAL CORPORATION LAW § 220.73 (4th ed. Supp. 2006)).

[207] *See* DEL. CODE ANN. tit. 8, § 220(b); *Melzer*, 934 A.2d at 917; Clark, *supra* note 193, at 624–25; Thomas, *supra* note 193, at 334; Velasco*, supra* note 3, at 420.

[208] *See* Clark, *supra* note 193, at 626.

[209] *See* Velasco*, supra* note 3, at 421.

[210] *See La. Mun. Police Emps. Ret. Sys.*, 2007 WL 2896540, at *10.

[211] *See* Miriam Schwartz-Ziv & Michael S. Weisbach, *What Do Boards Really Do? Evidence from Minutes of Board Meetings*, 108 J. FIN. ECON. 349, 350 (2013) (discussing board minutes as a legal record of the behavior of corporate management); *see also* DEL. CODE ANN. tit. 8, § 142(a) ("One of the officers shall have the duty to record the proceedings of the meetings of the stockholders and directors in a book to be kept for that purpose.").

[212] *See* Miriam Schwartz-Ziv & Michael S. Weisbach, *What Do Boards Really Do? Evidence from Minutes of Board Meetings*, 108 J. FIN. ECON. 349, 350 (2013) (discussing board minutes as a legal record of the behavior of corporate management);

Further, the right to access the financial records of a firm is significant because these financial records could be used to evaluate the integrity and sufficiency of public records, such as tax returns, financial statements, and regulatory filings of public companies, and could also be used to detect fraud, bribery, embezzlement, and other unlawful behavior. Periodic audits of such records by the government on the basis of the exercise of its shareholder inspection rights would deter misconduct, promote transparency, and incentivize more robust recordkeeping practices.

The incentives governing whether any individual shareholder would elect to exercise its inspection rights is dependent on the outcome of a cost-benefit analysis. If the likely benefits of inspection outweigh its cost to the shareholder, then a demand for inspection will likely be made. In contrast, if the costs of inspection outweigh the likely benefits to the shareholder, then a demand for inspection will likely not be made. Governmental monitoring through the exercise of shareholder inspection rights is necessary in the absence of action by private shareholders because the government has a strong interest in mitigating the negative effects that misconduct has upon the overall quality of firm governance.[213] As a result, the inspection rights conferred on the basis of its legal status as a shareholder would empower the government to improve monitoring in firm governance in a manner that is not possible without some degree of government ownership.

D. Exercise of Government Shareholder Proxy Solicitation and Proposal Rights Would Improve the Quality of Bargaining in Firm Policymaking through the Integration of the Cost of Externalities into Firm Governance Decisions

Government acquisitions of the equity securities of productive firms would enable the government to participate in the shareholder proposal and proxy solicitation processes of a firm.[214] Specifically, on the basis of its shareholder control rights, the government would have legal standing to propose its own policies for shareholder approval and to solicit proxies from other shareholders to support or oppose proposals proffered by firm managers and other parties.[215] Exercise of the government's shareholder control

see also DEL. CODE ANN. tit. 8, § 142(a) ("One of the officers shall have the duty to record the proceedings of the meetings of the stockholders and directors in a book to be kept for that purpose.").

[213] *See* Martynova et al., *supra* note 157, at 5–6 (discussing the role of government regulation in ensuring a high quality of firm governance).

[214] *See* Velasco*, supra* note 3, at 416–20 (discussing shareholder control rights); *see also* DEL. CODE ANN. tit. 8, § 212 (codifying Delaware state securities law regarding shareholder voting); *see generally* 17 C.F.R. § 240.14a-3 (2018) (codifying U.S. federal securities law regarding proxy statements).

[215] *See* Velasco*, supra* note 3, at 418–20; *see also* DEL. CODE ANN. tit. 8, § 212; *see generally* 17 C.F.R. § 240.14a-3.

rights would encourage more effective bargaining in firm policymaking.[216] The government would be empowered to opine upon proposed policies that impose significant externalities, negatively impact social welfare or otherwise have detrimental effects. This would engender more rigor in firm policymaking more generally.

Empowering the government with shareholder proxy solicitation and proposal rights would enable the government to influence firm policymaking from within the context of existing governance frameworks.[217] The government would be able to participate in firm policymaking to account for the cost of externalities and give the public a voice in the institutional discourse guiding firm behavior. Since the goal of regulatory intervention is to help markets "achieve the maximization of social welfare," the government has a strong interest in proposing policies that are designed to limit the impact of externalities caused by firm behavior.[218] Further, the government can use its proxy solicitation rights to garner support for or to oppose proposed policies proffered by firm managers and other interested parties requiring shareholder approval.[219]

Government participation in the shareholder voting and policy proposal processes would introduce a mechanism for integrating the costs of externalities into the institutional decision-making framework of firm governance.[220] In the absence of government participation in firm governance, decisions over the use and allocation of firm resources are made without a meaningful check on the fairness and sufficiency of such proposed uses with regard to the costs of externalities.[221] The absence of genuine bargaining in firm governance is a source of disutility because bargaining is the mechanism that yields the "reliable information about time and place variables" that is essential for optimization.[222] The insufficiency of effective bargaining in the institutional decision-making framework of firm governance is problematic because the lack of an adversarial check in firm policymaking generates the systematic potential for error.[223]

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[216] *See* Velasco*, supra* note 3, at 416–20; *see also* DEL. CODE ANN. tit. 8, § 212; *see generally* 17 C.F.R. § 240.14a-3.
[217] *See* Velasco*, supra* note 3, at 416–20; *see also* DEL. CODE ANN. tit. 8, § 212; *see generally* 17 C.F.R. § 240.14a-3.
[218] *See* Martynova, *supra* note 157, at 5.
[219] *See* Velasco*, supra* note 3, at 416–20; *see also* DEL. CODE ANN. tit. 8, § 212; *see generally* 17 C.F.R. § 240.14a-3.
[220] *See* Velasco*, supra* note 3, at 416–20; *see also* DEL. CODE ANN. tit. 8, § 212; *see generally* 17 C.F.R. § 240.14a-3.
[221] This is because "[w]ithin the firm, individual bargains between the various cooperating factors of production are eliminated, and for a market transaction is substituted an administrative decision . . . [t]he rearrangement of production then takes place without the need for bargains between the owners of the factors of production." *See* Coase, *supra* note 87, at 16.
[222] *See* Ostrom, *supra* note 1, at 14–15.
[223] *Id.* at 9–10.

While the private shareholders of a firm have a profit-seeking interest due to their equity stake in the firm, they also have a substantial interest in minimizing the effect of externalities since, as members of the public, they share in and are negatively affected by the costs of such externalities. This conflict of interest is significant when considering the manner in which such shareholders are incentivized to vote upon any particular policy. If the perceived benefits of a proposed policy to a shareholder outweighs its perceived harm, then the shareholder would be incentivized to support the policy. In contrast, if the perceived harm of a proposed policy to a shareholder outweighs its perceived benefits, then the shareholder would be incentivized to oppose the policy. Further, the array of policies proposed for shareholder voting is significant because a broader diversity of proposals widens the scope of matters subject to shareholder deliberation. Thus, government participation in the policy proposal and proxy solicitation process would empower the government to promote policy outcomes designed to maximize the social welfare and limit the effect of externalities through robust bargaining within the existing institutional frameworks that govern firm policymaking.

