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Mechanism and Context: On Economic Recipes

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Abstract: This paper aims to reframe the question of economic growth as one of functional fit between "mechanism" and "context." Developing a critique of Dani Rodrik's *One Economics, Many Recipes,* the paper argues that the "universal principles" Rodrik claims for neoclassical economics are in fact specific solutions to generic problems of control and coordination. Rodrik's universals are too concrete and his context too modular. If both states and markets are different kinds of control and coordination "mechanisms," then the question of state- or market-led growth is reframed as a question of the critical functions over which control and coordination are to be exercised. The *structure of state borrowing* is then shown to be the most general-purpose mechanism for purposes of economic development, necessary and not sufficient but logically anterior to other types of control and coordination. The structure of borrowing is the character of the relationship between state finance and the credit system. The particular political settlement of a nation, "context," will always be expressed and contested through this structure. While the credit system can itself be either bank- or market-based, the particular political settlement determines whether the relationship between the state and the credit system is itself mutually-reinforcing, and therefore good for development, or antagonistic. Abstract, transhistorical functions expressed in control mechanisms have to take particular, historically-contingent institutional forms. For development, this means that the mechanism that is the structure of state borrowing has to be optimized for a particular context, the political settlement, to enable growth.

> There is nothing natural about laissez-faire; free markets could never have come into being merely by allowing things to take their course...laissez-faire itself was enforced by the state. — Karl Polanyi, *The Great Transformation*

> In a capitalist democracy there are essentially two methods by which social choices can be made: voting, typically used to make "political" decisions, and the market mechanism, typically used to make "economic" decisions. — Kenneth Arrow, *Social Choice and Individual Values*

The aim of this paper is to reframe the question of economic growth and transformation by thinking with and against Dani Rodrik's *One Economics, Many Recipes*.[1] My central claim is that the "universal principles" Rodrik claims for neoclassical economics are in fact *specific* solutions to generic problems of control and coordination. These problems operate at a somewhat higher level of abstraction than Rodrik's "universal principles" because their solutions are *institutionally agnostic*: they can, in principle, be solved by varied configurations of state/market space.

The key is to view both states and markets as different kinds of control and coordination mechanisms, a view afforded to us by the late, great Alice Amsden. Once that is achieved, the question of growth becomes one of *functional fit between mechanism and context.* I will briefly attempt to initiate the claim that the key element of this fit is the structure of state borrowing (mechanism) that is predicated on a particular political settlement (context).

While this mapping from general, context-free *function* to particular *form* mirrors Rodrik's movement from universal principles of neoclassical economics ("one economics") to local context ("many recipes"), I aim to pluralize both sides of this equation, function and context. By foregrounding the control and coordination kernel within the so called "universal principles," we open up what Roberto Unger would call our "institutional imagination" further than Rodrik's framing allows.[2] Instead of the standard new institutionalist view of markets as "embedded" in nonmarket institutions, we can perhaps

[1] *One Economics, Many Recipes*: *Globalization, Institutions, and Economic Growth* (Princeton: 2007).
[2] See *Democracy Realized*, (Verso: 1998).

imagine a broader set of combinations of states and markets characterized by whatever configuration is functional for the context at hand.

My second interlocutor in this paper, albeit less explicitly, is Mushtaq Khan.[3] Khan's riposte to the new institutionalists is to foreground the costly and irredeemably *political* nature of rule enforcement. He suggests that developing nations forge institutions compatible with the underlying political settlement that would be productive of capitalists and thus "transforms" the economy.

This is no doubt central. Yet given the centrality of finance for all economic development, institutional mechanisms functional for development will be those that best mobilize domestic resources, including future resources. This mobilization itself rests on the *political settlement* in each context that Khan identifies as central. This concomitant focus on finance and the political settlement is somewhat underplayed in the development literature, even Khan's more innovative version, given the focus on the capacity of the bureaucracy to function like a good reciprocal control mechanism.

As I will argue in the concluding section, bureaucratic capacity and functional finance are *both* necessary but not sufficient conditions for generating control mechanisms that functionally fit context. However, I will attempt to sustain the claim that a political settlement that is generative of fiscal-financial scale and discipline is foundational and therefore *anterior* to any subsequent institutional capacity to create and discipline capitalists.

By thickening out our account of *context* itself, we move beyond Rodrik's neoclassical formulation that reduces context to heterogeneous forms of "constraint." While his formulation is no doubt a substantial improvement on the mainstream theoretical *status quo*, this reduction of context to constraint is incapable of answering questions about economic structure and the macropolitical dynamics because it retains a theoretically-inadequate methodological individualism. Notwithstanding an attentiveness to contextual heterogeneity, the individual in question remains the homogeneous neoclassical agent. As a

[3]See, for instance, his "State Failure and Institutional Reform Strategies," *Annual World Bank Conference on Development Economics—Europe 2003*, 2004.

result, politics as such, the interplay of power both domestically and internationally, fails to show up in Rodrik's formulation.

The following is in four sections. Section 1 briefly outlines the background of the "control mechanism" idea found in Alice Amsden's work. In Section 2, I reduce Rodrik's universal principles to a more general set of control/coordination problems that might be solved either by states or markets viewed as control mechanisms. Section 3 addresses the status of context in his work and outlines the epistemological blind spots therein, highlighting the centrality of macropolitics. Finally, Section 4 makes this all a bit more concrete by illustrating the foundational role of finance in development.

