

Development Economics and Policy Deficits

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More than five years have elapsed since the onset of the Great Recession and to distress of all those affected by the slowdown, a decisive turning point continues to recede into the future. Growth rates are low in the OECD countries (1.25% in 2012-2013)¹ and increasingly sluggish in the industrializing ones. Trade slowed sharply — to 2.5 percent — in 2013.² Unemployment is a worry in many countries; and inequality is on the rise in all but a few.³ There are concerns in some quarters that the tempo of technical change is slowing.⁴ And although there are ways of mitigating climate change, dispersed progress on this front is proceeding at a frightening crawl.

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¹ OECD (2013). Available at: <http://www.oecd.org/eco/economicoutlook.htm>; <http://www.oecd.org/std/na/quarterlynationalaccounts-gdpgrowth-fourthquarter2012oecd.htm>; Available at: The OECD (2012) forecasts that trend rates for member countries will range between 1.75%-2.25%. Available at: <http://www.oecd.org/eco/outlook/2060%20policy%20paper%20FINAL.pdf>.

² WTO (2013). Available at: http://www.wto.org/english/news_e/pres13_e/pr694_e.htm.

³ OECD countries are not immune: OECD (2011). Available at: <http://www.oecd.org/els/soc/growingunequalincomedistributionandpovertyinoecdcountries.htm>.

⁴ Gordon (2012, 2014).

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I. Introduction

Practitioners of economic 'science' failed by and large to predict the 2007 crisis.⁵ But then economics has a bad track record of anticipating business cycle turning points.⁶ More puzzling is the failure to avert a crisis of this magnitude by layers of market institutions, regulators, monitoring agencies, international bodies such as the IMF and the FSF, highly informed market participants and commentators, and by the experienced financial entities, which suffered huge losses and continue to incur large penalties. In the years that have elapsed since, efforts to introduce reforms and safeguards that would minimize the likelihood of a recurrence have made limited progress.

There is an urgent need to restore the pace of growth in the advanced economies and to maintain the hard won growth momentum of developing countries. And in countries faced with mounting unemployment, persistent poverty, and an increasing concentration of incomes, governments are under pressure to make growth more inclusive. Moreover, the widening awareness of climate change is generating a demand for the greening of growth; although, even if growth can be made increasingly green and inclusive, it will not solve our many pressing problems — in fact, it could create problems of its own. But slowly growing economies will find it far harder to cope with unemployment, poverty, inequality, and fiscal deficits, and to mobilize the resources needed to finance the greening of infrastructure and innovation.

Is economic science rising to the challenge and providing the analytic frameworks to guide decision makers, better tools and clearer instructions on their effective use? My sense is that the discipline is not delivering in large part because it is caught up in sectarian conflicts between rival schools, and in somewhat mindless hypothesis testing for purposes of publication.⁷

The ongoing debates on macroeconomic management, fiscal indebtedness, growth, technology and sectoral policies, while arguably energizing

⁵ Not only did the 'dismal science' fail "to spot the precipice, many forecast the exactly the opposite — a tranquil stability they called the 'great moderation'" (Economist, November 23rd, 2013, p. 58). During a visit to the LSE, Queen Elizabeth rightly asked, "Why did no one see this coming?" Available at: <http://www.ft.com/intl/cms/s/0/dfc9294a-81ef-11de-9c5e-00144feabdc0.html#axzz2lrt hY4lv>.

⁶ Wieland and Wolters (2012); Scientific American (2011) Time (2009).

⁷ Deaton's skepticism is expressed in (Deaton 2009, 2010).

for economists, are confusing for the public and the business community, and they contribute to uncertainty that discourages investment.⁸ Shared conventional wisdom on the workings of the economy and on policy remedies is being drained by contradictory findings based not infrequently, on questionable empirical analysis. For example, is harsh austerity together with a shrinking of the state sector, the medicine that will revive growth in western nations with significant fiscal deficits?⁹ What is the fiscal deficit indicator that should serve as a benchmark?¹⁰ Are several East Asian economies caught in a middle-income trap or are they regressing towards the mean global growth rate as indicated by the research on growth accelerations?¹¹ In attempting to restore higher rates of growth, what options do they have other than investing and exporting more than they currently do?¹² Does rising income inequality (paralleled by a decline in the share of gross corporate value added that is paid to labor between 1975 and 2012¹³) demand remedial action (possibly to avoid a slowing of growth) and if it does, can we identify

⁸ Bloom *et al.* (2006); Bloom *et al.* (2013).