U.S. state and federal securities laws provide formal requirements as to when a shareholder vote is required, the mechanics of how policies to be subject to a vote of the shareholders may be proposed, and the sufficiency of information to be disseminated to shareholders.[224] For example, under U.S. federal securities law, the shareholders of a company whose securities are registered under the U.S. Securities Exchange Act of 1934 (the "Exchange Act") generally must receive a proxy statement prior to a shareholder meeting.[225] The information contained in the proxy statement must be filed with the U.S. Securities and Exchange Commission (the "SEC") before soliciting a shareholder.[226] Solicitations, whether by management or shareholders, must disclose all important facts about the issues on which shareholders are asked to vote, subject to approval by the SEC.[227] Further, under SEC Rule 14a-8, shareholders may propose initiatives for shareholder vote, which the firm must include on its proxy statement under certain conditions.[228] A "shareholder proposal" is the recommendation or requirement that a firm and its board of directors take a specified action, which is intended to be presented at a meeting of the firm's shareholders.[229] Generally, the burden is on the firm to demonstrate that it is entitled to exclude a proposal.[230] The firm may elect to include in its proxy statement reasons why it believes shareholders should vote against the proposal, but the firm's opposition to the proposal cannot contain materially false or misleading statements in violation

[224] *See* DEL. CODE ANN. tit. 8, § 212; *see also* 17 C.F.R. § 240.14a-3.
[225] 17 C.F.R. § 240.14a-3.
[226] *Id.*
[227] 17 C.F.R. § 240.14a-101.
[228] *See generally* 17 C.F.R. § 240.14a-8.
[229] 17 C.F.R. § 240.14a-8(a).
[230] 17 C.F.R. § 240.14a-8(g).

of anti-fraud rules.[231]

Government participation in shareholder voting and proxy solicitation would improve firm performance by mitigating the effects of collective action problems in firm policymaking.[232] Given that a firm is owned jointly by its shareholders, meaningful participation in firm policymaking is hindered by free-rider problems since "[w]henever one person cannot be excluded from the benefits that others provide, each person is motivated not to contribute to the joint effort, but to free-ride on the efforts of others."[233] When faced with a collective action problem, each individual shareholder's dominant strategy is to free-ride.[234] However, if each individual chooses to free-ride, it produces a suboptimal result because there is no meaningful participation of all interested parties to determine the communal rules governing the use and allocation of firm resources.[235] Methods of firm policymaking that are wholly reliant on private shareholder action are undesirable because "the temptation to free-ride" undermines the goals of the majority.[236] When private shareholders in firm policymaking free-ride, the quality of policy proposals that impact firm resources suffer due to an insufficient check on their fairness and adequacy.[237]

As a remedy, the government's exercise of its shareholder voting and proxy solicitation rights would empower the government to act as a meaningful check on the sufficiency and fairness of policy proposals in the event that collective action problems inhibit private shareholders from effectively participating in firm policymaking.[238] Government participation in shareholder voting and the policy proposal and proxy solicitation processes would diversify and expand upon the range of policy proposals subject to shareholder deliberation. This would also broaden the institutional discourse of firm governance so that shareholders would be able to consider factors beyond the profit-seeking implications of a firm's proposed policies to include considerations of the cost of externalities.[239] The government would be empowered to opine upon and vote in consideration of the external harms of policies proposed by management and other interested parties and would be

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[231] 17 C.F.R. § 240.14a-8(m).
[232] *See* Ostrom, *supra* note 1, at 15–16.
[233] *Id.* at 6.
[234] *Id.*
[235] *See id.* at 6, 16.
[236] *See id.* at 6.
[237] *Id.*
[238] *Id.*
[239] *See* Velasco, *supra* note 3, at 416–17 (discussing the control rights of shareholders of a firm); *see also* DEL. CODE ANN. tit. 8, § 212; 17 C.F.R. § 240.14a-3; Coase, *supra* note 87, at 3 (discussing allocation of the cost of externalities); Ostrom, *supra* note 1, at 14–15 (discussing productive institutions that are both private and public).

permitted to solicit proxies from other shareholders.[240] Therefore, the government's exercise of its shareholder control rights to participate in shareholder voting and the policy proposal and proxy solicitation processes would create a new institutional channel within the context of existing governance norms for improving the quality of bargaining in firm policymaking in a manner that is not possible without such government participation.[241]

E. Government Purchases of Equity Securities Would Mitigate Systemic Risk of Institutional Failure in the Private Banking System by Diversifying the Economy's Institutional Sources of Access to Capital

Strategic governmental purchases of the equity securities of productive firms would mitigate systemic risk by diversifying the economy's institutional sources of access to capital.[242] According to Schwarcz, "systemic risk results from a type of tragedy of the commons in which market participants lack sufficient incentive, absent regulation, to limit risk-taking in order to reduce the systemic danger to others."[243] A common factor in the various definitions of systemic risk is that a trigger event, such as an economic shock or institutional failure, causes a chain of bad economic consequences.[244] This includes a chain of financial institution and market failures, significant losses to financial institutions or substantial financial-market price volatility.[245] Since banks and other financial institutions are important sources of capital, their failure can deprive firms of sufficient access to capital and increase the cost of obtaining capital needed for continued operations.[246] Ensuring continued access to liquidity is essential for economic stability because firms need liquidity to continue operations and keep markets functioning without interruption.[247]

Significant increases in the cost of capital, or decreases in the availability of capital, are the direct consequences of a systemic failure."[248] In the event of systemic failure in the private banking system, the factor cost of capital is artificially increased relative to when private capital markets are functioning normally because failure in the private banking system causes precipitous decreases in the supply of capital.[249] Increases in the cost of capital also lead to a persistent decline in the production of output because it

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[240] *See* Velasco, *supra* note 3, at 416–17; *see also* DEL. CODE ANN. tit. 8, § 212; 17 C.F.R. § 240.14a-3; Coase, *supra* note 87, at 3; Ostrom, *supra* note 1, at 14–15.
[241] *See* Velasco, *supra* note 3, at 416–17; *see also* DEL. CODE ANN. tit. 8, § 212; 17 C.F.R. § 240.14a-3; Coase, *supra* note 87, at 3; Ostrom, *supra* note 1, at 14–15.
[242] *See* Schwarcz, *supra* note 18, at 241–42.
[243] *Id.* at 193.
[244] *Id.* at 198.
[245] *Id.* at 198.
[246] *Id.* at 204.
[247] *See id.* at 199–200.
[248] *Id.* at 198–99.
[249] *See* Christiano et al. (2005), *supra* note 18, at 3; Christiano et al. (1996), *supra* note 18, at 16.

raises a firm's marginal costs.[250] Private financial firms designated as "primary dealers" have a monopoly over the disbursement of capital because they are the only firms eligible to act as sole trading counterparties to the central bank in the implementation of monetary policy under open market operations.[251] On the basis of this monopoly, it can be inferred that the increase in the cost of capital arising from systemic failure in private capital markets is the result of the poor administration of monetary policy shocks by "primary dealers" and the private banking system at large.

