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The public economy: understanding government as a producer. A reformation of public economics

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Abstract
In mainstream economics scripting, government is either bumbler or villain. Cast as market fixer, intervenor, enforcer or redistributor, the state cannot but act inefficiently or, worse, illegitimately. Public goods and collective action are called "problems," the commons a "tragedy." Even today's so-called "public economics," as represented by the "public choice" school, is decidedly anti-public. It was not always thus. More than a century ago, economists theorized the state as a framework of collective agency for public purpose and understood government as a producer meeting collective needs. A cogent concept of "the public economy" guided this nascent field of public economics, long since lost to historic upheavals and repression by proponents of market-centric rational choice theory.

This paper rejects today's orthodoxy and its artful, but artificial, construct that subverts the ability of the public economic system to produce on behalf of the polity. I call instead for the embrace of a new public economics that returns to lost roots while breaking new ground by taking into account the biophysical imperatives of production. The model offered here takes a systems perspective (as did Quesnay and early 18th-century Physiocrats); recognizes a public economy with distinctive purpose and drivers (as did the "German Public Economics" theorist Gerhard Colm in the 1920's); and focuses on government as a producer (as did Paul Studenski in the 1930s-50s). Finally, it draws on two centuries of physics and on 21st century systems ecology in recognizing biophysical imperatives inherent to production. Developing and promoting a cogent theory of the public economy system is vital to the effective operation and, ultimately, the survival of the governmental systems by which democratic nation-states function today. The simplistic type-casting of government, the "market-failure" rationalization for state action, the invalid imposition of market axioms and assumptions on the public domain, the disregard of public purpose must all be rejected. It is time for a Reformation of public economics.

1. Mainstream economics and the state

In standard economics scripting, government is most often cast in the role of bumbler or villain. Whether as market fixer, intervenor, enforcer or redistributor, its actions are portrayed as resulting in "distortion," "inefficiency," "deadweight loss," and worse.

Three quarters of a century ago, Paul Studenski rejected such casting. He found government to be a vital figure whose role was not simply to intervene or redistribute. Government was a *producer*. A professor of economics at New York University (1927-55), an authority on public finance, and a widely-respected historian of national income accounting,[13] Studenski argued that "government is a productive, wealth-creating organization. It supplies direct utilities as well as aids to private production" (1939, p. 34). He elaborated:

> "Under all forms of organized society, economic activity has required some collective effort in addition to the individual one, and this is still true of the

[13] In *The Income of Nations* (1958), Studenski traced the history of national income accounting and competing historical conceptions of production. Descriptions of Studenski's work can be found in Warren 2005 and Ogle 2000.

> modern society. The notion that production for exchange is alone 'productive' is preposterous.
>
> Production consists in the creation of utilities. Government furnishes services and goods which satisfy the two tests of economic value-namely, utility and scarcity. They satisfy human needs and must be economically used. **Government is, therefore, engaged in production just as much as is private enterprise.** Government employees are just as much producers as are private employees and entrepreneurs. To deny this fact is to demonstrate one's faulty economic education or the fact that one's idolatry for business has thwarted one's vision" (emphasis added).

His language and logic challenged mainstream economic thought, which by his era had turned to "exchange" theory and had sidelined "production". However, production *had* been of central interest to 18th century and subsequent generations of economists, who were concerned with the processes by which value was created. But, even then, government had persistently been placed outside the "production boundary" (Mazzucato, 2018) and the state was, at most, assigned only a supporting role. Even Karl Marx, who wrote of the "hidden abode of production" in the first volume of *Capital* (Böhm & Land, 2012) did not address the state's role as producer. And once Marx adumbrated a "labor theory of value" that could be used effectively to reveal the exploitation of workers by employers, liberal economists began to downplay the significance of production itself. In reaction to Marx, mainstream economists moved "to recast economics as a science of exchange rather than production" (Perelman 2006). This transformation facilitated mathematical modeling in economics and the eventual construction of a quantitatively precise but pragmatically constricting "production function."

In short, by the time that Studenski was writing, not only was government viewed as not productive, there was essentially no basis for even considering government as a producer, since economics had made "exchange" [14] between sellers and buyers the embodiment of economic value.

But Studenski's stance would not have been out of line with the thinking in the "German Public Economics" school that had flourished in the late 19th and early 20th centuries. Economists in Germany (and other European countries) had concerned themselves with "[u]nderstanding the economic foundations and explaining the scope of the state" (Sturn, 2010). Some saw the state as "a framework of collective agency for common purposes," and understood government as a producer – the "mechanism" for producing the goods and services necessary to meet "collective needs." However, with the rise of Nazism and the emigration of many of these theorists, a flourishing school of public economics fractured and the very idea of a "public economy" was eventually expunged from mainstream economics.

[14] Concerning the diminished role of production in neoclassical theory see: Bernstein, 2001, p. 95; Haring and Douglas, 2012; Stretton and Orchard, 1994, p. 158. Hudson (2012) writes: "Today's supply and demand approach treats the economy as a 'market' in a crudely abstract way, as quantities of goods (already produced), labor…and capital…are swapped and bartered with each other." Ogle traced the history of production in his 2000 thesis. He writes: "According to Walras, 'The theory of exchange based on the proportionality of prices to intensities of the last wants satisfied ... constitutes the very foundation of the whole edifice of economics.'" … "Neoclassical economics thus posited a definition of production based on the preferences of (autonomous, rational, utility maximising) individuals expressed through the market."

This paper calls for recognition of the public economy, argues for a reformed public economics, and proposes the elements of a new conceptual model.

This section describes and challenges the role-casting of mainstream economics, and very briefly reviews the history of the emergence and then submergence of the concept of a "public economy." Section 2 outlines the impacts on the polity and the planet that have resulted, at least in part, from submerging the public economy in economic theory and concurrently imposing market axioms and assumptions on the public sphere. In Section 3 I revive the idea, also buried by modern mainstream theory, that there are multiple economies, not simply a market economy. Section 4 introduces the elements of a new theory of the public economy which both returns to the 18th-century roots of economics and also breaks new ground. The new public economics concept offered here has the following features: (1) it takes a systems perspective (as did Quesnay and the early 18th century Physiocrats); (2) it recognizes a public economic system with distinctive purpose and drivers (as did Gerhard Colm, a leader in late 19th century "German public economics"); and (3) it focuses on government as a producer (following Studenski). Also, (4), it incorporates biophysical imperatives and constraints inherent to production and consumption, which draws on the insights of the Physiocrats and the learnings of 21st-century biophysical and ecological economics. Section 5 discusses the extraordinary complexity and difficulty of measuring results in the public non-market system, calling attention to the suffocating and destructive imposition of market-model public sector performance measurement schemes throughout many governments. This section summarizes what it will take to move away from "metrics mania" and toward a useful method for gauging the results of public production. The last section suggests a research agenda that can build both on restored historical thinking and on emerging knowledge about the biophysical realities of production.

The unrecognized public economy and devalued government production

While government as a producer goes unrecognized in today's conventional economics textbooks, throughout the real world of modern nation-states, public non-market production constitutes a major share of economic activity. Yet, the means by which this production occurs is not understood, explained or even recognized in mainstream economics teaching, dwelling, as it does, on the "market" model.

This vacuum of understanding is not of mere theoretical interest. In the absence of any understanding of the government as a producer, anti-state ideologues and opinion leaders have been able to impose market axioms, principles and practices on the public sector. The results are dire: private enrichment at public expense; perversion of public purpose; devastation of public goods; destruction of the means of producing them.

The citizenry has been given the impression that the private sector – the market – is the source of most goods and services. In the United States, we frequently hear that private consumption makes up two-thirds of the economy. This misleading statistic contributes to the impression that, at best, government is irrelevant to the production of things people need and want and – more perversely – that government gets in the way of efficient private sector provision.

Yet, government's contribution to economic activity is sweeping and crucial, and arguably larger than portrayed by GDP calculations[15] or the impressions conveyed to the public. Among European Union countries, government expenditures average 47% of GDP. And in nine European countries, government expenditures equal *half or more* of GDP.[16] Government's share of GDP output,[17] a different calculation that omits "transfer payments," shows government's share ranging from 12% to 26%. In seven European countries, government's share of GDP output is about one-quarter,[18] even according to the faulty methodology of GDP accounting, which undervalues government's contribution. From either standpoint – expenditures or output – government's share of economic activity is significant.

As Lew Daly noted in "What Is Our Public GDP? Government in the Twenty-First Century Economy," (2014) there is a "problem of *unmeasured public value* in our economy." Further, "As a result, a significant portion (exponentially significant, by some estimates) of valuable output, particularly in the form of non-market capital development, is obscured by or excluded from our measured growth and, more to the point, from the measurable landscape of public policy."

The undervaluation of government output in GDP has been documented at length. Papers have been written and committees formed to address the need to find a legitimate way to value government output and measure the rate of return on public investment (see, e.g., Slater and David 1998). In their paper, "A Framework for Nonmarket Accounting," Abraham and Mackie (2006) reported on the findings of a National Academy of Sciences panel that recommended the creation of "satellite accounts" within the system of national accounts to improve the system for valuing government and household production. Despite numerous efforts, no reformation has taken root.[19]

The conventions of national accounting systems which spawn GDP pronouncements about the relative importance of the private and public sectors in national economies flow out of mainstream economics.

Mainstream economics: A world of public problems and tragedy

Mainstream economics associates public or collective action with a host of discouraging "problems":

- **the public goods "problem"**

In the market-centric world of mainstream economics, public goods today are pronounced "a problem" because, being "non-rivalrous" and "non-excludable," they are not amenable to

[15] Inadequacies of GDP calculations relating to government are discussed later in this paper.
[16] Belguim 53.9%; Denmark 54.8%; Greece 55.4%; France 57%; Italy 50.3%; Hungary 50%; Austria 51.6%; Finland 57%; Sweden 50.2%.
http://ec.europa.eu/eurostat/statistics-explained/images/7/70/Total_general_government_expenditure_by_function%2C_2015_%28%25_of_GDP%29_03032017.png
[17] There are two principal conventional ways in which government's contributions are portrayed in GDP calculations: expenditures and output.
[18] Government's share of total output for 2016 was at or nearly 25% in 7 countries: Sweden 26.1%; Denmark 25.4%; Finland 24%; Netherlands 24.7%; Norway 24.3%;France 23.6%, Belgium 23.6%
https://data.worldbank.org/indicator/NE.CON.GOVT.ZS
[19] The Bureau of Economic Analysis recognizes and acknowledges some of the deficiencies, but concludes that the research "is currently preliminary, and further research is needed before [the recommended] measures can be considered for implementation in the national accounts. (Bureau of Economic Analysis 2017, pp. 9-4).

market production. This contemporary textbook portrayal of public goods arose out of work in the mid-20th century, particularly that of Richard Musgrave who was striving to explain the legitimate role of the state in providing goods and services (Tremblay, 2017)[20]. The concept was adopted and adapted by Paul Samuelson who mathematicized it. Subsequently, public goods became a "problem". As Sonja Amadae (2004) puts it, "the public goods problem" is an "invention" of rational choice theorists arm-wrestling with the "dilemma" of cooperation.

- **the collective action "problem"**

The "collective action problem" insists that, absent coercion, people will fail to work toward or contribute to a common goal that would benefit all. Advanced by Mancur Olson in the 1960's, this axiom is used by public choice adherents to argue against government provision and in favor of market provision. Stretton and Orchard (1994) capture some of the features and flaws of collective action theory: "A common theme is that the provision of public goods allows so much freeloading and self-interested contrivance by powerful groups and individuals that societies do well to make do with as few taxes and public goods as possible…The curious argument of *The Logic of Collective Action* [Olson's major work] is this: because freeloaders can gain more from collective action than the collective actors can, collective action is never rational."

- **the "tragedy" of the commons**

The "tragedy of the commons" probably owes its staying power more to clever naming than to its supposed insight that, since people act in their own self-interest, they will not voluntarily collaborate to preserve a "commons." Elinor Ostrom refuted the tragic assumptions with examples from real-life experience around the world. As Amadae observed ("Bargaining With the Devil" 2004), Ostrom's famous refutation may be just pointing out the obvious –

> "in their great and ongoing experiments with social coordination, humans themselves often resolved the "tragedy of the commons" problem long before it attracted the attention of social theorists. The role of social scientists was not that of teaching people how to solve this paralyzing dilemma. Instead, social scientists articulated a form of knowledge that human social actors had realized at a subliminal level but were not able to articulate in language or theory. I think this raises an important question of who is learning from whom: Does the social scientist draw new insights into age-old human dilemmas, or is the social scientist at times one step behind the wisdom of common human experience? This example calls for humility on the part of social theorists who, it may turn out, are 'conceptualizing subjects' decision tasks' in new ways, but are not necessarily providing new strategies for solving basic human dilemmas."

- **the zero price "problem"**

In mainstream economics, price is the determinant of value. Therefore if goods and services are supplied without a price – i.e., they are "free" at the point of receipt or usage – they cannot be valued, or calculating their value is difficult, i.e., a "problem". This is, of course, one of the

[20] In addition Keynes had talked about "public works" (Roy Harrod, *The Life of John Maynard Keynes,*1951) and, earlier, public goods had been discussed by German public finance theorists, e.g., Margit Cassel (Richard Sturn, "'Public goods' before Samuelson: interwar *Finanzwissenschaft* and Musgrave's synthesis," *The European Journal of the History of Economic Thought*, Vol. 17 Issue 2, 2010).

difficulties intrinsic to traditional calculations of government contribution to GDP: public economy outputs cannot be accurately valued because they are not sold.

- **the "problem" of taxes**

Economics textbooks devote chapters to the topic of taxation, detailing how taxes take money *out* of "the economy." But rather than try to sum the teachings of texts on taxes, it is perhaps more illustrative to cite this quotation from a recent article on bitcoin by Holden and Malani (2018) in which mainstream dogma on taxation is presented as though a law of physics:

> "The basic economics of taxation tells us that the economic losses from taxes increase exponentially with the tax rate, so [raising taxes] would transform revenue losses into a lower gross domestic product."

- **the public as meaningless**

In writing about the impacts of rational choice economics, Amadae (2003) discusses the ways in which "rational choice liberalism" cast doubt on the "meaningfulness of 'the public,' 'public interest' or 'general welfare'. This skepticism grows out of the doubt that procedures of collective decisionmaking can achieve rational outcomes, even in the best of circumstances."

- **Arrow's Impossibility Theorem**

Economist Kenneth Arrow produced a mathematical formulation that seemed to prove that democracy cannot "work." His "impossibility theorem" and related formulations have been interpreted as being "destructive of the possibility of reasoned and democratic social choice." (Sen, 1999). According to Buchanan (2003, pp. 1-4), Arrow's theory indicated that imposing majority will on the outvoted minority would inevitably lead to outcomes that are "inefficient and unjust."

- **deadweight loss**

As an "intervention" in the economy, state action must always be circumscribed, lest the apparatus of the market be "distorted." Market distortions in turn result in inefficiencies or worse. As the "Free Exchange" columnist in *The Economist* (2007) notes, in "the standard curriculum… government interventions in the market always generate a 'deadweight loss'".

Such apparently formidable "problems," taught in most university courses on economics, prejudice students against government, which then translates into a professoriate and a professional class bereft of the tools that could help them appreciate public economy activity and accomplish the work that many of them would like to do on behalf of the citizenry. It also leaves them naked of intellectual and rhetorical armor to defend against attacks on the public non-market system by the market orthodoxy.

In the United States, about 40% of college students take at least one economics course (Goodwin 2014a, p. 101); after graduation more than half of economics majors go to work in government (Kalambokidis, 2014). Thus are government agencies in the US populated by economists taught to distrust government and to look to the market for best practices. As Stretton and Orchard (1994, p. 138) remind us, "Such stuff educates rising numbers of the people we employ to govern us, and tells us not to hope or try to improve their quality. Insistently, explicitly, it tells *them* not to try to improve, except as 'legitimate thieves': to be anything else is irrational."

Students themselves are rising up in protest. In the UK, the "econocracy" movement has been particularly vocal. In their book, *The Econocracy: The perils of leaving economics to the experts*, (Earle et al. 2017, p. 37), they write: "students are being sold short…[Universities] are failing to equip the next generation of economic experts with the knowledge and skills to build healthy, resilient societies."

A missing "public economy" and a perturbing public economics

A concept of "the public economy" is as hidden as the abode of production in works of modern economics. With few exceptions,[21] economics is blind to all systems but the market. The discipline does recognize "the state" and admits a subdiscipline called "public economics," dominated by a school of thought called "public choice," but it seems incapable of understanding government as an agent of production and a producer of economic value.

Historically, things were different. Economists and other social scientists saw government as a productive agent, and even considered the working "mechanisms" of "the public economy."

- In 1856 Calvin Colton, Professor of Public Economy at Trinity College, devoted an entire book to *Public Economy for the United States.* Colton preferred "public economy" to the contemporary term, "political economy," explaining his choice in terminology in detail, but his volume was dedicated to an analysis of "free trade" versus protectionism, not the workings of the public economy as such.

