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Something of a Paradox:

The Neglect of Agriculture in Economic Development

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1. Introduction[1]

This paper is an overt essay in persuasion. We attempt to persuade readers of the inefficient and systematic bias in the allocation of developmental resources over the last three decades, with the bias going against the agriculture sector. The bias is inefficient because no currently advanced country of substantial size became advanced without the agriculture sector first achieving substantial productivity gains in the early stages of development. The bias is systematic because it has fundamental institutional causes grounded in both the political economy of developing economies and in theoretical views held within the premier institutions of the development profession. In this paper we will make the case for the inefficiency of the bias, explore the systematic institutional causes of the bias, and strongly argue for its correction.

2. Agriculture, Growth and Poverty Reduction

Economic development typically entails a structural transformation in the composition of production in tandem with increased urbanization. This has seldom proceeded without substantial gains in the agricultural sector at early stages of development. Many authors have shown that a Green Revolution occurred before or contemporaneously to the Industrial Revolution (Rostow, 1960; Crafts, 1985a; Allen, 1994; Overton, 1996),[2] while Adelman and Morris (1988) also present evidence that it was the strong agricultural performers in the 19th Century that subsequently developed most rapidly. Adelman and Morris (1967), in their cross-country study of the

[1] Note that on occasion we make reference to the full version of this paper – Bezemer and Headey (2006) - which is available as a CEPA working paper. Also, this paper has benefited from extensive discussions with Andrew Dorward, Tim Foy and Rachel Slater, but the authors are responsible for all opinions and any errors.

[2] While this claim has recently been disputed by Clark (1999), he also presents evidence that the Western countries – especially the industrial leader, Great Britain, had achieved comparatively high levels of agricultural productivity before the onset of the Industrial Revolution. Maddison (2001) provides similar evidence that the Western countries were already considerably wealthier than the rest of the world in 1800.

interdependent socioeconomic determinants of growth in contemporary developing economies, found that agricultural transformation was important both in the manner predicted by Lewis (1954) and in terms of breaking down the traditional social elements of the agricultural sector.[3] Seminal work by Ranis and Fei (1964), Johnston and Mellor (1961), Adelman and Morris (1967) and Little et al. (1970), as well as follow-up research, has also strongly confirmed the stylized fact that agricultural development precedes and feeds industrialization (see Timmer (1997, 2002) for a taxonomy of the linkages between agriculture and the greater economy). Krueger et al. (1991) and Stern (1996) have argued that successful industrializers (including the East Asian 'miracles') had only modest discrimination against the agricultural sector (which also decreased over time) and high levels of productivity growth, whereas unsuccessful industrializers often heavily discriminated against the agricultural sector through trade and pricing policies, and had agricultural growth ranging from modest to very poor indeed. Bezemer and Headey (2006) expand on previous research by analysing the role of agricultural development in creating sustained aggregate growth accelerations in developing countries in the past 40 years, and conclude that agricultural development is necessary (but not sufficient) for successful 'take-off'.

The growth of agricultural output and agricultural wages is also the most effective means of *reducing poverty* in the poorest countries. The 2001 World Development report estimated that 1.2 billion people world wide live below a PPP $1 per day poverty line. The proportion of these people that are rural is estimated to range from 62% (CGIAR) to 75% (IFAD) - that is, there are about 744 to 900 million rural poor worldwide – so agricultural-led growth immediately influences the incomes of the majority of the poor. But it also empowers an often under-empowered group

[3]The monetization of the agricultural sector, especially, serves an institutional purpose as well as an

(which may reduce future urban biases) and has stronger indirect effects on urban poverty via the reduction in food prices (conditional upon the tradability of food) and the reduction of 'push-urbanization' and its consequent urban unemployment. Thus in countries where the majority of the poor are rural, poverty reduction strategies in which agricultural productivity growth is the penultimate goal are always safer and sounder than industry-led strategies, a claim confirmed by numerous empirical studies of the last 40 years of development experience (Gallup et al. 1997; Thirtle et al. 2003; Datt and Ravallion, 1996; De Janvry and Sadoulet, 1996; Timmer, 1997, 2002; Bourgignon and Morrison, 1998; Warr, 2000; Ravallion and Chen, 2004; Byerlee et al., 2005).

