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Abstract: Using aggregate indices of education, health, demographic and gender equality outcomes, we empirically investigate the hypothesis that Bangladesh achieved a higher level of social development compared with countries of similar level of per capita income. Stylized facts and cross-country regression results support this hypothesis for a broad range of dimensions. Further tests show that such achievements do not simply reflect income-mediated channels and social expenditure programmes. We conclude by speculating on the role of Bangladesh's development to sustain the process of growth and on the role of governance and institutional quality for the nexus between growth and development.

January 07, 2014

To,
The Editorial Board,
World Development.

Dear Professor Arun Agrawal,

Thank you for your letter dated 29 July 2013 inviting us to resubmit the paper titled "Bangladesh's path to development: is it a paradox?" Please find attached a revised version of the paper which now contains 10,400 words (including tables, references, footnotes and the abstract). In revising the paper, we have greatly benefited from the valuable comments made by the three referees. In particular, we have been stimulated to produce and include additional empirical evidence to indirectly explore the possible role of infrastructure development, poverty reduction and poor governance in explaining Bangladesh's differential development performance. However, in a number of cases (particularly referee 2 and 3), we could not accommodate the revisions indicated in the comments. For instance, some of the comments made by referee 2 (such as dropping Table 2 that contains main econometric estimates in favour of graphical presentation of the data) required restructuring of the paper in a way that contradicted with revisions requested by referee 1. In the attached report, we have elaborated on the changes made clearly pointing out reasons for our disagreement with wherever applicable.

Amongst other things, we've changed the title removing the word paradox; the revised title is "Paths to development: is there a Bangladesh surprise?" We also avoid referring to Bangladesh's development as a paradox in the main text. The revised version has additionally updated the reference section by incorporating recent publications on Bangladesh's development progress (e.g. the 2013 LANCET series on Bangladesh's health sector performance with contribution from Amartya Sen). Reassuringly the papers in the series are mostly descriptive; none provide an econometric treatment of Bangladesh's health progress in cross-country data. In that sense, our paper provides by far the most detailed statistical account of Bangladesh's progress in health and education. Lastly, we no longer include the supplementary Tables as they have now been made available in a working paper version published from the Brooks Institute of World Poverty. Please see http://www.seed.manchester.ac.uk/medialibrary/bwpi/publications/working_papers/bwpi-wp-18913.pdf

With the changes made, we're confident that you'll find the revised version suitable for publication in World Development.

Sincerely yours,

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Abstract
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Paths to development: is there a Bangladesh surprise?

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Abstract

Using aggregate indices of education, health, demographic and gender equality outcomes, we empirically investigate the hypothesis that Bangladesh achieved a higher level of social development compared with countries of similar level of per capita income. Stylized facts and cross-country regression results support this hypothesis for a broad range of dimensions. Further tests show that such achievements do not simply reflect income-mediated channels and social expenditure programmes. We conclude by speculating on the role of Bangladesh's development to sustain the process of growth and on the role of governance and institutional quality for the nexus between growth and development.

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Paths to development: is there a Bangladesh surprise?

Abstract

Using aggregate indices of education, health, demographic and gender equality outcomes, we empirically investigate the hypothesis that Bangladesh achieved a higher level of social development compared with countries of similar level of per capita income. Stylized facts and cross-country regression results support this hypothesis for a broad range of dimensions. Further tests show that such achievements do not simply reflect income-mediated channels and social expenditure programmes. We conclude by speculating on the role of Bangladesh's development to sustain the process of growth and on the role of governance and institutional quality for the nexus between growth and development.