- In 1891 William Folwell of the University of Minnesota argued in "A Syllabus of the Public Economy" that the "Public economy should be recognized as a distinct…science, running parallel with that of private or social economics…We must demand the recognition of State or public economy as an independent body of phenomena, capable of being collected and grouped along a line of filiation…No sound conclusions can be drawn by mere deduction from the postulates of private economics."

- In *The Science of Finance* (1895), the German economist Gustav Cohn explored in depth the public economy, which he saw as a response to "The Wants of the People" and "the collective needs of any community" (p 13). He noted that "the public economy remains the central fact of national life" (p 58). Examining the issue of the "division of labor" between the state and private initiative, he questioned the claim of "the so-called encroachment of the state upon the private life of the society." In contrast to today's economics (and such postulates as Arrow's Impossibility Theorem or Olson's collective action "problem"), Cohn wrote of "the superior rationality of the state as compared with the private economy of the individual. In the life of the individual the motive to a development of his wants springs directly from the natural impulses…On the other hand, it is inherent in the nature of the state that its demands, taken as a whole, go through a clarifying process… [P]eace, order, security, culture, relief – these are the higher needs which are mainly served by the public economy." (p 73)

- In the late 19th and early 20th centuries a "German Public Economics" flourished. According to Richard Sturn (2010) this was more a "discipline" than a school, but while it "neither had a common theoretical foundation nor convergent political visions, it did not lack a common focal point: understanding the rationale for the modern state in a market

[21] A major exception among textbooks is Goodwin et al., 2014, *Principles of Economics in Context*.

economy and enhancing its effectiveness." Two of the prominent theorists within this group were Gerard Colm and Richard Musgrave, who both emigrated to the United States with the rise of Nazism. They represented different streams of the discipline, however. Colm's approach was the more radical; it was premised on the idea that the public sector is an economic system with "its own economic logic – it is an essentially non-market type of economic system… [H]is starting points are not some pre-institutional individual preferences, scarcities and technologies, but state and market as [different but] complementary systems". Musgrave, on the other hand, strove for synthesis with market theory. His approach interwove traditional and then-emerging trends in economics; he intertwined marginal utility theory, market failure theory and the more traditionalist roots of German public economics. In Sturn's view, there was too large a "conceptual gap between Anglo-Saxon Public Economics and Gerhard Colm's version." While Colm entered public service after settling in the United States and had a "meteoric rise" in Roosevelt's New Deal administration where his policy ideas had significant influence (Milberg 2017), his theory of the public economy lost out in the academic arena. "[C]ompetition between market and command economies [during the WWII era] created a demand for 'scientific' answers…" Colm's approach "found little support in the post-war profession" of economics. Eventually it was Musgrave's approach, not Colm's, that was absorbed into mainstream economic theory.

- After moving to the United States in 1933, Musgrave, devoted his attention to public finance and the concept of public goods, building and elaborating on his conceptual synthesis. But, while he and Colm may have differed in their approaches, they both recognized the existence of a "public economy." Maxime Desmarais-Tremblay (2013, 2017), a recent chronicler of Musgrave's work, explains that Musgrave as early as his 1937 PhD thesis, "considers a national economy as a system that comprises two legitimate spheres – the market economy and the public economy – in an interrelationship, both drawing from the same pool of resources...Musgrave did not see the market as the baseline for all economic life and neither was it for the study of public finance." Musgrave, according to Desmarais-Tremblay, understood the public economy as a socially-designed economic system to address collective needs, where: "the actual collective wants and socially interpreted individual wants satisfied by publicly provided goods depend on historical, political, and social factors" (Desmarais-Tremblay, 2017).

- Alan Peacock in the 1950s argued in his "The theory of the public economy" (Peacock and Wiseman 2010) that "Another mechanism [besides the market] has to be adopted in order to satisfy community wants…"

Peacock's work was already something of an atavism, and soon after, the concept of a "public economy" was effectively extinguished, especially in the wake of Paul Samuelson's reformulation of Musgravian "public goods" (Desmarais-Tremblay, 2013; 2017) as a mathematical expression of an increasingly limited case, and reliant, as it was and still is, on market failure theory .

Not only the ideas but the names of public economy scholars were relegated to disciplinary backwaters and lost to the mainstream of economics literature.

Indeed, economic thinking during the latter half of the 20th century underwent a remarkable transformation regarding the role of the state.

In his landmark book, *A Perilous Progress: Economists and Public Purpose in Twentieth-Century America*, Michael Bernstein tracks the evolution of economics from an academic field marginal to public policy into a powerhouse influencing and orienting government decision-making. Economists in the late 19th and early 20th centuries ardently sought to cultivate influence with elected and appointed officials to shape public policy and to contribute to "purposeful management" and "statecraft." These were among the driving ambitions of those who led the American Economics Association after its founding in 1885. Seeking respect for the new "scientific" field (no longer framed philosophically as "political economy"), "scholars sought a privileged and powerful access to public policy debate, formulation and implementation." If, as some asserted, it was not the business of economists to tell businessmen how to run their companies (p. 40), advising on the operation of government, *was,* somehow, economists' business. And they got their big chance in World War II. Ironically, "Not individualism but rather statism provided the special circumstances" for American economists to obtain prestige and power (p. 89). "In point of fact, it was statism and centralized economic policy practice that had brought economists and their discipline to the prominence and influence they [came to] enjoy…" (p. 194) The irony does not escape him: "It is one of the great ironies of this history that a discipline renowned for its systematic portrayals of the benefits of unfettered, competitive markets would first demonstrate its unique operability in the completely regulated and controlled economy of total war" (p. 89).

After the War, and during the Cold War, as Sonja Amadae has shown (2003, p. 3), rational choice theory began its march toward ascendancy. Holding as it did that "rational individuals do not cooperate to achieve common goals unless coerced," rational choice economics had "profound implications for democratic theory," for its "axiomatic treatment of human rationality…could be used as a virtual litmus test to determine if one were a liberal individualist or an irrational collectivist."

Economic historian Roger Backhouse (2005) has traced in detail the "profound changes in economic theory" that took place between 1970 and 2000 with the triumph of rational choice economics, which fostered a "remarkable and dramatic change in attitudes toward the role of the state in economic activity…a radical shift of worldview." Along with the rise of "free market" economics, the "ideology of rational choice" led to a belief among economists that government action creates perverse outcomes, which in turn produced a "climate of opinion" within economics biased against government.[22] This shift toward exclusively market solutions, as Backhouse notes "did not occur spontaneously: it was actively promoted by groups of economists committed to opposing socialism [and] making the case for free enterprise…"[23]

While the concept of a "public economy" may have been squelched and the German Public Economics discipline fractured, we still have a "public economics." And there are distinguished economists toiling in its fields (for example, Avner Offer of Oxford University

[22] Roger E. Backhouse (2005), "The Rise of Free Market Economics: Economists and the Role of the State since 1970", *Hist. Polit. Econ*. 37(Suppl 1), pp. 355-392.
[23] "The shift toward market solutions did not occur spontaneously; it was actively promoted by groups of economists committed to opposing socialism, making the case for free enterprise, and reviving the fortunes of liberalism. In the first stage, the most influential institution was, as the previous section has made clear, the RAND Corporation, which brought together the Cowles Commission, Princeton University, and many of the economists associated with the development of rational choice theory. RAND was a think tank set up by the U.S. Air Force at Santa Monica, California, to prevent the scientific and technical expertise that it had brought together during the Second World War from being dispersed. It was established in 1946 as a division of the Douglas Aircraft Company to undertake research on air warfare." Roger E. Backhouse, "The Rise of Free Market Economics: Economists and the Role of the State since 1970"; (2005)

[Offer, 2012] and Massimo Florio of the University of Milan [Florio, 2013]), and an entire "Institute of Public Economics" at the University of Graz. In 1969 Margolis and Guitton put together a volume titled *Public Economics*, which represented the proceedings of a conference held by the International Economic Association concerning an "Analysis of the Public Sector." Yet the contributions are consistently indentured to the market model. When Joseph Stiglitz produced a textbook on "the economics of the public sector" (the latest edition in 2000), his text did not recognize a "public economy," or the distinctive characteristics of a public non-market system. Instead he relied on "market failure" to open the way for a role for government.

In general, the field of public economics remains constrained by the absence of a theory of the public economy that is unchained from the market model and its axioms. Major credit for this state of affairs no doubt belongs to the "public choice" school, to which I turn next.

Public Choice – The Reigning Public Economics

As a subfield of microeconomics, public choice moved obscurely through the economics literature of the Cold War (Backhouse 2001, 2005), then took flight during the 1970s to become the reigning "public economics". James Buchanan, Gordon Tullock and Mancur Olsen were leading figures in the establishment of the field; their work also leaned on the "Impossibility Theorem" of Kenneth Arrow. More recently Tyler Cowan has been a leader in the public choice arena (MacLean, 2017).

Here is Backhouse (2005) on the school's early development:

> "The conventional view of policy ha[d] been to see the government as optimizing some social welfare function. The political process determined the values on which government policy had to be based, and the role of economists was to understand the constraints and design interventions, such as regulations, taxes, or government activities, that would achieve those objectives. Public choice theory challenged this by approaching government decision makers, whether politicians, civil servants, or regulators, as motivated by their own ends. This meant that government policy came to be seen not as maximizing social welfare but as driven by the interests of those responsible for implementing it. Government failure was as pervasive as market failure. The very possibility of government regulation would lead to rent seeking – using lobbying and other activities designed to achieve better treatment – diverting resources away from productive activities.
>
> This critique of government, which suggested that inefficiency was inherent in any government-run activities, fits well with the earlier critiques of socialism offered by Friedrich Hayek (1935) and others in the 1920s and 1930s.

Public choice became a school, and a movement, when James Buchanan and his collaborators found a home for their efforts at George Mason University in Northern Virginia. In the mid-1980s George Mason inaugurated the Center for the Study of Market Processes, its largest supporter being the Koch Family Foundations" (Backhouse, 2005, p. 376).

In diametric contrast to German Public Economics theory of a century ago, the public choice school rejects the legitimacy of collective endeavor. It portrays the public sector as "an arena for innumerable individual exchanges" (Stretton & Orchard, 1994, p158). A central tenet of public choice theory is that "politicians and (especially) bureaucrats seek to enrich themselves by enlarging their budgets." (Stretton and Orchard, 1994, p 151). And they seek little else, as Tyler Cowen et al. (1994) argued in a paper: "Public officials often have little incentive to spend time and effort proposing policies that benefit others."

A chief aim of public choice protagonists has been to influence the operations of government and to curtail the authority and power of the state (MacLean, 2017; Stretton and Orchard 1994). During the Reagan administration they made their first major leap from academia into government. Reagan's Commission on Privatization issued a report that cited as validation for its recommendations on contracting-out the "problems of the American governing process identified by the public choice school…" (Kettl, 1993, p. 63). And Reagan appointed E.S. Savas, known as the "father of privatization," as Assistant Secretary of Housing and Urban Development (HUD). Although Savas in 1983 was forced to resign from his high position at HUD due to "abuse of office," chiefly for having HUD staff type, edit and proofread his book, *Privatizing the Public Sector: How to Shrink the Government*, at least one reviewer gave the book high praise. Citing public choice theory as validation for Savas' privatization thesis, the reviewer tells us that "Privatizing is the peaceful way of dismantling the State brick by brick" (Reed, 1983).

The tenets of the public choice school have become entrenched within some public administration circles, as an article on performance measurement in *Public Administration Review* demonstrates. Rabovsky (2014), describes the school of thought which holds "that public administrators can generally be conceived of as self-interested, budget-maximizing bureaucrats who are constantly working to exploit their informational advantages in order to avoid meaningful oversight".

In a pamphlet he wrote about the origins of public choice theory, Buchanan (2003) described how his book, *The Calculus of Consent,* written with Gordon Tullock in 1962, laid the groundwork for a movement they initially called "Non-Market Decision Making." They brought together a group, whose discussions were

> "sufficiently stimulating to motivate the formation of a continuing organization, which we first called the **Committee on Non-Market Decision-Making**, and to initiate plans for a journal initially called *Papers on Non-Market Decision-Making,* which Tullock agreed to edit" (emphasis added).

But, as Buchanan explained,

> "We were all unhappy with these awkward labels, but after several annual meetings there emerged the new name "public choice," for both the organization and the journal. In this way the Public Choice Society and the journal *Public Choice* came into being. Both have proved to be quite successful as institutional embodiments of the research program, and sister organizations and journals have since been set up in Europe and Asia."

Outside the world of economics, Buchanan for years remained fairly obscure, but became better known with the 2017 publication of Nancy MacLean's *Democracy in Chains*, explicitly

intended for the general reading public. Among other revelations, MacLean has documented how Buchanan's work and the public choice view of government have been financed largely by the Koch brothers through their subsidies to the Economics Department at George Mason University where the public choice confraternity has been housed since 1983. The Koch Foundation alone has donated $96 million (McDonald, 2017) to the Department and its affiliated Mercatus Center that promotes public choice theory and libertarian policies.

The case against public choice as both economic artifice and conservative agenda has been best made by Stretton and Orchard, who document the anti-government, anti-democratic stance of public choice theory. They suggest that public choice "reasoning seems to arise from the theorists' reluctance to 'come out' and identify themselves as open enemies of democracy or at least of universal suffrage."

Ignoring the important and expansive body of work from the 19th century German Public Economics discipline, Buchanan began a 1967 paper on the premise that economists had not paid attention to collective decision-making, particularly how individuals make choices through the political process.

> "Individuals, separately and in groups, make decisions concerning the use of economic resources. They do so in at least two capacities: first, as purchasers (sellers) of goods and services in organized markets, and, secondly, as **'purchasers' ('sellers') of goods and services through organized political processes**. Economic theory has been developed largely to explain the workings of organized markets, and the trained economist understands how decentralized decisions are mutually co-ordinated so as to produce allocative results that are internally consistent. **Economists, especially English and American, have devoted little time and effort to an explanation of individual behavior in the second decision process**. Individual **participation in collective decision-making has not been thoroughly analyzed**, and the means through which the separate private choices are combined to produce 'social' or 'collective' outcomes have not been subject to careful and critical research… There exists no 'theory of collective choice,' no 'theory of demand for collective goods,' that is analogous to the familiar theorems and propositions in neoclassical economics. **We know little about how individuals behave as they participate in collective choice**. In societies that are organized democratically, even in the broadest sense of this highly ambiguous term, individuals must be assumed to participate in the formation of 'public' decisions" (emphases added).

Having raised the right questions,[24] Buchanan and his public choice school arrived at answers that don't squarely address them but do advance a right-angled political agenda. The questions he raised in 1967, had been addressed a century earlier in European public economics, but one does not learn that from studying "public choice" teachings. So today we must re-address these questions and construct a valid, penetrating and persuasive analysis of how the system of collective public action operates in modern economies.

[24] Interestingly, Mancur Olson's "Logic of Collective Action," addressed these questions and had come out in 1965, but there is no trace of Olson in this paper, even though Olson's thesis was earth-moving on these issues and became a bedrock of public choice theory.

In "Public Economics After Neoliberalism: A Theoretical-Historical Perspective," Madra and Adaman (2010) shine a light on the spread of public choice economics well beyond Anglophone countries, then call for public economics as a discipline "to move beyond neoliberalism."

Simply put, there are three basic problems with this school of economic thought: 1) it fails to recognize that the public economy is *non-market*; 2) it ignores scholarly work that has proven that many of the fundamental assumptions and assertions of market economics are as inapplicable to the everyday working of the market as they are to any non-market (e.g., Fullbrook, ed., 2007); 3) it ignores the body of work from German Public Economics – the "original" public economics.

2. The results

Mainstream economics' perspective on the state – and not solely the perspective of the public choice school – has had enormous impact in the academy, in government and on the lives of citizens. Here are some of its characterizations of government with which we must now everywhere contend:

a. Government is non-productive.

Studenski (1939) brilliantly described and disputed the "theory of nonproductivity" of government, which formed "a fundamental tenet of the so-called classical and neoclassical schools of economics still dominant in this and many other countries…" One passage (pp 23-24) is worth quoting at length.