1. Control Mechanisms and Development Theory

While this line of thinking is incongruously inspired equally by Karl Polanyi and Kenneth Arrow, the initial inspiration comes from Alice Amsden's understanding of control mechanisms. From Polanyi, one derives the assumption that "self-regulating" markets are not artifacts of some Hayekian "spontaneous order" but rather conscious constructions undertaken by those who wield state power to express a "liberal creed." Inspired by Arrow and others, one can see markets *as* artifacts in the first place, mechanisms *designable* for the achievement of social ends.[4] Seen from this admittedly partial angle, markets and states appear as different species of same social genus. This seems to be how Alice saw them.

The aim is to provide the theoretical means of achieving agnosticism in a world riven by competing theologies of states and markets wherein the two modes of social organization are assumed to have radically different ontological essences. Yet for all their differences, if markets were to be *designed* by publicly-appointed engineers for the achievement of socially-discussed ends, in what way would they be different from other modes of governance?

[4]See Shyam Sunder, "Markets as Artifacts: Aggregate Efficiency from Zero-Intelligence Traders," in Mie Augier and James G. March edits, *Models of a Man: Essays in Memory of Herbert A. Simon*, (MIT: 2004).

By denying any deep ontological difference between states and markets, we might shift the framing of state/market interaction from "more or less" regulation of markets to "better or worse" construction of social mechanisms. Assessments should of course be made on both positive and normative grounds in order to evaluate the co-construction of markets by private and public interest.

From traditions as diverse as mechanism design, experimental economics, market microstructure theory, and market socialism, there is a substantial tradition of thought that renders markets as algorithmic entities subject to design. Yet despite having common cybernetic ancestry, addressed below, this tradition has developed at some distance from Rodrik's home turf of "new institutionalism" which analogously invokes institutions as so many "rules of the game," as algorithms that "structure incentives in human exchange, whether political, social, or economic."[5] Meanwhile in anthropology, as central a figure as Clifford Geertz has urged us to see culture itself as "a set of controls mechanisms—plans, recipes, rules, instructions (what computer engineers call 'programs')—for the governing of behavior."[6] Strangely, we seem to be more comfortable thinking of institutions and cultures in algorithmic terms than markets.

To explain this pervasive comfort with the algorithmic, we need to take a brief detour into intellectual history.

A product of wartime bricolage, cybernetics was a blend of scientific theories and practices that sought to unite the social and natural sciences into a grand Theory of Everything. Through his war work with anti-aircraft predictors, Norbert Wiener helped create the field that he called "cybernetics" in 1948. Derived from the Greek word for "steersman," the new science was meant to outline the general principles by which order was wrested from entropic chaos by means of servomechanical feedback control.

This was to characterize knowledge per se. In reviewing Wiener's 1948 manifesto

[5]Douglas North, *Institutions, Institutional Change, and Economic Performance*, (Cambridge: 1990), p. 3.

[6]"The Impact of the Concept of Culture on the Concept of Man," in *The Interpretation of Cultures* (Basic Books: 1973), p. 44.

entitled *Cybernetics: Or, Control and Communication in the Animal and the Machine*, John von Neumann's characterized postwar science as moving "from problems of intensity, substance and energy to problems of structure, organization, information and control."[7] As Andrew Pickering notes,

> Cybernetics...took computer-controlled gun control and layered it in an ontologically indiscriminate fashion across the academic disciplinary board—the world, understood cybernetically, was a world of goal-oriented feedback mechanisms with learning.[8]

Alice Amsden was only too aware of this cybernetic ancestry of the idea of control. When recalling her concept of reciprocal control mechanisms, most people focus on the *reciprocal* dimension. What I want to draw attention to is the *control mechanism* itself: all such mechanisms were reciprocal for Alice, as we will see below, precisely because she was working with a cybernetic rendering of the term. And she said as much: her inspiration for the idea of control mechanisms seems to have come from Wiener himself. In a footnote in *The Rise of the Rest*, Alice claims that

> The concept of a control mechanism was first applied to the animal and the machine and adapted to cybernetics by a physicist (Wiener 1948) [*sic.*]. It also became part of modern corporate management techniques.[9]

This was not just a pungent metaphor for Alice; the central idea of *feedback* was critical to her conception of control:

> A control mechanism involves a *sensor*, to detect the ''givens'' in the process to be controlled; an *assessor*, to compare what is happening with what should happen; an *effector*, to change behavior; and a *communications network*, to transmit information between all functions.[10]

Further, Alice makes the equivalence between states and markets as control mechanisms clear:

[7] John von Neumann, "Review of Cybernetics, By N. Wiener," *Physics Today*, Vol 2, No.33-34, 1949, quoted in Philip Mirowski, *Machine Dreams*: *Economics Becomes a Cyborg Science*, (Cambridge 2002), p. 66.

[8] Andrew Pickering, "Cyborg History and the WWII Regime," *Perspectives in Science*, 3, pp. 1-45, 1995.

[9] *The Rise of "The Rest": Challenges to the West from Late-Industrializing Economies*, (Oxford: 2001), n. 6, p. 295.

[10] ibid., p. 9.

> A control mechanism is a set of institutions that imposes discipline on economic behavior. The control mechanism of 'the rest' revolved around the principle of reciprocity...The reciprocal control mechanism of 'the rest' thus transformed the inefficiency and venality associated with government intervention into collective good, just as the 'invisible hand' of the North Atlantic's market-driven control mechanism transformed the chaos and selfishness of market forces into general well-being. The reciprocal control mechanism of the North Atlantic minimized market failure. The reciprocal control mechanism of 'the rest' minimized government failure.[11]

Seeing markets as just another kind of servomechanical control mechanism, we follow Alice in effecting a kind of epistemic break, one that brings markets out of the realm of the natural and into that of the social. It takes the study of markets away from a naturalistic and "scientistic" epistemology of neoclassical and towards that of the socio-historical sciences.