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1. INTRODUCTION

Is Bangladesh's progress surprising when it comes to analyzing the relationship between economic performance and development achievements? Some authors have speculated that the answer to this question could be affirmative (Dreze, 2004; Devarajan, 2005; Mahmud, 2008). The Bangladeshi economy has recorded a remarkable economic performance in the new millennium, but its per capita income remains low (World Bank, 2012a). Yet its levels of many social development outcomes have improved steadily and significantly since 1980, generating a 'surplus' compared to countries with a similar level of economic development. This phenomenon is popularly referred to as the *Bangladesh conundrum* (Mahmud et al., 2008) and has also come to the fore in the media (Bowring, 2005; Dhume, 2010; Economist, 2012; Ramesh, Pande and Bhandari, 2012). Moreover, Bangladesh is generally seen as an economy in need of substantial governance improvements. To the extent that governance quality matters for economic and social development, the country's success in fulfilling various MDG targets represents another puzzle (Devarajan, 2008). This paper looks at the significance of Bangladesh's development progress in a cross-country framework. We empirically investigate whether and to what extent Bangladesh over-performs on social development indicators (such as education, health, sanitation and fertility), given its level of economic development. We also attempt some explanations for its progress.[i]

As the country was once famously dubbed 'the test case for development', a study on Bangladesh would contribute to the literature investigating countries' pathways to human development and the view that this is intertwined with economic development (Ranis et al., 2000; Ranis and Stewart, 2006; Ranis and Stewart, 2012). Within this strand, it has been argued that countries (e.g. China) that invested heavily in human development in their pre-reform period entered a virtuous cycle of high human development and high economic growth. In contrast, other countries could not sustain a process of high growth, owing to a human development deficit (Ranis and Stewart, 2006).

Secondly, this paper is related to the recent revival on the quest of the origins of long-term development. There is a large cross-country literature highlighting market-enhancing governance and institutions as an important ingredient of economic development (e.g., Acemoglu et al., 2001; Easterly

and Levine, 2003 and Rodrik et al., 2004). The lack of growth in Sub-Saharan Africa, for instance, is attributed to the poor bureaucratic quality and public services in the region (Ndulu and O'Connell, 1999; Collier, 2007).. However, global surveys on corruption perception, public sector efficiency and quality of the legal infrastructure routinely rank Bangladesh as one of the most corrupt countries in the world (Transparency International Bangladesh, 2005; Kauffman et al., 2009. Moreover, Bangladesh is frequently affected by floods and other weather-related adverse shocks. A case study on Bangladesh, therefore, adds to this debate on the possible pathways to long-run development, and complements the cross-country empirical literature on the institutions-development nexus.

The contribution of this paper is to offer a systematic investigation, producing regression-based evidence and using cross-country data, of whether and when Bangladesh's development progress is superior to economies with similar level of national income. We document that Bangladesh's progress is exceptional along many dimensions of social development. Further tests attempt to document which channels are responsible for Bangladesh's exceptionality, showing that its achievements may not simply reflect the role of economic growth and social expenditure programmes. We highlight, instead, the importance of low-cost solutions and NGOs, infrastructure development, public campaigns and inter-linkages between various indicators in achieving social progress, which otherwise would warrant a high level of income.

The rest of the paper is organized as follows. Section 2 describes the trends of Bangladesh's economic growth and development during 1980-2009. Section 3 presents regression-based evidence on the alleged exceptionality of progress made in social development outcomes. Section 4 discusses the possible pathways to development in the Bangladeshi context. Section 5 concludes by highlighting selected policy challenges.

2. BANGLADESH'S TRENDS IN ECONOMIC AND SOCIAL DEVELOPMENT

The World Development Report 2013 places Bangladesh is a rather small group of countries that have progressed significantly both in terms of economic performance and development indicators (World Bank, 2012b)**.** Based on descriptive statistics, this section illustrates the evolution of

Bangladesh's economic and social development in a comparative perspective. This will help to trace the origins of, and put in context, its alleged exceptionality.

(a) Bangladesh's national income

What has Bangladesh's economic performance been like? Table 1 below illustrates Bangladesh's real per capita GDP (panel (a)) and rate of growth (panel (b)) over the 1980-2009 period, comparing them to the developing countries average, as well as to India and Pakistan. The data is from the Penn World Tables, version 7.0 (Heston et al., 2011). The Bangladeshi economy has substantially grown, but its per capita income is not quite close to Indian and Pakistani levels yet. As the rank analysis shows, it remains an economy with a rather low income (and it is classified as such by the World Bank). Its per capita GDP has nearly doubled since 1980, but remains a small fraction of the developing countries average and of that of other Asian developing economies.

