
Public Policy, Human Instincts, and Economic Growth

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Economic growth occurs whenever people take resources and rearrange them in ways that are more valuable.

—Paul Romer, “Economic Growth”

The world does not appear to make sense. If it did, Botswana would be as miserable and poor as its neighbor Zambia. Instead, Botswana’s standard of living of more than \$13,000 per person is more than eight times higher, its literacy rate is 12 percentage points greater, and its infant mortality rate is 68 percent lower (World Bank 2010). According to many conventional theories of development, Botswana would never be a candidate for success: it is a sparsely populated country that does not enjoy economies of scale or scope in manufacturing. It is landlocked, with high transactions costs for interacting with global markets. The terrain consists of many deserts and swamps that limit agriculture, but it allows for small and large cattle pastures. Botswana was a British protectorate until 1966 and retained local elites after independence. The country does have diamonds, but other African nations with valuable resources suffer civil wars over them; oil-rich Libya has stable political rule but languishes with roughly the same standard of living today as it had thirty years ago. Despite all the odds, Botswana somehow made the list of the thirteen top

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“success” stories heralded by the Commission on Growth and Development (2008); it was the only African country to be so honored.

What is the secret of Botswana’s success? Is it a fluke, a happy accident? Or is Botswana’s feat the result of sensible government plans and policies? If institutions and policies play a reliable role in creating economic progress, can these constructs be readily transferred to other countries? The answers to these questions are not simple. Although markets and stable governments are associated with growth, it is nearly impossible to say how a particular institution or policy would fare in a new legal, cultural, and social setting without supportive complementary institutions and policies. Like transplanted human organs, some institutional transplants are rejected. After sixty-five years of promoting development through financing capital flows to developing countries, the World Bank’s own economists despair over their failure to generate growth in Africa (Easterly 2007). Predictions across borders are notoriously poor, and numerous countries followed the “right” policy advice to no avail (see, for example, Stiglitz 2003).

Alfred Marshall (1920) famously insisted that economics is more like biology than physics. Societies are organic ecologies that evolve and produce organized but unplanned complexity (Hayek 1979). Although no public policy reliably produces economic growth across all ecosystems, a key element unites diverse institutions and policies that do seem to work: they all are reasonably compatible with human *instinct*. Institutions that build on the basic instinct for self-betterment (as in markets) have a much easier time in achieving success than institutions that oppose it (as in communism). Instincts, like gravity, are a force of nature. Adam Smith theorized, for example, that the natural propensity to “truck, barter, and exchange” ([1776] 1981, 25) initially arose not from the impulse for financial reward, but from the social urge to share beliefs and to persuade others (1982a, 493). Exchange spurs growth because it is compatible with deep human intuitions. Sisyphus was the Greek king condemned to push a heavy rock up a hill but never to succeed. Such is the fate of modern-day Cubans, laboring under statist policies that limit their expression of the human experience through exchange.

Diverse institutions and policies can work reasonably well with human instincts, however. Time and place create a path-dependent limitation of feasible options. Nevertheless, such historical processes have not kept modern economists from trying to uncover a few key policies that hold the greatest promise for growth. In this article, I explore the fascinating debates in growth theory and public policy of the past half-century. Adam Smith’s theories suggest a practical way to understand how public policies can work with instincts to create economic progress.

A Short History of Growth Theory

Modern mainstream economists like to build simple predictive models. Occam’s razor limits the analysis to a few variables, and we hope we can identify the key one

that dissolves bottlenecks and brings about rapid growth. Popeye the Sailor had a magic remedy—spinach—that instantly transformed him. Sleeping Beauty needed only a kiss to undo her paralysis. Every generation creates its own mythology about what causes economic takeoff. Stalin thought he had found a panacea in communism, which stabilized investment spending through government ownership. Mao thought he could improve on this approach by mandating a steel mill in every backyard.

Autocrats are not the only deluded ones. In the 1950s, Western economists also had a captivating vision: that economic growth happens through capital infusions from rich countries to poor countries (just as the Marshall Plan apparently had worked in Europe). This theory can be illustrated with a biology metaphor. In an experimental setting, one can vary the amount of fertilizer and record the effect on plant growth, holding constant the type and quality of soil, the amount and intensity of sunlight, the amount of water and humidity, and so on. Initial doses of fertilizer will likely have greater effects on plant growth than later doses. Using this information, an omniscient planner might determine how to subsidize fertilizer usage so as to achieve the desired plant size.