This also might allow us to reframe the aim of development and industrial policy from *always* aiming to build *firms* that are national champions—although that might well be the solution in a given context—to seeing what combination of control mechanisms—state *and/or* market—works in particular contexts. Alice shows us that what is at stake is not states or markets per se but something more general, *control*. Dani Rodrik's renovated neoclassicism can be read this way as well.

Markets are just ways of organizing economic life; they can be more or less effective, more or less exploitative, depending how they are designed. As Unger claims, the version of the market economy that we are used to is but one iteration of many possible forms.

Yet the best configuration of mechanism and context *is not known in advance*, by definition: we have to *experiment* in order to find it. We might say that development is about setting up the conditions by which such a fit can be found.

Though this experimental ethic is shared by Rodrik, Unger, and others like Charles Sabel and Sanjay Reddy,[12] the target of experimentation is different in each case: the binding constraints of an economy for Rodrik, the just productive market arrangements

[11] ibid., p. 8-9

[12] "Learning to Learn: Undoing the Gordian Knot of Development Today "Charles Sabel and Sanjay Reddy, *Challenge*, 50/5, September/October 2007, pp. 73–92.

for Unger, local supply/demand constraints for Sabel and Reddy. While my understanding of the productive fit between mechanism and context touches on these aspects, it focuses more directly on the macro relationship between finance and political settlement that can create the fiscal medium within which these other forms of experimentation can emerge.

2. The Kernel of Control

Dani Rodrik's stated theoretical aim in *One Economics, Many Recipes* is *to reconcile the development experience of the late twentieth century with neoclassical theory*. Being attentive to induction, Rodrik fully acknowledges that the historical record does not line up with the neoclassical-inspired Washington Consensus. What then does this mean for neoclassical economics?

For Rodrik, the Washington Consensus was *bad* neoclassical economics because it failed to make a distinction between the "higher-order" economic *principles* and the institutional *content* that might express these principles. The Washington Consensus was just one possible institutional "recipe" among a "infinite" set of possible institutional recipes that are all consistent with neoclassical reasoning. By opening up a space between the Washington Consensus and neoclassical economics, Rodrik can jettison the former as patently inconsistent with the historical record while salvaging neoclassical economic reasoning itself. As he notes,

> Neoclassical economic analysis does not determine the *form* that institutional arrangements should or do take. What China's case and other examples...demonstrate is that the *higher-order principles of sound economic management do not map into unique institutional arrangements*. In fact, principles such as appropriate incentives, property rights, sound money, and fiscal solvency all come institution-free...[T]here may be multiple ways of packing these principles into institutional arrangements...From this perspective, the "art" of reform consists of selecting appropriately from a potentially infinite menu of institutional designs.[13]

[13] *One Economics, Many Recipes*, p. 29, emphasis added.

Rodrik notes that a fair criticism of his "universal principles of sound economic management,"[14] enumerated below, might be that they are not false but trivial. A more apt characterization might be that they are not trivial but *tautological*: they are not an account of *how* growth might be achieved but a *description* of such achievement.

Rodrik is not unaware of this line of attack, of course. His defense is again induction: econometrics indicates that institutions *qua* universal functions are *causal* with respect to growth:

> Of course, high-quality institutions are perhaps as much a result of economic prosperity as they are its cause. But however important the reverse arrow of causality may be, a growing body of empirical research has shown that institutions exert a very strong determining effect on aggregate incomes. Institutions are *causal* in the sense that a poor country that is able to revise the rules of the game in the direction of strengthening the property rights of entrepreneurs and investors is likely to experience a lasting increase in its productive capacity.[15]

Now, econometrics can only suggest independent correlations whereas the causative story comes from a theoretical intuition "outside" the econometric model itself. Therefore the studies he sites do no more than make highly suggestive correlations.

Setting this to one side, we can see tautology in action when Rodrik cites Larry Summers as identifying three basic attributes of growth.[16] International trade and investment (Summers' first attribute) undergirded by systems of contract and property (his second attribute) are the very stuff of what Fernand Braudel once called "market society." They have existed in robust forms in several societies since at least the 13th century if not earlier. Modern capitalism is but a species of market society. It is therefore redundant to hold that successful capitalism entails these attributes.

Sound money and fiscal conservatism, Summers' third attribute, are on the other hand the result of a *particular* institutional braiding of states and markets that supercharged Northwest European capitalism in the late seventeenth century. It did so by enabling the

[14] ibid., p. 31.
[15] ibid., p. 185.
[16] ibid., n. 9, p. 21.

generalization of market-society enclaves to the political community at large. The critical element here was *the financialization of the state* and its concomitant transformation from predator to underwriter.

This of course is the story that comes to new institutionalism through North and Weingast's paradigmatic paper on constitutions and commitment.[17] Yet while they render it as a story about secure property rights of a generic kind, the control view allows us to see that the seventeenth-century revolution went much deeper. With the secure marketing of national debt, the state became less "state-like" and more like a bank mediating between its taxation "assets" and bond liabilities, while "market society" took on the mantle of governance by funding and thereby sharing in control of the state.