Bangladesh's growth performance can be ideally divided into two periods. In the first period, from 1980 until the early 1990s, growth was lackluster. But it accelerated after 1995, the second period, and it remains sustained in the new millennium. Presumably, this is also the result of a period of economic reforms, which started in the 1990s. As a result, it overtook Pakistan's growth rates in the mid-1990s, and maintained the growth advantage afterwards, but it has been well below the average Asian developing economy and India. As the rank analysis indicates, Bangladesh's growth momentum has not declined and has performed better than the average developing economy, despite the worsening global economic environment and the worsening of its governance quality (see Kauffman et al., 2009).

[Table 1 about here]

(b) Progress in health outcomes, female schooling and population control

The 2011 UN Human Development Report places Bangladesh third out of 178 countries in terms of improvements in education, health and inequality over the last 20 years (UNDP, 2011). Indeed, looking at Bangladesh's Human Development Index percentile ranking over the 1980-2009 period, one will also observe that the country, not only has consistently improved its ranking, but has

always been better ranked worldwide in terms of human development than economic development. As a result, Bangladesh has managed to catch up with Pakistan (UNDP, 2011), despite its much lower national income. However, the statistics on the Human Development Index, as they are aggregating different dimensions over time, may be hiding interesting details. Hence, we must rather look at a number of individual development outcomes over time.

The country particularly stands out in terms of progress in female secondary schooling, fertility decline and two health indicators – infant mortality and child immunization.[ii] Bangladesh's progress in these indicators is particularly impressive when compared with India and Pakistan. Figures 1-5 plot data on such indicators in two points in time, the five-year periods 1981-1985 and 2006-2010, and the initial level of national income.[iii] To facilitate comparisons, the plots highlight the positions of Bangladesh, India and Pakistan.

During the period from 1981 to 1985, Bangladesh was behind India and Pakistan in infant mortality. However, by 2010, mortality fell very quickly – so much so that it was lower than that in India and Pakistan (Figure 1). Between 1980 and 2010, Bangladesh's percentile rank in the cross-country data changed from 92 to 54, compared to only a modest improvement experienced by India (77 to 75), whilst the situation in Pakistan worsened (80 to 85) Bangladesh's position in 2010 is also below the regression line, confirming that the progress was achieved despite low income. This is particularly interesting in that Bangladesh leap-frogged India in infant mortality by the end of 1990s despite economic growth being much faster in the latter (Dreze, 2004). The health progress made relative to India and Pakistan, as well as income level, is even more striking in case of immunization outcomes. The immunization rate in Bangladesh increased from 1 percent in the early 1980s to over 70 percent within ten years, a development described by UNICEF as a near miracle (Chowdhury, Bhuiya and Aziz, 1999).

Turning to education outcomes, the progress made in female secondary school enrolment is remarkable. Once again, Bangladesh exceeds Pakistan by 2010 (Figure 3). Bangladesh's position in 2010 is also above the 45 degree line, confirming that the progress was achieved despite low income.

Between 1980 and 2010, Bangladesh's percentile rank in the cross-country data improved from 18 to 27, compared to a fall for India (32 to 25) and Pakistan (21 to 14).

[Figure 1 about here]

[Figure 2 about here]

[Figure 3 about here]

[Figure 4 about here]

Since the 1970s, Bangladesh has also managed to reverse its initially poor record in terms of total birth per woman, now largely outperforming countries with similar income, including India and Pakistan (Figure 4). Between 1980 and 2010, Bangladesh's percentile rank in the cross-country female fertility data changed from 78 to 57, compared to only modest improvement experienced by Pakistan (78 to 74) and India (48 to 59). Lastly, the progress in fertility decline has been aided by the spectacular increase in contraception prevalence. Between 1980 and 2010, the percentage of women using contraception jumped from 10 to nearly 60, whilst the 2005 figures for Pakistan and India were 30 and 53, respectively.

[Figure 5 about here]

In sum, the changes documented in this section -- sharp fall in fertility, high prevalence of contraceptive use, and improvements in female schooling -- are remarkable in comparison to Pakistan. With much slower economic growth and half India's per capita income, Bangladesh also performs equally or better on some indicators.