Economists undertake mental experiments of exactly this type. Robert Solow's (1956) growth model predicts that greater amounts of capital investment per worker—holding all else constant—leads to an increase in output per worker. As with fertilizer, Solow anticipated diminishing returns to capital. Given a certain rate of savings, a country would eventually reach an equilibrium level of capital per worker and a corresponding equilibrium output per worker. A policymaker can potentially raise the living standard by promoting capital “deepening”; that is, an investment tax credit can increase the equilibrium amount of capital per worker. But such policies produce only temporary gains, and the economy eventually stabilizes at a new level. Tax policies cannot lead to sustainable *growth* in per capita income.

In the real world, we cannot do experiments on whole societies. When some countries experience rapid growth, it may be because they have the “fertilizer” of added capital, but growth is likely the result of something else that is changing. When Solow measured the impact of capital deepening on economic output, he reached a startling conclusion: more than 85 percent of the observed increase in output per worker did not derive from greater capital investment—it came from unknown sources (1957, 320). But what are the mysterious factors that produce growth? Solow did not know and simply declared that “technical change” had shifted up the production function (1957, 312). The terminology unfortunately suggests an improvement in machinery (for example, a faster computer). In fact, productivity enhancements may derive from institutions such as laws and norms and from the intangible qualities of inputs. One of Adam Smith's key contributions in *The Wealth of Nations* ([1776] 1981), for example, was to highlight the role of exchange in competitive institutions. The launching of market reforms—in China after 1978, in Latin America in the 1980s, in India and eastern Europe in the 1990s—presaged the widespread recognition that global exchange shifts up growth parameters.

Although economists generally agree on the desirability of markets, they disagree about which public policies work best with markets to produce short- or long-term growth. “New” growth theorists, such as Paul Romer (1990), try to rectify this uncertainty by predicting how public policies enhance productivity. The proposals for ramping up development in the twenty-first century—depending on the source—are strengthened legal systems and property rights (De Soto 2003), greater freedom (Friedman and Friedman 1990), better governance (Kaufmann, Kraay, and Zoido-Lobaton 1999), more accommodating culture (Harrison and Huntington 2000), preschool interventions (Heckman 2008), subsidies for knowledge innovation (Romer 1990), new trade theory industrial policy (Krugman 1994), greater aid redistribution (Sachs 2006), and less aid redistribution (Moyo 2009), among others.

We nevertheless still lack a simple way to account for how public policies produce wealth or growth across the particular contexts in which growth occurs. One reason for this shortcoming is that the institutional rules of the game vary greatly, both in their formal constructs (such as constitutions) and informal applications (such as customs). Douglass C. North notes: “Institutions are the humanly devised constraints that structure political, economic and social interaction. . . . [They] create order and reduce uncertainty in exchange.”

Economic history is “largely a story of institutional evolution” that is sequential (1991, 97). Policy analyses should stress path dependency because markets evolve jointly with competing and supportive institutions such as family, church, tribe, philanthropy, and politics. Hence, although gross domestic product (GDP) per capita is often correlated with good governance, the causality is unclear—good governance may be the *result* of economic growth, not its cause (Meisel and Aoudia 2007). The rise of markets often changes moral values, making societies more open, more trustworthy, and more generous (B. Friedman 2006; McCloskey 2006).

A further complication is that public policies are intertwined and produce multiple outcomes, both positive and negative. The *net* effect may stimulate growth in some contexts, but the joint product is devilishly difficult to disentangle. For example, an Indian program to promote nutrition of existing students in schools discovered that the real impact of a free midday meal was that poor parents now sent more of their children to school (Reddy and Heuty 2005). Unanticipated and unintended consequences are the norm and in this case were hailed as a lucky accident for literacy.

The seeker of single answers may insist that technological innovation is the source of sustainable growth. Surely public policy can stimulate primary research through direct subsidies or financially stimulate market innovation indirectly through stronger patent and property rights. But, again, reality is more complex. Innovations reflect society’s tolerance for creativity (North 1994) and may disrupt tradition and authority. Many of the great innovations of the twentieth century were the accidental results of government policy (for example, the Internet and the space race) or were stimulated by nonfinancial incentives of status and achievement in the private sector

(for example, the theory of relativity, computing, the coding of the genetic sequence, and television) (Kay 2004a).