This braiding of state and market at the birth of modern capitalism points us back to that simple fact: markets and states are both institutions of coordination and control. Rodrik's "universal principles" seem to be universal because they are themselves specific encodings of a more general principle of control and coordination. This is the deep lesson one can take from a neoclassical like Kenneth Arrow: states are markets are equivocated as different *mechanisms* of control; they are, at bottom, *both institutional mechanisms subject to design*.

When Rodrik says that he wants to investigate "the broad design principles of successful growth strategies," he is in effect asking, *What forms of institutional control and coordination enable growth in this context?* If it is true that "[t]here is no unique correspondence between the *functions* that good institutions perform and the *form* that such institutions take,"[18] it can be argued that the deep *functions* that institutions perform are coordination and control. Such a view is implicit in the canonical formulation of institutions from North that Rodrik cites:

> In its broadest definition, institutions are the prevailing rules of the game in society.

[17] "Constitutions and Commitment: The Evolution of Institutional Governing Public Choice in Seventeenth Century England," *Journal of Economic History*, Vol. 49, No. 4, Dec. 1989), p. 803-832.

[18] *One Economics, Many Recipes*, p. 15.

> High-quality institutions are those that *induce* socially desirable behavior on the part of economic agents.[19]

The congruence with the control view is evident: the *function* of institutions is to *induce* or *discipline*—ie to control and coordinate—economic behavior towards socially desirable ends like growth. These rules occur at every level of economic life, from the firm to the market to the state and beyond. This entire social field—this domain of social algorithms—is the subject of intense political competition, design, and redesign, from the micropolitics of the firm and market to the macropolitics of the global reserve system. Some algorithmic configurations map sufficiently well on to their contexts that they are massively productive of economic wealth. Others do not.

The following table briefly illustrates the the control/coordination kernel withing Rodrik's Universal Principles.[20]

[19] ibid., p. 51, emphasis added.
[20] ibid., p. 32-3.

Economic Objective	Universal Principle	Control and Coordination Kernel
Efficiency (micro)	Property Rights	*de facto* control vs *de jure* rights
	Incentives	markets: mech. design playbook firms/states: org. theory playbook
	Rule of Law	equilibrium political struggle over defining institutions
Stability (macro)	Sound Money	configure price- and lolr functions for specific credit system
	Fiscal Sustainability	configure borrowing and spending profile to ensure social goals
	Regulation	configure non-price control mechanisms to reflect social goals

Where Rodrik has outlined economic objectives for which "first-order principles" of new institutionalism are functional, one can in fact *further decompose* these principles into a more elemental control and coordination kernel. In short, while Rodrik wants us to stop fetishising form on concentrate on function, *the function at stake in each of his universal principles seems to be control and coordination* of some kind.

Rodrik wants to show us that there is a considerable space between the first principles and the world, a space into which context, judgment, and experiment can thrive. We are suggesting a further step. Once we decompose the first principles into their functional kernel, we open up a space to map between various societal objectives such as development and combinations of social algorithms—states and markets—adequate to the task.

Thinking from neoclassical first principles limits this combinatorial range by freighting in modular institutional solutions to problems. This problem is compounded by a low-dimension understanding of context, further limiting the institutional imagination.

3. Thinking from the Model

What we appear to need is the construction of a theoretical relationship between control, coordination, and context. Where Rodrik notes the need for control, his thinking from the neoclassical model and insisting on the market/nonmarket distinction actual inhibit him getting at context as such. This is ironic, of course, because Rodrik sees himself and deeply sensitive to context: "turning...general principles into operational policies requires considerable knowledge of local specificities."[21]

What is the theoretical status of context for Rodrik? Context is the space of varied "binding constraints" on growth. The "environment" or the local context is unknown to the policy-maker *a priori*, therefore growth policy cannot be decided *a priori* and solutions do not travel well. For example, the cost structure of the economy is unknown to both policymakers and entrepreneurs, therefore it has to be discovered. No neoclassical rea-

[21] ibid., p. 57.

soning is being violated here; it is simply that the material to which the reasoning applies is *diverse* and has to be *discovered* through an investigation of context. This investigation is to proceed by means of a "diagnostic" test derived from neoclassical growth theory that, like a blind man's cane, feels out the local environment to throw up its particular binding constraints; these in turn form the targets of development policy.

This neoclassical reasoning comes in two parts: methodological individualism and "thinking-from-the-model."

Methodological individualism is of course a means of arriving at a characterization of social phenomena by breaking them down into their constituent parts, assessing the properties of these parts, and then aggregating individual properties back up to arrive at a picture of the social. This strong reductionism—reducing the whole (the social) to an aggregation of the parts (the individual)—is of course definitional of the science the nineteenth century founders of the neoclassical paradigm consciously emulated: physics.[22] Rodrik remains completely faithful to this method:

> social phenomena can best be understood by considering them to be an *aggregation* of purposeful behavior by *individuals*—in their roles as consumer, producer, investor, *politician*, and so on—interacting with each other and acting under the constraints that their environment imposes.[23]

In Rodrik's theory, methodological individualism links agents endowed with standard neoclassical reasoning capabilities to constraints that themselves arise from radically diverse contexts; that's the twist. Standard neoclassical reasoning is the same everywhere, it is universal: "the good news here is that we have found *homo economicus* to be alive and well in the tropics and other poor lands."[24] The choice-theoretic enterprise is thus secure. The error in existing neoclassical theory is to *homogenize constraints*. Yet in Rodrik's hands, context or environment—the source of diversity—is reduced to a bundle of heterogeneous constraints within which the familiar, homogeneous agent acts.