3. ECONOMERTIC EVIDENCE: HEALTH, EDUCATION AND DEMOGRAPHY OUTCOMES

In this section, we take the analysis of Bangladesh's development further. We test and provide a quantitative appreciation of the exceptionality of Bangladesh's development progress using cross-country regressions. Regression analysis can be used to formally test the hypothesis that Bangladesh's development is unusual in relation to other countries with similar economic development. This means

that Bangladesh would fare as a response outlier: the dependent variable of interest takes on an unusual value for economies with similar characteristics. In particular, we produce diagnostics based on introducing a Bangladesh dummy in development outcomes regressions, which would detect if Bangladesh can shift the intercept of the development outcome of interest.[iv] To observe its evolution, such regressions are repeated for each five-year sub-period. The hypothesis of Bangladesh's development exceptionality suggests that the Bangladesh dummy is expected to be statistically significant.

We explore for which dimensions Bangladesh's progress is most striking by using a wide range of measures. The following discussion shows that Bangladesh outperforms countries with similar level of per capita income on a number of health, education and fertility indicators. But this has not always been the case through its history.

(a) Health regressions

Table 2 (panel (a)) shows the performance in health indicators in Bangladesh since its independence. Compared to other countries at the same income, Bangladesh has had a higher percentage of babies born with low birth weight and significantly higher infant mortality. However, since the 1970s, it has managed to reverse its initially poor record in terms of infant deaths per thousand and child deaths per thousand, now largely outperforming countries with similar income, including India and Pakistan. Excess mortality disappeared by mid-1990s, i.e. even before the country saw large-scale reduction in poverty. In addition, since 1990, the rate of mortality under the age of five has significantly decreased.

It has been argued that the sharp decline in child mortality in the post-1995 period is likely to be due to a confluence of a decline in poverty, a government immunization scheme, a fall in fertility, the use of low-cost targeted technologies, and broader social changes, such as improved literacy and women's empowerment (Koehlmoos et al., 2011). Similar factors are likely to have contributed to the fall in low birth babies. We discuss these factors in Section 4.

(b) Education regressions

Bangladesh's progress in education has been somewhat mixed (Table 2; panel (b)). In the 2006-2010 period, 13 percentage points more of Bangladesh's population was more illiterate than is normal for a country of its income level, reflecting excess illiteracy of 11 percentage points for females and 15 percentage points for males. On the other hand, Bangladesh has generally improved school enrolment levels. Up to 1990, Bangladesh had no exceptional statistics in terms of its elementary school-age children enrolled in primary school. However, this changed in subsequent years and is driven by exceptional progress in terms of elementary school-age girls who attend primary school and poor progress concerning same-age boys. Equally, relative to other countries at its level of income, its superior performance in secondary school enrolment is explained mainly by a 14-percentage point abnormally high record for females in 2001-2005.[v] Tertiary enrolment is, however, abnormally low for females. The pathways underlying the progress achieved in gender equality are discussed in Section 4.

(c) Demographic indicators regressions

Demographic indicators are exceptional in Bangladesh (Table 2; panel (c)). Population growth is unusually lower for Bangladesh than for countries with a similar income level, and there is lower fertility per woman. Fertility started to decline significantly as early as 1981-1985, with the rate of decline increasing in the 1990s. Bangladesh has also had an increasingly smaller age dependency ratio than a typical country of its development level. Finally, similar to other countries in South Asia, Bangladesh's population has a lower female proportion than normal. The decline in fertility and dependency ratio confirms the process of demographic transition, which was achieved through a combination of social awareness campaigns and easy access to contraception (see Section 4).

[Table 2 about here]

The demographic changes documented above could be an important channel through which Bangladesh's future growth process is likely to benefit. The demographic transition changed the age composition of the Bangladeshi population, potentially affecting resource allocation at the household level and leading to demographic dividends at the aggregate level. There is also micro-level evidence

that these demographic changes are likely to benefit the development process (Schultz, 2009). The changes are also significant, in that they facilitated progress in other social indicators. We discuss this issue in the next section.