World Data Survey

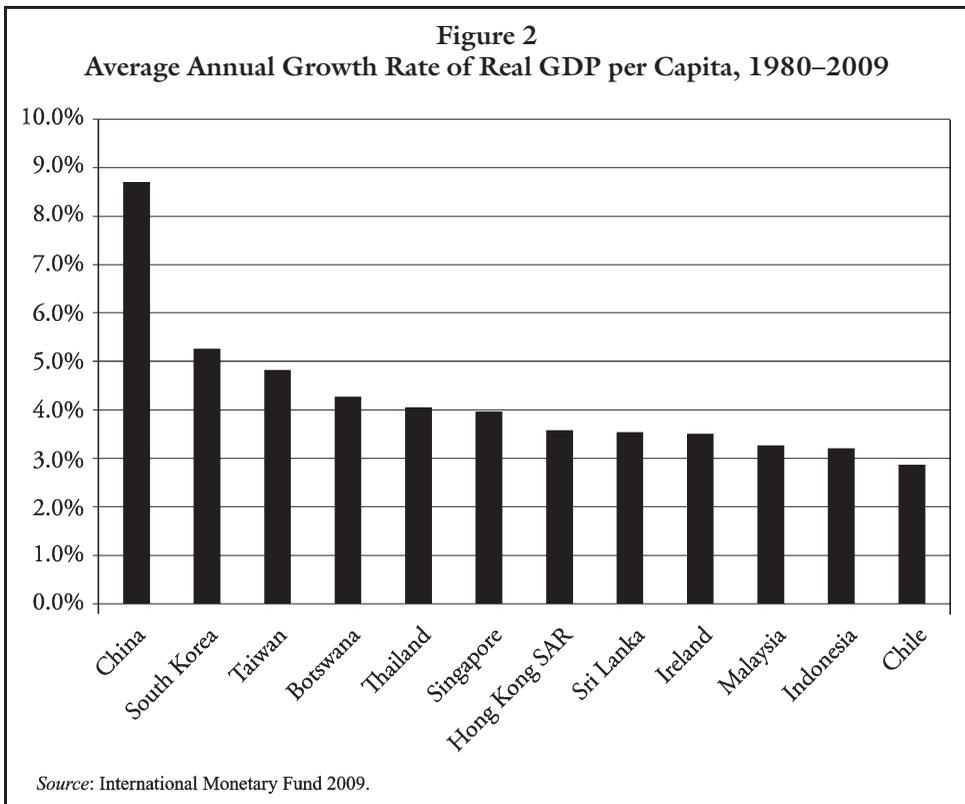
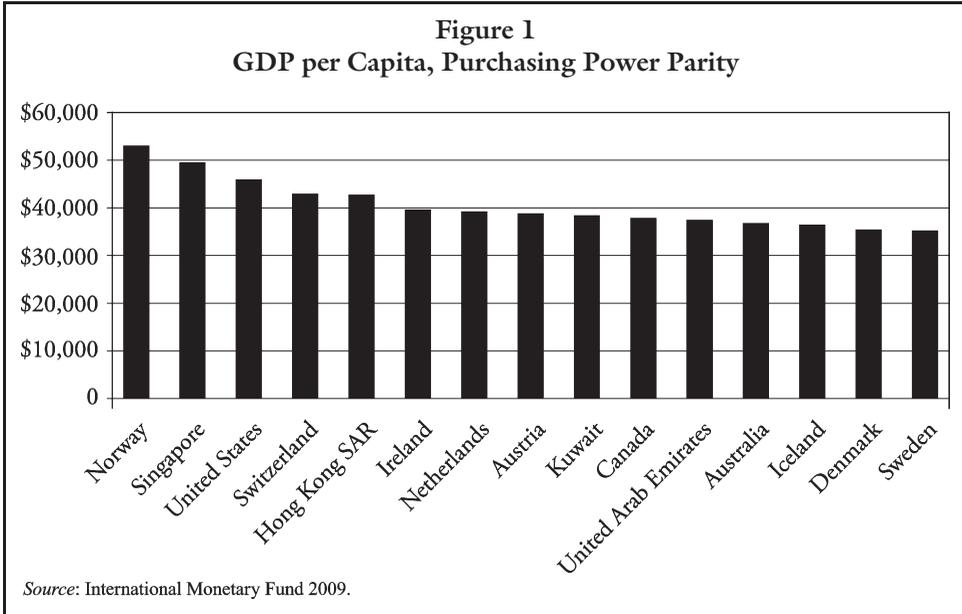
Although innovation is widely believed to drive the U.S. economy, the same may not be true for all rapidly growing economies. The share of world output produced by major advanced economies (the G-7) amounted to about 50 percent in 1990 (International Monetary Fund 2009).¹ By 2014, that share is expected to fall to 37 percent. The emerging markets of Brazil, Russia, India, China, and (South) Korea (BRICK) will double their shares to nearly 30 percent. Like the United States, both Brazil and Russia produce industrial products, but also primary product exports, some under government control. The survey described here reveals a startling diversity of institutions and policies across a spectrum of successful economies.