> *"Theory of Nonproductivity*
> Towards the end of the eighteenth century…under the influence of the industrial revolution, a sudden revulsion took place in the political and economic thinking of the time. The entrepreneurial class, in its quest for freedom from restrictive governmental regulation, attacked the ability of government to attend to the economic affairs of its citizens. Political economists took the view that business enterprise was the sole productive agency in society and that government was a passive, nonproductive, wealth-destroying organization...
>
> Strange as it may seem, this peculiar doctrine of the nonproductivity of government activity has tended to persist to the present day, and forms a fundamental tenet of the so-called classical and neoclassical schools of economics still dominant in this and many other countries at the present time. The theory of the nonproductivity of government activity is founded on several basic errors, to wit: (1) a tendency to regard government as an organization independent and apart from the people and pursuing its own advantage; (2) a wrong identification of economic activity with individual endeavor to make a living, and a failure to recognize the importance of collective economic effort; and (3) an unduly narrow commercial view of production as the creation of utilities having an exchange value. The exponents of the nonproductivity theory of government activity fail to see that government in modern democratic society, with which we are particularly concerned, is an agency

> set up by the people for their own advantage and controlled by them with a view thereto, and is, in fact, in some of its aspects, the people themselves acting collectively. Quite erroneously they conceive of government as being operated for the sole advantage of scheming politicians. It is wrong to conceive of economic effort as being purely individual in character."

b. Collective public action has no legitimacy

The collective and cumulative impact of pro-market postulates such as "the collective action problem," the "public goods problem," and the many others listed above is a de-legitimization of the state – of government – as a vital and authentic, or even an acknowledged, economic actor. Government is most often cast as a villain in the operation of "the economy." All evidence to the contrary – the scope and level of its productivity, the success of its investments in technological breakthroughs, the essential value of its foresight, planning, and maintenance of infrastructures (Lind 2012; Mazzucato 2013) – has been quite thoroughly covered up or spuriously repudiated (Hacker & Pierson 2016).

c. Government is incompetent.

The market-centrism of mainstream economics has played directly into political and popular media views of government as incompetent and inefficient. In *Public Goods, Public Enterprise, Public Choice,* Stretton and Orchard (1994) analyzed four beliefs that together constitute "a theory of public incompetence" (p. 80). All four derive from the axioms of neoclassical economics, in particular that self-interest is the universal motivator, and that markets, unlike governments, are invariably efficient, punishing failure by eliminating inefficient producers. Today, unfortunately, it is accepted as a truism that government is inefficient and unproductive, while the market is tirelessly productive and innovative. Even those who may not buy into such axioms, along with those who do, have decried "broken government" (see, for example Bruni, 2014; Luntz, 2014; Schuck, 2014; Teles, 2013).

d. The public domain should model itself on the market and use market solutions.

So entrenched is the creed of market superiority that government administrators are not only encouraged to work within a market model; they are often compelled to use "a market solution where markets had never existed" (Galbraith, 2008). Mainstream economic thinking has carried market-mimicry into ever-widening gyres of the public domain: rebranding public university students and public hospital patients alike as "customers"; seeking private sponsorships and trade advertisements for public parks, forests and preserves.

Beyond such "marketization" of government, we have seen widespread privatization and contracting out of public services (Sekera, 2016 & 2017), amounting to what Verkuil (2007) has termed the "outsourcing of sovereignty". This routine commodification and profitization of government has led to its disfigurement, dismemberment and destruction.

e. State institutions should be reduced, restricted and replaced with private actors.

Toynbee and Walker (2017a, 2017b) have written convincingly and alarmingly about the "dismemberment" of the British state. Their summary applies to other democratic nations as well: "the idea of the state has been systematically disrespected, and derided as a concept to be regarded with suspicion," and the cumulative effect of these negative sentiments is "a

sense of resignation that has allowed the functions of the state to be dismembered, fragmented and degraded as deliberate policy." Others have written about the hollowing-out of government (e.g., Frederickson and Frederickson, 2006).

f. The very idea of "public" must be held suspect.

Decades of negative teaching and public messaging about the public sector have succeeded in reducing respect for government and the personal valuation of government service and products in many Western countries, and in the United States most sharply. I have already mentioned how students in most university economics courses learn about the superiority of markets over government from professors who transmit the reigning market-centric economics, and who speak of government as little more than an impediment to "efficient markets" while presenting public goods as a "problem" of "market failure." The devaluation of government has also been accomplished by economists who have determinedly and effectively reached a broad public audience, such as Friedrich von Hayek, whose 1944 *Road to Serfdom* was converted into a "wildly successful" cartoon version that ran in *Reader's Digest* and *Look* magazine (Mudge, 2014). Milton Friedman, "who *did more than any other economist of his generation to advance his belief in free markets"* (*The Economist* 2007), along with his wife Rose Friedman created a television series that ran for years on the Public Broadcasting System in the 1980s and 1990s.

More broadly, the rhetoric of "public" has been co-opted and defined negatively by those with market interests.

g. Private and public are not that different after all

Within public administration scholarship there has been escalating movement during the last several decades to advance the notion that public and private are "intermingled," "blended," "meshed". Blurring the distinction between public and private works to the advantage of for-profit businesses and corporations who can then claim that their strategies, "partnerships" and profits are in the public interest. It also furthers the momentum toward the privatization and the contracting-out of government services.

Much of the theorizing of this blur has proceeded under the rubric of the "public value" movement within the field of public administration. This line of thinking arguably fuses government and private sector to the disadvantage of the public (Feldman, 2014). Some celebrate and others accept this movement toward debilitative fusion – Kettl (2015), endorsing "public-private interweaving"; Bozeman (2004; 2007 p. 18), explaining degrees of "publicness"; Light (2017), applauding the proper "meshing" of public and private. In the 1980s political scientist Ronald Moe (1987) stood witness to the first steps toward such a fusion and warned against it as a form of economic rationalization that would promote round after round of privatization.

> **"Promoters of privatization have been at the forefront of current efforts to mesh the public and private sectors…Implicit in the rhetoric of the Privatization Movement is the view that the public and private sectors are alike, both subject to the same set of economic incentives and disincentives**. Many functions are interchangeable. Some promoters of privatization go so far as to argue that nearly all public sector activities are potentially amenable to being transferred to the private sector."

As for the contention that '"sector blurring" was not only present and inevitable but desirable, Moe wrote:

> "While a certain fascination arises from the idea that the current complexity and ambiguity in organizational matters is an inevitable and desirable consequence of the complexity and ambiguity of life in general, this fascination is misplaced. **A line must separate that which is public, or governmental (while other meanings of public are important, these terms are used here interchangeably), and that which is private.** The configuration of the line may vary over time and with circumstances, but it is a vital line nonetheless and the **fundamental basis of this line is to be found in public law**, not in economic or behavioral theories" (emphases added.)

The impacts on people and the planet

The immediate implications of these seven popular characterizations of government put democracy in severe jeopardy, workers at risk of ill-health and shorter lives, and the planet under increased threat of waves of famine, flood, and extinction.

Mal-informed voters

In the wake of voter choices in the UK (Brexit) and the US (Trump), and the rise of the right-wing, so-called "populist" movements in a number of Western democracies, scholars and pundits are assiduously theorizing possible causes for what appear to be voters voting against their own best interests. A growing consensus is that voters have been ill-informed and, in many cases, subject to campaigns of disinformation or mal-information. As yet, there are no definitive solutions to this problem, but several of the causes are obvious: continuing campaigns to reduce popular trust in government, to blur the distinction between public and private operating spheres, and to assert the overarching wisdom of the market despite recurrent financial "shocks" and real estate crises.

Precarity, lower living standards; declining well-being, decaying infrastructure

Steep divides in annual income, increasingly precarious personal health and shelter, declining living standards for the working class, declining life expectancy (in the United States), declining societal well-being, and decaying infrastructure have been widely documented. Hollowed out, contracted out, and out of favor, central governments are no longer in a strong position to maintain the necessary services, income security, protections and infrastructures needed today, let alone to ward off future vulnerabilities or prepare for unintended consequences of technological successes.

Endangerment of the planet for human habitation

Globally, mainstream economics neglects the biophysical basis of production and slights the significance of energy in particular. Western democracies that have for decades indulged in the notion of the superiority of "free-market economics" and have glorified economic doctrines that are insensitive to the biophysical realities of production are presently pondering how to combat the evident negative impacts on the natural environment -- multiplying evidences of

climate change, environmental degradation, species loss and ocean acidification (among others) -- that ultimately endanger human habitation.

In sum

For the past several decades, we have witnessed the enfeebling of the public economy system, less and less capable of benefitting the polity as a whole; government has increasingly met the needs of the moneyed rather than the majority. In "Democracy and the Policy Preferences of Wealthy Americans", Page, Bartels and Seawright (2013) document disproportionate power of the wealthy over national policy in the United States, with the wealthy and the non-wealthy having dramatically different interests. Similarly, in "Persistence of Power, Elites, and Institutions," Acemoglu and Robinson (2008) distinguish between "de jure political power" and "de facto political power" with the latter being "possessed by groups as a result of their wealth, weapons or ability to solve the collective action problem." But in 1967, when James Buchanan began to sketch out his public choice thesis, the policy preferences of the wealthy elite were nowhere near as divorced from those of lower-income populations as they are now. Survey research from the 1960s cited by Buchanan showed that the wealthy supported "public spending programs of all sorts" as frequently as low-income respondents. Undoubtedly, the success of opinion leaders from the public choice school and of those who led the pro-market/free-market campaign accounts, in part, for the divorce.

Their successes have also resulted in a hollowing out of the state, a "dismembering" of government (Toynbee and Walker 2017a, 2017b). Over the past several decades, government has been so hollowed out in some democracies that it is questionable whether the state has the capacity, without serious efforts at institutional recovery, to undertake the expanded role that many progressives envision at this critical juncture. Stiglitz, for example, calls for "Re-Writing the Rules" (2015) and expanding government's role so as to achieve a number of goals like restoring full employment and making markets "more competitive." All of his goals require government action. He speaks about "the old economic model" and argues that in order to rewrite the rules, "we must re-learn what we thought we knew about how modern economies work." Left unaddressed in his call to action is the reality that over the last forty years the US government has been privatized, dismantled, disabled and outsourced, so that the public sector's administrative capabilities to take on huge new tasks have been severely compromised. Stiglitz specifies "what the old models got wrong" about how the market economy works, but his critique is limited to what is wrong with *market* economics. He does not address the *public economy or the lack of a conceptually solid public economics*. Given the extent of governmental dismemberment since the 1970s, the capabilities of the public sector cannot be truly restored until we have a coherent and comprehensive understanding of how the public economy actually works.

Over two decades ago, development economist Marc Wuyts summed up the problem:

> "Once you assume that the state is a private institution like any other, then from orthodox economic assumptions, the prescription of competition emerges at once. Market failure may be a problem, but no viable alternative principle of economic organization to the market exists" (Wuyts, 1992, p. 73).

That is the vacuum that needs to be addressed.

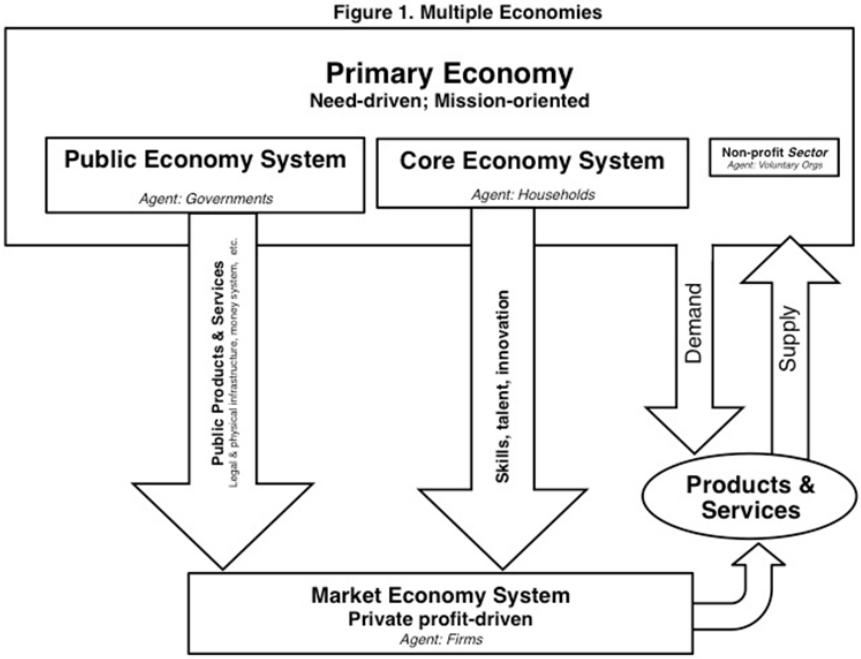
3. Multiple economic systems

There is more than one economic system for producing things that people need and want. Or, as Neva Goodwin puts it in her essay in this volume, "Human economies can be understood in more than one way."

As French economic historian Fernand Braudel (1981) argued half a century ago, societies have created multiple economies, not just a single, market economy. This plurality is rarely addressed by contemporary economics textbooks. Instead, generations of students learn only about "the economy," meaning the market system. As Schultze (1977, pp. 13-14) has noted, modern economics research and teaching rests on "the 'rebuttable presumption' that the desirable mode of carrying out economic and social activities is…'the private market.'" Government is considered no more than an intervenor in the private market, even though, as Schultze observes, "In most societies throughout history (and in many today), the presumption ran the other way," a situation that "with only a little facetiousness…might be labeled 'private intervention into the collective system.'" And while some economists do call attention to the fact that markets are societal creations (Polanyi, Goodwin, Mazzucato), the orthodoxy resists the reality of multiple economic systems and disdains recognition of non-market systems, whether that be the public economy (the public production system), the core economy[25] (households and communities), or the non-profit (charitable, NGO) sector.[26] While the present paper concerns the public economy, the core sphere (Goodwin et al., 2014, pp. 64-67) is also considerable, representing as it does the productive, unpaid, activity of households (none of which is counted in the calculation of GDP).

The constellation of non-market systems and the market system can be viewed as reciprocal. See Figure 1.

Figure 1. Multiple Economies



[25] Economist Neva Goodwin originated the term "core economy" to refer to the productive activities of households and communities.

[26] Bowman et. al. (2014) also speak of the "foundational economy," by which they mean the sectors that produce the "mundane goods and services" that are: 1) necessary to everyday life; 2) consumed by all citizens regardless of income; and 3) distributed according to population through branches and networks. Examples include food, communications, transportation, and banking.

While these economic systems are interdependent and co-produce goods and services, the market system and the non-market systems are intrinsically different, with fundamentally distinct purpose, drivers and dynamics. As Colm (1936, p. 4) stressed "The fundamental difference between these [market and public] economies must be explained before their interrelationship in modern economy can be understood." In one system – the market – the chief driver is profit. In the other constellation of systems – the non-market sphere – the chief driver is meeting a need: a household's needs, a charity's mission, or the collective needs of a polity. To our detriment, the only system that is routinely theorized in the current era is the market.

Economies and economics from a systems perspective

Empirically, economies are human-created systems (see Goodwin in this volume). A "systems perspective" is not new. François Quesnay, an 18th century physician and advisor to the king of France, and "often described as the 'father of economics,'… used his medical training to understand the economy as a 'metabolic' system [in which] everything must come from somewhere and go somewhere…" (Mazzucato, 2018). It is time to restore such systems thinking to economic analysis, with special concern for drawing connections between economic systems and natural systems (Daly, 1998; Klitgaard, 2011).

To be sure, traditional economic textbooks speak of economic "systems." Frequently the view is that there are three systems: market (exchange) systems; command systems and "mixed" economies. Especially perplexing is the term "mixed economy," in which disembodied "government" takes actions that impact "the economy;" yet the means by which government functions goes unexplained.

Conceptualizing economies as *production* systems can be enlightening; conceptualizing the public economy as a production system may even provide a framework for ameliorating the negative impacts outlined in Section 2 above (also detailed in *The Public Economy in Crisis;* Sekera 2016). From a systems perspective, we can see most clearly what happens when resources are turned into products and services (Wenar, 2016). Hodgson (1988) takes a systems view to look at "purposefulness and choice". A systems perspective enables us to address important questions of causality, directionality and impact. Additionally, a systems, or institutional (Galbraith, 2014), perspective enables us to understand "the conditions under which the organization can function and the conditions under which it fails." No less crucially, viewing economic sectors as *production* systems facilitates the urgent need for economics to integrate the findings of systems ecologists concerning the *biophysical* bases of production (Hall and Klitgaard, 2012). Such a perspective is essential for incorporating an analysis of the biophysical imperatives and outputs of economic production, particularly the insufficiently studied output of *waste*.

Finally, adopting a systems perspective on economic activity enables us to reach finer discriminations and more cogent theories concerning purpose, dynamics and results. I will examine each of these with regard specifically to the public economy. My analysis is different from that of traditional systems theorists. As Bevir (2010) explains in a discussion of theories of democratic governance (pp. 51ff), "systems theorists… emphasize the self-organizing and self-producing properties of systems." And "[a] transfer of information leads to the self-production and self-organization of the system even in the absence of any center of control." In contrast, I take an approach that examines empirical, observable factors such as causality and destination (Mitchell, 2015), directionality (Mazzucato, 2018), drivers and forces (Hall and

Klitgaard, 2012). My approach also differs from that of the "systems dynamics" field which tends to analyze phenomena from a mathematical or quantitative perspective using simulation-based modeling and similar techniques. The approach outlined here might be called a *functional systems* approach – one that is best suited to examining and understanding a human-created system of *production.*

The simple conceptual structure is as follows: Economies are operating systems that have been created by humans. Such systems contain a number of elements: forces, such as purpose, that drive actors (agents); sources of power, such as energy and other resource inputs; dynamics between and among agents, forces and resources. And there are outputs and impacts that result from the system's operation. To examine these with regard to the public economy, I turn next to understanding government as a system of production.