[22]See Philip Mirowski, *More Heat than Light: Economics as Social Physics, Physics as Nature's Economics*, (Cambridge: 1989).

[23]ibid., p. 3, emphasis added.

[24]ibid., p. 152.

We can then get different stories about different places not, say, because each context has a different institutional structure that generates its own regularities, or indeed that people think and behave differently in different places. In this neoclassical conception, rich environmental features are first *reduced* to one-dimensional constraints, then diverse modes of economic reasoning are flattened into the mold of neoclassical thinking. Once you get agents and constraints together in this way, you have a neoclassical frame that doesn't assume agents are always arriving at the same *answers*, but it does assume that they should always be asking the same *questions* viz. constraints, and that social outcomes are nothing but the aggregation of such questions:

> I believe that appropriate growth policies are almost always context specific. This is not because economics works differently in different settings, but because the environments in which households, firms, and investors operate differ in terms of the opportunities and constraints they present. [25]

Development policy is then performed by moving through an algorithm by which the relevant agents, policy elites who are presumed to be in a position of control, can *learn* about the specifics of the constraint environment and kick-start the growth process. In this way, two reductions work together to make the problem susceptible to methodological individualism: first, the environment is reduced to constraints, then growth itself is rendered as a problem of a "binding constraint" that blocks the economy from attaining full capacity. Once a method of uncovering these constraints is established, the appropriate set of policies can be custom-fit for the generic neoclassical agent. The entire problem of growth is reduced to an agent's optimizing choice under constraint. This is a return to the central planning roots of neoclassical economics with all of the deep problems of decision-making under uncertainty swept away by a search protocol.

Rodrik characterizes his approach as one based on "pragmatism, experimentation, and local knowledge."[26] "Pragmatism" in Rodirk's vocabulary means to replacing (Washington Consensus) ideology with agnosticism derived from paying attention to the facts:

[25] ibid., p. 4.
[26] ibid., p. 6.

"[t]he lesson is that institutional innovation requires a pragmatic approach that avoids ideological lock-in."[27] "Search and discovery" is the appropriate disposition for a planner facing environmental uncertainty: this is "experimentation"; "local knowledge" means reducing structural diversity to a diversity of constraints.

Next, let us examine the problems thrown up by "thinking-from-the-model." The actual state of any given economy is set against the hyperreal benchmark of neoclassical growth theory, in the light of which distance from a hypothetical "attainable productivity frontier" is an index of size of the return on changes to the environment. No contextual specifics are given, but none are required: "An economy that is underperforming and in need of reform is *by definition* one where market imperfections and distortions are rampant."[28] *Departures from the theoretical perfect market are caused by imperfections or distortions that act as so many blockages that have to be removed by development policy.*

This idealization, of the kind that goes back at least to the physiocrats, washes out nearly all structural features of any particular economy that fail to take the form of blockages to a notion of "full capacity" that is purely abstract. This can hardly be a recipe for seriously attending to context. How is a context-free model meant to be capable of acting as a benchmark for a context-rich world?

Naturally, the optimum development strategy from this point of view would be to remove all these blockages simultaneously to move the economy to its peak potential productivity; this is couched as "wholesale reform" by Rodrik and his collaborators. But this, they concede, is impossible:

> It requires us not only to have complete knowledge of all prevailing distortions, it also necessitates that we have the capacity to remove them all in their entirety. This strategy is technically correct, but practically impossible.[29]

The invocation of the impossibility of complete knowledge on the part of any planner is transparently aiming to address Hayek's position in the Socialist Calculation Controversy

[27] ibid., p. 41.
[28] ibid., p. 58, emphasis added.
[29] ibid., p. 61.

of the 1930s; his antagonist was the neoclassical socialist Oscar Lange who envisioned the planner's computer mimicking the activity of the market economy described by neoclassical equations to generate a "market socialist" utopia.[30] In this latest avatar, Rodrik aims to deal with Hayek's riposte by reducing the broad range of knowledge that the planner would have to know *to three simple variables*:

> In a low-income economy, economic activity must be constrained by at least one of the following three factors: the cost of financing economic activity may be too high, the economic (social) return to economic activity may be too low, or the private appropriability of the (social) returns may be too low.[31]

So, for example, if the cost of financing is high, as indicated by a high real interest rate, then the solution is "an exogenous increase in investable funds" from foreign aid or remittances. Brazil's entire growth episode in the 1990s is explained in these terms.

Once a macro constraint has been discovered, industrial policy has then to been designed. Here is where Rodrik tries to shift the ground of industrial policy away from a control mechanism to more of a coordination mechanism, from a plan to generate productive capacity to one that creates an hospitable environment for private investment through a process of *search and discovery* and *social learning*:

> the analysis of industrial policy needs to focus not on the policy *outcomes*—which are inherently unknowable ex ante—but on getting the policy *process* right...the right way of thinking of industrial policy is as a discovery process—one where firms and the government learn about underlying costs and opportunities and engage in strategic coordination.[32]
>
> Solving the problems [of the binding constraints] involves social learning—discovering where the information and coordination externalities lie and therefore what the objectives of industrial policy ought to be and how it is to be targeted. In this setting, the

[30] "[M]athematical Walrasian theory had assumed a dangerous "pinkish" cast in the eyes other members of the Chicago economics department such as Frank Knight, and this conviction was to set the stage for the ongoing hostility of the Chicago school to [neoclassical] Walrasian general equilibrium in the postwar period. As Donald Patinkin...noted, 'it was the socialist Oskar Lange who extolled the beauties of the Paretian optimum achieved by a perfectly competitive market—and Frank Knight who in effect taught us that the deeper welfare implications of the optimum were quite limited."' Mirowski, *Machine Dreams*, pp. 233-4.

