

State and Markets: Not Whether But How



Diane Coyle

Abstract The public and political demand for simple answers to complex economic problems generates its own supply. Moreover, policy narratives or “missions” can play a useful role in aligning expectations and coordinating private sector actions. However, the standard historical examples of successful missions (such as the Apollo program or the smartphone) involve nuanced and contingent interaction between the state and the market. In the current context of a revival of strategic industrial policies, governments must avoid oversimplified rhetoric that obscures the need for an analytical framework assigning policy instruments to specific identified elements of the strategy. Without such a framework, responsibility and accountability for policy delivery are impossible to allocate.

Keywords Industrial policy · Levelling up · Technology · Market failure

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Introduction

“There is nothing a government hates more than to be well-informed; for it makes the process of arriving at decisions much more complicated and difficult” (J. M. Keynes, quoted in Skidelsky 1992). Keynes, as ever, provides an apt quotation. Policymakers make decisions under the pressures of time and political and media scrutiny. This decision-making context generates the demand for simple answers to problems that are often complex; the demand then creates its own supply.

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There is therefore no shortage of external advice to governments about how they should tackle long-standing, intractable, and multidimensional challenges such as inequality, regional economic development, or low productivity growth. Such advice often interacts with both political and intellectual trends and is crystallized in a particular form that captures the imagination of politicians. One recent example is the idea of a creative class of young creative and tech sector workers as a dynamo of urban growth, with Richard Florida's (2002) observation of the sociodemographic changes in some cities combining with the resurgence of economic geography and agglomeration economics and the political ambition for urban renewal in many postindustrial cities. Florida founded a successful consultancy advising many urban authorities around the world. However, his academic research tended to reach the policy world in simplistic form, such as creating a "gay village" or appointing a "nighttime economy" advocate, as key urban renewal policies.

The same fate is befalling the idea of a "mission economy." Mariana Mazzucato's bestseller (2013) echoed the renewal of academic interest, noted above, in industrial policies and a purposive or strategic role for government. This interest has coincided with, and been stimulated by, the political challenge from "left behind" people and places whose dissatisfaction has played a part in the emergence of populist votes in many countries (Rodriguez-Pose et al. 2023). Many policymakers use the device of "missions" to give apparent coherence to a set of measures that in general may have an unclear economic rationale and are unlikely to solve the complex underlying problems. The policy fashion for devising missions may at the same time obscure well-founded economic rationales for specific government intervention in the supply side of the economy, for there are good reasons for such policies, and more so now than in previous decades.

This is not to argue that policy narratives are unnecessary or even detrimental. On the contrary, successful policies need to align expectations and coordinate many different actors to bring about policy success. A recent formulation of the need is the case for "narrative economics" made by Robert Shiller and others (Shiller 2017; Akerlof and Snower 2016), or the much older advocacy for a "guiding hand" by development economist Albert Hirschman (1967). In many contexts, and particularly where there are increasing returns or network effects (either in time or—as with agglomeration—in space), positive feedbacks are more likely to occur if encouraged by some framing device or policy rhetoric. However, as will be described in the following sections, some of the popular examples of past missions oversimplify important aspects of the historical experience, while the practice of devising policy missions can diverge considerably from effective coordination narratives. This essay concludes by setting out some principles for government intervention in the supply side of the economy that will help avoid the pitfall of oversimple answers to complex policy challenges.

The Case for a Strategic Supply Side Policy Framework

State activism in the form of industrial policy went out of fashion in the 1980s, at least in policy rhetoric and in economic research, although many countries continued to implement a variety of industrial policies in practice. The experience of economic crises in the 1970s had decisively tilted received wisdom away from government intervention and in favor of market forces. In academic economics the era of demand management gave way to real business cycle theory and the efficient markets hypothesis (Coyle 2009). In policy practice, the UK, the USA, and New Zealand introduced deregulation of many sectors and the privatization of public utilities, paving the way for other western economies to follow. By the time of the 2008 financial crisis, the “markets-first” approach combined with an expanded financial sector had taken shape as the political economy framework often described as neoliberal.

This broad consensus is crumbling rapidly. One reason is simply the succession of major economic shocks, the financial crisis followed by the pandemic followed by Russia’s invasion of Ukraine, and subsequent energy/inflation shock. Shocks on this scale always lead to a questioning of standard practice, no matter how successfully they are navigated in the moment. A majority of people—and particularly those on low incomes or living in depressed places—are experiencing a substantial erosion of their living standards. In any case, productivity growth has slowed since the mid-2000s, leading to almost a decade during which living standards for most people had failed to improve much.