4. The public economy: theorizing a new public economics

In this section I outline basic elements of the public nonmarket economy. I present a conceptual model of the forces and dynamics of production within this distinctive environment. I explain how these characteristics differ from the market model and why those differences matter.

Government as a producer

Neither economics nor public administration theories adequately address the state's function as a producer. Neoclassical economic theory squints at government through the lens of "market failure," blind to government's presence as a legitimate economic producer in its own right. Political economists are concerned with the "powers" of the state and of its branches, rather than its function as producer. The field of public administration deals with issues related to the state but does not engage with concepts of public economic production.

In reality, most of what government does is carry out production. This is the case whether done directly by government employees or contracted out. In the public products economy, production is shared between the legislative branch (with its powers to *authorize and appropriate*) and the executive branch, which bears the responsibility for actually *producing* those goods, services, standards, protections, risk mitigation products and other outputs that have been authorized and financed.

As context, once again I can do no better than to quote from Studenski's essay, "Government as a Producer":

> "In every type of political organization known in human history, from the most primitive to the most elaborate, government has had to furnish services satisfying important needs of the members of the society, help them to make a living, influence their productive processes and consumption habits, manage economic resources to these several ends, and generally function as the **collective economic agent of the people**. The productive character of government activity was recognized by political and economic philosophers from ancient times down to the earlier part of the modern era" (emphasis added) (Studenski, 1939).

Studenski lays out the nature and centrality of public production:

> "In the public economy…goods and services are produced which require the collaboration of all the members of society, and can generally be enjoyed by them only in common…The services and goods produced in the public sector serve to maintain organized society… [including] protection of life and property, the administration of justice, and the regulation of economic activity…They also provide specific aids to private production, such as roads, and improvements of rivers and harbors…Obviously, without the services of government, society would be in a state of chaos and all production would stop…." (Studenski, 1939)

Unfortunately, Studenski did not develop a theory of public production. What are the system's drivers? Its dynamics?

The public economy – elements and driving forces

Regarded from the perspective of systems theory, the public economy is a system for production whose parts are designed to work "as a coherent entity." That's a quotation from Wikipedia, which also tells us that:

> "A system is a set of interacting or interdependent component parts forming a complex/intricate whole…
> There are natural and human-made (designed) systems. Natural systems may not have an apparent objective but their outputs can be interpreted as purposes. Human-made systems are made with purposes that are achieved by the delivery of outputs."[27]

And further,

> "The goal of systems theory is systematically discovering a system's dynamics, constraints, conditions and elucidating principles (purpose, measure, methods, tools, etc.) that can be discerned and applied to systems at every level of nesting…[28]

Those unencumbered definitions are fine for the moment, to keep things simple. Also, I will note the definition of economic production as crafted by the Bureau of Economic Analysis (BEA) for its 2017 handbook on National Income and Product Accounts,[29] used by OECD nations to calculate GDP:

> Economic production may be defined as an activity carried out under the control and responsibility of an institutional unit that uses inputs of labour, capital, and goods and services to produce outputs of goods or services. There must be an institutional unit that assumes responsibility for the process of production and owns any resulting

[27] https://en.wikipedia.org/wiki/System
[28] https://en.wikipedia.org/wiki/Systems_theory
[29] This BEA definition is also that used by the international System of National Accounts. (Bureau of Economic Analysis, "Concepts and Methods of the U.S. National Income and Product Accounts," November 2017, p. 2-1.)

goods or knowledge-capturing products or is entitled to be paid, or otherwise compensated, for the change-effecting services provided.

In constructing a theory of the public non-market from a systems perspective, I must therefore ask the following questions:

- What is the system's purpose? (destination, directionality);
- What causes public goods to be produced? (causality, drivers);
- What are the inputs? (resources);
- What are the system dynamics? (drivers, flows)?; and
- What are the results? (outputs and impacts).

Now we can begin to frame the elements of the public nonmarket economy. Figure 2 diagrams the conceptual framework.

Figure 2 The public economy: a system perspective

Conceptual framework

	Question addressed	Elements	Elaboration
Purpose	**Why?**	Purpose	"destination", "directionality" "purpose is independently causative in the world" (Daly 2005)
Process	**What's used?**	Resource inputs	Inputs: **- Energy** **- Natural resources** **- Labor, talent, technology** **- Financial Capital**
	How?	Drivers & Dynamics	**Driving forces:** - Collective choice - Collective payment **Dynamics** – relationships among driving forces, resources, agents **Agent** – government as the agent of the polity. Polity as ultimate driving force.

Product	**What results?**	Results	**Outputs**	• *products* • *services* • *benefits* • *standards; regulation (obligations)* • *thermodynamic waste*
			Impacts	*determined via analysis*

a. Systemic Purpose

Purpose: meeting a societal need

The fundamental purpose of public nonmarket production is to meet the unmet needs[30] of a society. While economics today lacks a theory of purpose-driven public production, this was not always the case. The idea of government as a "framework of collective agency for common purposes [was] endorsed by Wicksell (1896) and Gustav Cassel (1898)." (Sturn 2010, p. 291.) Even today, some economists and social scientists do talk about purpose, destination or directionality. Herman Daly (2005) tells us: "Through our choices, value and purpose lure the physical world in one direction rather than the other. **Purpose is independently causative in the world"** (emphasis added). Economist William Mitchell (2015) argues for a metaphor of purposes as destinations: "The destination must be prominent in the narrative and then we must specify the causal chains through which the purposes are achieved." Mazzucato and Robinson (2016) speak of "directionality,"[31] a concept correlative to purpose.

The idea that meeting "collective need" is the driving purpose of the public economy was of central interest to several theorists in the German Public Economics discipline (Cohn, 1887; Sax, 1887; Margit Cassel, 1924 in Sturn, 2010). Wuyts (1992), Desai (2003), Ranson and Stewart (1989, pp. 10, 12, 24), and Galbraith (1958, p. 242) also saw collective need as a central purpose of public production (though they generally didn't use the term "production.") But this perspective was obscured and eventually erased from standard economics.

Viewing purpose as a systemic driver or as "causative" (as per Daly) rejects the assertion that "market failure" is the rationale for government action. This approach is consistent with Colm and other more recent theorists, like Wuyts, and different from, but not totally inconsistent with Samuelson regarding "public goods." Marc Wuyts (1992) argued that public goods are "socially defined and constructed" and "result from public action prompted by…perceived public needs." He explicitly rejected "orthodox economic theory" in which

[30] Note that "needs" includes the needs of people, organizations, businesses, communities or the natural environment.
[31] Directionality, a term also used in other social sciences, is said to concern "vertical" or "horizontal" direction. The usage may be derived from Samuelson. The following is from Desmarais-Tremblay, 2017: "He [Samuelson] acknowledged being driven by aesthetic ideals, notably in his contribution on collective goods: 'My aesthetic sense was tickled by the beautiful duality displayed by public and private goods and their "prices"—the **vertical** addition of **public**-good "demands" as against the **horizontal** addition of **private**-good "demands," the "+ and =" dualities'" ('Public Goods Twenty Years Later,' June 1974, Samuelson Papers, box 143, p. 2, emphases added).

"public goods are defined solely with respect to the *inherent characteristics* of the goods and services concerned" (emphasis added).

Wuyts' distinction is a crucial one. And he is empirically correct. Public goods are not defined by some inherent characteristic, like "non-rivalry" or "non-excludability" as Samuelson (and some in the German Public Economics group) would have it and as millions of students have learned in economics courses all over the world. Any classic Samuelsonian example – whether it be lighthouses, fireworks or warfare – has been provided both by market agents for profit and by government (Sekera, 2014). It is futile to try to draw a line of demarcation between state and market based on some hypothesized innate distinctive qualities of the goods or services themselves. This argument has been made before, but lost to mainstream teaching on public goods. "The line of demarcation between [public and private] is constantly changing in accordance with the practical needs of the day," said Keynes (1927). Colm argued that "'the line of demarcation between public and private tasks is a flexible one, changing with changing public opinions, with changing weight of interest and political groups' (Colm, 1936, p. 6); 'not scientific calculation but the political struggle defines this line of demarcation.'" Goldscheid too, made a similar argument: "Goldscheid envisaged the profile of state activities as something that is determined by political struggle and not by theory-guided optimization exercises" (Sturn, 2010, p. 300).

Whether we have public schools or only private education, public "freeways" or private toll roads; private fee-charging fire services or public fire departments – all of these, and everything else produced by the public economy, stem from a decision made ultimately by the polity in a democratic nation-state (or by another type of "sovereign" in other forms of governance; see discussion of "sovereignty" below).

How, then, can we think of public purpose – meeting "collective need" – as causative from a systems perspective? Various taxonomies of collective needs and public purposes have been suggested in the past. I offer the following categorization of *the purposes of public production*:

- to supply goods or services not supplied by other means;
- to solve multifaceted or complex social, technological or economic problems;
- to make particular goods or services accessible to all regardless of ability to pay; or
- to achieve single-provider efficiencies (economies of scale; network effects) that simultaneously ensure universal access.

Non-market production is need-driven, not demand-driven.[32] In the public non-market, needs are articulated and become a systemic driver through distributed decision-making -- the process of electorally-manifested collective choice, a system "by which individual preferences are socially structured" (Gutmann, 1987, p. 134, quoted by French, 1998, p. 339).This process is detailed in the next pages.

In some Western nation-states, advocates of marketization have gone to great lengths to stub out all reference to public purpose as the "destination" of government actions. Their agenda has been facilitated by the absence of a concept of systemic purpose in economic

[32] Wuyts 1992, but cf. the work of economist Geoffrey Hodgson (2013), who distinguishes "needs" from "demand," which is a function of preferences and the ability to pay (Tankersley, 2014, p. 671).

production theory. In filling that vacuum, we can look back to earlier theorists and restore the concept of collective-need/purpose-driven public production.

b. Resources

Production can be defined as the conversion of resources into goods and services (Goodwin et al., 2014). Put another way, production involves the conversion of *inputs* into *outputs* (e.g., Lipsey and Steiner, 1981).

Traditionally the inputs were triune: "land, labor and capital". In the BEA definition (above), inputs are "labor, capital, and goods and services." The labeling of inputs has varied over time depending on interests. For purposes of this paper, there is no need for a general description the inputs to production. Nor do I have reason to consider the neoclassical "production function". The input I want to focus on is energy.

But before that, a word on financial "capital". In the public non-market economy, the source of capital for production is *collective*. This is key: in the public non-market economy, collectively-raised capital is not just a "resource" but is a *driver*. This is one of the signal differences that distinguishes public from private production. Unless this is well and widely understood, we can have no strong conceptual footing for withstanding the all-pervasive and otherwise persuasive pressures today to turn government agencies, programs and services into money-generating operations. If we yield to such pressures, we will face such perversions of public purpose as "policing for profit" and infrastructure schemes to serve private profit-makers rather than meet public needs.

The intended result of the public economy collective-choice, collective-payment production process is that goods, services, benefits, and protection can be accessed without regard to personal wealth – to be free or below cost at the point of receipt or usage. Displacement of this *systemic* purpose, such as by making revenue-generation a goal, results in system malfunction by necessity and by definition. Of course this systemic purpose is, time and again, ignored or over-ridden by those who privatize and marketize government and who force public agencies to become fundraisers instead of performing their fundamental missions. But such perversion is all the more likely in the absence of an understanding of the centrality of collective payment as a systemic driver.

Biophysical imperatives and thermodynamic waste

The disregard of biophysics

Just as mainstream economics ignores the existence of the public non-market economy, it disregards the biophysical basis of production (Hall et al., 2001), and the role of energy in particular. In *Energy and the Wealth of Nations,* Hall and Klitgaard (2012) show that economics for the most part has "treated energy not as a critical factor of production but only as another commodity to be bought and sold" (p. 8). They argue that treating natural resources and energy "simply as a commodity or as an externality" imperils future development and production.

The second law of thermodynamics tells us that waste is an intrinsic feature of the use of energy in production. But there is a qualitative, and controllable, difference between the level of unavoidable waste generated by matter-energy transformation and *the gratuitous waste*

inherent in the predominant corporate business model, a wastefulness that goes unaddressed by market economics.

Market mimicry in the public domain undermines the ability of the state to achieve public purpose, which in turn exacerbates the depletion of natural resources, stymies solutions to climate change, and thwarts a transition to renewable energy sources affordable to all. If mainstream, market-based economics blithely disregards the biophysical constraints on production, certainly a new public economics cannot.

Biophysical imperatives and constraints on production

The imperatives of thermodynamics are everywhere inescapable, none more so than the waste associated with all production. Precisely how these imperatives can be integrated into a systems theory of public production remains to be worked out.

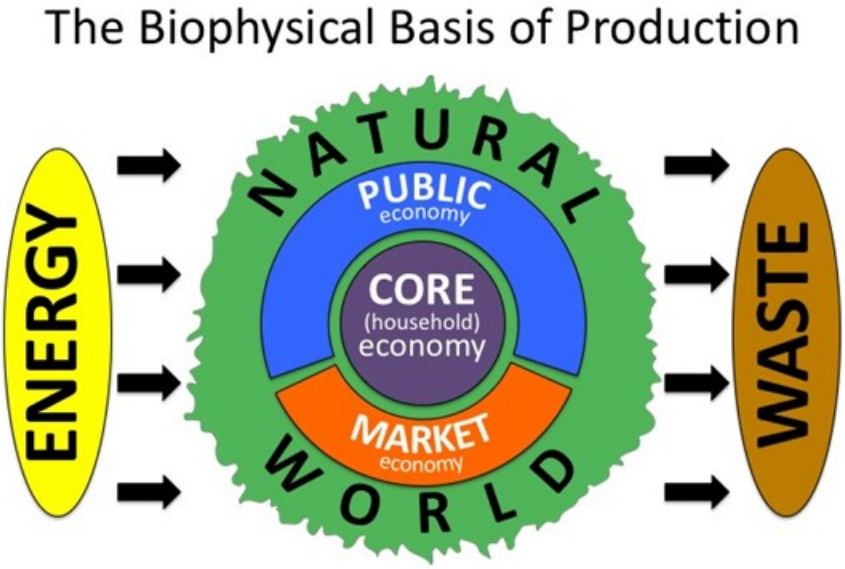
One might start by focusing on the source and sink functions of the natural environment. As Cleveland (1987) explains,

> "One of [Herman] Daly's (1985) most insightful contributions to biophysical theory was his critique of the conceptual model of the economic process found in most introductory textbooks…exchange value embodied in goods and services flows…Daly argues that the circular flow model is seriously incomplete because it focuses on the circular flow of exchange value (i.e., money) rather than the throughput of low-entropy natural resources from which all goods and services are ultimately derived. Daly emphasizes that the circular flow of exchange value is coupled with **a physical flow of matter-energy which is not circular. The matter-energy flow is linear and unidirectional**, **beginning with the depletion of…resource stocks from nature and ending with the pollution of the environment with…wastes**. In this view, *nature* is the ultimate *source* of the raw materials necessary to produce economic value, as well as the ultimate *sink* for the unavoidable by-products of the production process" (emphases added).

Also, as Cleveland (1987) further notes:

> "For Georgescu-Roegen, the economic process is unidirectional – what goes in is valuable, low-entropy energy and matter, and what comes out is valuable goods and services plus high-entropy waste heat and degraded matter."

Figure 3



The need to recognize the biophysical imperatives of production has been receiving more attention since the turn of the millennium, but it remains an underdeveloped topic in terms of public policy and public economics. But, again, there are guideposts for moving forward.

In "The Illth of Nations and the Fecklessness of Policy: An Ecological Economist's Perspective," Herman Daly observed that,

> "Policy dialog would make no sense unless there was a real criterion of value by which to choose from among the alternatives. Unless we can distinguish *better from worse states of the world* then it makes no sense to try to achieve one state of the world rather than another."

Having shown how "The concepts of throughput, of entropy…are foreign" to "mainstream neoclassical economists," Daly argues for **a policy of "non-wasteful sufficiency**" (emphases added).

Other economists and natural scientists have gone a step further and argued for an "energy standard of value" (Cleveland, 1987):

> "Odum (1977) argued that energy was the source of economic value. He pointed out that wherever a dollar flow existed in the economy, there was a requirement for an energy flow in the opposite direction. Money is used to buy goods and services, of necessity derived from energy… Economists have generally reacted strongly against many of Odum's economic theories in large part because he believes that low-entropy energy is the ultimate source of economic value – a so-called energy theory of value which is unpalatable to neoclassical economists."
>
> "Costanza (1980, 1981) …analyzed the relationship between the direct and indirect energy used to produce a good or service in the US economy…

> Costanza (1981) used this empirical evidence to argue for an embodied energy theory of economic value which maintains that the value of any good or service to humans is ultimately related to the quantity of energy directly and indirectly used in its production."