3. Agricultural Development and the Public Sector

Growth and poverty reduction via agricultural growth requires active and long-term involvement by the public sector in shaping and facilitating sector-specific technological innovation and market development, in conjunction with the general role of developmental states in providing public goods and in co-ordinating market processes (e.g. Stigltz, 1998). Market failures which are often particular to the underdeveloped rural sector necessitate government intervention of various forms. Incomplete or missing markets due to information asymmetry, high transaction costs, labor market distortions, extreme volatility and covariance of incomes (resulting in missing agricultural insurance markets), and the indivisibility of many rural investments (Binswanger and Deininger, 1997) all imply that governments are justified in executing Second Best (e.g. in the provision of rural finance) or even Third Best policies (e.g. in the direct provision of capital if financial intervention fails).

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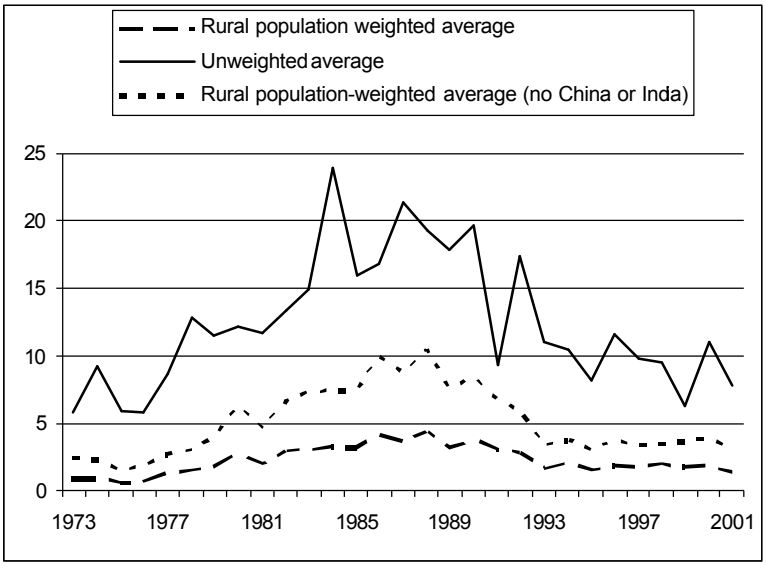
economic one.

Empirical evidence strongly supports Second Best reasoning. DFID (2005a) notes that a common characteristic of successful Green Revolution adopters was the primacy awarded to agriculture in national development efforts. In Bezemer and Headey (2006) we also confirm these views with a novel analysis of data on central government resource allocation to the agricultural sector. Successful Green Revolution (GR) countries poured significant resources into agriculture (Mexico, Malaysia, Indonesia, Thailand, China, Korea, with Middle Eastern and North African countries arguably constituting a second group) while low-spending GR countries floundered (India, Sri Lanka, Nepal, Bangladesh, Colombia). We conclude that resource accumulation matters as much as, or even more than, technology driven growth in the agricultural sector, and is probably best described as a necessary complementary input to technological factors. Research by Murgai (2001), Mosley (2002) and Dorward et al. (2003, 2004, 2006) similarly note the institutional bottlenecks constraining agricultural development in Africa and South Asia.

But despite these solid theoretical grounds for government intervention in the sector, agriculture has received a disproportionately small allocation of public resources, including foreign aid, over the last three decades. Agricultural aid has declined as a proportion of total aid, especially in the 1990s (World Food Summit, 1996; World Bank, 2003; DFID, 2005b) and DFID (2005b) even show that the absolute global volume of assistance to agriculture (expressed in 2002 prices) decreased by nearly two-thirds from US$ 6.2 billion to US$ 2.3 billion between 1980 and 2002, with most of this decrease occurred during the 1990s. In Figure 1 we show that real agricultural aid has declined since 1985 even when agricultural aid is weighted by 'need'; that is, but the size of rural populations. Thus, agricultural aid per rural inhabitant has markedly declined in the last 20 years.

Figure 1. Agricultural aid commitments, all LDCs, 1973-2001 (1995 $US)



4. Understanding the Paradox: Urban Biases

So far, we have posed what might be termed an Agricultural Paradox in development: publicly financed agricultural investments are of large and continuing developmental importance for growth and poverty reduction, yet development resources devoted to such investments have generally been small and have largely been decreasing in recent years. In this section we attempt to offer the first of our two explanations, long-standing political economy factors which fall under the broad umbrella of "urban biases".