4. PATHWAYS TO DEVELOPMENT

Where does Bangladesh's "development surprise" come from? This section investigates the role of a number of potential channels. We present further tests, attempting to document which factors facilitated or hindered Bangladesh's progress.

Sen (1999, Chapter 2) distinguishes between 'income-mediated' and 'support-led' human development. The former works through rapid and broad-based economic growth, which facilitates better standards of living and better provision of social services, while the latter works primarily through effective welfare programmes that support health, education and social security. In this section, we look at the potential of both channels. Therefore below we assess whether Bangladesh's development progress can be supported by public expenditure, as this could be important for future policy strategies. We also assess to what extent Bangladesh's development progress can be aided by economic growth, through its consequential poverty reduction, or by its public infrastructures. And we conclude by speculating on the lessons we can learn from this case study. However, we should first shed further light on whether Bangladesh's achievements may reflect the role of governance and institutional quality, given its relevance in the recent debates on long-term prosperity.

(a) Does governance quality matter?

We have mentioned that Bangladesh is often regarded as an economy affected by deep-rooted governance problems. Table 3 takes a closer look and tests whether governance quality in Bangladesh has indeed been abnormal by studying the sign and significance of the Bangladesh dummy in regressions looking at different aspects of the governance environment. We utilize a set of popular indicators on areas of governance widely regarded as critical to economic development: corruption, state capacity, political stability and security of private property rights. Most of them are based on perceptions of 'experts', often from the business community. The *Quality of legal system and property*

rights protection index, produced by the Fraser Institute, is the only variable offering a 'long-term' view. The results, using such index, show that Bangladesh has historically had significantly worse governance quality than countries with the same income: the Bangladesh dummy is always negative and significant expect for 1995. When looking at recent history (from the mid-1990s to 2010), it seems that the process of development has improved some dimensions of governance quality, at least in the sense that it is no longer abnormally low. But then Bangladesh continues to have lower ratings in terms of *Political Stability* and *Control of Corruption* than in countries with the same income level, for example.

According to the evidence in Table 3, it is unlikely that governance have contributed to any social development progress. To the contrary, social outcomes have improved despite substandard governance quality and compared to its less corrupt neighbors (e.g. India), providing evidence in support of the idea of a development surprise. After all, poor governance may have undermined the effectiveness of social spending (e.g., Gupta et al, 2002; McGuire, 2006).[vi]

[Table 3 about here]

(b) Does public expenditure matter?

The trends in the government's budgetary allocations show that the shares of expenditure on both health and education out of the total budget expenditure have increased steadily from the early 1980s to the late 1990s (Mahmud, 2008). However, as a percentage of GDP, spending on education and health still remains rather low when compared to other developing countries.[vii] On average, education expenditure in Bangladesh remains below that of India and Pakistan. This is evident from Table 4, which presents data on public spending (see panels (a) and (b)).

[Table 4 about here]

In panel (c), we test whether public expenditure in Bangladesh has been abnormally low by studying the sign and significance of the Bangladesh dummy in public expenditure regressions. Bangladesh has had, and still has, significantly less public health spending as a share of GDP than countries with the same income (1.82 percent less in 2006-2010).[viii] Similarly, public spending on

education is, for example, 2.1 percentage points lower than in countries with the same income level in 2006-2010.

These results suggest that Bangladesh's progress in development outcomes has been achieved despite low social expenditure. This is confirmed by an analysis of data on progress in health and education inputs (Table 5). In education, schools remain resource-strapped. There are six additional students per teacher (a proxy for school quality) in Bangladeshi primary schools than what its income level would predict. The student-teacher ratio was also significantly higher in secondary education for all years except the period 2006-10. As in the case of health, this could be the effect, in part, of the lack of public resources invested in education, as we illustrate in Section 4.