⁹ Paul Krugman claims that since 2008, mainstream economists have achieved a decent track record of prediction. He points to the findings of the IGM's Economic Experts Panel, which showed that 36 of 37 economists polled believed that fiscal stimulus in the U.S. (the ARRA) reduced unemployment, and majority thought that it was beneficial. Krugman maintains that the problem is that policymakers have ignored the professional consensus and remain insensitive to evidence and results. Others have questioned the degree of consensus based on the composition of the expert panel, which included many more democrats than republicans. Available at: http://krugman.blogs.nytimes.com/2014/07/30/useless-expertise/?_php=true&_type=blogs&r=0; http://econlog.econlib.org/archives/2012/07/igm_and_economi.html.

¹⁰ The controversy aroused by questions regarding the estimates presented by Reinhart and Rogoff have brought this issue to the fore. See Summers (2013). Available at: http://articles.washingtonpost.com/2013-05-05/opinions/39048174_1_reinhart-austerity-data-errors; Cassidy (2013). Available at: <http://www.newyorker.com/online/blogs/johncassidy/2013/04/the-rogoff-and-reinhart-controversy-a-summing-up.html>; http://www.slate.com/blogs/moneybox/2013/04/26/reinhart_rogoff_respond_unpersuasively_to_their_critics.html; <http://www.econbrowser.com/archives/2013/04/reinhartrogoff.html>.

¹¹ Pritchett and Summers (2013); Hausmann *et al.* (2004).

¹² Kharas (2013). Available at: <http://www.eastasiaforum.org/2013/08/05/developing-asia-and-the-middle-income-trap/>; <http://www.economist.com/news/finance-and-economics/21571863-do-countries-get-trapped-between-poverty-and-prosperity-middle-income-claptrap>; <http://www.economist.com/blogs/freexchange/2013/02/middle-income-trap/print>.

¹³ Karabarounis and Neiman (2014) estimate that the share fell from 64 percent to 59 percent.

politically viable policies to reverse the trend?¹⁴

Issues such as these deserve to be settled, however, supposedly cutting edge research is not yielding compelling answers that could forge a consensus on policy actions. We need a fresh approach to research in economics that more fully accommodates behavioral and institutional factors as well as political constraints impinging upon policy making; and in the balance of this paper, I propose to identify seven important areas where research-policy gaps need to be narrowed. These are: Crises; Growth; Poverty; Role of the state; Technological change and innovation; Urbanization; and Foreign assistance.

Each — to varying degrees — has been the focus of attention for the past four decades and more. Very broadly, from the 1960s onwards through much of the 1980s, achieving high growth rates was at the forefront with adjustment a parallel concern, as countries struggled with periodic crises followed by bouts of recession. From the late 1980s through the latter part of the 1990s, there was a preoccupation with the relative roles of the market and the state with coalescence of opinion around the Washington Consensus emphasizing the efficiency of markets in allocating resources and maximizing welfare. This was when a number of economies were transitioning from socialism to the free market, privatization was in full swing (from the mid 1980s), and the advantages of open trading regimes and an easing of capital controls were aggressively championed and widely implemented. Capitalism, liberal democracy, globalization and the IT revolution were all in ascendance. Market based economics was on the roll.

Since the turn of the century, development economics has acquired a microeconomic and sectoral orientation, looking at how institutions, services, urbanization, and specific interventions affect economic outcomes and wellbeing. Randomized control experiments have emerged as the new gold standard of research.¹⁵ Conducting such experiments is now the overwhelming preoccupation of many of the leading practitioners of development economics. Whether such research is yielding answers to pressing policy concerns remains to be convincingly established. Let me take up the items on my list, starting with crises.

¹⁴ See Egawa (2013). Available at: <http://aei.pitt.edu/44892/>; In a recent and much debated book, Thomas Picketty (2014) proposes a global wealth tax, introducing which would pose insurmountable problems.

¹⁵ Deaton (2009, 2010) *op. cit.*; Cartwright (2007); Barrett and Carter (2010).