Economists have been aware of urban biases since Myrdal's *Economic Theory and Underdeveloped Regions* (1958), and quite especially since the work of Michael Lipton (1977), who popularized the term and claimed that the insufficient allocation of resources to the rural sector was *the* primary obstacle to greater poverty alleviation. However, the deeper impediment to a more efficient allocation of resource is institutional in nature, for urban biases are deemed to evolve endogenously out of

social and political factors, including the lower costs and greater effectiveness of urban political mobilization (Lipton, 1977; Lal and Myint, 1996; Bates, 1988; Binswanger and Dieninger, 1997), the small short-run supply elasticity of agriculture which allows short-sighted politicians to tax the sector at a seemingly low expense (Johnston and Mellor, 1961), race and caste differences between the elite and the rural poor, and attitudes derived from colonial institutions which often favoured urban elites and fostered elitist attitudes towards the working masses (Myrdal, 1958; see also Binswanger and Deininger, 1997).

In empirical terms, explanations of urban biases have been difficult beasts to capture, even though biases in government expenditure, foreign aid and trade regimes have long been documented. In the tables below we a use a simple measure of urban infrastructure bias, the percentage of the urban population with access to safe water less the equivalent rural percentage circa 2000, based on data from WDI (2004). Table 1 documents these urban-rural infrastructure differences for a wide range of countries. We leave the reader to peruse individual scores, but we do ask the reader to note that the difference between urban and rural safe water infrastructure is remarkably large on average (with a mean of 27 percentage points) which is consistent with our findings on foreign aid allocations, but also highly dispersed (a standard deviation of 14 percentage points). In Table 2 we test whether the institutional explanations of urban biases noted above are validated by the data. The table shows that urban biases are significantly explained by (expected signs in parenthesis): initial labour productivity (-), land inequality (+), land area (which proxies for the political isolation of rural pressure groups) (+), the strength of democratic institutions (-), and a sub-Saharan Africa dummy (-). All the variables have the right signs and are significant at conventional levels, and the R-squared is a high 0.60. Thus, the urban bias theory of

underdevelopment has significant empirical support. Moreover, the deep institutional causes of urban biases provide a plausible explanation of the remarkable persistence of such biases. We now ask the question of whether the dominant paradigms in economic thought satisfactorily recognize and address these biases.

Table 1. A measure of urban biases: descriptive statistics and selected country scores

Low		Moderately Low		Moderately High		High	
Iran	15.0	Vietnam	30.5	Cameroon	42.5	Ethiopia	66.0
Venezuela	15.0	Syria	30.0	Brazil	40.5	PNG	56.0
Pakistan	13.5	Sri Lanka	28.5	Tanzania	40.5	Madagascar	54.0
Honduras	12.5	Zimbabwe	28.5	Ghana	39.0	Kenya	53.0
Algeria	12.0	S. Korea	26.0	Morocco	39.0	Malawi	49.0
Philippines	11.5	S. Africa	26.0	Nigeria	37.5	Iraq	48.0
Thailand	11.5	Indonesia	25.5	Bolivia	37.5	Chile	45.0
Costa Rica	7.0	Argentina	24.0	Saudi Arabia	36.0		
Uruguay	5.0	Myanmar	23.0	Peru	35.5		
Bangladesh	4.0	Colombia	21.5	Tunisia	35.5		
Egypt	4.0	India	21.5	Paraguay	34.0		
Turkey	3.0	Ecuador	19.5	China	33.5		
Malaysia	0.0	Nepal	18.0	Mexico	32.0		

Notes: The urban bias proxy is the percentage of the urban population with access to safe water less the equivalent rural percentage. The source of both variables is the WDI.

Table 2. Explaining an urban bias proxy (circa 2000) for 40 LDCs with Least Squares

Variable	β
Labour Productivity, 1970	-2.41***
Land Area	6.96**
Democracy (1-10)	-2.56***
Land inequality	0.66***
Sub-Saharan Africa dummy	10.59**
R-squared	0.59
Adjusted R-squared	0.53
Notes: White Heteroskedasticity-Consistent Standard Errors & Covariance	

*The urban bias proxy is the proportion of the urban population with access to safe water less the equivalent rural proportion, circa 2000. The source of both variables is the WDI.

5. Understanding the Paradox: Shifting Paradigms

Whilst biases against agriculture within LDC governments are understandable in light of their deep institutional determinants, these alone cannot fully account for the bias against agriculture, especially within the international foreign aid community. The bias in aid delivery and in international policy circles in general should be regarded as especially paradoxical given that, in the development paradigm loosely known as the 'Washington Consensus' (Williamson, 1990), intervention in favour of industry at the expense of agriculture was deemed especially deleterious to LDC growth prospects, especially in the paradigm's nascency (Little et al., 1970; Krueger et al., 1991). However, the neoclassical public choice-theoretic criticisms of government interference in general meant that although the Washington Consensus called for the reduction of effective taxes on agriculture, it also reduced government support for agriculture. Indeed, Anne Krueger's work embodies both of these elements (Krueger, 1974; Krueger et al., 1991). While it is not our contention that government intervention in agriculture has been uniformly successful, the drastic reduction in agricultural investment in LDCs, under the auspices of the dominant paradigm of the day, was tantamount to throwing away the baby with the bath water. That is, the important role of public investment in agricultural development was subsumed under anti-government dogma, despite substantial evidence in East Asia of the complementary role of public investment to their likewise favourable trade regimes.