A second factor is that a consequence of the recent economic shocks and increasing geopolitical tensions has been a new awareness of supply chain vulnerabilities. Initially due to the inherent lack of tolerance in tightly optimized just-in-time logistics, subsequent shortages occurred for several reasons—including labor shortages and energy price hikes—all serving to underline a lack of economic “resilience” and the presences of unanticipated supply chain fragilities. Advanced computer chips have been a particular political focus, with extreme dependence on Asian and particularly Taiwanese production (Miller 2022) leading both the EU and the USA to subsidize new domestic production. The uncertainties seem unlikely to diminish quickly, for reasons both of geopolitics and an increasing number of extreme weather events affecting production in some countries. In economic research, recent experience has prompted a new interest in a production network approach (Carvalho and Tahbaz-Salehi 2019; Acemoglu and Azar 2020).

Thirdly, the policy priority of speeding up the energy transition away from fossil fuels toward renewables has—along with awareness of continuing digital restructuring of the economy—raised questions about the role of the state in financing and incentivizing investment in the new infrastructure, built environment and consumer durables; in setting standards; and in coordinating switchovers in products such as electric vehicles. General purpose technologies—those that transform not just one sector but the whole economy—usually involve either energy or communications; steam, electricity, and printing are examples. Currently both an energy and

a communications transformation are under way globally. The case for coordination of transition and management of significant disruption by the state will be compelling.

Arguments of this kind—made eloquently by economists such as Rodrik (2007) and Liu (2019)—help explain why policymakers are newly interested in the role of the state in strategic economic management. Coordinating large-scale socio-technical transition in complex, interlinked modern economies and in the context of repeated experience of “radical uncertainty” (Kay and King 2020) is daunting. Little wonder policymakers have looked for ways of making their task seem more manageable and explicable to their constituencies.

Take, for example, the widespread political priority of “levelling up” (to use the UK’s recent political language), mitigating or reducing the increased spatial inequalities that have emerged as a result of more powerful agglomeration effects (whether due to technology, globalization, or both) (Autor et al. 2013). The income distribution has hollowed out in recent decades, with an increased wage premium to those with degrees and especially STEM skills (Stansbury et al. 2023). Its geographic expression is economic stagnation in places that are unconnected to thriving high skill cities, including the extreme phenomena of “deaths of despair” (Case and Deaton 2020) and falling life expectancy. Moreover, the geographic inequality has political consequences, from the UK’s Brexit vote in 2016 to right populism in many European countries and the USA.

The UK government responded to the pressures of spatial inequalities with a substantial policy effort resulting in its Levelling Up White Paper (DLUHC 2022). Although this policy document subsequently fell victim to broader political instability within the ruling Conservative Party, it captures much received policy wisdom about how to tackle this deep-seated economic and political challenge. It sets out, “an ambitious set of missions, galvanizing action across sectors to improve jobs, incomes, health, skills, transport, pride in place, safety, and well-being across the UK. These clear, quantified missions mean no-one can any longer be in any doubt about what is meant by success in levelling up” (p. 10). The missions it set out are summarized in Table 1, with their corresponding policy areas and an example of the many numerical targets set for each.

It is immediately apparent that the terminology of missions is being used here to bring apparent coherence to a wide-ranging set of policy aims of different types and with targets or indicators admitting of different degrees of control. Whereas a government can perhaps feasibly plan to achieve faster and wider broadband infrastructure, changing life expectancy is an outcome of many different contributory factors and not easily amenable to being influenced by policy on any normal political timescale. The whole set of missions in the White Paper is worthy, for sure, but spans most of any government’s domestic policy agenda. The rhetoric of missions in this example cannot disguise the absence of a unified analytical framework for determining which policy interventions are required to achieve the aim of reducing spatial economic inequality.

Table 1 The UK Levelling Up missions

Mission	Policy areas	Example of numerical target
Boost productivity, pay, jobs, and living standards	Living standards; research and development; transport connections; digital connectivity	“By 2030, the UK will have nationwide gigabit-capable broadband and 4G coverage, with 5G coverage for the majority of the population”
Spread opportunities and improve public services	Education; skills; health; well-being	“By 2030, the gap in Healthy Life Expectancy (HLE) between local areas where it is highest and lowest will have narrowed, and by 2035 HLE will rise by 5 years”
Restore a sense of community, local pride, and belonging	Pride in place; housing; crime	“The government’s ambition is for the number of non-decent rented homes to have fallen by 50%, with the biggest improvements in the lowest performing areas”
Empower local leaders and communities	Devolution of powers	“By 2030, every part of England that wants one will have a devolution deal”