II. Crises

Avoiding financial crises is a task that economics should facilitate to a greater degree than has been the case. But the record of forecasting crises and projecting their outcomes has been poor, in spite of their frequency and their cost (there have been 42 banking crises in 32 countries between 1970 and 2007).¹⁶ The past couple of decades have witnessed a quantum leap in modeling techniques, access to data, and in the power of computing technology, but to quote a recent survey, “Despite increased use of sophisticated mathematical tools the field of country risk has been unable to anticipate the onset of financial crises” (Schroeder 2008).¹⁷ Wendy Carlin quotes a Turkish professor in the FT (11/18)¹⁸ who lamented that his students could handle any mathematical problem but “if asked about the economy, their reasoning is no different from the wisdom of taxi drivers and sometimes a bit less informed.”¹⁹

Following the East Asian crisis of 1997-98 (and earlier crises in Latin America), there was talk of a new financial architecture that would guard against a recurrence. No such architecture was created. The call for a tighter internationally coordinated regulation of the financial system is again making the rounds. But the past history of regulation makes one pause. Regulators in the advanced capitalist economies are susceptible to political pressures and also to capture by the industries they are supposed to supervise.²⁰ Regulatory arbitrage and regulatory fragmentation creates many problems. Financial entities have considerable economic muscle, substantial political clout and well-honed powers of persuasion aided by deep pockets. Regulators have found it hard to discipline them — and are reluctant to allow the larger ones to fail.²¹ In recent years because of liberalization, banks and other financial intermediaries have become bigger and more influential.²² Moreover, past

¹⁶ Cecchetti *et al.* (2009); Reinhart (2009); Reinhart and Rogoff (2008).

¹⁷ Available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-6419.2007.00541.x/abstract>.

¹⁸ Available at: <http://www.ft.com/intl/cms/s/0/74cd0b94-4de6-11e3-8fa5-00144feabdc0.html#axzz2lrthY4lv>.

¹⁹ On the persisting confusion over financial crises see Lo (2012).

²⁰ See Bo (2006).

²¹ The failure of Lehman Brothers and its aftermath may have increased the skittishness of regulators.

²² Simon Johnson (2013) Available at: <http://ineteconomics.org/blog/institute/simon-johnson-problem-too-big-fail-even-bigger-2008>.

bailouts and the pursuit of profit have made them incautious about acquiring more leverage and taking risks with the help of ever more complex innovations. Whether a new round of regulations will have enough traction, remains to be seen. Certainly, research to date, has not uncovered the means of making regulators autonomous; to stay one step ahead of innovations; and to conduct systemic regulation in the face of mounting pressures, enabling them to “take the punchbowl away when the party gets too wild.”²³ Alan Greenspan admitted that when he was at the Fed he would ask, “Does anyone know what is going on in the (synthetic) derivatives market and I would get a detailed analysis. But I could not tell what was really happening.”²⁴ And he did not want to regulate risk taking because it would inhibit risk taking.

Policymakers also remain wedded to the notion that a large financial sector is intrinsic to economic modernization and that it is good for growth²⁵ — when the experience of the past two decades suggests that by exposing countries to crises, by siphoning away talent from other sectors, and by contributing to income inequality, a large financial sector could even be growth reducing.²⁶

III. Growth

The research on the sources of growth (and growth promoting policies) is impressive, but as the numbers of explanatory variables and parameter estimates have proliferated, it has become harder to demonstrate that policymaking is becoming more effective. Thirty years ago, growth was explained mainly with reference to capital, labor, and total factor productivity and on occasion, human capital. From capital, the focus in recent years has shifted to factor productivity and the quality of human capital, to institutions, to urban development, and to innovations. But a number of worrisome issues remain. First, there are as many estimates of factor productivity as there are researchers and no one has identified policies, which would enable a country, even well-governed and competitive countries such as Finland and Korea, to raise and sustain pro-

²³ A famous remark by Fed Chairman McChesney Martin. See <http://conversableeconomist.blogspot.com/2013/06/the-punch-bowl-speech-william-mcchesney.html>.

²⁴ Available at http://www.cjr.org/the_audit/gillian_tett_talks_to_alan_gre.php.

²⁵ There is a large literature on this, see Levine (2004); Beck (2012).