A policy pursuant to which the government strategically purchases the equity securities of productive firms would operate to establish the government as a "liquidity-provider of last resort." This would create a new mechanism for providing liquidity to firms in order to prevent mass institutional failure during an economic crisis.[252] The government's purchases of the equity securities of firms would mitigate the systemic risk of market failure because the liquidity obtained by firms would enable such firms to access capital and continue operations even if the private banking system is unable to supply sufficient capital.[253] Since this program would operate independently from the private banking system, it would create more flexibility in the formulation of monetary policy since "primary dealers" would no longer be the sole administrators of capital. Using this method, monetary policy can be formulated in a manner that supplies capital directly to productive firms without necessitating the use of private banks as a middle-man.[254]

Purchases and sales of equity securities by the government could also operate as a novel method of influencing money supply that accelerates the rate at which monetary policy shocks can effectively counteract the ebbs and flows of the economic cycle. Government purchases of equity securities could be used to increase money supply since firms would receive cash that would increase the total amount of money available for circulation in the economy (which would operate to decrease the interest rate).[255] In contrast, sales of equity securities by government could be used to decrease money supply since purchasers of these equity securities would pay cash that would decrease the total amount of money available for circulation in the economy (which would operate to increase the interest rate).[256] Using this alternative method of monetary policy, the government would be able to influence money supply in a manner that is independent from the operation of the

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[250] *See* Christiano et al. (2005), *supra* note 18, at 3; Christiano et al. (1996), *supra* note 18, at 16.

[251] *See* Fed. Reserve Bank of N.Y., *Administration of Relationships with Primary Dealers* (Mar. 24, 2016), https://www.newyorkfed.org/markets/pridealers_policies.html (explaining the United States Federal Reserve Bank's standards for primary dealers).

[252] *See* Schwarcz, *supra* note 18, at 241–42.

[253] *See id.*

[254] *See* Fed. Reserve Bank of N.Y., *supra* note 256.

[255] *See* Christiano et al. (2005), *supra* note 18, at 3, 5–8.

[256] *See* Christiano et al. (1996), *supra* note 18, at 16.

private banking system. This would counteract the negative effects of the monopoly of the private banking industry over the administration of monetary policy and mitigate systemic risk.

As a general rule, "monetary aggregates tend to move in the same direction as economic activity," meaning that changes in the demand for money are shown to correspond with changes in economic activity.[257] After an expansionary monetary policy shock, an exogenous increase in the money supply leads to a drop in the interest rate and a rise in output and employment.[258] Assuming that all other factors remain constant, a decline in the interest rate lowers marginal factor costs since the major components of marginal factor costs are wages and the rental rate of capital.[259] In turn, such decreases in marginal factor costs caused by decreases in the interest rate produce a persistent rise in output.[260] In contrast, after a contractionary monetary policy shock, an exogenous decrease in the money supply leads to persistent declines in output and employment as well as increases in the interest rate.[261] Assuming that all other factors remain constant, an increase in the interest rate raises marginal factor costs.[262] Such increases in marginal factor costs caused by increases in the interest rate produce a persistent decline in real output.[263] Changes in money supply caused by exogenous monetary policy shocks are demonstrated to have a correlative effect upon the production of output because such changes in money supply affect the factor cost of capital in a manner that is a function of changes in the interest rate.[264]

Open market operations are one of the instruments traditionally available to a central bank to affect the cost and availability of bank reserves, which, in turn, affects the total supply of money available for circulation in the economy.[265] The traditional method of conducting monetary policy through open market operations is for a central bank to purchase or sell government securities for the purpose of supplying reserves to or draining

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[257] *See* Christopher A. Sims, *Interpreting the Macroeconomic Time Series Facts: The Effects of Monetary Policy*, 36 EUR. ECON. REV. 975, 977 (1992).

[258] *See* Christiano et al. (2005), *supra* note 18, at 5–8 ("[A]fter an expansionary monetary policy shock, 1. output, consumption, and investment respond in a hump-shaped fashion, peaking after about one and a half years and returning to preshock levels after about three years; 2. inflation responds in a hump-shaped fashion, peaking after about two years; 3. the interest rate falls for roughly one year; 4. real profits, real wages, and labor productivity rise; and 5. the growth rate of money rises immediately.").

[259] *Id.* at 3.

[260] *Id.*

[261] *See* Christiano et al. (1996), *supra* note 18, at 16 ("[O]ur measures of contractionary monetary policy shocks are associated with persistent declines in real GDP, employment, retail sales and nonfinancial profits as well as increases in unemployment and manufacturing inventories.").

[262] *See* Christiano et al. (2005), *supra* note 18, at 3.

[263] *See* Christiano et al. (1996), *supra* note 18, at 16.

[264] *See* Christiano et al. (2005), *supra* note 18, at 3.

[265] *See* Axilrod & Wallach, *supra* note 18, at 288.

reserves from the private banking system.[266] An open market purchase made by a central bank has the effect of increasing money supply since private banks, in exchange for a claim on the central bank, receives an excess balance that it could then use to make loans to or investments in firms operating in the broader economy.[267]

In the United States, primary dealers serve as the sole trading counterparties of the Federal Reserve Bank in the central bank's implementation of monetary policy.[268] Primary dealers are obligated to participate consistently as counterparty to the Federal Reserve Bank in the central bank's execution of open market operations to carry out U.S. monetary policy.[269] Primary dealers are also required to participate in all auctions of U.S. government debt and to make reasonable markets for the central bank when it transacts on behalf of its foreign official account-holders.[270] In order to be eligible for designation as a primary dealer, an entity must either be a broker-dealer registered with and supervised by the Securities and Exchange Commission or a state or federally chartered bank or savings association (or a state or federally licensed branch or agency of a foreign bank) that is subject to official supervision by bank supervisors.[271] Further, in order to qualify for designation as a primary dealer, the Federal Reserve Bank also promulgates standards governing minimum capital requirements, seasoning, the size and sophistication of operations, compliance controls and periodic financial reporting.[272] In this manner, increases in money supply, initiated through the traditional open market operations of the central bank, are made available to the economy at large through loans and investments made by the private banking system, which then exerts significant discretion over how such funds can be utilized in the broader economy.[273]

"Monopoly exists when a specific individual or enterprise has sufficient control over a particular product or service to determine significantly the terms on which other individuals shall have access to it."[274] Under traditional open market operations, the private banking system, acting through a select group of banks and broker-dealers designated by the central bank as primary dealers, monopolizes monetary policy by wielding absolute control over the economy's access to new capital.[275] This monopoly generates transaction costs that systematically inhibit the effectiveness of monetary policy because the private banking system has sole discretionary power to administer new

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[266] *Id.* at 74.
[267] *Id.* at 75.
[268] *See* Fed. Reserve Bank of N.Y., *supra* note 256.
[269] *Id.*
[270] *Id.*
[271] *Id.*
[272] *Id.*
[273] *See* Axilrod & Wallach, *supra* note 18, at 75.
[274] *See* MILTON FRIEDMAN, CAPITALISM AND FREEDOM 120 (1982).
[275] *See* Fed. Reserve Bank of N.Y., *supra* note 256; *see also* Axilrod & Wallach, *supra* note 18, at 74.

capital. This sole discretionary power empowers financial intermediaries to administer new capital in a manner that may deviate from the underlying regulatory intent. This arrangement generates significant transaction costs since financial intermediaries are able to leverage their monopoly over the administration of monetary policy to generate windfalls that are disproportionate to and in excess of the value they provide to the economy. These transaction costs provide a strong basis for breaking the monopoly wielded by the private banking system over the institutional mechanisms governing the broader economy's access to capital. Diversifying the conduct of monetary policy by enabling firms to access capital from sources outside of the private banking system would operate to mitigate the effects of this monopoly.