Source: Department for Levelling Up, Housing and Communities (2022)

Mission-Oriented Policies in History

This is perhaps an extreme example of stretching a concept too far, much as policymakers did with the creative class construct; but others beyond the UK have also leapt on the missions bandwagon. The EU, for instance, has commissioned multiple studies of mission-oriented innovation policies.¹ Mazzucato’s original work (2013, see also 2018) largely focused specifically on policies to shape the direction of innovation, and she states some broad principles for the role of government captured by the acronym “ROAR”: routes and directions, organizations, assessment, and risks and rewards. In other words, this concerns one area of policy, innovation policies, and alludes to the role of setting a direction for societally relevant effort, coordinating multiple actors, evaluating outcomes including by considering who should bear what risks and with what returns. As discussed in the next section, these are useful headings for considering the role of the state in supply-side policies. However, the concept of mission-oriented policies has subsequently been broadened beyond innovation policy to embrace wide societal aims, such as green transition, plastic-free oceans, and economic development in Latin America and the Caribbean (Mazzucato 2021, 2023; Miedzinski et al. 2019). Inevitably, such very broad aims involve multiple policy instruments and actors, as in the UK Levelling Up White Paper example, and involve fuzzy analysis of how to achieve the stated missions.

¹ https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/mission-oriented-policy-studies-and-reports_en.

Are there lessons from the early examples of successful missions that would help map the appropriate terrain for this approach? Two US examples recur frequently in the literature: the Apollo program (the original “moonshot”) and the role of DARPA in digital innovation. In a sense both are consequences of a far more fundamental policy aim during the second half of the twentieth century, ensuring America’s technological superiority over the USSR in the context of the Cold War. It is well-documented that President Kennedy launched the space program in 1961 in response to the shock of the early lead gained by the Soviet Union. His exact statement of the ambition “to go to the moon...before this decade is out” was the subject of negotiation with the leadership of NASA, to ensure that it was sufficiently loosely worded to be more feasible (by giving them potentially an extra 2 years to hit the deadline) in the context of a politically unpopular, costly program (Gisler and Sornette 2009; Madrigal 2012). This offers perhaps the purest example of mission-driven policy: a clear ambition, with an uncontestable success metric, and sufficiently important that financial resource and organizational effort (as well as political capital) was poured into the mission, effectively coordinated by NASA. Related innovation outcomes (such as Teflon and the miniaturization of transistors) were by-products.

The second example, which triggered a great deal of interest and commentary, was the development of the iPhone and the Internet, ascribed in *The Entrepreneurial State* to public sector investment. These would not have come about, the book argues, without DARPA commissioning basic research, or without public sector contracts enabling RAND to develop innovations subsequently picked up by entrepreneurs like Steve Jobs. This history of the interplay between government and private sector in the USA is very well known (see O’Mara 2019 for one recent account of many).

The novel element in describing this as “mission-oriented” is the attribution of intentionality and the conclusion that if it worked for inventing the Internet, it can work for other societal aims. Mazzucato sets out her argument concisely in an interview: “I describe in the longest chapter of my book, the US government has been a leading player in funding not only the Internet but all the other technologies—GPS, touchscreen display, and the new Siri voice-activated personal assistant—that make the iPhone, for example, a miracle of American technology. Crucially, mission-oriented policies are needed today to tackle climate change and other large societal, technological challenges.”²

It is unquestionably true that public investment in research has been important for many fundamental innovations. One can point to the basic research underlying mRNA vaccines, CRISPR gene editing, graphene, and many, many more technologies. It is entirely uncontroversial among economists and policymakers alike that governments have an essential role in funding basic research, where the private sector will underinvest because of knowledge spillovers they cannot internalize. It would also be very widely accepted that governments have a valid role in shaping

²<https://www.pbs.org/newshour/economy/the-entrepreneurial-state-appl>.

the direction of innovation, setting priorities for funding research. For example, in 1971 Richard Nixon announced the “war on cancer” through funding research at large scale through the National Institutes of Health; this was a broad and arguably unsuccessful mission (Surh 2021). Since the Nurse Review in 2015, UK government departments have expressed “Areas of Research Interest” linked to specific policy questions or issues. There is a considerable literature—theoretical and empirical—on how and why governments can and should influence the direction of innovation (e.g., Rothwell and Zegveld 1984; Aghion and Tirole 1994; Acemoglu 2002; Bryan and Lemus 2017; Bryan and Williams 2021; Acemoglu and Johnson 2023). The literature addresses two types of market inefficiency: *too little* socially valuable innovation and the *direction* of innovation away from those that would deliver the greatest social value.