²⁶ Bartlett (2013) Available at: http://economix.blogs.nytimes.com/2013/06/11/financialization-as-a-cause-of-economic-malaise/?_r=0.

ductivity growth. Another worry is that, human capital is an unreliable variable; some find it has explanatory power, others don't. And over long periods of time, growth in the advanced countries, which have steadily increased the volume of high-level human capital (Western European countries, the United States, Korea, Japan), is seemingly unaffected — or in some cases — is slowing. Research that ascribes importance to institutions creates more problems than it solves: For those who think that market institutions are key, the problem is that culture and history can constrain institutional reforms; growth can remain captive to institutions dating back hundreds of years.²⁷ More confusing is that there is a multiplicity of interacting institutions that influence growth; and identifying the ones that matter, and strengthening them to the point at which they can contribute to growth, is a poorly understood, time consuming process. Research has also not explained why across the developing world, there are striking instances of countries where market institutions are weak and where they are still in the gestation stage (*e.g.* China, Vietnam), growing faster and more consistently than countries with stronger institutions.

Factor inputs are only a part of the growth story: the coordinated use of macro policies is another key determinant. The Great Recession has demonstrated that there are deep disagreements on how fiscal, monetary and exchange rate policies should be used and many constraints on deploying the instruments.²⁸ It is the same with labor market policies. Distortions persist and efforts at improving training schemes — for young and middle-aged workers — so as to supply the desired volume and mix of skills — are hamstrung by mixed messages from research and by the diminished “recruiting intensity” of large firms, which are demanding ever more specific skills backed by experience and because of a short term shareholder maximizing focus are cutting back on in-house training.²⁹ Meanwhile, vocational training and apprenticeship programs are failing to remedy labor market mismatches in virtually all countries.

Growth is also a function of start-up activity, and here again we know a lot more about the SME sector and about what contributes to a healthy amount of churning, but no country has discovered a recipe

²⁷ See the research by Daron Acemoglu, James Robinson and Nathan Nunn for example (Acemoglu *et al.* 2014; Acemoglu *et al.* 2012; Giuliano *et al.* 2013; Nunn 2012; Nunn *et al.* 2011).

²⁸ Debates raging between the likes of Krugman, Mankiw, Feldstein, DeLong, Summers and others.

²⁹ Davis *et al.* (2013); Weil (2014).

that produces a rate of new entry that delivers the sought after growth rate. Even in the U.S. the rate of net entry is declining.³⁰

There are several striking examples of successful development most notably in East Asia, which can be linked to institutional innovations and policy intervention. But the direct operational contributions of macro and growth economics to these are difficult to determine. More troubling is the silence on how to sustain these success stories. As Dani Rodrik (2012, pp. 137-8) has observed in a recent paper, “the standard growth regression in which economic growth (or any other performance indicator) is regressed on policy tells us nothing about the effectiveness of policy and whether government motives are good or bad.”³¹

IV. Poverty

If we face difficulties when it comes to accelerating growth, which exerts the strongest influence on poverty, can we still reduce poverty and inequality any quicker? And has this been demonstrated other than episodically in any developing country that has stagnated? From the literature, it is clear that our ability to measure poverty and inequality is much improved.³² We are surely better informed about how well various policy interventions such as rural roads, safety nets, microfinance schemes, public works and health and education delivery mechanisms have performed, or failed to deliver. Most of these are not new instruments — they were around in the 1970s — and enhancing their effectiveness is the challenge so as to make a bigger dent on poverty and to contain or reverse inequality under conditions of slow growth or no growth in per capita GDP. The most convincing research continues to show that it is growth that leads to a reduction in poverty³³ and what policymakers need is much more fine-grained guidance on the use of other instru-

³⁰ Haltiwanger (2013) Available at: http://www.richmondfed.org/publications/research/econ_focus/2013/q2/pdf/interview.pdf.

³¹ Available at: <https://www.sss.ias.edu/files/pdfs/Rodrik/Research/Why-We-Learn-Regressing-Nothing-by-RegressingGrowthonPolicies.pdf>.

³² Available at: <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPOVERTY/EXTPA/0,,contentMDK:20202198~menuPK:435055~pagePK:148956~piPK:216618~theSitePK:430367,00.html>; however, as always there remains room for dissatisfaction and improvement, see <http://www.theguardian.com/global-development/2013/sep/25/new-ways-measure-poverty>; <http://www.nap.edu/html/poverty/summary.html>.