In *The End of Normal*, James K. Galbraith (2014) focuses on the biophysical realities connected with economic activity, and explains why these have not been readily taken up by mainstream economics. Summarizing the work of Georgescu-Roegen, Galbraith writes: "economic activity… consists in concentrating useful energy, in deriving satisfaction from it, and in releasing the residues as waste." But, as he points out,

> "To suggest that resources were limited and their distribution inherently unjust – that was a task for the unfashionable fringe. To admit that the country was living high on the world's resources was also to raise sticky moral questions about the lifestyle of everyone in America, including one's own."

The difficulties and denialism continue. In a recent paper on "The Energy Pillars of Society: Perverse Interactions of Human Resource Use, the Economy, and Environmental Degradation," a group of systems ecologists spelled out the barriers to change (Day et al., 2018):

> "[While] the renewable energy transition is a topic that is justifiably receiving increasing attention in both public discourse and the scientific literature, [w]e believe that the inherent difficulties in effecting this transition are not sufficiently considered. [A] a central goal of this [paper] is to call attention to the need to do more comprehensive and system level thinking about the significant challenges of replacing fossil fuels and mitigating environmental stressors that lay ahead… [D]eveloping future energy policy requires a systems approach with global boundaries and new levels of appreciation of the complex mix of interrelated factors involved."

Despite these complexities, a "biophysical economics" movement has been gathering momentum (Hall and Klitgaard, 2012; François-Xavier Chevallerau, www.BiophysEco.org). If it has not yet revolutionized mainstream economics, its findings can surely be incorporated into a new *public economics*. This is critical, since the last half-century has made it painfully obvious that solutions to the problems of gratuitous production of thermodynamic waste by market actors will *not* come from the market.

The challenges we face are unprecedented. In a paper on "EROI of Different Fuels and the Implications for Society," Hall, Lambert and Balogh (2014) conclude:

> "The decline in EROI [Energy Return on Investment] among major fossil fuels suggests that in the race between technological advances and depletion, depletion is winning...Thus society seems to be caught in a dilemma unlike anything experienced in the last few centuries."

The paper by Day et al. (2018) is even more stark. The authors, ecological scientists who don't normally tread into the realm of public policy, pose the dilemma that societies will have to confront: the competition of resources needed for two courses of action – energy transition versus mitigation of climate change impacts.

There will be a competition for resources for:

- **transition to renewables**: developing renewable energy sources, and necessary infrastructure, in order to replace declining stocks of high net yielding fossil fuels, and;
- **mitigation**: investments to mitigate the effects of environmental degradation and associated social and economic upheaval, due to already-locked-in impacts of climate change.

Deciding on the tradeoffs to be made, developing viable new energy sources and financing a course of action is, they write, the "grand grand challenge of the present century, and we believe that this challenge will decide the fate of our planet and humanity for generations to come."

Solutions and the necessary leadership cannot come from the market. The market is not constituted to produce solutions to extraordinarily complex, technological common-need problems. Nor can it meet essential basic needs and supply products to all regardless of ability to pay. The inherent driving forces of the market system – short time horizons, growth as a requisite, the inability to operate indefinitely without profits – as well as the gratuitous waste baked in, render the market system incapable of producing solutions to the coming dilemma. The solutions require long time-horizon investments with no immediate payoff in terms of saleable products, no visible ROI, no profit-making in the near-term. Such investment can only be generated in the non-market environment of the public economy, in which financing is collective and financial profit is not the point, and which is driven by public purpose. Solutions must originate through collective action, public leadership and the public economy.

Yet, policymakers – elected leaders, their advisors, and the public servants who write policy "options papers" for them -- have been taught to embrace "market solutions" for every sort of societal need, from education to infrastructure, food security to national security. "Market solutions" is the tsunami that has swept in across the public sector, "public-private-partnerships" the perpetual hurricane that has been flooding all offices of government for more than 30 years. What is needed is a new public economics that comprehends and embraces the public purposes of the public domain, that recognizes and incorporates biophysical imperatives, and that enables the long-term investments on behalf of long-view solutions that both solve the problems and serve the polity.

c. Drivers and dynamics

In the public non-market, the most basic drivers and dynamics of mainstream economics do not apply. In the central dynamics of the public products economy there are no "buyers", no "sellers", no "exchange." There is no market-model competition, but only "pseudo-privatization" (Siltala 2013). The purpose is not profit but meeting identified societal need. Satisfying "customers" does not produce revenue. There are no "customers" -- people don't pay directly; they pay collectively. In a non-market, outcome goals are devilishly difficult to define – unlike the simple market goal of maximizing profit. Results are often obscured because of factors unique to non-markets, where *invisibility* of outputs and *absence* of harmful conditions are hallmarks of success (Sekera, 2016).

How can we analyze, understand and demonstrate the component elements of this system, its drivers and its dynamics?

The place to start is with the two most fundamental driving forces: collective choice and collective financing. Then we will look at these drivers in relation to event-causation.

Collective choice and collective finance

Public administration scholars Stewart Ranson and John Stewart (1989,1994) have argued that public goods and services "are provided following a collective choice and financed by collective funds." (1994 p 55). Indeed, empirically, those are the two chief forces, in addition to public purpose, that drive the public production system.

Collective choice

In the public non-market system, collective choice replaces the "demand" of the market system. In democratic nation-states, public, non-market goods and services originate through the complex process of collective choice in the polity -- i.e., voting. (In non-democracies, choice is not collective, but rather is that of whatever entity is the sovereign; see the discussion below concerning sovereignty.)
For over a century, economics has not understood collective choice as a generator of production in the public economy. Instead, economic theory has focused on mathematical modeling of forms of collective choice and the "rationality" of various possible voting procedures. Economics students learn about the "collective choice problem" and ingest Arrow's "impossibility theorem." Amartya Sen, who has been studying and writing about collective choice for over four decades, has acknowledged (Sen, 1999, p. 364) that "Impossibility results in social choice theory…have often been interpreted as being thoroughly destructive of the possibility of reasoned and democratic social choice." But he goes on to say that he has "argued against that view." Although Sen wrote an entire book on collective choice (*Collective Choice and Social Welfare* 2017 [1970 updated]) in which he proved both mathematically and logically that Arrow's impossibility theorem need not undermine the validity of collective choice in the real world, Arrow's work spawned an industry of economists debating his findings. "[F]orty years and a thousand books and articles later, scores of economists are still writing about variations of Arrow's work." (Stretton and Orchard, 1994, p. 59). While Arrow eventually admitted the lack of utility of his formulation in actual governance, "in other minds, perhaps keener on doing maths than understanding government, rigorous unrealism persists." (Stretton and Orchard, 1994, p. 62).

In the real world, in democratic nation-states electorally-manifested collective choice is the generative source of public products. Public products are not created in response to demand. Instead, a variety of products – goods, services, benefits, protections, standards – originate from the complex decision-making dynamics of collective choice and collective financing. In contrast to the "supply and demand" dynamic of the market environment, this dynamic is more complex at every level.

Since the late 19th century, few economists have accepted the process of collective choice as a legitimate replacement for the market concept of demand. One exception is Richard Musgrave:

> "Since the market mechanism fails to reveal consumer preferences in social wants, it may be asked what mechanism there is by which the government can determine the extent to which resources should be released for the satisfaction of such wants…A political process must be substituted for the market mechanism."[33]

In his 1937 dissertation, Musgrave talked about "socially interpreted individual wants" and "collective wants." According to Desmarais-Tremblay (2017, p. 63) "Musgrave assumes there exists individual wants, and collective wants proper. Most of the first ones are satisfied within the market economy, **but the public economy may satisfy both collective wants proper and 'socially interpreted individual wants'**" (emphasis added).

Musgrave's reasoning built off of the thinking of some of the late 19th and early 20th century public economics theorists. For example, Margit Cassel, Emil Sax and Knut Wicksell all theorized about collective choice as a mechanism in the public economy (Sturn, 2010).

And, in this century, we have, for example, Stiglitz (2000, pp. 15, 156-57):

> "In the public sector, choices are made *collectively*. Collective choices are the choices that a society must make together…Unlike expenditures on conventional private goods, which are determined through the price system, expenditures on public goods are determined through a political process….Individuals vote for elected representatives, these elected representatives in turn vote for a public budget, and the money itself is spent by a variety of administrative agencies."[34]

Other social scientists and public administration scholars have elaborated on the collective choice process.

In the 1990s public administration scholars Stewart Ranson and John Stewart (1989, p. 10) weighed in:

> "…choice has to be made from a number of competing claims. There will be arguments about needs, spillovers, rights and obligations. Collective choice is political because ***these disagreements and conflicts of interest have to be resolved before social life can proceed*. Collective conflict has to resolve into collective choice**" (my emphasis).

Ranson and Stewart (1989) go on to link collective choice to public purpose, arguing that that collective choice is a process through which "differing interests are resolved, and conflict and argument lead to decision and action" (p. 7). The "public domain will value and chose to provide those goods and services which are regarded as essential to the community as a whole" (p. 7). "The essential task of the public domain can now be interpreted as enabling authoritative public choice about collective activity and purpose. In short, it is about clarifying, constituting and achieving public purpose" (p. 10).

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[33] The quote is from Michael Albert and Robin Hahnel, "A Quiet Revolution In Welfare Economics", but Maxime Desmarais-Tremblay (2013) provides a more extensive analysis of Musgrave's work.

[34] Although Stiglitz gives a rhetorical nod to collective decision-making through the political process, he reverts to standard economics modeling, using the "collective demand curve," to explain what he calls "the demand" for public goods.

Writing about "shared social responsibility," political sociologist Claus Offe (2010, p. 95) makes a similar point today with regard to "self-binding acts of pre-commitment: at their origin stands the political, collectively binding *choice*, made in the past by some winning coalition of political forces."

And, from Amartya Sen, *Collective Choice and Social Welfare* (2017 p. 32): "…there are political decisions that a society has to make for which the procedure of voting remains a major route to social choice."

In 2002 public management scholar John Alford added the important clarification that "collective choice is a mediated process because it is articulated through the channels of representative government." His elaboration (p. 339) on the mediated nature of this process gives a sense of the *profound complexity* of the public sector:

> "This collective choice is not simply an aggregation of the preferences of individual citizens (Carroll, 1995; Pegnato, 1997). Such an aggregation would be very difficult to achieve because each citizen has different wants and aspirations. Collective choices, therefore, are necessarily the outcome of political interaction and deliberation, in which citizens or their representatives engage with each other in advocacy, debate, and negotiation (Lynch and Markusen, 1994; Patterson, 1998). Sometimes these processes manage to reconcile conflicts or identify convergent interests, but often they do not. When they don't the political process follows some procedure, usually enshrined in a constitution, for arriving at authoritative determination…"

Nearly a century ago Austrian economist Emil Sax expounded on the complexity of the mediated process of collective choice. Sturn (2010) discusses a 1924 article by Sax in which Sax sketches

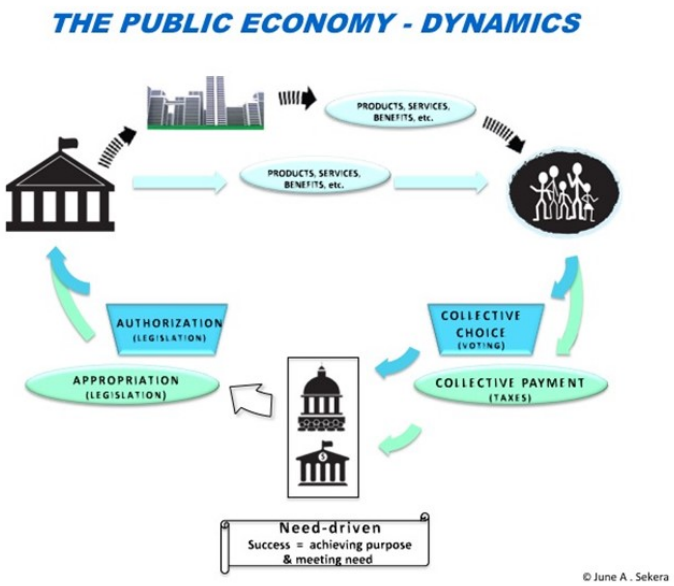
> "his ideas concerning the **complexity** of the collective choice processes (including **democratic voting**) and informational mechanisms used for the practical implementation of the theoretical optimum (Sax 1924: 339). His emphasis on the manifoldness of potential channels of information, frameworks of decision and motivational settings is guided by a concern for 'realism'. Sax (1887; 1924) emphasizes and systematizes the potential role of non-egoistic motivations (collectivism, mutualism, altruism) in the public economy" (emphasis added).

In sum, collective choice is achieved through a process with the following attributes: it is carried out via a procedure established by a polity (e.g., nation-state); it represents aggregated individual preferences (values, needs and wants); it is expressed following a process of argumentation, disputation and contention; it is intermediated by elected representatives (except for referenda, which are aggregated but un-intermediated). (Stewart & Ranson, 1989, 1994; Sen, 2017; Gutmann, 1987; Musgrave in Desmarais-Tramblay, 2013, 2017; Alford, 2002.)

It is important to emphasize that in democratic states, collective choice in the public economy production process is *intermediated* and subsequently *concretized* in law, which authorizes and finances production.

The process is represented in the Figure 4 below.

Figure 4



Does voting "work"? Scholars have wrestled with this question. But so have civic leaders and activists, since voting often appears to disappoint as an effective mechanism for the expression of collective choice. Too many don't vote; elections are bought by those with the most money; those who would like to vote are denied the ballot by technical and discriminatory measures. However, the question at hand is not whether the system works well, but to understand *how* it works.

It is crucial that we better understand the function of real-world collective choice – voting – in producing public goods and services. Our general appreciation of the nexus between voting and economic public production has been undercut by those mainstream economists who insist on the priority and superiority of individual choice. Whether in the guise of public choice economics, Arrow's Impossibility Theorem, the writings of Coase or Hayek, or the various masks of rational choice theory, mainstream economics has exhibited an elemental "hostility to democracy" – and here I am quoting an economic historian, Philip Mirowski (2015).[35]

Law: the way collective choice is concretized

Mediated collective choice – through voting – results in the selection of representatives who concretize collectively expressed decisions. These elected intermediaries prioritize needs and wants by enacting laws whose purpose is to produce some specified good, service, benefit or protection.[36] "Public purpose" is thus embodied in the concretized collective choice: enacted legislation. In this formulation (and in the real world), **collective choice is not mere theory. In the public economy system, collective choice is rendered operative, made actionable. It results in an operational outcome: a lawmaker is chosen; laws are enacted.** The public mandate that is manifested through mediated collective action is the basis for public production, but proximate causes of public production are authorizing

[35] Mirowski (2015) was pointing principally to microeconomics, but he implied that the charge could also be levied against aspects of macroeconomics.
[36] See text box, next page on "Public Bads?"

legislation and appropriating legislation. In the public domain, law authorizes and triggers both action and financing.

Once authorized and financed, public production is carried out by the elected and appointed leaders and the civil service managers and workers of government. (This is the case even where the supply of public goods and services has been contracted out; even in those cases, governmental leaders and employees are ultimately responsible for overseeing production and are accountable for the results.) But there has been inadequate attention to a debate that has been hidden in the shadows in public administration scholarship about whether law is the basis for public administration practice. While it once seemed indisputable that law was the source of agency in the public domain, that assumption was questioned with the rise of other management philosophies in the 20th century. An important paper by Laurence Lynn (2009) traces the evolution of this change.

Lynn's paper, "Restoring the Rule of Law to Public Administration: What Frank Goodnow Got Right and Leonard White Didn't," explains that law both grants public administrators the authority "to achieve public purposes" and bounds the discretion those agents are allowed to exercise in carrying out their work to achieve that goal. "As both agents and principals of the law, public administrators necessarily play an essential role in defining what the rule of law means in practice…" As Lynn explains, Frank J. Goodnow, "regarded as the 'father of public administration'" saw law as the basis for administrative and managerial action (Goodnow, 1886). This view evidently was generally accepted until challenged by the assertion of Leonard D. White, in his 1926 textbook – the first in the field – that "the study of administration should start from the base of management rather than the study of law and is therefore more absorbed in the affairs of the American Management Association than in the decisions of the courts." The thrust of Lynn's paper is to challenge this "pronouncement" by White.

It seems that, just as economics dropped the line of thinking that saw production as the source of value more than a century ago, public administration scholarship lost the train of thought that law is the basis of public management. Indeed, one can find cris de coeur in the critical literature on New Public Management and public value theory in public administration warning that the concept of the rule of law has been abandoned amongst the interest in "networked governance," "citizen participation," "citizen co-production," "deliberative democracy" and the like. Lynn and others he cites are attempting to re-invigorate the lost perspective. He concludes that "Law is the root system of public administration" and that "Ensuring that the rule of law is real must be a central commitment of public administration education" (2009, p. 810).