The private banking system's monopoly over the administration of monetary policy generates significant systemic risk. The scarcity of alternatives to access capital outside of the private banking system jeopardizes macroeconomic function in the event that failure in the private banking system renders the economy's access to liquidity insufficient for viability.[276] In contrast, a policy program by which government influences money supply through purchases and sales of equity securities issued directly by productive firms would accelerate the capitalization rates of changes in the money supply by making such capital immediately available to firms. Firms would receive capital directly from the sovereign source and would not have to incur the transaction costs rendered by the private banking system. This alternative method of monetary policy would promote efficiency by reducing the transaction costs incurred by the private banking system in the administration of monetary policy under open market operations. Further, systemic risk would be mitigated because firms could access a supplemental working capital channel that is not contingent upon the efficient function and continued viability of the private banking system.[277]

According to Schwarcz, "[a] liquidity-provider of last resort should be created to provide liquidity to failing financial institutions and markets as appropriate to prevent systemic collapse . . . . Liquidity ensures maximum flexibility because '[i]t could solve any problem, irrespective of its cause.'"[278] A policy program pursuant to which the government, as a liquidity provider of last resort, strategically purchases the equity securities of productive firms would create a new alternative institutional financing channel to supply firms with capital in the event of systemic failure. This would mitigate systemic risk and act as a redundancy mechanism in the event private capital markets cannot supply sufficient liquidity. In addition, government purchases and sales of the equity securities of productive firms could be used

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[276] *See* Fed. Reserve Bank of N.Y., *supra* note 256; *see also* Axilrod & Wallach, *supra* note 18, at 74; Schwarcz, *supra* note 18, at 204.

[277] *See* Christiano et al. (2005), *supra* note 18, at 38 ("[W]ithout a working capital channel, a drop in the interest rate does not reduce firms' marginal costs.").

[278] *See* Schwarcz, *supra* note 18, at 248.

as a tool to influence money supply. This alternative method of monetary policy would create a novel mechanism through which the government can supply liquidity to the economy. This would mitigate systemic risk generated by the private banking system's monopolization of the administration of monetary policy by diversifying the institutional sources of access to capital available to the broader economy.[279]

III. THE LEGAL CHALLENGES TO DODD-FRANK

A. Partial Government Ownership of Firms as a Temporal Byproduct of Privatization Movements

Privatization is the process whereby ownership and control of public assets are shifted to private investors.[280] Privatization of traditionally wholly government owned firms has occurred in a number of countries, including the United Kingdom, France, Spain, Chile, Nigeria, Turkey, Malaysia, Poland, Hungary, the Czech Republic, and China.[281] Typically, privatization is conducted through offerings of the equity securities of formerly government owned enterprises to institutional investors or through graduated sales in the open market.[282] The structure of such privatization programs shows that, while the transfer of control often occurred at the onset of privatization, government tended to retain a minority ownership stake for significant periods of time as the stock of formerly state-owned enterprises were sold gradually to private investors.[283]

The movement towards privatization was predicated on the idea that government ownership is inferior to private ownership because wholly state-owned firms are theorized to be systematically less efficient than private firms.[284] The rationale given in support of this idea is that, because government retains absolute control over firm assets in wholly state-owned enterprises, this discretionary power incentivizes rent-seeking behavior by firm insiders, subordinates profit maximization to social and political policy goals, creates vulnerability to political pressure to maintain established rents (such as high wages/low effort, high and secure employment, favor to domestic suppliers etc.), and leads to the government's employment of staff based on political connections rather than the ability to perform.[285] In contrast, it is presupposed that privately owned firms are more efficient because such firms have stronger incentives to reward efficient behavior and are less vulnerable to political risk, which operates as a source of inefficiency.[286]

However, the literature indicates that neither sole public ownership nor

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[279] *See* Christiano et al. (2005), *supra* note 18, at 38–39.
[280] *See* Sun, *supra* note 7, at 1.
[281] *Id.* at 4; *see also* Perotti & Guney, *supra* note 286, at 87–96.
[282] S*ee* Perotti & Guney, *supra* note 286, at 86–95.
[283] *Id.* at 85–86.
[284] *See* Sun, *supra* note 7, at 1–2.
[285] *Id.*
[286] *Id.*

sole private ownership is optimal. In China, although there has been a movement towards privatization, at least partial government ownership of firms designated as state-owned enterprises ("SOEs") is the norm.[287] Pooled regression analysis of the performance of SOEs with a mixed public-private ownership structure demonstrates that a limited proportion of government ownership has a positive impact on firm performance as long as the amount of government ownership is limited to a proportion that balances political risk with the benefits of government ownership. According to Sun, in an empirical study of the performance of mixed enterprises in China:

> The surprising result is that government ownership and firm performance are actually positively related . . . . When [a state-owned enterprise] begins selling a small portion of shares to the public, the firm's performance improves. Beyond a certain level, increased selling of government shares to the public is correlated with poorer firm performance. Given the poor performance of [state-owned enterprises] in general in centrally planned economies such as China, it seems that the government actually plays some important and supportive roles for [state-owned enterprises].[288]

Further, the empirical data suggests that there is an "optimal" allocation of mixed public and private enterprise ownership, meaning that some level of government ownership is required for optimization and that the degree of government ownership of mixed public and private enterprises need to be carefully calibrated in order to achieve optimization. According to Sun:

> How does the existence of continuing government ownership affect the performance of these partially privatized firms? Pooled regression on data from 1994 to 1997 was used in an attempt to answer this question. Contrary to the common belief, the results suggest that partial government ownership has a positive impact on [state-owned enterprise] performance . . . . Further investigation shows that the relationship between government ownership and firm performance follows an inverted U-shape pattern . . . . A certain level of government ownership seems 'optimal' . . . . Too much government holding of [state-owned enterprise] shares means too much control and interference in the economic operations of [state-owned enterprises]. Too little government holding means too little support from the government to pull the [state-owned enterprises] out from their difficulties.[289]

In contrast to the rationale justifying complete privatization, this result provides support for a more nuanced model of economic organization

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[287] *Id.* at 2–3.
[288] *Id.* at 3.
[289] *Id.* at 22–23.

predicated on maintaining an optimal balance of public and private ownership as a necessary condition for achieving optimization.

The positive impacts upon the performance of firms with mixed public-private ownership structures have been attributed to: (1) signaling effects, since investors interpret equity retention by the government as a form of insurance; (2) improvements in monitoring, since government oversight reduces agency conflicts between shareholders and firm managers; and (3) public policy effects, since government, as a shareholder, has the incentive to enact public policy conducive to positive economic outcomes.[290] Building upon these findings, the case for partial government ownership of productive firms relies upon the idea that such government ownership provides idiosyncratic benefits that are unavailable to firms that are wholly owned by private investors; provided, the proportion of public and private ownership must be equal to an optimal equilibrium that is designed to maximize the benefits of government ownership and minimize political risk.

B. U.S. Government Ownership of Firms as a Result of Seizures of Enemy Assets During World War II

At the onset of World War II, the U.S. Government, acting through the Office of the Alien Property Custodian ("APC") under the authority of the Trading with the Enemy Act, seized and later managed the assets of enemy nationals. This included equity stakes of between 25% and 100% of the U.S.-based subsidiaries of German and Japanese corporations.[291] The APC maintained equity ownership stakes in these firms for periods ranging between 1 to 23 years, with the underlying intent that "these enterprises be sold and thus returned to the private sector as soon as possible."[292] The U.S. Government principally operated these firms as going concerns throughout the course of its ownership tenure.[293]

The mechanics of how the APC managed the equity stakes acquired by the U.S. Government during World War II is significant because the APC adopted a "hands-off, supervisory role" in connection with their management of these assets.[294] A prospectus prepared in connection with the sale of the U.S. Government's equity stake in the company *American Felsol* illustrates the U.S. Government's passive approach to the management of firms in its portfolio:

> The Alien Property Custodian and his successor, the Attorney General, did not undertake active direction of the business but general

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[290] *Id.* at 4–7.
[291] *See* Stacey R. Kole & J. Harold Mulherin, *The Government as a Shareholder: A Case from the United States*, 40 J.L. & ECON. 1, 3 (1997); *see also* Trading with the Enemy Act, 50 U.S.C. § 4306 (2012).
[292] Kole & Mulherin, *supra* note 298, at 4.
[293] *Id.* at 3.
[294] *Id.* at 8.