[31] ibid., p. 89.

[32] ibid., p. 100-101.

> principal-agent model, with the government as the principal, the firms as its agent, and an optimal policy that aligns the agents' behavior with the principal's objectives at least cost, does not work very well.[33]

At first blush this would appear to be an indictment of the kind of development policy that Alice Amsden would have stood for. The "principal-agent" control mechanism depends too much on the omniscience of the planner, relying on information that he doesn't have, and is too prone to corruption and rent-seeking if the correct calibration of "embeddedness" and "autonomy" is not found. Implicitly, the argument here is that East Asia was a one-off. The solution to the problem of uncertainty, and, by extension, rent-seeking, is a process that allows the participants, both government and private, to *learn* about what works while having the ability to correct mistakes. Yet the manner in which this cashes out institutionally is dictated by a laundry list of design principles that appear to come rather directly out of the playbook of Wade, Evans, and Amsden.[34]

The net result is to embed the familiar reciprocal control mechanisms in a neoclassically-derived protective belt that takes the name of search-and-discovery and social learning so that it might ward off the neoclassical zombies moaning "rent-seeking!" We are still missing a general account of the relationship between control coordination, and context.

We might note, in concluding this section, that it is not as if Alice Amsden was unaware of the centrality of learning. Needless to say, she did not situate the problem in neoclassical terms as a planner's response to an ill-defined macro uncertainties; rather, firm-level learning is an absolutely necessary response to over-coming gaps in *knowledge* that she saw at the heart of poverty. Indeed, she understood the dilemma of late develop-

[33] ibid., p. 112.

[34] The "Ten Design Principles for Industrial Policy" that Rodrik outlines are: 1. Incentives should be provided only to "new" activities; 2. There should be clear benchmarks or criteria for success and failure; 3. There must be a built-in sunset clause; 4. Public support must target activities, not sectors; 5. Activities that are subsidized must have the clear potential of providing spillovers and demonstration effects; 6. The authority for carrying out industrial policies must be vested in agencies with demonstrated competence; 7. The implementing agencies must be monitored closely by a principal with a clear stake in the outcomes who has political authority at the highest level; 8. The agencies carrying out promotion must maintain channels of communication with the private sector; 9. Mistakes that result in "picking the losers" will occur; 10. Activities need to have the capacity to renew themselves, so that the cycle of discovery becomes an ongoing one. Ibid. pp. 114-117.

ers to be one of "pure learning," namely a situation of total dependence on commercial technology of the developed world.

Her key distinction between information and knowledge highlights the *tacit and conceptual* dimensions of the production process that made the production of "knowledge-based-assets" so difficult. She thus replaces Hayek and Rodrik's rather generic "uncertainty" as the limit-point for an idealized social planner with a more specific problem of *tacit knowledge* for the technology learner, a move Hayek's friend Michael Polanyi (Karl's brother) would have enjoyed very much. Alice notes that,

> The nature of technology itself makes knowledge difficult to acquire. Because the properties of a technology cannot necessarily be fully documented, process optimization and product specification remain an art. The managerial skills that comprise such an art are themselves *tacit rather than explicit*.[35]

It is of course this tacitness, for Alice, that makes the skill deficit between rich and poor persist, generating a demand for "subsidized learning" to bridge the productivity gap. These subsidies were themselves the result of learning by doing: failed experiments in liberalization that inhibited new firms from being competitive at world prices led policy-makers to create the reciprocal control mechanisms required to tackle tacitness. While this would risk some measure of corruption—which was, for Alice, "the scourge of late industrialization"[36]—the control mechanism would minimize it both by its internal functioning and by generating enough productivity.

In short, the unique situation of the developing world is that it actually *knows* where it has to get in terms of productive capacity. What it has to learn is *how* to generate that capacity; tacitness stands in its way. So too does context, something Alice doesn't theorize explicitly. For her, the reciprocal control mechanism enables learning in all contexts. In the concluding section, I will suggest that a bit more might be said at this level of generality about the *context* within which such a mechanism has to functionally fit.

[35] *The Rise of "The Rest,"* p. 5 emphasis added. See also Michael Polanyi, *The Tacit Dimension*, (New York: 1966).

[36] ibid., p. 11.

4. Finance, Politics, Development

Reflecting on the "rise and decline of development economics," Albert Hirschman observed that the discipline had failed to recover from the twin onslaught of methodological monism (of both the neoclassical and neo-marxist variety) and real-world political cataclysm of the late-mid twentieth centiry. In the wake of the trauma of seeing economic growth turn out to be political poison in certain areas, development economists had retreated into a collection of basic-needs and income-distribution specialists:

> [They] thought it legitimate to operate on the basis of an implicit Pareto-optimality assumption: like plumbing repairs or improvements in traffic control, the technical efforts of economists would improve matters in one area while at worst leaving others unchanged, thus making society as a whole better off...An illusion was created and sought that, by confining itself to smaller-scale, highly technical problems, development economics could carry on regardless of political cataclysms.[37]

This disposition of the discipline as plumbers is common to those working in the Sachs-JPAL line. Axiomatically, this line eschews *social transformation* that was at the heart of development in the tradition of Hirschman. By extension, it also eschews the key element of *politics*.