³³ Dollar and Kraay (2013).

ments to reinforce the effects of growth and to contain inequality.³⁴ Here the research — policy gap remains wide.

V. Role of the State

In the 1990s, it appeared that economics would enable us to demarcate the role of the state. Privatization and market based solutions and institutions, lighter regulation and the abandonment of industrial policies, where these were still practiced, were among the policy staples. They all remain relevant today, although in the light of the current lingering crisis, we may need to rethink the state's ownership and regulatory roles with respect to certain key sectors. But the guidance that research provides is flimsy at best. Where economics remains especially vague is on industrial and technological development. It is hard to ignore the government's role in nurturing industries through incentives, trade policies, research funding, manpower policies, and procurement.³⁵ The aerospace, biotech, electronics, IT, and energy industries — to name just a few — in the United States have depended heavily on federal and state support. Even the survival of major auto companies at crucial junctures, has depended on state intervention. All across East Asia, the growth of the more capital and technology intensive industries has been promoted or directed by the state. In several economies, the bulk of the financial system is owned by the state that has traditionally exercised strong control over the operations of financial entities. And as industrializing countries attempt to diversify industry, governments will have to coax, exhort and direct, and to provide risk capital through a variety of channels. Particularly in the larger economies, both national and sub-national governments are actively involved in making industrial and technology policies.³⁶ Many countries are launching ambitious long-term research programs involving large commitments of specialized human and physical

³⁴ See the recent debate between four leading Indian economists (the authors of two major volumes on India's development, both published in 2013): Jagdish Bhagwati and Arvind Panagariya (2013); Amartya Sen and Jean Dreze (2013). In a recent letter to the *Economist* (July 13th 2013, Letters), Bhagwati and Panagariya argue that "(Sen) asserts that redistribution has led to rapid growth in Asia, a proposition that has no basis in reality and puts the cart before the horse. Growth has made redistribution feasible, not the other way round."

³⁵ Mazzucato (2013).

³⁶ Ha-Joon Chang among others has written extensively on the role of industrial policy. Available at: <http://ideas.repec.org/f/pch741.html>.

resources. They are gambling that certain kinds of research — on bio-pharmaceuticals or biofuels or clean technologies or nano-materials — will yield a commercial payoff.

Many of these initiatives will prove to be costly failures but in spite of warnings from market oriented economists, governments find it impossible to put industrial and technological policies aside. There is now as it was in the past, an urgent need for guidance on what sort of industrial policy (IP) a state should conduct, but one looks in vain for such practical and precise policy recipes under conditions where market signals are weak or ambiguous, or markets are missing and private businesses too risk averse to act.³⁷

VI. Innovation

Which leads me to the issue of innovation. In the past decade, innovation is beginning to arouse feelings one associates with religion. Among growth economists, business school professors, and policymakers, innovation is the Holy Grail: a means of raising productivity, competitiveness and growth. Inevitably, this fascination has given rise to a flourishing research industry but one that is rich in “findings” but short on “recipes.” Even for wealthy countries with strongly rooted scientific traditions and mature university systems, stimulating and sustaining growth-enhancing innovation is no easy task. Many of the supposedly most competitive and innovative European countries such as Finland, are struggling to revive growth and restore the performance of key industries.³⁸ The highest ranked innovative economy, Switzerland has grown at an average rate of 1.7 percent per annum between 1980 and 2013.³⁹ The United States worries that it is in danger of losing its competitive edge. China and other East Asian economies are pouring money into their nascent innovation systems so as to equal if not surpass the innovative capacity of their competitors in the West. But success is elusive.

³⁷ Matrix, soft, skill based etc. approaches to industrial policy making and other market compatible approaches are scarcely helpful. See O’Sullivan *et al.* (2013); Froy (2013); Aghion *et al.* (2011); Van Reenen (2012); Harrison and Rodríguez Clare (2010); and Aiginger and Sieber (2006).

³⁸ World Economic Forum (2012) Available at: http://www3.weforum.org/docs/CSI/2012/Europe2020_Competitiveness_Report_2012.pdf.

³⁹ <http://www.globalinnovationindex.org/content.aspx?page=GII-Home>; <http://www.tradingeconomics.com/switzerland/gdp-growth>; <http://data.worldbank.org/products/wdi>.