> authorizations were issued permitting the existing management to continue the normal conduct of the business. While the existing management has continued the conduct of the business of the company, under the Supervisory Order and existing authorizations, specific authorization is required by the Company for any transactions not in the normal course of business, including any substantial purchase or sale of capital assets, and any other transaction which would directly or indirectly substantially diminish or imperil the Company's assets or otherwise prejudicially affect its financial position.[295]

For the most part, the APC managed the U.S. Government's ownership stakes in a manner typical of a passive shareholder; provided, however, that "after vesting the enemy shares, the APC routinely commenced a stockholders' meeting to elect a new board of directors, with the intent of removing any enemy influence."[296] Further, "[i]n the process of Americanizing the boards of vested enterprises, the APC sought to retain directors who could channel the resources of the seized firms towards the war effort. Enemy sympathizers were often retained at firms that manufactured products deemed vital to the war."[297] Nevertheless, in accordance with existing governance norms, the proportion of the board members appointed by the APC corresponded to the proportion of the U.S. Government's ownership stake in such firms.[298] Although the APC used its shareholding power to promote U.S. national interests by appointing its choice of directors to the board, the APC's ability to influence the governance of these firms was constrained by both the limitations of its proportion of ownership as well as the restrictions imposed by existing governance norms.[299]

According to an empirical study by Kole, et al. comparing U.S. Government-owned firms to similarly situated firms that were wholly owned by private investors, mere government ownership (without the undue exercise of government control) did not have any abnormal effects upon firm performance.[300] While the boards at U.S. Government-owned firms had relatively high turnover because of the change in ownership, the stability of executive management was comparable to similarly situated wholly privately-owned firms.[301] Further, growth in sales, assets, and investments did not differ significantly between U.S. Government-owned firms and similarly situated privately-owned firms.[302] Return on assets, return on sales, and the ratio of sales to employees also did not significantly differ between U.S. Government-

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[295] *Id.* at 9.
[296] *Id.* at 6.
[297] *Id.*
[298] *Id.*
[299] *Id.*
[300] *Id.* at 11–15.
[301] *Id.* at 11.
[302] *Id.* at 12.

owned firms and similarly situated privately-owned firms.[303] Finally, there was no significant difference in stock market behavior between U.S. Government-owned firms and similarly situated privately-owned firms.[304]

Laissez-faire economic theory suggests that there would be performance differences between government-owned and wholly privately-owned firms because it is presumed that wholly privately-owned firms are subjected to a broader set of monitoring devices than government-owned firms.[305] Specifically, government-owned firms are presumed to be less efficient than wholly privately-owned firms because "the costs-rewards system impinging upon the employees and the 'owners' of the organization are different." Presumably, the government, in an ownership capacity, has less of an incentive to monitor the performance of its employees than owners in wholly privately-owned firms.[306] Further, it is suggested that government-owned firms are less efficient than wholly privately-owned firms because the government has the propensity to use the powers of the state to suppress competition and such government-owned firms are used by the government purely as a policy vehicle to promote nationalistic goals.[307]

However, contrary to laissez-faire economic theory, mere passive ownership by the government does not produce the inefficiencies that would be expected of government-owned enterprises because of the limitations placed upon government control.[308] The effectiveness of monitoring mechanisms is shown to be more determinative of firm performance than whether a firm is partially owned by the government or wholly owned by private investors.[309] Performance did not significantly differ between U.S. Government-owned firms and privately-owned firms. This is attributed to the lack of government intervention in the actual operations of U.S. Government-owned firms.[310] Notably, the data suggests that optimization requires the "existence of competitive markets, external valuation and internal evaluation and incentive devices to monitor [firm managers]."[311] In the absence of excessive government control over the operations of a firm, mere government ownership did not significantly affect firm performance.[312]

In its management of equity ownership stakes in firms operated by the APC, the U.S. Government generally did not directly interfere with the

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[303] *Id.* at 13–14.
[304] *Id.* at 15.
[305] *Id.* at 2.
[306] *Id.*
[307] *Id.*
[308] *Id.* at 15–16.
[309] *Id.* at 17 ("[O]ur analysis does indicate that the availability and implementation of monitoring devices can affect the performance of any form of enterprise, whether it be in the public or private sector.").
[310] *Id.* at 16.
[311] *Id.* at 17.
[312] *Id.*

operations of these firms.[313] Generally, "the role of government was restricted to that of a stockholder."[314] Thus, the success of a policy characterized by partial government ownership of firms is contingent upon the government's ability to insulate itself from the management of operations and to act merely as a passive shareholder in line with the power and constraints of its proportion of equity ownership.[315] The case for partial government ownership of productive firms relies upon the idea that, in its capacity as a passive shareholder, the government can leverage its unique shareholder rights to promote competitive markets, improve external valuation and internal evaluation, and strengthen incentive devices in a manner not possible without partial government ownership of such firms.

C. U.S. Government Ownership of General Motors as a Fiscal Policy Response to the 2008–2009 Financial Crisis

The rescue of General Motors ("GM") by the U.S. Government during the 2008-2009 financial crisis (the "Financial Crisis") under the Troubled Asset Relief Program ("TARP") provides a more recent case study of the impacts of U.S. Government ownership upon the performance of a productive firm. In 2008 and 2009, collapsing world credit markets and a slowing global economy gave rise to the worst market in decades for the production and sale of motor vehicles in the U.S. and other industrial countries.[316] Notably, the tightening of credit markets, increases in the unemployment rate and declining consumer confidence (caused by declining household incomes) contributed to significantly lower vehicle sales in the U.S.[317] Total U.S. automobile industry vehicle sales declined by 21.4% from 13.5 million vehicles sold in 2008 to 10.6 million vehicles sold in 2009.[318] As a result, GM's market share declined from 22.1% in 2008 to 19.6% in 2009, and its U.S. production dropped by 48% in 2009 from its levels of production in 2008.[319]

The decreases in GM's production and sales not only threatened the individual solvency of GM but also, it jeopardized the ongoing viability of the suppliers, auto dealers, and other manufacturers interconnected throughout the automobile supply chain.[320] Specifically, hundreds of suppliers of seats,

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[313] *Id.* at 8–9.
[314] *Id.* at 16 (citing Douglas W. Caves & Laurits Christensen, *The Relative Efficiency of Public and Private Firms in a Competitive Environment: The Case of Canadian Railroads,* 88 J. POL. ECON. 958, 974 (1980)).
[315] *Id.*
[316] *See* BILL CANIS & BAIRD WEBEL, CONG. RESEARCH SER., RL41978, THE ROLE OF TARP ASSISTANCE IN THE RESTRUCTURING OF GENERAL MOTORS 1 (2013).
[317] *See* Gen. Motors Co., Annual Report (Form 10-K), at 5–6 (Apr. 7, 2010) (providing regulatory disclosures regarding GM's competitive position).
[318] *Id.* at 49 (providing regulatory disclosures regarding GM's sales).
[319] *Id.* (providing regulatory disclosures regarding GM's market share and production); *see also* Canis & Webel, *supra* note 323, at 1.
[320] *See* Canis & Webel, *supra* note 323, at 1.