There are two types of support for our criticisms of the Washington Consensus. First, we would need to show that market-oriented reforms ('liberalization') in LDCs coincide with reductions in agricultural expenditure. The full analysis of this question is available in Bezemer and Headey (2006), which we omit here for brevity's sake. Our approach was to study agricultural expenditure

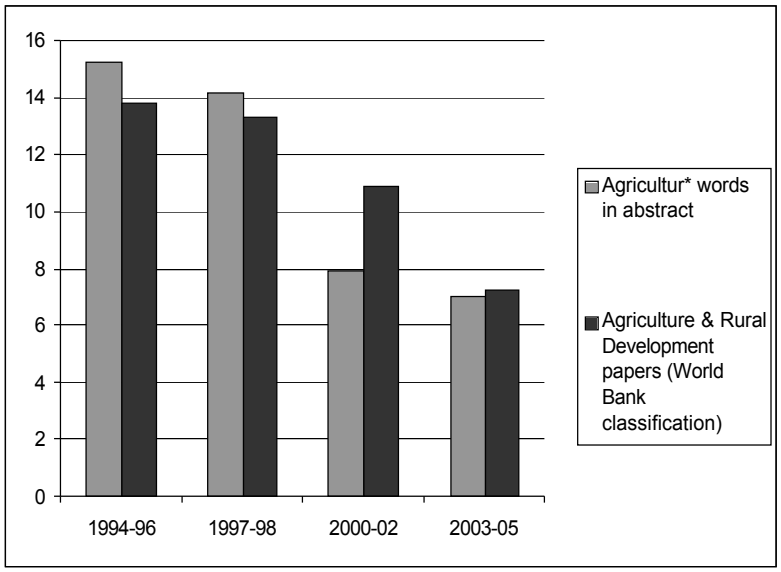
trends in nine countries which are argued to have engaged in discrete Washington Consensus Style reforms as defined by Sachs and Warner's (1995) index. In all nine countries, agricultural expenditure decreased after reform. However, the net benefits of reform appeared to be quite varied. In Mexico and three South American countries (Chile, Bolivia and Peru) labor productivity in agriculture increased after reform, so that the net benefits of reform appear to have been positive.[4] However due to high inequality and weak linkages in South America, there are arguably no clear benefits to broader growth and poverty reduction from agricultural productivity gains in the region (e.g., Bravo-Ortega and Lederman, 2005). In the other five countries in the sample, reform did not alter the stagnating or declining growth paths of these countries. Thus, Washington Consensus reforms in agriculture in this sample appear to have brought, at best, sectoral productivity improvements without broader growth benefits, or at worst, neither pro-growth nor pro-poor impacts.

A second strand of evidence that might support a hypothesis of diminished emphasis on agriculture in the Washington Consensus is the quantity of intellectual resources devoted to agriculture. To test whether such a decline exists, we compared research in the World Bank (the more developmental arm of the Consensus) to general academic research via systematic word searches of World Bank working papers, World Bank *World Development Reports* and four major general academic journals on development. In Figure 1, we indeed see a quite dramatic trend of decreasing emphasis on agriculture as a subject of World Bank research. In the period 1994-98, around 14% of World Bank working papers dealt with the agricultural

[4] Moreover, Chile can not really be regarded as a Washington Consensus 'star student' as its policy reforms were primarily internally driven.

sector, but in the period 2003-2005, this declined to around half that, or 7%.[5] In fact, the intellectual resources devoted to agriculture in the World Bank roughly declined by about the same proportion as World Bank IDA aid to agriculture over the 1990s, which decreased from 19.7% in 1990 to 10.3% in 2000.[6]

Figure 2. The Percentage of World Bank Working Papers Discussing Agriculture



Source: The World Bank e-Library

However, this declining trend in the relative intellectual interest in agriculture is not apparent in four leading field journals,[7] in which we searched for "agricultur*" or "rural" in their abstracts. Figure 1 below depicts the development of the percentages for the four journals taken together. We note the start contrast to Figure 2: the share of