In this sense, the importance of innovation policies that can help achieve directional aims is motherhood and apple pie, in economic research and the policy world alike. But can governments deliver specific outcomes? Contrary to the impression some have taken from the debate, the US government did not intend to invent either the iPhone or the Internet; these innovations were the result of many unplanned, serendipitous actions by a multitude of public and private actors. Governments can certainly incentivize innovation in specific areas, as the USA and EU are now by funding research on green energy technologies or chip manufacture. Governments also have a large portfolio of policies available to them to encourage both private and public sector innovation (Bloom et al. 2019). But the standard mission-oriented examples do not represent intentional and specific innovation by an “entrepreneurial” government.

So on the one hand, there is scope for fruitful state intervention to bring about better societal outcomes; but on the other hand, it is not immediately obvious how broad or narrow in scope a government’s aims should be, whether these are packaged as missions or in some other way.

State and Markets

Given the shift in the intellectual climate described above, how should governments think about their role in supply side interventions? Although many of those who advocate a more active state dislike the construct of “market failure” for thinking about this (and understandably so, as market failure is pervasive), the different ways in which private and social welfare can diverge offer a useful diagnostic approach (Coyle 2020).

On the question of when a policy intervention makes sense—and what type—it is useful to think about whether the private-social wedge is due to missing markets, asymmetric information and knowledge spillovers, Pigouvian externalities, or the gap between the social and private discount rates. The diagnostic will point to different policy approaches. For example, markets for some future technologies are highly uncertain, deterring private investors even if the societal payoff is likely

to be large. Policy tools such as public sector advance market commitments (as with Covid vaccines or new antibiotics) or prizes (Kremer et al. 2020; Murray et al. 2012) may be the most effective approach. Some innovations will help tackle externalities (such as CO₂ emissions) but may not be initially profitable, due to learning-by-doing or scale economies, for example, meriting taxpayer subsidies. Subsidies in the initial stages to the production and installation of photovoltaics led to extremely rapid declines in the price of generating solar electricity (Way et al. 2022).

The longer time horizon of the public sector—a lower social than private discount rate—is relevant in contexts ranging from blue skies research to investment in infrastructure. If a project has a longer payback period than private investors will accept, or there is a high nonmarket, social return, a combination of direct public investment and incentives for complementary innovations and assets may be appropriate (Offer 2022). Large infrastructure projects are also a good example of the need to overcome coordination problems. The intention of large projects is to bring about non-marginal changes in economic activity. The economy consists of a large set of complicated nonlinear relationships. Multiple equilibria and tipping points characterize such systems (Coyle 2022), creating the scope for purposive policies to achieve a different equilibrium or to reach a critical scale that will overcome early coordination challenges. While governments can consider criteria such as existing strengths or resources in innovation and production or identify reasons for believing production can attain a region of increasing returns to scale, there is bound to be an arbitrary element in the selection of investments or points of intervention. These may vary depending on current priorities and political preferences, as there is no “best” way to run a complex modern economy. A mission—in other words, a societally desirable aim—may, like a policy narrative (Shiller 2017; Akerlof and Snower 2016), be one way of expressing a goal intended to align private sector decisions or achieve a tipping point in coordinating actions around a set of standards or achieving a critical scale of activity. Coordination problems probably offer the strongest case for mission-oriented approaches.

Even in this latter case, though, devising an appropriate mission involves more specificity about the nature of the problem to be solved than is generally apparent in current policy discourse. Some missions in the sense of coordinating policy narratives may be useful, but not every policy can be shoehorned into a mission. Indeed, the usual examples of successful mission-oriented approaches in the postwar USA were not intentional in the way the subsequent literature has sometimes portrayed them. The problems that have helped recently shift the climate of opinion in economics and policymaking in the direction of a more activist state are highly complex and create a decision-making context of huge uncertainty.

There is broad agreement about key societal aims such as achieving an energy transition or improving productivity and incomes, and there will be no simple solutions. How then should governments intervene in the economy to help bring about the desired aims, which must involve multiple private sector businesses and consumers, in this complex and uncertain environment? Although a coordinating narrative or mission can be thought of as one of the instruments available to government, nevertheless useful political rhetoric answering the demand for simple

solutions should not be mistaken for a consistent or sufficient framework for policy action. A supply-side economic strategy requires assignment of specific instruments to identified aims and the delegation of responsibility for implementation to the relevant agencies or departments (and individuals within them). The outward-facing rhetoric risks obscuring the chain of accountability essential for successful industrial policies. Missions are not enough.

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