Broadly speaking, we know what policies matter. It is the detailed tailoring of policies to the histories and current circumstances of individual countries, which slows progress to less than a crawl.

Innovation seems to be influenced by five sets of policies and institutions:

- Those affecting the composition of industry and the contribution of FDI;
- Policies affecting urban scale and urbanization economies as well as knowledge spillovers in urban centers;
- Education and research policies which determine the foundation building strengths of primary and secondary schooling, the quality of tertiary education and the volume and productivity of research;
- Socio-political institutions which assign status and recognition to learning, and encourage intellectual achievement; safeguard intellectual property; and which also promote openness to ideas, cross national collaboration, and to the circulation of knowledge workers; and
- Institutions, which stimulate competition among producers of ideas, of goods, and of services.

In other words, countries need first to build their knowledge base and to move closer to the frontiers of technology in selected fields. Once achieved there is scope for sustained innovation — and high returns from tertiary level S & T skills.⁴⁰ But acquiring this technological capability is no simple matter — the process remains uncoded. And after countries have acquired substantial technological depth and are near the frontiers of knowledge, it is difficult to say what might push the system they have created to deliver high and persisting rates of productivity augmenting innovation. Spending on R&D and high-level training can help; the innovation strategies of major firms can make a contribution; and the excellence of the research universities can feed the pool of skills and of ideas. Beyond this, concrete policy suggestions are notably sparse — another policy gap. Whether research can fulfill the demands of national policymakers and CEOs, who would like to routinize innovation, remains an open question.

⁴⁰ Acemoglu *et al.* (2006).

VII. Urbanization

With the global rate of urbanization past the halfway mark and trending upwards, its impact on productivity and on innovation has attracted a wealth of research. There are numerous estimates of agglomeration economies and a decomposition of gains into urbanization and localization economies.⁴¹ The contributions of increasing size to productivity range from 2 percent of GDP to 14 percent of GDP, with a clustering around the lower number.⁴² Although size may be a vital factor, it appears that there are several other determinants of urban efficiency, including: the composition of economic activities; the degree of urban industrial specialization; the business climate; negative externalities caused by congestion, pollution and crime; the extent of urban sprawl; and the quality of urban governance. How much size alone matters is unclear and even if it does, policies to achieve an optimal city size with the appropriate characteristics are difficult to pin down much less implement.⁴³ The research on agglomeration economies much like the research on total factor productivity, is strong on estimation but uninformative as to its policy implications.

There is also a vast companion literature on what makes cities innovative.⁴⁴ Some say it is size; others put more emphasis on diversity, openness, international connectedness, human capital, start up activity and the pre-existing industrial base. City officials must choose from among an excess of potential policy variables. What they need is guidance on the specific mix of policy actions customized to the size and potential of their cities. In many instances, innovativeness may not be a feasible policy objective. But how to design urban policies so as to promote innovation remains underexplored.

VIII. Foreign Aid

Development assistance provided bilaterally and by multilateral agencies should yield results. Only a brave few would question this dictum. Not only should individual projects succeed on average, in addition, international assistance and associated policy advice should lead to faster

⁴¹ Puga (2009); Rosenthal and Strange (2004); Henderson *et al.* (2004).

⁴² Melo *et al.* (2009).

⁴³ Gomez-Ibañez and Núñez (2009).

⁴⁴ Bettencourt *et al.* (2007); Carlino *et al.* (2004); Hunt *et al.* (2007).

growth, stronger institutions and less poverty. Decades of research and operational experience ought to have greatly enhanced our ability to make aid deliver desired outcomes. Research by and large, fails to validate these expectations. From well over a hundred empirical studies, the message that emerges is not reassuring.⁴⁵ There is a better understanding of the mechanics of the assistance process, but on the whole, aid has a persistently weak record in stimulating growth and investment and in strengthening institutions. Moreover, donors have been slow to reduce the volatility of aid flows, which degrades their effectiveness, to minimize the fragmentation of the aid effort, which burdens the recipients, and to coordinate their activities. The case for aid appears no stronger from the historical perspective of individual regions such as East Asia. Some researchers maintain that we should assess the impact of only that portion of assistance, which is for development. Unfortunately, such an approach can easily introduce selection biases that can distort the results.