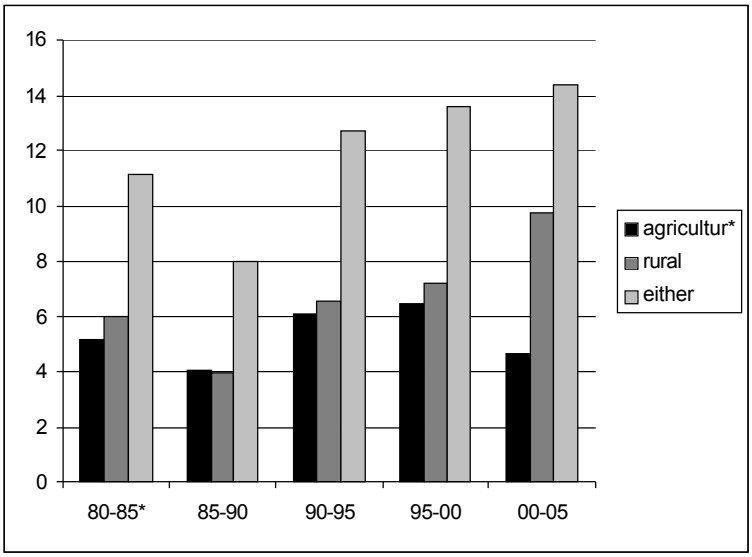
[5] Although we note that in absolute terms the number of papers on the agricultural sector in 2005 was quite high relative to previous years. However, the total numbers of working papers had obviously risen proportionately.

[6] In Bezemer and Headey (2006), we also study average "agricultur*" words per page counts of World Development Reports from 1978 to 2006 as an additional test of our hypothesis. We once again observe a strongly declining trend in the importance of agriculture over this period. The period 1978-1986 stands out in particular as one in which agriculture received considerable attention in these reports (with an average word counts score of 0.51), while the remainder of the period (1987-2006) indicates only slight more than a third as much attention (the one exception in this trend being the 2002 "Building Institutions for Markets" report).

[7] These are *World Development, Journal of Development Economics*, *Journal of Development Studies,* and *Economic Development and Cultural Change*.

articles and book entries on 'green' topics in the four leading journals nearly doubled between 1980 and 2005, from 8% to and 14 %.

Figure 3. The percentages of all book entries and articles on agriculture and rural development for four development journals, 1980-2005, by time period.



Notes: *The 1980-85 data are for keywords in the title since the search in abstracts does not work for this period. Source: ECONLIT

To summarise, we note declining trends: in agricultural aid in general, including World Bank agricultural aid; in most LDC governments' agricultural expenditure, which is often associated with neo-liberal reforms; and finally, in the intellectual resources devoted to agricultural research within what is arguably the most important aid donor and development research institution. In the full version of the paper, we also turn our sights to what Rodrik (2003) has termed the Washington Consensus Mark II which, along with the Millenium Development Goals, constitutes a more rural-based poverty alleviation strategy. While it is still early days in this new consensus, our general conclusion is that these related paradigms spread resources dangerously thin and still ignore the necessity of agricultural productivity growth for both poverty alleviation and successful industrialization.

6. Conclusion

This paper has attempted to persuade readers of the inefficient and systematic bias in the allocation of developmental resources over the last three decades, with the bias running against the agriculture sector in the least developed countries. We have shown that a large mass of historical evidence suggests that such a bias is detrimental to economic growth and structural transformation, as well as poverty reduction. Moreover, the most successful developing economies – as gauged by high rates of equitable growth - are those in which the government played a very active role in the agricultural sector. Despite this weight of economic theory and historical evidence, however, foreign aid and domestic government expenditures to this sector have declined remarkably in the last twenty years.

This persistence of this Agricultural Paradox is ultimately rooted in deep institutional determinants. However, the more disturbing conclusion in this study is that this neglect has not been satisfactorily redressed by the dominant paradigm in our profession, the Washington Consensus. If anything, the Consensus has only added to the problem. Moreover, candidates to replace this paradigm - a more poverty-focussed Washington Consensus approach in tandem with the entirely poverty-focussed Millennium Development Goals - still continue, in their very vagueness, to overlook the primacy of agricultural development for both economic growth and poverty reduction. Instead, this augmented Consensus simply threatens to repeat the mistakes of the past, and add to them the novelty of spreading developmental resources uncomfortably thin in the years to come. Unfortunately, it is the poor – rural *and* urban – who will ultimately pay the price for this continued neglect.

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