It should by now be clear that, while I take issue with the way Dani Rodrik has set up the problem of development, I have huge admiration for his vaulting ambition. In the main, this is because *he stands implacably opposed to development-as-plumbing*. Uniquely for someone in the mainstream, he seeks to transcend the idea of development as a flotilla of micro-technical interventions. Given the state of thinking on development, this is a tremendously enabling move.

The theoretical *form* in which he opens up the critical dimension of context is also inspiring: any social science worth its salt should be able to tack between a general set of regularities, to say something short of "laws," and the countless diversity of actual and possible social life, including economic life. That the actual content of Rodrik's theory does not do justice to this ambition is almost besides the point: he has asked the question,

[37] *Essays in Trespassing: Economics to Politics and Beyond*, (Cambridge: 1981), p. 21.

and that is often more than half the battle. I am certainly in no position to satisfy that ambition at the moment. This concluding section will outline my tentative thoughts in this direction.

My own theoretical intuition on the relationship between the universal and the particular similarly revolves around the distinction between *universal function and particular form*. As noted above, viz. economic life, the critical function is *control*. The particular form the control function takes depends on context, most critically on the macropolitical balance, what Mushtaq Khan calls *the political settlement* of the place. It is this dimension that development-as-plumbing is congenitally unable to grasp. And even while he stands opposed to the latter line of thinking, Rodrik also forecloses any understanding of the macropolitical. For the purposes of development and growth, we need to understand how macropolitics is tied to state finance.

The modern monetary system is a complex, politicized arrangement, one that combines institutional intricacy with fundamental questions of how a society should organize its economy. We know that how we fund our governments matters for its legitimacy, but our democratic habits of mind tie only taxation to representation, leaving out borrowing. Every state rests on a political settlement, and that settlement in turn rests on a *structure of borrowing* from a credit system. This credit system can be either bank- or market-based, that is a matter of design.

A political settlement might be defined as the balance of power in the realm of ideas, interests, and institutions, between major competitors for social control in a particular context. These competitors are social actors that can range from classes to ethnic groups to comprador elites. Any contest for social power is at some point *interrupted*: the *modus vivendi* achieved comes to be expressed in an institutional and ideological settlement: "Institutions and ideologies...are nothing but frozen will and interrupted conflict: the residue crystallized out of the suspension or containment of our struggles."[38]

[38]Roberto Unger, *The Self-Awakened: Pragmatism Unbound* (Harvard: 2007), p. 7.

Now any such settlement, in order to be sustainable enough to bear the name, must have fiscal undergirding: the power of the fisc must be divided up in a manner that reflects and supports the settlement if it is to hold. This, in turn, generates a particular *structure of state borrowing*.

This structure of borrowing is given by character of the relationship between state finance and the credit system. The particular political settlement determines whether the relationship is mutually-reinforcing or antagonistic. In one iteration, the more robust the state's finances, the more its central bank is able to successfully function at the apex of the credit system to steady the ship. And the better functioning a credit system, the greater the state's ability to borrow on easy terms to fund development. In another iteration, infirm state finances lead to the defaulting of system control, either *de facto* or *de jure*, as private interests—either foreign or domestic—assume control of the credit system. Such a credit system will either be too small to function equitably or overstretched to the point of instability if left without a state to secure it. In a third version, hyperactive state finances can swamp private resources either to productive or unproductive effect, leading to privateers either being subsumed under state industrial policy, exiting the constituency, or pushing back to constrain the fisc by fighting to calibrate the credit system accordingly.

The first scenario is the monetary analog of a well-balanced, Rousseauvian General Will. The second is one where the money interest trumps the public interest: this is nineteenth-century and contemporary Euro-America. The productive variant of the third scenario is East Asia; the unproductive, India.

The centrality of the state to credit systems comes down to its uniqueness as an economic and therefore financial animal. State finances are secured by taxation that is legitimate, in theory, because exchanged for "representation," even if not the electoral kind. Taxes, in turn, make the state a shareholder in every single economic entity in its jurisdiction. Thus precisely because it encodes the legitimate *political* settlement, the state has unbeatable *economic* scale within its own borders, and therefore unbeatable creditworthi-

ness as a domestic borrower. Rearranging Weber, we might say that *a state is a human community that successfully claims the apex of a hierarchical credit system because it is legitimate within a given territory*.

Legitimacy is key, for without it, the *scale* of taxation will be insufficient to render the state robust enough to successfully claim the apex of the credit system. But the credit system has a logic of its own that those wielding state power have to understand if they are to control it successfully. The power of the sovereign is to *bend* this logic in its favor, not break it. This institutional "bending" entails design, construction, and configuration of a credit system that might be market-based but not necessarily so: that is a contextual determination.

This, arguably, is one way of reading the East Asian development experience. *Development banks backed by state finance* were absolutely central to this experience. They were, for Alice Amsden, "the flagship of the developmental state."[39] These banks were the *unique historical creation* of the Rest in response to its particular set of problems: "The postwar development bank in 'the rest' appears to have been sui generis."[40] Yet as is well known, Alice focused on their activities in creating a mechanism of control that acted as a functional equivalent for the market mechanism. Development banking was nested three other functions of the development state: "local-content management; 'selective seclusion' (opening some markets to foreign transactions and keeping others closed); and national firm formation.[41]

Alice focused more on these functions than on the critical enabling condition of development banking per se. Yet we can see that this anterior question of the financial capability of development banks is absolutely critical. To wit, how did they get their money?