electrical systems, and other components, which generally supplied parts to multiple car companies throughout the supply chain, were in danger of collapse.[321] This is significant because even modest supplier disruptions have historically caused widespread disturbance to production throughout the entire automobile industry overall.[322] According to Austan D. Goolsbee, the former Chairman of the U.S. Council of Economic Advisers, "it was essential to rescue General Motors to prevent an uncontrolled bankruptcy and the failure of countless suppliers, with potentially systemic effects that could sink the entire auto industry."[323]

The Financial Crisis had a significant effect on GM and the automotive industry as a whole. In the second half of 2008, increased turmoil in the mortgage and overall credit markets (particularly the lack of financing for buyers or lessees of vehicles), continued reductions in U.S. housing values, volatility in the price of oil, recessions in the U.S. and Western Europe and the slowdown of global economic growth created a substantially more difficult business environment for automakers.[324] The ability to execute capital markets transactions or sales of assets was insufficient, vehicle sales in North America and Western Europe contracted severely, and the pace of vehicle sales in the rest of the world slowed.[325] GM's liquidity position, as well as its operating performance, were negatively affected by these economic and industry conditions as well as by other financial and business factors, many of which were beyond GM's control.[326]

Consequently, GM faced a capital crisis because the normal avenues for raising capital were unavailable: auto sales were plummeting, GM had limited success in selling off assets, GM's efforts to cut costs were undermined by the long timeline required to determine the efficacy and viability of such steps, and traditional sources of capital on the open market were unavailable because of systemic failure in private capital markets.[327] Although firms might ordinarily be able to arrange for financing through private financial institutions when private capital markets are functioning normally, this option was unavailable to GM because, as a result of the Financial Crisis, institutional failure in the private banking system operated to inhibit access to capital on a macroeconomic scale.[328] Compounding matters, GM was facing extreme financial stress because of a decline in the overall U.S. automobile market, steady loss of U.S. market share, high margins for profitability, labor and retiree health care costs, and higher overall gasoline prices.[329]

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[321] *See* Goolsbee & Krueger, *supra* note 8, at 11.
[322] *Id.*
[323] *Id.* at 4.
[324] *See* Gen. Motors Co., *supra* note 324, at 41–42.
[325] *Id.*
[326] *Id.*
[327] *See* Canis & Webel, *supra* note 323, at 2–3 (discussing GM's inability to access sufficient liquidity during the Financial Crisis).
[328] *Id.* at 3.
[329] *Id.* at 3–4.

As a result of these economic conditions and the rapid decline in sales, GM determined that it would be unable to pay its obligations in the ordinary course of business or service its debt in a timely fashion and was forced to file for Chapter 11 bankruptcy in the summer of 2009.[330] In response, as a remedy intended to prevent widespread systemic failure in the U.S. automobile industry, GM received assistance from the U.S. Government funded through TARP.[331] The U.S. Government ultimately emerged as the majority owner of GM after GM's bankruptcy because the vast majority of the TARP loans made to GM were converted into an equity ownership stake as an outcome of the bankruptcy process.[332] The new GM, formed post-bankruptcy, was established in July 2009 and retained ownership of the legacy company's technology and physical assets.[333]

The U.S. Government, through TARP, provided approximately $51 billion in financial assistance to GM.[334] Of this amount, $7.4 billion was repaid by GM in installments as loans, $2.1 billion was converted into shares of preferred stock that were ultimately redeemed by GM, and the approximately $40.7 billion remaining was converted into an initial 60.8% equity ownership stake in GM.[335] The U.S. Government's recoupment strategy centered on conducting "large-scale public offerings of shares negotiated sales of large blocks to other entities and gradual share sales in the stock market."[336] The last of the U.S. Government's shareholdings in GM were divested in December 2013.[337] The U.S. Government ultimately recouped approximately $39.7 billion from the original $51.0 billion investment.[338]

Management of the U.S. Government's ownership stake in GM under TARP was limited by four core principles (referred to hereinafter collectively as the "TARP Principles"):

1. The U.S. Government had no desire to own equity any longer than necessary, and would seek to dispose of its ownership interests as soon as practicable;

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[330] *See* Gen. Motors Co., *supra* note 324, at 41–42.
[331] *See* Canis & Webel, *supra* note 323, at 6–7 (discussing the circumstances surrounding the financial assistance given to GM by the U.S. Government); *see also* Gen. Motors Co., *supra* note 324, at 45–47.
[332] *See* Canis & Webel, *supra* note 323, at 6–7; *see also* Gen. Motors Co., *supra* note 324, at 16 (documenting the Secured Credit Agreement by and between General Motors Company and the U.S. Department of Treasury dated July 10, 2009).
[333] *See* Gen. Motors Co., *supra* note 324, at 41–47; s*ee also* Canis & Webel, *supra* note 323, at 8.
[334] *See* Canis & Webel, *supra* note 323, at 12; *see also* Gen. Motors Co., *supra* note 324, at 1.
[335] *See* Canis & Webel, *supra* note 323, at 12; *see also* Gen. Motors Co., *supra* note 324, at 35.
[336] *See* Canis & Webel, *supra* note 323, at 10.
[337] *See* Goolsbee & Kreuger, *supra* note 8, at 20–21.
[338] *Id.*

2. In exceptional cases where the U.S. Government felt it was necessary to respond to a company's request for substantial assistance, the U.S. Government would reserve the right to set up-front conditions to protect taxpayers, promote financial stability, and encourage growth;
3. After any up-front conditions are in place, the U.S. Government would manage its ownership stake in a hands-off, commercial manner; and
4. As a common shareholder, the U.S. Government would only vote on core governance issues, such as the selection of a company's board of directors and voting on major corporate events or transactions that typically require shareholder approval.[339]

The "hands-off, commercial manner" in which the U.S. Government managed its ownership stake in GM was similar to the management of the U.S. Government's shareholdings by the APC during World War II.[340] In its capacity as a passive shareholder, the exercise of the U.S. Government's authority in the operations of GM was limited to "vot[ing] on core governance issues, such as the selection of a company's board of directors and voting on major corporate events or transactions" that typically require shareholder approval.[341] While the TARP Principles acted as a check on government control by providing institutional guidelines for limiting excessive governmental interference, the preservation of the U.S. Government's right to exercise its authority as a passive shareholder also acted as a check to monitor the activities of the executive management of GM.[342]

In addition to the monitoring mechanisms conferred by the U.S. Government's rights as a shareholder of GM, the U.S. Government was also authorized to monitor the executive management of GM on the basis of contracts negotiated at arms-length. For example, pursuant to the Secured Credit Agreement entered into by and between GM and the U.S. Treasury Department (the "UST Credit Agreement"), GM agreed to a series of special covenants designed to limit the discretion of GM's managers and protect the public's interest.[343] Specifically, GM agreed to:

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[339] *See* Canis & Webel, *supra* note 323, at 10–11. TARP Principles constitute a tacit recognition of the significant shareholder powers derived from the government's ownership of GM's equity securities and the capacity of such powers to operate as a basis of authority for regulation. Although the TARP Principles were implemented as a limitation of government's power in light of extraordinary circumstances during the Financial Crisis, the institutional guidelines promulgated thereunder set forth a preliminary model for how a permanent policy program involving governmental acquisitions of equity securities may be structured and implemented.

[340] *Id.*; *see also* Kole & Mulherin, *supra* note 298, at 8.

[341] *See* Canis & Webel, *supra* note 323, at 10.

[342] *See* Black *supra* note 26, at 588.

[343] *See* Gen. Motors Co., *supra* note 324, at 58–64.