Could all these findings be incorrect or misleading? If they are, then we need to worry about the robustness of research in general. If they are broadly on the mark, then development economics has a lot of work ahead of it.

IX. Concluding Observations

We face something of a contradiction. A virtual torrent of interesting and revealing findings, have enriched our understanding of development. But economists are making very slow progress in providing policymakers with better forecasts and advice on how to respond to crises; on how to raise and sustain growth and stimulate innovation; to lessen inequality; to define a role for the state appropriate to the circumstances; and to get better results from international assistance.

It is possible that in the absence of research, things would be far worse. But these are demanding times with many questions in the air; and an urgent need for development economics to demonstrate increasing value added and successes at narrowing the policy deficit.

If so, what might be the future directions of research and how might we arrive at a greater consensus on desirable policy actions?⁴⁶

⁴⁵ Doucouliagos and Paldam (2010); Easterly (2003); Radelet *et al.* (2005); Roodman (2008).

⁴⁶ A number of teachers at the university of London are designing a new

Should economists give more attention to the political dimensions of development, as economics is more often an obedient follower of politics than a leader? The roots of too many crises and the indifferent outcomes from too many policies seem to be entwined with politics. Whether a more qualitative and interdisciplinary approach will make it easier to devise policies to achieve sustainable growth, make countries more innovative, lessen poverty and reduce our vulnerability to crises, is by no means obvious. But it could enhance and modulate the findings from empirical research in economics.

Advances in behavioral economics are opening up another promising avenues to improve policy making by strengthening the psychological underpinnings of analysis. By incorporating new findings we can take account of how people actually behave and the sometimes-irrational considerations that influence choices, rather than assuming that decision-making is guided by the axioms of neoclassical theory. Loss aversion, the decision making context, the order in which choices are presented, the belief in the “law of small numbers,” and altruism, are among the apparent anomalies that affect real live decisions, and are neglected by mainstream economics.⁴⁷ In his book, *“The Map and the Territory”* Mr. Greenspan notes⁴⁸ that, “I have come around to the view that there is something more systematic about the way that people behave irrationally, especially during periods of economic stress, than I had previously contemplated... September 2008 was a watershed moment for forecasters, myself included. It has forced us to incorporate into our macro models those animal spirits that dominate finance.”⁴⁹

Sustaining development in a harsher physical environment and a more crowded, urbanized planet will require a great deal of ingenuity. Approaching the past golden age of growth may depend upon the speed and magnitude of the international response to the immense challenge posed by climate change and the capacity to rapidly assimilate green

curriculum in response to widening dissatisfaction with the state of the discipline. Available at: <http://www.economist.com/news/britain/21590555-britain-leads-global-push-rethink-way-economics-taught-keyness-new-heirs/comments>.

⁴⁷ Camerer and Lowenstein (2002); Thaler and Mullianathan; and papers by Dan Ariely <http://web.mit.edu/ariely/www/MIT/papers.shtml>.

⁴⁸ Penguin Press, New York, 2013.

⁴⁹ “Animal spirits” a term mainstreamed by Keynes, denoting the “spontaneous urge to action rather than inaction” is once more in vogue and the subject of a weighty volume by two Nobel Prize winners G. Akerlof and R. Shiller (*Animal Spirits*, Princeton University Press, 2009). The term has a long history and was first used in an economic context by William Wood in 1719.

technologies, itself no easy matter. Knowledge is going to have to serve as the fulcrum of progress or provide the key to a decent survival. Much will depend upon solutions forged through application of the hard sciences. But economics and other social sciences can also do their bit. For instance through pricing schemes, institutional innovations, and behavioral adjustments.

Development problems are tough and perhaps it is optimistic to think that solutions can be found in a few decades (the science of genomics also saw a new dawn when the genome was decoded but all we know now is that the machinery of life is more complex than we thought and the scientists need time and billions of dollars to extract something that is of substantive medical value from the decoding). That we understand development problems so much better should be a source of considerable satisfaction. That we are getting better at explaining why things go wrong after the fact suggests that we are inching forward. That there is no alternative to doing more research, is pretty much a given; however, for this research to continue receiving the generous financial support it has garnered to date, development economics must demonstrate that it is meaningfully enhancing policy content.

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