"Public bads?"

Not every law is viewed as "good" (in the moral sense) by everyone. Some legislative actions produce what some in the population would see as "bad." Deneulin and Townsend (2006) raised and addressed this issue:

> "[H]ow is the common good generated or nurtured and how can we ensure that the common life of a community is good and not bad?...We emphasise here that there is no guarantee that participation in common action will generate something genuinely good. It might lead to bringing into power a government which might use nuclear weapons or which introduces unjust structures such as those of Apartheid. Human actions are always fallible because they are human. However the 'possibility of moral evil is inherent in man's constitution' does not nullify the claim that the good for each of us is found and sustained in relationships, whether at the level of the community of the family, village, country or world, and the public policy ought to recognize and nurture them if it is not to undermine the human well-being."

Collective finance

Individual payment is fundamental to the market both theoretically and empirically. In the market model, individual buyers maximize their utility and individually pay. And in the real world market economy, as in the model, access to products and services is expressly contingent on ability to pay.

In contrast, in the public non-market system the cost is intended to be socialized; financing must be collective for the system to work. Supply is to be free at the point of delivery or with fees that are not economically significant.[37,38,39] Non-market production is **systemically** *not* meant to yield income or profit. Imposing a goal of revenue-raising to cover the costs of production is inimical to the inherent purpose of public goods production.[40] Yet, in the real world, public non-market production is increasingly forced to yield income rather than meet a collective need (or sometimes yield income in *addition* to meeting a need, making mission-fulfillment often impossible.) This is a perversion of systemic purpose and should be understood as such. It is not merely a matter of social justice, though that's often the case. Installing or increasing fees in order to replace collective financing results in systemic dysfunction.[41] ***When income-generation is made a purpose of public production, the system inevitably will malfunction.***

[37] See definition of "prices that are not economically significant" in *NIPA Handbook – Bureau of Economic Analysis*, Nov. 2011.
[38] Public communications about the UK's National Health Service capture this purpose precisely, as they say the NHS is "free at the point of delivery" or "free at the point of use".
[39] Any fees that may be paid by users are not, or should not be, intended to cover the costs of production.
[40] The only justification to make revenue-raising a goal is to raise money to cross-subsidize the supply of other public goods.
[41] Of course, some public services, like the US Postal Service, have been required to cover all costs with revenues, tossing out the concepts of collective payment and universal access.

That verity didn't stand in the way of David Osborne and Ted Gabler, who were the progenitors of the "Reinventing Government" movement rolled out by President Clinton and Vice President Gore in the 1990s. (Reinventing Government was the US version of the so-called "New Public Management" movement of government privatization and marketization that took off in many Western democracies in the 1990s). In a 1994 essay wonderfully titled, "Can Markets Govern?" Lynch and Markusen explain that in this "reconceptualization of government in business terms" governments should be "relying more on fees than taxes, and investing their resources so that they are 'earning rather than spending.'" That this approach was embraced not only by conservatives and business interests, but also by Democrats in the US and Labour in the UK stands as testimony to the absence of any compelling argument or concept to illustrate the fatal flaws of this thinking.

Again, there is a void. Collective payment is neither recognized nor accounted for in the market "exchange" construct. While mainstream economics discusses taxes at length and speculates about their influence on individual behavior and their "distortion" of market activity, it does not deal with the implications of collectively-raised capital for the public system of production, or what might be better called "collective finance." Nor does the extensive field of "public finance" contribute to understanding the systemic dynamics of public production.

Collective financing is an extraordinarily complex process entailing distinct actions by different groups of agents. In contrast to utility-maximizing individual choice and payment in the market, the financing source for goods and services in the public non-market is collective. In the market, while financing for initial production is from investors (whether an individual owner or shareholders/lenders), financing for continued production is largely obtained from payments by customers. Not so with public production. In the public system of production, those who use or receive public goods and services do not pay the producer directly. This single fact introduces a complexity into public production that does not exist in the market: a third-party agent (legislature, council, parliament, congress) that actually supplies money to the producer so it can produce. The pooled financial resources of the polity are put to use only after a process of legislative appropriation.

Another complexity arises from the fact that there are basically two ways the public sector "finances" the outputs it creates: expenditures and tax expenditures.

"Expenditures" includes both current spending (on services like education or public health) and investment, as in roads or innovations. One might distinguish "spending" from "investment," but the distinction is unnecessary in this paper. "Expenditures" may be financed by taxes, debt or money creation. Debate rages about public financing mechanisms. In modern monetary theory (MMT), for example, money creation by government precedes payment of taxes, which are conventionally considered the source of revenue for government financing. But even assuming MMT theory is correct, money creation is the result of collective choice by the polity: the authority to create money comes from the legal structure of the public economy system, which was collectively originated. Again, it is unnecessary to delve into the details of financing mechanisms for purposes here.

In the market model, the source of financial capital for production is money in the form of cash, debt or equity investments. In the public non-market, outputs can be produced and goals achieved through "tax expenditures" (tax credits, exclusions and other legislated forms of tax exemption financing) wherein the producer – a government agency – makes no outlay of money.

Tax expenditures are rarely thought of as a financing source for production of goods and services. But, as noted by Marr et al. (2013) of the Center for Budget and Policy Priorities (CBPP), "The distinction between tax breaks and spending is often artificial and without economic basis."[42] The Joint Committee on Taxation (2014, p. 2) explains that "Special income tax provisions are referred to as tax expenditures because they may be analogous to direct outlay programs and may be considered alternative means of accomplishing similar budget policy objectives." Wikipedia (2015) is most blunt: "A tax expenditure program is government spending through the tax code."

The complexity of collective payment has consequences not found in the market:

- Payers are often unaware of what they have paid for via their taxes or other shared-financing mechanisms.
- The size of the producer's budget is determined by elected intermediaries; it does not grow or shrink based on customer satisfaction.

In contrast, the market mechanism for payment (from buyers) and income (to producers) is simple: payment is made directly to the seller/producer: and satisfied buyers are the source of a firm's income. The size of a firm's budget is a function of payments from buyers.

Collective payment means that the size of a public agency's budget is not determined by satisfied clients, users or recipients of services or goods. Rather, income to producers (government agencies) is a result of decisions by elected representatives. Thus, income to the producer is *not* connected to effectiveness: whether recipients/users are satisfied or dissatisfied, or whether the specified public need has been met is, by and large, unconnected to whether the producer receives income. Income to the producer may be terminated even when production has been effective, a public need is being met, and the recipients of goods and services are satisfied. Conversely, funding may continue even if the identified need is not being met.

Such un-market-like dynamics are usually cited as symptomatic of the "dysfunction" of government. But it is time to stop squinting at the public sector through a market lens and to see the public economy from a systems perspective and to understand government as a producer. Only then will it be possible to understand the dynamics of the public non-market financing system and the centrality of *collective* finance to its effective operation.

Without such an understanding, it is easy for market ideologues and profit-making interests to sell the idea that government agencies should make revenue-raising a purpose. Raising money is not their purpose; meeting a societal need is. For the system to operate effectively, financing must be collective. Wherever the idea takes hold that public agencies should raise their own revenues, we find a loss of public goods, as in exclusionary pricing of entry to US national parks or, more invidiously, policing for profit. Police killings of unarmed citizens and other tragic police interventions have been convincingly linked to "unconstitutional" profit-driven policing (Shepeard, 2015, *Harvard Law Review*).

[42] Tax expenditures have been used to finance a large array of public products or benefits, including education, health care, business expansion, and home ownership. Marr et al. (2013) revealed that in 2011 tax expenditures ($1.072 *trillion*) cost more annually than either Social Security ($725 billion) or Medicare ($755 billion).

Dynamics: event-causation

What causes production to happen?

From a systems perspective, this is a question of event-causation. The "event" in question is production.

So far I have argued that purpose is causative (following Daly) and that the chief driving forces of the system are collective choice and collective financing.

As to what instigates production, contrast once again the market and public nonmarket systems. A firm may be motivated to produce by an entrepreneurial inspiration, an invention, a desire for financial gain, or other (even humanitarian) reasons. But, at bottom, production is instigated after an assessment of whether the producer can charge, *and can get*, a price that will cover both the cost of production plus the desired profit margin. **The instigation of production (the decision to produce something) is a function of projected price viability.**

In the public sector, in contrast, the instigation of production is a function of mediated collective choice.

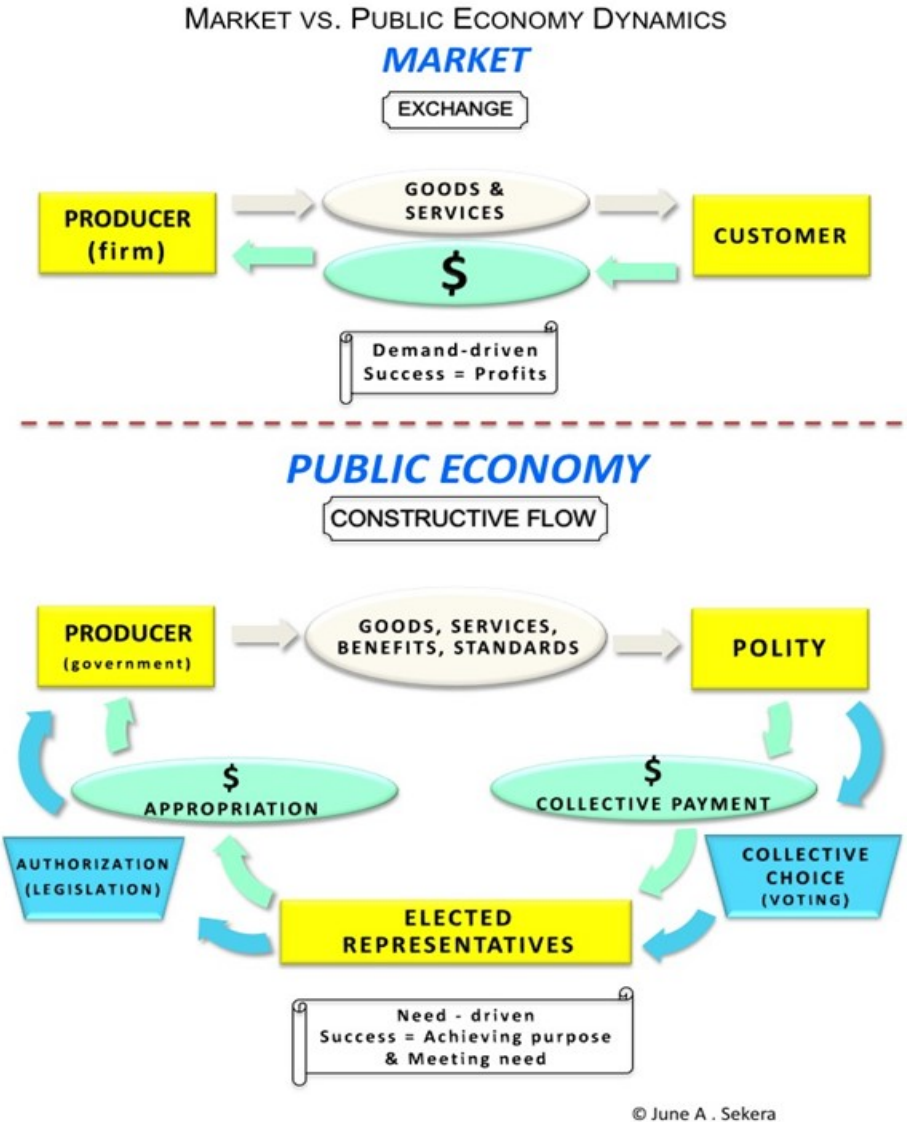
In the market, it is investors or managers who determine up front what the firm will produce based on a calculation that buyers will pay a price sufficient to cover cost and desired profit margin. In the public nonmarket, the government agency produces particular goods and services based on fulfilling a **prior public mandate**. That mandate is the basis for the proximate causes of public production: authorizing legislation and appropriating legislation.

Here I am consistent with Colm (1936) who was careful to distinguish between the instigators of public versus private production: "Among enterprises production is incited by the profit motive…In the public sector services are ordered by the responsible organs of the state or the municipalities, by the parliament, the chief executive or whoever else may have the constitutional right or factual power to decide upon public activities."

The public sector event causation[43] structure can be seen in Figure 5 below, which contrasts the dynamics of the public production system with that of the market model. In the "constructive flow" of the public economy, events are contingent on the actions of agents in the previous part of the sequence.

[43] I am using the term "event-causation" in the sense that economist William Mitchell (2015) has used it in discussing event-causation structures in the public sector. He looks at the "causal chains through which purposes are achieved." That is, he makes a useful connection between a chain of events and achievement of purpose. I am *not* using the term in the way that it is deployed in philosophical debates about "event causation" versus "agent causation".

Figure 5



In mainstream economic theory, the market is a two-way transaction -- an *exchange*: a producer sells and a buyer buys. In contrast, the public non-market, as I have outlined it, is a three-node constructive flow. There is no "exchange."

Indeed economists from the 19th century German public economics tradition held that exchange theory was not applicable to the public economy. Here is Musgrave (quoted in Sturn, 2010):

> "To summarize: as an interpretation of the actual revenue-expenditure-process, the voluntary exchange theory was found unacceptable because of the unrealistic nature of the voluntary exchange assumption in general and the competitive pricing assumption in particular…" (Musgrave, 1939, p. 14).

And here is Emil Sax (again, from Sturn, 2010):

> "In keeping with other scholars of German *Finanzwissenschaft*, [Sax] criticizes voluntary exchange-theories – in which the state vanishes – …as well as positive theories that reduce the public sphere to a mere battlefield of interest groups."

In the public economy there is no exchange. Instead, there is a *flow of actions among agents*, in which acts or outcomes are contingent upon prior acts or outcomes, ultimately relying on the polity. Public goods are created through legislation, passed by legislators whose existence is contingent upon voters. The flow of funding to the producer is contingent upon the actions of elected representatives, not upon "buyers".

This diagrammatic rendering is a conceptual model designed to clarify the dynamics of the system design. As all models do, it simplifies. Not represented here are such exogenous factors as the influence of power elites on elected representatives, resulting in what Acemoglu and Robinson (2008) have termed "de facto political power" in contrast with "de jure political power." Further (and problematically), recipients of public goods and services are often unaware of their source, or their own role in public goods generation. One of the virtues of this model is that it highlights the need to educate citizens regarding the connection between their choice when they vote and their receipt of goods, services and benefits.

Sources of power

Another question to be addressed when conceiving of the public economy from a systems perspective is – what are its sources of power?

Sidestepping all the sloughs of discourse on power – Marxist, Weberian, Foucauldian, and so forth – I would claim that, from a systems perspective, the sources of power in the public economy system are twofold:

- thermodynamic power, or energy; and
- societal power, or sovereignty.

Thermodynamic power

I have discussed thermodynamic power above, and will simply reiterate here that a new theory of the public economy must incorporate an understanding of energy flows and waste creation.

Sovereignty

I have argued that collective choice by the polity is one of the two chief drivers of the public economy in democratic nation-states. But behind the concept of collective choice lies the concept of sovereignty. Again, sidestepping centuries of discourse on sovereignty, I want only to argue that a concept of the "sovereign" is necessary for understanding the source of human-generated power in the public economy system. Sovereignty is "metaphysical" in Will Davies characterization of it (Davies, 2014, p. 23). "Sovereignty represents a particular form of 'political metaphysics', but one which makes claims about the 'final' source of political power, rather than the 'final' measure of the common good."

Davies' definition is useful. It helps us understand that a systems theory of the public economy is not normative. Sovereign power can produce benefits to societies and it can produce social harms. Public "goods" in the sense of economic outputs is not the same thing as public "good," which is a value judgment that varies according to the judge.

The idea of sovereignty as the root source of societal power applies to *all* forms of governmental organization, not just democracies; it applies to: autocracies, oligarchies, republics, monarchies, or any other. In modern nation-states, sovereignty is the power to create, change and enforce legal obligation (Jacobson, 2011; Moore, 2014). In most countries, sovereign power is collective and intermediated (through elected legislatures and heads of state). According to *The Global State of Democracy*, 2017[44] about 68% of the world's countries, home to 62% of the world's population, are electoral democracies with "genuinely contested elections" (Jimenez, 2017). But the world's largest rising economy is not. These days, Chinese leadership has declared that it is operating according to the principles of "socialism with Chinese characteristics." China observers are not of one mind as to the meaning of this mantra. Some have viewed China as transitioning to capitalism (e.g., Coase and Wang, 2013); others see the country as doggedly Marxist-Leninist. Regardless, it is safe to say that that, if the Communist Party in China is effectively the sovereign, this "Party-State" (Xia ca., 2006) is likely not in need of a new public economics; its system is doing quite well economically. It is the democratic republics of the world that need a new theory.

Finally, appreciating sovereignty as a source of power in the public economy system is a useful bulwark to defend against the imposition of the market model on the public sector, with the resulting, inevitable, systemic malfunction and incapacitation. "State capture" might better be understood as "sovereignty" capture. Verkuil (2007) makes just that argument when he writes about the contracting out of government functions as "outsourcing sovereignty".