Figure 1 shows the nations with the highest income per capita in 2009, restricted to those with populations greater than 1.5 million.² Norway, the leading country on the list, maintains a social democracy with a high marginal tax rate of nearly 50 percent on its most prosperous citizens; government revenues amount to more than 40 percent of GDP (Heritage Foundation 2010). Singapore, ranked second, is known for its authoritarian rule that has prohibited antisocial practices, such as chewing gum (Prystay 2004) and reading the wrong kinds of literature. The United States, in third place, is in some respects much more free-market oriented, permitting consumers to buy not only bubble gum but also assault rifles and all manner of seditious books (such as Salman Rushdie's *The Satanic Verses*, banned in Singapore). Compared to western European countries, the United States has less stringent regulations of labor markets. Continuing down the list of rich countries, one uncovers many different approaches to property rights, financial regulations, subsidies to education and health, government ownership of assets, and so on. In short, advanced countries use markets along with a smorgasbord of institutions and policies that have evolved over time in a particular social, political, and economic ecology.

A second line of inquiry is to examine not the countries with the highest *levels* of GDP per capita, but those with the highest *growth rates* of real GDP per capita over the past thirty years. Growth rates typically fall as income rises, so figure 2 restricts the list to countries with populations greater than 1.5 million that have achieved “upper-middle-income” status according to the World Bank—that is, income of at least \$3,856 per capita by 2009 (World Bank 2010). Once again, all countries on the

1. The G-7 includes the United States, Japan, Germany, France, Italy, the United Kingdom, and Canada.

2. Purchasing power parity (PPP) is an international comparison of the cost of living derived by estimating exchange rates based on a comparable market basket of goods. Alternative measures of welfare (such as life expectancy, literacy rates, and capabilities) enrich our understanding of the human experience (Stiglitz, Sen, and Fitoussi 2009). These alternative measures are generally highly correlated with income per capita.



list have relied on markets for growth, but the relevant institutions and public policies vary. China reports the fastest economic growth, yet it has had a nontransparent legal system, high levels of corruption, and questionable property rights, and its government continues to carry out massive banking and currency manipulations.³ On a scale of 0 to 100 in the Index of Economic Freedoms, the Heritage Foundation gives China a hugely failing grade of 20 for property rights, 30 for financial freedom, and an overall rating of 51, which makes it “mostly unfree” (Heritage Foundation 2010).

South Korea, solidly developed after fifty years of industrialization, used massive market intrusions to manipulate industry and trade. In Botswana, the government spends more than 40 percent of the country’s GDP and distributes free health care to all citizens. India—booming since 1991 but not on this list because its status is still below middle income—historically emphasized education at the graduate level, whereas countries such as Taiwan have emphasized broad-based elementary education (World Bank 1993).

Hong Kong, cited by Milton Friedman and Rose Friedman in their influential series *Free to Choose* (1990), earned the highest Freedom Index score of 90 (Heritage Foundation 2010). Yet Hong Kong is by no means a land of *laissez-faire*. The government owns virtually all land and strictly regulates its use. Because of the high housing prices this policy causes, half of the population lives in government-subsidized apartments (Chiu 2007). All citizens are eligible for universal health care. *Why* does the government have these policies, and what do their costs and benefits presage for economic progress? When Great Britain owned the colony, most immigrants were poor, and long-term land leases provided the government with revenues needed to pay for infrastructure; health policies likely promoted political stability by creating a shared economic fortune. As Hong Kong citizens have become richer, their preferences, such as their preference for private medical specialists, may have changed. But history creates a path dependency that constrains future policy choices. Privatizing land would unleash market forces but might set in motion negative social repercussions that cannot be predicted. Thus, neither Hong Kong nor mainland China seems likely to privatize land ownership.