1. Provide to the U.S. Government information regarding its financial statements, financial condition, operations and business on a periodic basis or otherwise at the request of the U.S. Government;
2. Use the proceeds of the TARP financing only for certain purposes;
3. Comply with certain restrictions on executive privileges and compensation;
4. Divest itself of its interests in any private passenger aircraft;
5. Use commercially reasonable best efforts to ensure that a certain volume of manufacturing is conducted in the United States;
6. Abide by certain restrictions on expenses; and
7. Obtain the prior written consent of the U.S. Government before entering into material transactions.[344]

Further, pursuant to the Stockholders' Agreement entered into by and between GM and the U.S. Treasury Department (the "VEBA Agreement"), the U.S. Government obtained certain additional rights and privileges, including the right to appoint specific directors to GM's board of directors as well as special registration rights, tag-along rights, pre-emptive rights, and information rights.[345] The use of private contractual law as the basis of authority to monitor the activities of the executive management of GM is a departure from conventional modes of regulation because these covenants were voluntarily negotiated on an arms-length basis in exchange for the U.S. Government's financial assistance and were not involuntarily imposed on the basis of legislative fiat.

The improvement in GM's financial position in the aftermath of its bankruptcy during the Financial Crisis provides empirical support demonstrating that the fiscal stimulus policy implemented through TARP was successful. GM's financial statements indicate that there was a positive correlation between the timing of the U.S. Government's assistance, the amount of GM's total available liquidity, and GM's subsequent production of output. At the fiscal year ended 2007, GM's total available liquidity was $35,702,000,000, its worldwide production volume was 9,286,000 units, and its total number of worldwide vehicle sales was 9,370,000 units.[346] In contrast, at the fiscal year ended 2008, GM's total available liquidity was $14,837,000,000, its worldwide production volume was 8,144,000 units, and its total number of worldwide vehicle sales was 8,362,000 units.[347] The 58% decrease in GM's total available liquidity from $35,702,000,000 in the fiscal

[344] *Id.*
[345] *See* Gen. Motors Co., Current Report (Form 8-K), at 6, 8, 12, 15–17 (July 16, 2009).
[346] *See* Gen. Motors Co., *supra* note 324, at 58, 88.
[347] *Id.*

year ended 2007 as compared to $14,837,000,000 in the fiscal year ended 2008 is primarily attributed to the global recession during the Financial Crisis.[348]

In 2009, GM received financial assistance from the U.S. Government under TARP.[349] Subsequently, at the fiscal year ended 2009, GM's total available liquidity was $36,861,000,000, its worldwide production volume was 6,503,000 units, and its total number of worldwide vehicle sales was 7,478,000 units.[350] The 20% decrease in GM's production volume from 8,144,000 units in the fiscal year ended 2008 as compared to 6,503,000 units in the fiscal year ended 2009 suggests that the significant shortfalls in total available liquidity in 2008 negatively affected production levels in 2009. In comparison, at the fiscal year ended 2010, GM's total available liquidity was $33,543,000,000, its worldwide production volume was 8,714,000 units, and its total number of worldwide vehicle sales was 8,390,000 units.[351] The 34% increase in GM's worldwide production volume from 6,503,000 units in the fiscal year ended 2009 as compared to 8,714,000 units in the fiscal year ended 2010 suggests that increases in GM's total available liquidity in 2009, only made possible by the financial assistance provided by the U.S. Government under TARP, operated to stimulate GM's worldwide production volume and enabled GM to achieve profitability in 2010.[352]

GM's annual reports filed with the SEC acknowledge that GM's "business plan and other obligations require substantial liquidity, and inadequate cash flow could materially adversely affect [GM's] financial condition and future business operations."[353] On the basis of the significant improvement in GM's financial condition, production volume, and sales as measured from after GM's bankruptcy during the Financial Crisis, such improvement suggests that the investments made by the U.S. Government under TARP were a determining factor in stimulating GM's recovery.[354] Specifically, capital was inaccessible on a macroeconomic scale because of the failure of private capital markets. TARP was successful as a fiscal policy designed to stimulate production because it enabled GM to access capital in a manner that was not possible but for such government investment.[355] In this case, the U.S.

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[348] *Id.* at 41–42.
[349] *See* Canis & Webel, *supra* note 323, at 6; *see also* Gen. Motors Co., *supra* note 324, at 41–42.
[350] *See* Canis & Webel, *supra* note 323, at 6; *see also* Gen. Motors Co., *supra* note 324, at 41–42, 58, 88.
[351] *See* Gen. Motors Co., Annual Report (Form 10-K), at 70 (Mar. 1, 2011).
[352] *See* Goolsbee & Krueger, *supra* note 8, at 13 (discussing the profitability of GM subsequent to its bankruptcy during the Financial Crisis).
[353] *See* Gen. Motors Co., *supra* note 358, at 28 (reporting that insufficient access to liquidity is a risk factor impacting the operation of GM's business).
[354] *See* Goolsbee & Krueger, *supra* note 8, at 13.
[355] *See* Gen. Motors Co., *supra* note 358, at 28 (reporting that insufficient access to liquidity is a risk factor impacting the operation of GM's business); *see also* Goolsbee & Krueger, *supra* note 8, at 13.

Government was successful as a "liquidity provider of last resort" in the aftermath of systemic failure in private capital markets during the Financial Crisis.[356]

In the absence of the financing provided through the U.S. Government's purchases of GM's securities under TARP, it is likely that GM would have entered a disorderly bankruptcy with an uncertain and less successful outcome.[357] Many of the suppliers, auto dealers, and manufacturers interconnected through the automotive supply chain probably would have failed, further deepening the adverse effects of the Financial Crisis more generally.[358] According to Goolsbee:

> What were some of the more likely outcomes if the government had not acted in early 2009 to extend further assistance to GM and Chrysler? As we and others in the Obama administration investigated this question, the answers we heard were not comforting. The companies themselves would lay off their workers immediately. There would be widespread spillovers into supplier industries and auto dealerships, as well as knock-on macroeconomic effects through a reverse multiplier. The Congressional Oversight Panel (2009) called the companies' possible collapse 'a potentially crippling blow to the American economy that Treasury estimated would eliminate nearly 1.1 million jobs.' Other contemporary estimates suggested that the near-term jobs at risk from a disorderly liquidation could reach as high as 2.5 to 3.3 million jobs.[359]

Despite systemic failure in private capital markets which severely limited the accessibility of capital on a macroeconomic scale during the Financial Crisis, the U.S. Government's acquisitions of GM's equity securities enabled GM to access capital and maintain its viability in a manner that would not have otherwise been possible.[360] Further, fiscal policy conducted through the U.S. Government's acquisitions of GM's equity securities contributed to broader macroeconomic recovery after the Financial Crisis more generally.[361] According to Goolsbee:

> It is fair to say that no one involved in the decision to rescue and restructure General Motors and Chrysler ever wanted to be in the position of bailing out failed companies or having the government own a majority stake in a major private company. We are both thrilled and relieved with

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[356] *See* Schwarcz, *supra* note 18, at 198–99.
[357] *See* Canis & Webel, *supra* note 323, at 13; *see also* Goolsbee & Krueger, *supra* note 8, at 8.
[358] *See* Canis & Webel, *supra* note 323, at 13; *see also* Goolsbee & Krueger, *supra* note 8, at 8–9.
[359] *See* Goolsbee & Krueger, *supra* note 8, at 8.
[360] *Id.* at 13.
[361] *Id.* at 22.