[39] *The Rise of the Rest*, p. 285.
[40] ibid., n. 4 p. 313.
[41] ibid., p. 125.

Alice spends about one page on this in *The Rise of the Rest*.[42] She cites several sources of funding, foreign and domestic, with the latter main being forced savings from worker's pension funds (Brazil), public savings (Korea), and tax revenues and domestic borrowing (Malaysia).

In order for development banks to operate the reciprocal control mechanism, they would have to be securely funded. This, in turn, implicates *fiscal politics*: if the political settlement of a particular context did not permit the kind of fiscal latitude that generated secured funding for development banks, the whole mechanism would have been ineffectual.

Thus the macropolitics of state finance is a critical condition: it is necessary, not sufficient, but certainly *anterior* to the effectiveness of control. In short, if mechanism is to fit context, and the key to context is politics, then you need a functional fit between the political political settlement and state finance *before* you can get a control mechanism off the ground.

This happened to differing degrees across the polities of the Rest. The legitimacy of relatively authoritarian states in East Asia rested less on direct representation than a sense of public duty: development was being undertaken in the name of the people. This enabled a scale of resource mobilization that was relatively autonomous from the demands of the populous and could therefore be deployed towards developing a control mechanism. This mechanism would still have to succeed in actually producing efficiently, something that was by no means pre-ordained by its ability to mobilize national savings, but no production at all would have been conceivable without this prior mobilization.

The case of India—the main subject of my work thus far[43]—highlights the contingent and contextual nature of development banking. Here, you had a political settlement that also enabled the mobilization of vast national savings for the development project

[42] ibid., p. 133.

[43] "India's Fiscal-Monetary Machine: Construction and Overheating, 1966-1991," in *States, Markets, and Control Mechanisms: Essays in Monetary Politics*, Unpublished manuscript.

as well as the creation of substantial development banks. But two conditions were different: first, these banks were less able to discipline the productive process and therefore create a world-beating capital stock;[44] and second, the state was embedded in a populist form of government that meant it was swamped with demands for patronage. Thus even when India had its authoritarian moment, its state was unable to achieve the autonomy required to harness resources for development. A different political settlement created different configuration of state finance; this in turn atrophied the developmental control mechanisms by starving it of resources.

Allying with an oligarchy of bourgeoisie to place its debt on commercial terms gave the early modern European state substantial degrees of freedom and formed the monetary core of the world-beating "fiscal-military state";[45] *this* was the critical element of the Glorious Revolution, *pace* North and Weingast. India's political settlement under Mrs. Gandhi was different, a difference reflected in the way this settlement was funded. Hers was not a partnership between a strong executive and a narrow bourgeois oligarchy but one between a centralizing executive and a mass of followers swayed by populist and personalized themes of welfare, not unlike a medieval monarchy. But where the land-based European aristocracy had to go through the urban bourgeoisie to borrow for their states, the Indian nationalist monarch could reach into her subject's pockets by means of a vast network of banks that she nationalized in the late 1960s.

The vast bulk of substantial national savings funneled into this banking system was the pool from which the Indian political settlement was funded: nationalized banks turned household savings (borrowing short) into the national debt (lending long). This *fiscal-monetary machine* pumped out the critical capital required to run the populist political settlement. When domestic sources of liquidity began to run dry in the 1980s, the machine was for the first time since the early 1960s, turned *outwards* to the vast global markets

[44]See Vivek Chibber, *Locked in Place: State-Building and Late Industrialization in India*, (Princeton: 2003).

[45]John Brewer, *The Sinews of Power War, Money and the English State, 1688-1783*, (Harvard:1990); P.G.M. Dickson, *The Financial Revolution in England: A Study in the Development of Public Credit, 1688-1756*, (Macmillan: 1967).

to source funds. This heralded a paradigm shift as foreign debt was replacing domestic debt at the margin in the political settlement. The relative autonomy generated by high savings pumped through the fiscal monetary machine meant that it happened a decade later than other developing countries, but a sovereign debt crisis duly resulted and the political settlement radically transformed through "liberalization."[46]

In short, to fit mechanism to context, you need a political settlement that enables national resource mobilization into a development state *so that* its development bank might have the raw material to run the control mechanism. Two subsequent conditions then kick-in: the ability to discipline production, and the ability to stave off patronage. The standard reading of the Indian case is that patronage swamped productivity while the opposite was the case in East Asia. This remains true. What I am suggesting is that it might be profitable to conceptualize this as a relationship between finance and politics, between the state and the credit system. This enables a clear targeting for development policy.

If the key function for development institutions is *control*, then the key *domain* over which control must obtain is the nation's finances through the structure of state borrowing; the entire history of growth since the early modern period suggests that this is the case. *How* this control might be fashioned is a matter for contextual determination viz. the macropolitical settlement. Development policy might then start to ask the question: how do we adapt or indeed revolutionize the political settlement of a particular context to enable the democratic financialization of the fisc? It is only after having addressed this question that the internal design and capacity building of a contextual control mechanism can securely proceed.

[46]This account of liberalization stands in contrast to one based solely on an "attitudinal shift" by the Indian government in the 1980s offered by Dani Rodrik and Arvind Subramanian in "From 'Hindu Growth' to Productivity Surge: The Mystery of the Indian Growth Transition," *IMF Working Paper WP/04/77*, May 2004.