Trading Occam’s Razor for an Invisible Hand

Before we abandon hope of finding anything universal to say about the causes of growth, let’s recall the image of Sisyphus laboring with his rock. Just as it is folly to think that successful policies can be easily transferred across time and place, it may be greater folly to continue down a path that is clearly wrong. Social experiments are devices for learning. The greatest socioeconomic experiment of the modern era took place when the Soviet Union and China wrenchingly attempted to obliterate history

3. Chinese statistics are also questionable (“China’s Unreliable Economic Statistics” 2009).

and culture and to centralize authority around the notion that an economy should be run on the principles of a communal family: “From each according to ability, to each according to his needs.” The abject failure of this approach suggests that although there are layers of analysis, each must begin by recognizing fundamental human nature.

In the twentieth century, economists focused on the aspect of human nature related to rational self-interest. In the twenty-first century, economists have relaxed this assumption to delve into dimensions of behavioral *irrationality* (Kahneman and Tversky 2000) and of *other-regarding* behavior that might arise from evolutionary adaptations (D. Friedman 2008). Human nature is complex because it comprises different instincts needed not only for survival in the wild, but also for successful cooperation in a village. This discovery is essentially the message of the invisible hand (Evensky 1993; Wight 2007).

The conviction that instincts are the starting point for social and market analysis was a theme developed by Adam Smith (1732–90), the Scottish founder of modern economics. Because rationality is often weak, Smith proposed that nature provides a more reliable mechanism through instinctive responses. As is well known, Smith did not think that the instinct for serving oneself alone is sufficient to achieve the aims of nature because humans are fundamentally social creatures. Selfish instincts must be held in check by both internal and external forces, as elaborated in *The Theory of Moral Sentiments* ([1759] 1982b). Smith postulated three kinds of instincts: *for oneself*, which is the important source of prudence; *for others*, which is the source of benevolence; and *against others*, which is the source of justice.

The instinct for self is strongest at birth, when one’s survival hangs in the balance. A baby cries for itself when it is hungry, cold, or afraid. Other instincts, such as “fellow feeling,” develop over time. Mutual sympathy renders the other’s happiness necessary for one’s own (Smith [1759] 1982b, 7). At approximately two years of age, more complex social ability appears: the child gains the sense of perspective, which forms the basis for moral thinking about right and wrong. A well-socialized child starts to develop self-control. Concern for self and benevolence toward others are important building blocks, but they are inadequate without a third instinct—the unsocial instinct for revenge against injustice. Justice is the “pillar” without which social organization would “crumble into atoms” ([1759] 1982b, 86). Hence, all three sets of instincts serve social functions.

Modern experiments corroborate Smith’s theories. The pathways for sympathy are said to have been discovered in the mirror neurons of the brain (Umiltà et al. 2001). Chemical hormones such as oxytocin (the “trust” molecule) are released to create emotional bonds during breast feeding and during economic exchange (Zak 2008). Numerous researchers have found evidence that people are predisposed to trust others and to treat them fairly, particularly in advanced market economies (Gintis et al. 2005). Subjects willingly incur a personal cost to punish those who fail to show proper concern for fairness, even in double-blind, one-time experiments in

which reciprocity cannot occur.⁴ Although “enlightened self-interest” can produce trustworthy behavior as a result of reputational effects, Smith noted that *calculated* honesty is “much inferior” to honesty ingrained by habit and moral reflection ([1759] 1982b, 263). Moral capital is an important source of social capital, as noted in *The Wealth of Nations*: the invisible hand of the market worked in Great Britain because of the trust that arose from knowing the “character” of one’s business associates ([1776] 1981, 454).