> the result: the automakers got back on their feet, which helped the recovery of the US economy. Indeed, the auto industry's outsized contribution to the economic recovery has been one of the unexpected consequences of the government intervention.[362]

Thus, the rescue of GM under TARP, and its contribution to the recovery of the broader economy more generally after the Financial Crisis, exemplified the recuperative power of a fiscal policy conducted through government purchases of equity securities as a form of economic stimulus.

These government purchases have demonstrated to be an effective method of fiscal policy in the event of an economic crisis. As provided by this case study of the rescue of GM during the 2008–2009 financial crisis, U.S. Government purchases of the equity securities of GM enabled GM to continue operations, and ultimately achieve profitability, in spite of the systemic failure of private capital markets.[363] The U.S. Government, functioning as a "liquidity-provider of last resort," functioned as an alternative source of capital when private financial firms, and capital markets more generally, were unable to satisfy the liquidity needs of productive firms on a macroeconomic scale.[364] Further, structuring the U.S. Government's rescue of GM as an acquisition of GM's equity securities empowered the U.S. Government with the legal standing to monitor the management of GM on the basis of its unique legal rights as a shareholder.[365] In this manner, the augmentation of the U.S. Government's legal standing to monitor the management and operations of GM was enabled without more restrictive legislation. Instead, the U.S. Government relied upon existing governance norms as an alternative legal basis for the exercise of regulatory authority. This would not have been possible without the unique shareholder rights conferred upon the U.S. Government as a result of its acquisition of GM's equity securities.[366]

CONCLUSION

An institutional policy through which the government acquires the equity securities of productive firms would give rise to a paradigmatic shift in the manner in which the relationships between firms, government, and investors are organized. For one, the government would be empowered to act on the basis of shareholder rights under existing law. The unique control rights, information rights, economic rights, and litigation rights conferred by equity ownership would enable the government to influence firm policymaking and improve the quality of firm governance in a manner that would not

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[362] *Id.*
[363] *Id.* at 12–13.
[364] *See* Canis & Webel, *supra* note 323, at 2–3; *see also* Schwarcz, *supra* note 18, at 198–99.
[365] *See* Canis & Webel, *supra* note 323, at 10.
[366] *Id.*; *see also* Velasco, *supra* note 3, at 413, 416, 420–21.

otherwise be possible without such government ownership.[367] Government ownership of the equity securities of productive firms would also empower the government with the legal standing to sanction firm managers for misconduct on the basis of its shareholder litigation rights. Since collective action problems systematically operate to disincentivize effective monitoring, the government would have the legal standing to prosecute misconduct by firm managers that would otherwise go unprosecuted.[368] Leveraging the government's shareholder rights in accordance with existing governance norms would create more dynamism in the government's ability to influence firm policymaking. This would also improve the quality of firm governance in a manner that is currently outside of the current scope of the government's regulatory authority.

The practical implementation of this policy framework would also give rise to innovations in the technical parameters of how fiscal policy and tax policy could be formulated. Specifically, government transactions in the equity securities of productive firms could be conducted as: (1) fiscal policy, by using government purchases of equity securities issued from the treasury of productive firms as a method of economic stimulus; and (2) tax policy, by collecting equity securities issued from the treasury of productive firms as a method of in-kind tax assessment. A hybrid system of in-kind taxation (designed to capture the benefits of government ownership with regard to a broad class of firms) combined with a narrowly tailored fiscal policy (designed to strategically stimulate specific areas of the economy targeted for growth) is likely the optimal policy method since it would allow for both broad regulatory coverage and sufficient flexibility to counteract fluctuations in economic performance under rapidly changing conditions.

The case for partial government ownership of firms as a necessary condition for the optimization of firm performance assumes that (1) the proportion of government and private ownership would be at an optimal equilibrium, such that the amount of government ownership does not exceed or fall under a certain optimal threshold as determined by the balancing of political risk with the benefits of government ownership; (2) the acquisition and disposition of securities is conducted on a class-basis as opposed to a firm-specific basis, such that the government would not be able to influence competition within a specific market through its investments; and (3) the government's ability to exert control over the management and operations of a firm is limited to that of an ordinary shareholder *pari passu* with other similarly situated shareholders, such that the government would not be able to exert excessive control over the operations of a firm. These requirements are designed to maximize the utility of government ownership and limit the political risk associated with excessive government control. This policy would not function as a panacea. Careful management of the government's

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[367] *See* Velasco, *supra* note 3, at 413, 416, 420–21.

[368] *Id.* at 421; *see also* Ostrom, *supra* note 1, at 6; Thomas & Thompson, *supra* note 151, at 1765.

portfolio would still be required in order to achieve and maintain optimization as conditions change over time.

Empirical data of the performance of firms with mixed public-private ownership indicate that "[a] certain level of government ownership seems 'optimal.'"[369] Specifically, if government ownership is less than a certain optimal threshold and government provides too little oversight of and support for such firms, then a negative impact on firm performance has been observed.[370] In contrast, if government ownership exceeds a certain optimal threshold and government is able to exert too much control over the operations of such firms, then a negative impact on firm performance has also been observed.[371] These results show that while partial government ownership is required for optimal firm performance, the proportion of government ownership must be carefully managed in order to maintain optimization.[372]

In the event of an economic crisis, government purchases of the equity securities of firms have been demonstrated to operate as an effective form of fiscal policy that functions to stimulate economic growth.[373] By using government purchases of the equity securities of productive firms as a method of fiscal policy, the government would be empowered to mitigate systemic risk by acting as a "liquidity provider of last resort." This policy would empower the government to make capital directly available to productive firms. This would accelerate the simulative impact of fiscal policy upon the operation of the broader economy.

Further, this policy would diversify the economy's access to liquidity by supplying an alternative institutional source of capital that is independent from the private banking system. The monopolization of monetary policy by the private banking system is a source of systemic risk because continued access to capital on a macroeconomic scale is dependent upon the viability of private capital markets, which have historically been prone to failure.[374] Diversification of the economy's institutional sources of access to capital by empowering the government to act as a liquidity-provider of last resort would operate to mitigate this systemic risk.

The unique rights and privileges conferred by equity ownership are substantial. Ownership of even one share of stock would provide the government with a new and more effective source of legal authority to (1) influence firm policymaking, (2) improve the quality of firm governance, (3) resolve collective action problems that negatively affect firm performance and (4) mitigate systemic risk. Partial government ownership of productive firms would harmonize the array of incentives that govern the relationships between firms, government, and investors since each would have a comparable stake

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[369] *See* Sun, *supra* note 7, at 22–23.
[370] *Id.*
[371] *Id.*
[372] *Id.*
[373] *See* Goolsbee & Krueger, *supra* note 8, at 13, 22.
[374] *See* Schwarcz, *supra* note 18, at 198–200.

in ensuring positive economic outcomes. Government transactions in the equity securities of productive firms would establish a novel policy framework for shaping economic activity that would not otherwise be possible such partial government ownership.

As the externalities imposed by firms increase and firms worldwide become more interdependent due to the increased complexity of the global economy, it will become progressively more vital for the government to adapt to globalization and adopt new methods to effectively respond to economic crises that are increasingly becoming more pervasive and devastating in scope. A permanent institutional policy under which the government acquires the equity securities of productive firms on a macroeconomic scale would empower the government to leverage shareholder rights under existing governance norms to create a new paradigm for the regulation of firms. The implementation of such a policy would give rise to technical innovations in the conduct of fiscal policy and tax policy. These innovations would expand upon the parameters of public policy formulation and create more dynamism in the government's capacity to influence economic behavior, facilitate optimization, and improve outcomes more generally.