However comparison of overall per capital government social spending per capita does not take into account composition of the budget. In case of Bangladesh, an intra-sectoral re-orientation occurred since 1990 towards basic (primary and secondary) education and primary health that made important difference to exceptional human development outcomes. Equally, development of physical infrastructure (e.g. construction of roads, bridges, and culverts) received relatively little emphasis in public spending in the 1980s. However this changed in the 1990s (Sen, Mujeri, and Shahabuddin, 2007): the percentage share of electricity and road spending in total public expenditure in agricultural and rural development jumped from 16% in 1989/90 to 56% by 2000/01 fiscal year (World Bank, 2003**).** District level correlation analysis between social indicators and road density data also confirms a positive relationship (e.g. see Sen and Ali, 2009). This finding is supported by evidence based on household panel data from Bangladesh (Khandker, Bakht and Koolwal, 2009).[ix] We revisit the issue of infrastructure development in section (d).

[Table 5 about here]

(c) Have growth and public infrastructures aided development?

There are two further hypotheses that deserve scrutiny for us to understand if the development has been driven by "income-mediated" or "support-led" channels. We have paid no attention yet to the role of public infrastructures and external assistance (which are associated with public spending) and to

private income (associated generally with economic growth).[x] Poverty reduction would be part of the income-mediated channel and public infrastructural spending and foreign aid, instead, would be included in the support-led channel. The private income channel would work through the 'private demand' for human development, via faster reduction of poverty in post-1990 era. Equally, macroeconomic stability during 1990-2010 along with better fiscal management created the fiscal space for greater allocation of public resources into rural infrastructure. Such investment in roads and bridge may have strong effects on health and educational outcomes through improved connectivity, lower transport costs and greater physical mobility of people for commuting and accessing schooling and health care services.

To test the public infrastructure channel, we use proxies on transport and communication infrastructure (although one would ideally want to use also data on public expenditure on infrastructures). The *World Development Indicators* provide five such variables with meaningful country coverage (although quite erratic). However, apart from one variable (telephone lines per 100 people), the time coverage is quite short. As a proxy for external aid, we use *Net ODA received per capita (current US$)*[xi] and *external resources for health (% of total expenditure on health)*.[xii] To assess the role of private demand (i.e. income mediated explanation), we use WDI indicators on poverty (poverty headcount and poverty gap measures) and *out-of-pocket health expenditure (% of total expenditure on health),* a direct proxy for private spending on health.[xiii]

Table 6 below tests whether and when Bangladesh has abnormally different levels of foreign aid, transport and communication infrastructure, poverty reduction and private expenditure than countries with the same level of national income. The coefficient on Bangladesh dummy is significant and became a bigger negative by 2010 confirming that aid dependence has fallen over time. Such result suggests that external resources (either ODA or health resources) are unlikely to be the main drive to social development in Bangladesh (see panel (a)), although we cannot rule out the impact of policy and institutional support provided by international agencies for national activities of advocacy, microcredit, education, and health (on this point, see Schurmann and Mahmud, 2009). Our results also suggest that communication infrastructures are unlikely to be the main drive to development in

Bangladesh. However, the country does seem to have developed a far greater road density than countries with the same level of income, but the unavailability of data over time does not allow assessing when this advantage dates back to.

Regarding the role of poverty reduction, gains in social development (e.g., immunization coverage and progress in fertility decline) occurred at a time when no large-scale fall in poverty was recorded. The regression results indicate that Bangladesh has had a higher number of poor compared to countries with the same level of income. However, there is evidence that the intensity of poverty is decreasing faster, compared to countries with the same level of GDP, since the 1980s. This would indicate that poverty reduction could begin to have some impact subsequent progress in development outcomes. In particular, the 'private demand' for social development may have originated from that segment of the population that still belongs to the bottom quintile or decile but, as a result of an increase in income, is about to transition out of poverty. This is partly supported by health expenditure data (see panel (d)). Bangladesh does seem to have significantly greater household health expenditure than countries with the same level of income, but the unavailability of data over time does not allow us to assess when this advantage dates back to.

[Table 6 about here]

(d) Which lessons from the Bangladeshi experience?