Instincts give rise to behavior in a complex mix of moral norms, legal rules, and customs that develop over centuries and cannot be easily imposed. North notes that “there is no guarantee that the beliefs and institutions that evolve through time will produce economic growth” (1994, 363). For one thing, growth may not serve society’s individual or collective needs at a particular point in time. During the Middle Ages, the instinct for security generated the rigid feudal property rights of primogeniture and engrossing (the exclusive possession of uncultivated lands by lords) that made society safer from internal strife and invasion. Smith lamented that such “[l]aws frequently continue in force long after the circumstances, which first gave occasion to them, and which could alone render them reasonable, are no more” ([1776] 1981, 383). Although formal property rights for women exist today in many African countries, they are likewise routinely ignored because of cultural norms.

Making Policies Work

Seen in this light, the invisible hand is not the market, not self-interest alone, and not a tendency toward efficiency, but rather a collection of instincts manifesting themselves in social and institutional settings. Robert Nozick, the political philosopher, astutely observes that “not every pattern that arises by an invisible-hand process is desirable” (1994, 314). In some cases, self-interest runs rampant, and mechanisms of self-control are weak. If laws of justice fail to become embedded in day-to-day behavior—because of corruption and a misalignment of policies with natural instincts—efforts are devoted to upending the system. In Africa, systemic problems of justice pit tribe against tribe and leader against citizen in the division of economic rents. Effort is expended to take rather than to produce.

Properly designed institutions create appropriate tension by structuring incentives to encourage productivity without free riding (Rosenberg 1960). For the invisible hand to work well, “incentive compatibility” must prevail between natural passions and human institutions (Makowski and Ostroy 2004, 6). Policies that work *with* human instincts will more reliably create opportunities for progress. Economists play a central role in developing innovative policies that conform to this principle. John J. Siegfried’s collected volume *Better Living Through Economics* (2010), for

4. “Fairness” in this context means what is equitable, not what is equal.

example, highlights twelve successful policy innovations over the past half-century, including the all-volunteer army, airline deregulation, trade liberalization, the earned-income tax credit, welfare reform, and markets for pollution permits. In each case, incentives work with the instinct of self-betterment to achieve desirable ends that are measureable and accountable. Other successes might include the Freedom of Information Act, charter schools, vitamin A enrichments, malarial nets, oral rehydration therapy, and other high-benefit/low-cost discoveries that are nonrival and can be widely shared and locally implemented.

One institution that is essential for invisible-hand reforms is *competition*—in markets, in governments, and in ideas. In *The Theory of Moral Sentiments*, Smith discusses people’s instinct for creating order, which is desirable as long as it is kept in check. Mao Zedong exemplifies a modern “man of system” (Smith [1759] 1982b, 233–34) who—after eliminating the competition—egoistically imposed on society his own “ideal” plan of order, wrecking China in the process. Top-down policies routinely encounter this problem because they arrogantly thrust aside local interests, institutions, and norms. The results are at best uncertain: “[O]utcomes emerge that may in some respects be meaningfully measured but that cannot be chosen, and thereby controlled, by concentrated decision takers,” says James Buchanan (2009, 152).

Policies fail when they are poorly suited for the microsystems of society and commerce. Elinor Ostrom won the Nobel Prize in 2009 for demonstrating that natural self-organization often arises at such lower levels to solve a problem such as the tragedy of the commons. Ostrom set forth some of the properties of evolving local governance: “a large number of contextual variables affects the processes of teaching and evoking social norms; of informing participants about the behavior of others and their adherence to social norms; and of rewarding those who use social norms, such as reciprocity, trust, and fairness” (2000, 154).

Microlending, for example, is a hugely successful innovation that relies on Smith’s invisible hand and appropriate social norms. Mohammed Yunus (2003) accidentally discovered that the world’s most plentiful entrepreneurs are home workers in rural villages. Men migrate for work, leaving women behind to tend the fields and care for the family. Although villagers lack the financial or real assets needed as collateral for traditional loans, the instinct for self-betterment can still be unleashed. Yunus employed women’s social capital (reputations and psychological bonds in the community) as an ingenious form of collateral for business loans. Small economic advances lead to greater psychological breakthroughs as women find themselves empowered to deal with wider problems in their communities. Social status and trust are now known to be a factor in efficient production, and microlending has been successfully replicated around the world. One disturbing issue lingers, however: gender discrimination. Men are routinely excluded from microloans because they are thought to lack self-control and have weaker emotional social bonds. The sources of gender differences may be deeply rooted in both culture and genetics. The rise in the

women's status will have profound social, economic, and political effects over time, calling forth new policies and institutions. It is significant that Yunus, who also received a Nobel Prize for his work, did not set out to *deduce* a new principle of finance: it was uncovered by local experience and experimentation.