"Efficiency" – rejecting a typecast

Having been cast for decades in the role of an intervenor who causes deadweight loss, distortions and "inefficiency", government has been hard-pressed to demonstrate that it is not such a villain. But the type-casting has stuck. This is so despite the fact that, as Oxford economist Avner Offer (2012, p. 2) points out:

> "It has never been proven that markets always provide the most efficient economic outcomes; it is not even easy to determine what such efficiency would consist of. People often make choices which are not intended to maximise their economic advantage...Those who buy and sell for their own advantage, have no incentive to seek overall efficiency, and efficiency does not just happen by itself."

For those who would demonstrate that government is not intrinsically inefficient, or at least not *more* inefficient than market actors, it has been difficult. This is especially so given that definitions of efficiency are so market-centric, Pareto's questionable[45] formulation being the gold standard.

[44] International Institute for Democracy and Electoral Assistance https://www.idea.int/gsod/
[45] For a marvelous dissection of Pareto efficiency, see Uwe Reinhardt, "When Value Judgments Masquerade as Science," 2010.

But challenges to the typecasting have arisen, both in terms of alternative definitions and in the form of evidence of government efficiency.

First, as to definitions, Herbert Simon in his 1997 volume *Administrative Behavior: a Decision-Making Processes in Administrative Organizations*, offered a definition of efficiency specifically for non-market (nonprofit) conditions; efficiency is defined as "*that choice of alternatives which produces the largest result for the given application of resources*." More recently, an economics textbook, (Goodwin et al., 2014) *Principles of Economics in Context,* defines efficiency as the condition in which "resources, or inputs, [are used in such a way] that they yield the highest possible value of output, or the production of a given output using the lowest possible value of inputs." Usefully, the latter definition could support a theory of production that incorporates biophysical realities.

Second, documented evidence of public sector efficiency is increasing and is gaining attention. Significant recent research has shown decisively that, in terms of cost and effectiveness, the market has not proved to be superior. In a meta-analysis of sophisticated comparisons of direct government provision with privatized or outsourced provision, David Hall of the University of Greenwich has found no evidence that the private sector is more efficient in terms of cost or effectiveness of results (Hall, 2014):

> "It is often assumed that privatisation or public-private partnerships will result in greater levels of efficiency, just because of the involvement of the private sector. But the empirical evidence does not support the assumption that there is any systematic difference in efficiency between public and private sector companies, either in services which are subject to outsourcing, such as waste management, or in sectors privatised by sale, such as telecoms.
>
> This does not mean that there is no difference, however. Privatised companies or contractors do charge significantly more to users of services; and transaction costs of sales, regulation, contract renegotiations, etc. are always significantly higher under privatisation. **If there is no systematic difference in efficiency, then it is always better value to use the public sector**" (emphasis added).

Hall's findings are summarized in this volume in his paper with Nguyen on "Economic Benefits of Public Services".

It is important to emphasize a form of "inefficiency" that is generally overlooked in comparing public vs private provision, i.e., that government financing costs less than private financing (Hall, 2014):

> "governments can always borrow more cheaply than companies, so raising money through PPPs [public-private-partnerships] is always the worse option. This has been stated very clearly by the IMF: '… private sector borrowing generally costs more than government borrowing … This being the case, when PPPs result in private borrowing being substituted for government borrowing, financing costs will in most cases rise …'"

Lobina (2017) found similar results in a study of water de-privatization:

> "the 2010 return to public management in Paris, France has allowed for an 8% cut in water tariffs (compared to a 260% increase in rates under private management from 1985 to 2008) and a series of interventions in favour of vulnerable consumers and the environment, with no deterioration in service quality, investment levels or the financial health of the new public enterprise."

The Project on Government Oversight's study of government outsourcing in the U.S. also found that, contrary to common belief, contracting out actually costs more than direct government provision. Their 2011 study showed that, on average, the U.S. federal government pays contractors at rates 1.83 times greater than federal employees' total compensation, and more than twice the total compensation paid in the private sector for comparable services (Amey, 2012).

And a recent report by the UK National Audit Office "found little evidence that government investment in more than 700 existing public-private projects has delivered financial benefits. **The costs of privately financed projects can be 40% higher than relying solely upon government money,** auditors found" (Syal, 2018, emphasis added).

d. Results of public production

The results of public production are of two types: outputs and outcomes. Outputs are products, both tangible and intangible. Outcomes are impacts; they relate to whether a need was met, whether a purpose was achieved.

d.1 Outputs: tangible and intangible products

Production – whether market or nonmarket – produces both *tangible* goods, like cars and streets, and *intangible* services like insurance and education. But in the public sector (with its power to create and enforce legal obligation), intangibles also include products that the market cannot produce: rights and obligations.

Products of the *public economy* are "public goods." I am not using the Samuelson definition of public goods, which is found in all textbooks but is nonetheless "useless for policy purposes" (Desai 2003). Rather, I am employing a definition consistent with my conceptual model of the public economic system; *viz* –

Public goods are created to meet a societal need:

- to supply goods or services not supplied by other means;
- to solve multifaceted or complex social, technological or economic problems;
- to make particular goods or services accessible to all regardless of ability to pay; or
- to achieve single-provider efficiencies that simultaneously ensure universal access.

I have elaborated elsewhere on the need for a new, functional definition of public goods in my "Rethinking the Definition of Public Goods" (Sekera, 2014).

The public non-market produces products that the market does not. And those that are particular to the public non-market are arguably more complex.

Figure 6 Products of the market vs the public economy systems

Market	**Public Economy**		
Category	*Category*		*A few examples of public products*
Goods	**Goods**		street lighting; sidewalks; roads; nautical navigation markers; clean water; parks; playgrounds; currency; GPS satellites & infrastructure; bridges; dams; canals; dikes; airports; shipping ports; etc.
Services	**Services**	**Services**	GPS, mail delivery; weather forecasting; emergency call service; disaster response/relief; education; food safety inspections; job training programs; patent system; enterprise and socioeconomic data collection and dissemination; copyright protection and copyright enforcement; innovation through basic R&D investments; legal / judicial system; infrastructure maintenance and repair; etc.
		Economic Insurance	unemployment insurance; old age, survivors and disability insurance; pensions insurance; bank deposit insurance, etc.
	Standards		air quality standards; water quality standards; drug safety standards; product safety standards; emissions regulations; food nutritional labeling; workplace safety protections; banking regulation; food safety; etc.

With the exception of "standards," these categories are fairly self-explanatory.

Standards: regulation and obligation

Most of the goods and services that the public economy system produces could also be produced by the market system. The decision to produce certain goods and services via the public economy system is made through collective choice (as discussed previously).

But some products can only be produced by the public economy system: those that are based on the power of the state to create legal obligation[46] and its power to enforce those obligations. Such obligations are created by law and (often) by subsequently issued "regulations," which might better be termed "standards."

In order to operate effectively, both physical systems and institutional production systems require regulation, and I will be sticking here with an analysis of regulation or standards from a systems perspective, rather than a Marxist or Fordist perspective (Bevir, 2010).

[46] Moore (2014) refers to this class of products as "obligations," and he refers to those subject to such obligations as "obligatees".

Standards and regulations are issued by both the public and private sectors, although those of the private sector do not carry the force of law. Indeed, some have argued that standards and regulation account for much of the 20th century's economic success, and the curtailment of standards may account for the reduced reliability of 21st-century systems. The Internet is a prime example. Addressing the need for standards in relation to the vulnerability of Internet sites to hacking and sabotage, Andrew Russell (author, with Lee Vinsel of "Hail the Maintainers" 2016) recounted in a 2017 interview[47] how crucial standards were to the operation of the telephone system operated by the Bell Telephone Company in the 20th century. Russell pointed out that the Bell Systems Index of Standards was 1,000 pages long – the index alone! Operating standards were a large part of the reason that the Bell Telephone system was so consistently reliable. Said Russell: "We knew that the phone would work when we picked it up." Phone customers didn't complain that there were "too many regulations."

Standards and regulation have been an essential to the success of "advanced" economies. As James Galbraith writes in his essay for this volume,

> "In an advanced society, regulations cover all aspects of every production process. They set limits on the extraction of natural resources from the soil. They discipline the production process itself, with respect to safety, working conditions, carcinogens and much else. They establish standards for the quality of the product. They limit the emission of waste products… [Moreover,] all living systems – whether biological, mechanical or social – function in accord with certain immutable principles, governed by thermodynamic law. All extract resources from their environment. All process those resources, generating useful energy, put to purpose. And all release waste. But most important for the present argument, *all* biological, mechanical and social systems must regulate their use of resources. They regulate to keep energy released in the consumption of resources within the tolerances of the materials available for containing and directing that energy to useful effect."

In fact, he continues, the market itself could not operate without regulation and legal obligations:

> "there are no markets without governance and government and regulations... the extent of the market depends on the reach of the state – on its capacity to provide security, a framework of law and justice, and to regulate effectively in the public interest. Without each of these, many if not most modern markets could not exist in their actual form."

It is little recognized that, as with creation of tangible outputs, the creation of standards (regulation) also entails a production system and a production process. Resources – energy, labor, talent, etc. – are input. And outputs – intangible products – result. This is akin to the inputs and process necessary to produce other intangible products in the realms of insurance or banking. The production of insurance or banking services by the private sector is viewed as a legitimate production process. Pundits and market ideologues don't seem to question the

[47] Andrew Russell interview at https://soundcloud.com/user-573696350/dark-side-of-innovation-andy-russell

profusion of banking and insurance skyscrapers that loom over our cities, housing huge armies of production workers. But government's creation of regulations, or standards, is scarcely viewed in the same light. It's not just that government creation of regulations is seen as harmful or distortionary to "the economy"; it's that there is no appreciation of the production process that is required to produce these intangible outputs, even by those who support such regulations or standards. Economics textbooks that note the state "power" to regulate never address that regulatory function as a process involving resource inputs and production capabilities. But, as with the production of other public goods and services, producing these standards and obligations entails collective choice, legislation, appropriation, and the capabilities (skills, talents, knowledge and technologies) for carrying out an effective production process.

The Franklin D. Roosevelt administration did explicitly recognize the need to understand government as an operating system. FDR and his Cabinet repeatedly used the metaphor of "the machinery of government" in their meetings at the highest level (Seligman and Cornwell, 1965), and the "machinery" in question had often to do with governmental apparatuses for issuing regulations and handling violations. In an era when the state had to rescue a falling and failing national economy, public sector leaders dealing with a national economic crisis knew that they had to attend to the proper functioning of this "machinery" in order for their rescue effort to work. Regulation wasn't a "deadweight" on the market economy; New Deal standards and obligations were critical to its survival.

d.2 Outcomes

The intended outcome of market production, at its most basic level, is profit. Without profits the agent of the market system – the firm – cannot survive (unless, of course, it receives subsidies from an outside source). In the market, measuring outcomes is simply a calculus of profitability. And there is only one constituency to satisfy: customers.[48]

The intended outcome of public economy production relates back to purpose. A good or service is produced to meet some identified need, which has been specified or at least implied, in the authorizing legislation that makes production possible.

And there is even more complexity. In the public non-market, there are multiple constituencies to satisfy: (1) the recipients of the goods or services; (2) the elected representatives who appropriate the funding; and (3) the public (voters and taxpayers). Additionally, (4) the legislated purpose must be met. Finally, beyond immediate outcomes, long-term impacts (intended positive externalities) ought ideally to be measured.

Measuring results in the public domain is therefore a tall order.

5. Measuring results and messaging what matters

For the past three decades, public administration practice has been suffused with the prescriptions of the ruling economic orthodoxy and constrained by the inapt imposition of private sector practices. Public sector performance measurement regimes have been

[48] Of course, investors must be satisfied with their return on investment, but that is a completely different point than the reality that if buyers are not satisfied with the products or services that are produced, revenues will cease (except in conditions of monopoly or near-monopoly).

designed within this confining and inappropriate context. (This has been true particularly in Anglo-Saxon countries – UK, US, NZ, Australia – but continues to spread across the planet.) New mandates simply build on existing performance measurement practices, which are manifestly inadequate to the complexity of publicly-funded nonmarket systems. Constrained by assumptions of neoclassical and public choice economics and corporate business practices, they fail to take into account the uncommon complexity of the public production process.

An entire industry dedicated to government performance measurement has spawned a vast literature on measuring results. Public servants and educators are regularly bombarded by corporate salesforces expounding the virtues of their proprietary systems for measuring outcomes. Some of the key problems in measurement schemes have been identified, others are barely recognized. (For a brief exposition on the situation in higher education, see "The Misguided Drive to Measure 'Learning Outcomes'" Worthen, 2018).

This for-profit industry thrives on the notion that results can be measured in the public sector as in the private sector. It thrives therefore on lucrative contracts from all levels of government. The advent of "Big Data" has been wind in the already-unfurled sails of this multi-billion dollar, fabulously lucrative, enormously influential industry. Responding to continual pressure from its salesforces, and in lockstep with ideological preferences, legislators mandate performance management systems without regard to their failures past and present.

The difficulties of measuring the outcomes of public nonmarket production may not be insuperable, but they are so fiendish that to treat them with the respect they deserve, I would be obliged to compose an entirely separate essay. I can do no more here than alert readers to a few of the most salient issues.

Measurement mania

Before diving into a fiery lake of metrics, I should note that there has been stout resistance from some quarters to the very notion of measuring results in the public domain. Diefenbach (2009), for example, has argued that "This 'measure mania' brings far-reaching negative consequences to public sector organizations, the people who work in them and the services that are being provided." He has a point, given the inapt market-centric postulates and inept and inapt methods embedded in most public performance measurement programs. But the push for performance measurement in the public sector is widespread and accelerating, so we would do better to construct a meaningful method of measurement than to simply bristle at any mention of metrics.

Criticisms of the current situation are numerous (Levartu, 2016; Moynihan, 2008; 2014; Frederickson and Frederickson, 2006; Brady, 2016; Pollitt, 2013; Radin, 2011; Metzenbaum, 2014). Critics charge that public sector performance measurement systems have:

- "Penalized and disrupted service to the poor"
- "Insulted the intelligence of America's teachers"
- "Sapped the energy and depressed the morale" of the public workforce
- Distorted public purpose, values and norms
- Poisoned the atmosphere for serious efforts to assess results and improve outcomes.

Yet, these sorts of critiques are coming only from a small subset of scholars and observers. Politically, rhetorically, intellectually, today's challenges to public performance measurement methods are *insufficient* and undertheorized. Political leaders and pundits all-too-commonly accept the contention that we need a business-like measurement of performance in the public sector, either because they march under the pennant that government ought to be run like a business, and/or because they have bought into the creed that government is invariably inefficient and government workers invariably self-seeking.

So there are multiple issues to resolve under the rubric of measurement. Among them: why should performance be measured? What metrics would be most useful? How can we appropriately and astutely measure results specifically in non-market systems?

Measuring for the wrong reasons

The reasons for measuring the results of public production are fourfold:

1) to determine whether an intended need has been met or purpose achieved;
2) to improve results;
3) to inform elected representatives, who make ongoing decisions about authorization and funding; and
4) to inform the public, who are both the recipients of public production and the originating source.

These are frequently *not* the reasons that programs of measurement are imposed. More often the reasons are:

- Punishment: reputation and rankings (Muller, 2018)
- A culture of compliance (Metzenbaum & Shea, 2018)
- An ideological motivation (Worthen, 2018; Caiden & Caiden, ca. 2000)

"Measuring the unmeasurable" [49]

A significant aspect of production in the public economy is providing protection. How do you measure the results of work whose success lies in forefending harm? For example, how do you measure the achievement of harms that did not happen:

- epidemics that don't arise or spread;
- food poisonings avoided;
- plane crashes that don't occur (each day there are 60,000 safe plane landings in the US alone);
- car crash injuries that don't occur;
- savings that are not lost because bank accounts have been publicly insured.

And so on. Current measurement regimes do not even pretend to deal with such questions.

Complexity – an obstacle of measuring results in the public nonmarket economy

[49] I borrow this term from *Key Indicators in Canada* (Warren, 2005), which touches on some, but not all, of the problems I identify.