Experiment, Failure, and Fresh Experiment

Societies that create workable institutions for unleashing the instinct of self-betterment within a system of justice will grow and progress, despite all of the obstacles thrown up by imperfect policies. In *The Wealth of Nations*, Smith chides a reformer who seeks only “perfect” institutions and policies: “[He seems] to have imagined that [society] would thrive and prosper only under a certain precise regimen, the exact regimen of perfect liberty and perfect justice. He seems not to have considered that, in the political body, the natural effort which every man is continually making to better his own condition, is a principle of preservation capable of preventing and correcting, in many respects, the bad effects of a political economy” ([1776] 1981, 673–74). Attempting to implement an ideal or perfect system would be a fool’s errand, because culture, history, and path dependency produce acceptable alternatives that work reasonably well—indeed, often better than those derived from pure theory. Although Smith’s rhetoric on free trade was soaring and ideological, his actual policy prescriptions were context specific and incremental. Hence, he argued that opening a nation to trade should be done gradually and reflect concern for justice and process: “Humanity may in this case require that the freedom of trade should be restored only by slow gradations, and with a good deal of reserve and circumspection” ([1776] 1981, 469).

Dani Rodrik mirrors Smith’s “reserve and circumspection” in *One Economics, Many Recipes* (2007). Economics is the analysis of incentives that operate on human instincts, but costs and benefits vary greatly around the world, producing divergent recipes for success. The 1990s “Washington Consensus”—the unswerving set of reforms for market liberalization (Williamson 1990)—has been largely scrapped because of its “cookie-cutter” mentality, which fails to take account of local context. An inductive, experimental approach is preferable when systems are “complex, imperfectly understood, and change their nature as we engage with them” (Kay 2004b). If these arguments carry weight, they imply a bright future for policy innovations based on incremental, fact-driven reforms that are responsive to local environments. Society will advance by practicing “disciplined pluralism”—that is, “experiment, failure, fresh experiment” (Kay 2004a, 127).

I began this article by asking why Botswana has experienced growth, but Zambia has not. My explorations suggest that we should examine how the instincts for betterment were unleashed in one country but thwarted in the other. This project requires knowledge of history, social and moral norms, and institutions of justice. It requires a path analysis of previous policies, including both those that succeeded and

those that failed. The British created a colonial system that promoted the development of indigenous leaders. One of them, the tribal chief Sir Seretse Khama, briefly studied at Balliol College, Oxford, where Adam Smith had studied. Khama became the first president of Botswana after independence. In a magnanimous gesture of unity, he ceded the property rights in diamond mines from his own tribe to the national government, thus creating an incentive for every tribe to demand accountability in the mines' development (Commission on Growth and Development 2008, 27). Revenues were guarded from corruption and invested in health, education, and infrastructure. Markets were fostered through low taxes and trade. We should ask, What made Khama the kind of statesman who would propose these policies rather than seek his own enrichment? As a lawyer, he was initially exiled from Botswana for marrying a British white woman. In a strange twist, moral suasion both internally and externally led to his homecoming and ultimate entry into politics. Character and conviction were forged by his ancestral tribal roots, by education in South Africa and England, and by personal struggle. Luck played a role when these factors converged on a market approach in Botswana; Zambia was not so fortunate.

We can draw tentative and humble conclusions from this story, which may lead to proposals for policy experiments in other times and places. Adam Smith inspires good policymaking by linking timeless instincts to local circumstances. He is a realist who in the best of times would say of a newly adopted policy: "With all its imperfections . . . it is the best which the interests, prejudices, and temper of the times would admit of. It may perhaps in due time prepare the way for a better [one]" ([1776] 1981, 543).

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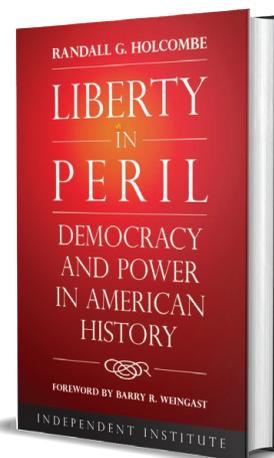
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