I will briefly list a few more of the complexities, most unaddressed, by present-day public sector performance measurement systems.

a. Difficulty of defining outcomes

Most scholars of public performance measurement have not dealt with, or even mentioned, the complexity and difficultly of defining outcomes. A few who do are Radin (2012); Moynihan (2008); Pollitt (2000); Pollitt, Bouckaert & van Dooren (2009).The fundamental need to tackle this problem has been overlooked or minimized in most of the literature on and practice of public sector performance measurement. In many cases, the purpose of public production is to create "positive externalities," sometimes immediate, sometimes long-term.[50] This aspect has been unaddressed in public sector performance measurement schemes.

b. The multiplicity of types of public goods that are produced:

Metrics and measurement schemes basically ignore the diverse categories and multiplicity of products the public domain produces:

(1) goods (tangible products)
(2) services and protections
(3) economic insurance (old age and disability insurance; workers' compensation; etc.)
(4) standards (regulations and operating rules)
(5) innovations (Internet; GPS; medical devices; medications; etc.)

c. The multiple ways the public sector produces value:

- Product / service provision (directly by civil servants or indirectly via privatization / outsourcing).
- Regulation
-

d. Invisibility is a hallmark of effectiveness

Since public goods and services are created to meet the unmet needs of a society or to solve complex social or economic problems, once the needs are met or problems solved, they "vanish." Invisibility is a hallmark of effectiveness in the public economy system. Even when public goods, services and processes are not invisible, they may be opaque: that is, taxpayers cannot easily or directly see what they have paid for.

e. The complexity of how the public sector finances production

As outlined above, there are basically two ways the public sector "finances" production:[51] expenditures and tax expenditures.

(1) Expenditure (including "investment") for products, services, protections, standards and innovations (schools, roads, innovations like GPS, health and science innovation grants,

[50] Weisbrod (1964) in an analysis of the long-term impacts of public education, makes the point that "when goods and services have significant external effects the private market is inadequate".
[51] As noted earlier, I am not addressing Modern Monetary Theory and the idea that money creation precedes taxation. Doing so is not necessary for the argument here.

social security, environmental regulation and enforcement, food and drug safety regulation and enforcement, and scores more).

(2) Tax expenditure (tax credits, deductions, exemptions, exclusions, etc.). Public policy is often accomplished via tax expenditures rather than through spending/investment. A few US examples: mortgage interest deduction; the Earned Income Tax Credit; renewable energy tax credits.

Tax expenditures in the US are enormous. Here are numbers from 2015, for example:

> "On the basis of estimates prepared by the staff of the Joint Committee on Taxation (JCT), CBO expects that those and other tax expenditures will total about $1.5 trillion in 2015 – an amount **equal** to 8.1 percent of GDP, or equivalent to nearly half of the revenues projected for the year."[52]

There has been virtually no attempt to measure the results of tax expenditures or whether they are achieving their intended purposes. In the United States, the Government Accountability Office (GAO) has repeatedly called attention to this failure to assess the impacts of governing by tax expenditure.

In 2013, for example, GAO basically said it could not evaluate whether tax expenditure programs were achieving their purposes:

> "With so much spending going through the tax code in the form of tax expenditures, the need to determine whether this spending is achieving its purpose becomes more pressing. This report identifies gaps in the data required to evaluate tax expenditures but makes no recommendations on how to fill these gaps. A key step in collecting the data is first determining who should undertake this task. … However, these agencies have not yet been identified. GPRAMA may make a start on answering the question of who should evaluate tax expenditures by requiring that the responsible agencies identify the various program activities that contribute to their goals, which we believe should include tax expenditures" (GAO, April 2013, "Tax Expenditures").

f. Non-use of results

Enormous and costly efforts have been made for decades to measure performance at all levels of government. In the United States, massive programs have been enacted by Congress and imposed across domestic agencies (excluding the Department of Defense, intelligence services, and tax expenditure programs).[53] These attempts to impose market-like "accountability" regimens on the public nonmarket have not delivered on their promises. Studies have found that the results of these measurement systems have been used neither by Congress when making funding decisions nor by government managers. (Moynihan &

[52] An Update to the Budget and Economic Outlook 2015–2025; CBO, August, 2015
[53] In the United States, at the federal level, two massive government-wide programs were created – the Government Results and Accountability Act of 1993, enacted concurrently with the Reinventing Government initiative of the Clinton administration, and the Program Assessment Rating Tool (PART), created in 2002 by the Bush administration. Then GPRA was amended by the GPRA Modernization Act (GPRAMA) of January 2010, signed by President Obama in January 2011.

Lavertu, 2012; Government Accountability Office, 2014; Radin, 2011; Radin, 2012 p. 159; Metzenbaum, 2013; Metzenbaum, 2014; Frederickson & Frederickson, 2006).

This is hardly to say that performance measurement in the public domain cannot work. It can (as has been demonstrated in limited cases), and some believe it must.[54] But approaching performance measurement from the perspective of "accountability" on the one hand, while mimicking the ways and means of the private sector on the other, is not the way to go about it.

What's needed

The persisting inability to measure and communicate the results of government production of goods and services underscores the need for a comprehensive rethinking of how to measure results in the public domain. I will list, but do not have space in this essay to discuss, actions that are needed.

- Adapt complexity theory.
- Construct a connection to legislative purpose.
- Write simpler, goal-oriented laws.
- Deal with the difficulties of goal definition.
- Re-think risk adjustment.
- Distinguish between process and products; outputs and outcomes.
- Re-think impact evaluation.
- Tackle tax expenditures.
- Measure positive externalities (short, medium and long-term).
- Integrate concepts from the Public Service Motivation (Moynihan & Soss 2014).
- End the "accountability" attitude.
- Call a moratorium on "pay for performance."
- Articulate with macro measurement efforts.
- Message what matters.

Messaging what matters

As I stated above, one of the four reasons for measuring results of the public production system is to inform the polity. This may seem so obvious as to merit no further discussion. As Hochschild (2010) notes:

> "Almost every democratic theorist or democratic political actor sees an informed electorate as essential to good democratic practice. Citizens need to know who or what they are choosing and why – hence urgent calls for expansive and publicly funded education, and rights to free speech, assembly, press, and movement."

[54] Jerry Ellig et. al. *Government Performance and Results: An Evaluation of GPRA's First Decade* (ASPA Series in Public Administration and Public Policy); Sep. 8, 2011.

But once we consider the informed citizen from a systems perspective, we must think of the choosing individual[55] as the fulcrum – the point or lever--upon which the operation of the whole system depends, *if* this system is to operate effectively.

As Hudson and Sommers (2013) remind us, voters must be sufficiently informed to understand the consequences of their actions within this system. However, due to characteristics of the collective choice systemic driver, the choosing individual may make uninformed choices or the majority of choosing individuals may be co-opted by a minority with wealth, power or other advantages (Acemoglu and Robinson, 2008; Page et al., 2013).

Is the public choice school right? Is collective choice simply a "problem"?

As I have noted, Buchanan did get to the nub of the issue when he began the work that eventuated in the public choice school:

> "Individual participation in collective decision-making has not been thoroughly analyzed, and the means through which the separate private choices are combined to produce 'social' or 'collective' outcomes have not been subject to careful and critical research."

But the analysis and conclusions to which the public choice school has clung is destructive to the system it purports to analyze. Perhaps intentionally casting the process of collective choice as pathological (Stretton and Orchard, 1994), they propose to substitute a supposedly incorruptible market system for a supposedly corrupt system of collective choice. If your vote can be bought, you should vote by buying.

The creed of the public choice school is not the solution to the problem. It *is* the problem. If today's democratic nation-states are to function effectively for their polities, one of the elements to attend to is how to effectively and accurately message what matters.

What voters must come to understand is that the public economic system is a major producer in all democratic states; that the market system cannot and will not provide what the public economy provides; that the public system of production is ordinarily more efficient and responsive than those for-profit entities to which government services have been contracted out; that the market system itself depends for its health and vitality on the standards, regulations, and infrastructure maintained by government through the public economy; and that it makes no sense to measure the performance and achievements of the public economic system as if it were a for-profit business.

Such messaging will need to overcome years of misinformation and willful misconstrual of the role of government and the purposes of the public economy. As Baekgaard and Serritzlew (2016) at Aarhus University concluded from their research:

> "Citizens' interpretations of performance information are systematically biased and depend on their prior beliefs...*Policy makers should bear in mind that performance information is likely to be systematically misinterpreted by*

[55] "The choosing individual" is a term used in philosophy, political science, ethics and genetics and favored these days by some conservative pundits. But it does not seem to have been much integrated into systems theory, nor portrayed as a fulcrum in collective choice theory.

> *citizens, limiting the payoff from providing citizens with performance information*" (emphasis added).

A more useful, and immediately feasible, approach than reporting outcomes metrics would be to reform the vocabulary used to talk about the public sector, which has been devalued *through rhetoric, not through any demonstration of fact*.

There is much conversation now about "public value", a school of thought within the field of public administration scholarship which is based on the assumption that the public sector must prove its value in a way that is analogous to the way that businesses prove their value. (Moore, 2014; O'Flynn, 2007; Williams & Shearer, 2011).This entangles public value theory, as it has unfolded thus far, in the market model – its idiom and perspective (Dahl and Soss, 2014) – which does not offer a framework for explaining the unique way in which the public economy system actually does create value.

The public economy system produces a cornucopia of things that people want and value; the messaging about them needs to be tied to an encompassing concept of the system itself and individual citizens' role in producing them. Once again, a great deal of ink has been spilled on vocabulary and messaging, but these attempts (heretofore mostly unsuccessful) have been launched in the absence of any coherent concept of the public sector production system that produces the myriad goods, services, protections and benefits that citizens receive and use daily.

6. Conclusion

Many recognize that the policies and rhetoric of neoclassical economics are devastating many democracies, but few are working actively to formulate an alternative economic framework for understanding the public economy.

Ideas and concepts matter. Ideas frame theory; theory shapes concepts, and "Concepts," writes economist Meghnad Desai (2003), "influence how the world is viewed. They shape human expectations and actions." So does our phrasing of those ideas and concepts: Richard Musgrave observed in the 1960s that "Semantics, as the history of economic thought so well shows, is not a trivial matter" (Desmarais-Tremblay, 2013, p. 5).

A number of heterodox economists have been advocating an overhaul of the pedagogy of economics to reverse much of the damage done by a market-driven system of values. Victoria Chick of University College London, for example has been advocating for such an overhaul.

> "[O]ver the past few decades [a narrow, market-centric] economics has colonised not only much academic inquiry in the social sciences, but also public debate as a whole. Most notably, it has colonised politics. By giving 'scientific' support to programmes of deregulation and privatisation over the past 40 years, it has managed to transform our economic structures to conform to its ideal of free markets…" (Chick, 2011).

A cogent and catalyzing concept of public economics is now called for. In her paper on the new economy, Neva Goodwin (2014b, p. 8) speaks of the urgent need to reconnect economic theory with the real world:

> "the relationship between theory and reality is dramatically overdue to be realigned. In the 20th century, economic theory, regardless of its realism, was allowed to direct policies – some self-fulfilling, and some disastrously different from the announced intentions. We must move to a theory that is not only based on observed reality, but that also gives attention to what kind of economy is necessary, possible, and desirable."

Here is where we might start:

a. Name the public economy

With few exceptions (e.g., Goodwin et al., 2014) a "public economy" is neither mentioned nor recognized in the teaching of economics. It is not named. Even in the most recent online edition of the authoritative Oxford English Dictionary, the term has no entry or subentry of its own.[56]

As Betty Friedan showed in her path-breaking 1950s discussion of women's plight as "the problem that has no name," women needed words to name their predicament before they could understand it and act to fix it. The solution, then, must begin with making clear, evident and popular the language that will enable people to recognize public goods and the public economy (Derber & Sekera, 2014).

b. Map the public economy

Of course, as we bring it into the limelight, the public economy must be defined. Part of that definition must entail qualifiers of the scope and size of the public economy.

I began this paper by stating that the public economic system is a "major" contributor to all economic activity. But there is no agreement about its size.

Its sphere and scope are undoubtedly larger than generally acknowledged, although it is regularly claimed that the market has a larger scope. For example Robert Johnson, President of the Institute for New Economic Thinking (INET) said in his remarks last year on the launch of INET's new, independent "Commission on Global Economic Transformation",

> "the existing paradigm can't meet the challenges we face. That paradigm romanticizes unfettered markets while it overestimates the capacity of national governments to address human problems—*at a time when the domain of the sovereign is smaller than the scope of the market"* (emphasis added, Institute for New Economic Thinking, 2017).

[56] But there are two usage references in the OED, one of which notes that "Dispute centers… about how large this role may become before the public economy metastasizes and swallows up the private economy."

Such assertions are common, but their accuracy questionable.[57] Calculations of GDP undervalue government's contribution; moreover, GDP is based on inputs because no one has determined how to value government outputs or outcomes. Also, GDP counts "government social benefits to persons" (commonly called transfer payments) in the category of private economic activity (as part of personal consumption expenditures), rather than as government activity. The GDP methodology (in the US at least) also places certain public agencies, like the Postal Service, local transit agencies, public water and sewage agencies, airports, water ports and other "government enterprises," in the "business sector" category. In the National Income and Products Accounts, "the value added by government enterprises (as producers of goods and services for the marketplace) is recorded in the business sector, along with that of private businesses" (Bureau of Economic Analysis, 2017, p. 9-3). The Bureau of Economic Analysis recognizes and acknowledges some of the deficiencies (Bureau of Economic Analysis, 2017, p. 9-4).

Research is needed to identify the extent of mis-categorization and undervaluation.

c. Develop and advance a new public economics:

- Use a systems approach;
- Recognize government as a producer;
- Reclaim and restore elements of the "original" public economics; and
- Incorporate the biophysical imperatives of production.

Contemporary economics teaching fails to address, let alone explain, the dynamics and drivers of non-market systems. That void seriously imperils the ability of the public economy to function on behalf of the populace as a whole. In the absence of an understanding of the systemic forces and requirements of production in the public domain, purveyors of the notion of market superiority and private interests can together maneuver the machinery of government to benefit from the diversion of public financing to private gain. Privatization, outsourcing, marketization and monetization of public systems, assets and services channel taxpayers' collective financing into activity that guarantees private profits but often abandons public purpose. The public nonmarket has been devalued, dismantled and de-funded. And today's economics lacks an explanatory model of how goods and services originate through this collective-choice and shared-cost system.

This paper proposes a new theory of the public economy based on a restoration of extinguished but crucial historical analyses and on empirical evidence relevant to today's real-world practice. I argue for a systems approach. Such a perspective facilitates the development of a theory of government as a producer, following the concepts of Studenski. A systems architecture also facilitates incorporation of the biophysical realities of production – a factor long, and dangerously, neglected in mainstream economics, but certainly essential as we look forward. A "new" theory can also reach back to the "original" public economics of the 19th and early 20th century, and build on aspects of that discipline. In particular, Gerhard Colm's reasoning can be a source of pivotal insights. To begin with, we can look to his two guiding principles:

[57] For an insightful analysis and data, see Hall and Nguyen in this volume: "Economic Benefits of Public Services."

> "the public sector should be dealt with as an *essentially economic* phenomenon, not as an extra-economic appendix to the market economy; and the state as the core of a modern public sector is an economic system with its *own* economic logic – it is an *essentially* non-market type of economic system whose proper analysis must neither explicitly nor implicitly be based on market price-theoretic reasoning" (emphases in original, Sturn, 2010).

We can also build on Colm's concepts, and those of other contributors to the German Public Economics discipline, concerning public purpose, collective choice, and other attributes distinctive to the public economy – incorporating perspectives that were developed and discussed over a century ago, but that were expunged when rational choice theory ascended. Re-invigorating long-submerged perspectives could contribute to a useful blueprint and sturdy platform on which to build a new public economics.

As Sturn (2010) summarizes in his essay on the German Public Economics discipline:

> "Colm's system-theoretic foundations trigger a different research agenda: how to develop the mechanisms of the state economy according to the system-specific logic of an economy not oriented towards market demand, but towards various kinds of politically defined public goals?"

Proviso and presage

In a recent essay, "Is Neoliberalism Still Going According to Plan?" British political economist William Davies (2017) suggests that a caveat may be needed with regard to analyses such as those by Philip Mirowski in "Hell is Truth Seen Too Late." Davies speculates on whether the hellish pathology that has "thoroughly undermined American democracy" may be a peculiarly *American* pathology.

My pages might also be taken as peculiarly American. Certainly, few democratic nation-states are as distempered as the United States at present, and simultaneously as blinkered with regard to the public economy. But Davies goes on to say, "On the other hand, the global reach and ambitions of Silicon Valley do mean that nowhere is entirely safe from this any longer."

It is not just the values and presumption(s) of Silicon Valley that are infecting the world. Other US-hatched creeds and practices are proving highly contagious. The British universities, Oxford and Cambridge included, writes Simon Head (2011),

> "are under siege from a system of state control that is undermining the one thing upon which their worldwide reputation depends: the caliber of their scholarship. The theories and practices that are driving this assault are mostly American in origin, conceived in American business schools and management consulting firms."

So, although the "deconstruction of the administrative state" and the privatization and profitization of government may be proceeding at a particularly accelerated pace now in the United States, other democratic nation-states are under similar, if less virulent, assault.

Many progressive activists, pundits and political leaders, and heterodox economists as well, are calling for a replacement of capitalism with something else. That's all well and possibly good. But, in the meantime we still have democratic nation-states whose public economic systems are vital producers of the goods and services that "maintain civilization as we know it."[58] We had best learn how to understand, repair and operate these public economies so that they may continue doing just that.

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