Bangladesh's achievements do not seem to fit into the typical pathways to development. The evidence above shows that its progress in social outcomes neither reflects the effect of economic growth nor public expenditure-led development. Perhaps it results from a more 'marginal' approach facilitated by a dynamic NGO sector, rather than a 'transformational' approach using large-scale foreign aid flow (Easterly, 2006). Mahmud (2008) conjectured that the public provision of health and education has been engineered by non-government service providers, combining low-cost solutions with public awareness campaigns.[xiv] As part of an innovative social policy, the government allowed a variety of NGOs to operate with support from overseas aid agencies, providing a range of services such as relief and rehabilitation, poverty alleviation, education, health, environmental and social protection (World Bank, 2007). Changes in selected social indicators coincided with the timing of

some of the NGOs interventions. For instance, diarrhoea accounted for one-third of all childhood deaths in the 1970s and 1980s, whilst another third was attributable to six immunizable diseases. BRAC responded by scaling up the Oral Therapy Extension Programme (OTEP) which provided oral rehydration solution using an incomplete but simple substitute (Chowdhury and Cash, 1998). OTEP also provided a platform to scale up child-targeted health programmes, thereby assisting the government to achieve the target of 80 percent infant immunization by 1990. OTEP health workers additionally instructed mothers on the value of immunizing children against the six diseases (diphtheria, pertussis, tetanus, measles, polio and tuberculosis) and of feeding them vitamin A-rich food. As such, the BRAC programme facilitated the government initiatives through social mobilization and creating a demand for increased coverage.

At an operational level, NGOs collaborated with the government to have pioneered innovative tuberculosis treatment programmes and developed a community healthcare programme (Chowdhury et al (2013). In addition, BRAC ran another scheme – the Child Survival Programme (CSP) – to promote the government's efforts to attain 'Health for All' by 2000 through reducing child and maternal morbidity. The CSP health technology included the oral rehydration therapy, immunization and Vitamin A (Rohde, 2005). Between 1986 and 1990, the CSP covered a third of Bangladesh, including many non-OTEP areas. Unsurprisingly by early 1990s, Bangladesh had a higher percentage of immunized children compared to other countries of similar income level (Table 5).

The gains made in immunizing children against measles and DPT were aided by an early decline in fertility. The latter, on the other hand, was achieved at a time when female schooling was extremely low, poverty was widespread and contraception use limited. The success in early reduction in fertility is again attributed to NGO- and government-led social campaigns that educated the masses about the importance of family planning for child and maternal wellbeing. By the 1990s, more married Bangladeshi women of childbearing age started using contraceptives than is typical for a country of similar income level (see Table 5). This helped achieve a further decline in fertility.

Similarly, excess infant mortality in Bangladesh disappeared compared to other countries as early as 1986-1990 – a time period when female schooling was very low. This achievement is

particularly striking considering the fact that maternal schooling is considered to be a key channel in explaining the global reduction in child mortality (Gakidou et al., 2010). Once again, the early decline in fertility, combined with immunization, and a diarrheal diseases campaign explain Bangladesh's health achievement without a high level of maternal education.

NGO programmes also made an important contribution in the education sector. At the primary level, the effects of government schemes such as a cash stipend scheme and a food for education programme were reinforced by the large presence of BRAC-run single-teacher non-formal schools, and helped to achieve gender parity in enrolment. BRAC schools targeted dropouts and non-enrolled children, particularly girls, in marginalized communities. However, the boom in female enrolment in secondary education is largely credited to a government- and donor-led gender-targeted cash transfer scheme, i.e. Female Secondary School Stipend programme (FSSSP). A partnership was formed with pre-existing Islamic schools (i.e. madrasas) to scale up the programme (Asadullah and Chaudhury, 2009b).

Whilst it is widely acknowledged that NGOs as a group promoted innovative solutions to address issues of poverty, unemployment, health, and education, causal evidence on the developmental impact of NGO run programs is limited. There is some descriptive evidence on the positive effect of such programs on child survival and nutritional status, family planning practices and children's education (e.g., see Chowdhury and Bhuiya, 2004). Anecdotal evidence also attributes the progress in human development in relatively poorer divisions to NGO interventions (World Bank, 2008).[xv] Equally, what made the NGO sector to successfully up-scale various development programs is unclear. Widespread application of community-based approaches (e.g. investment in community health workers), experimentation with informal partnership arrangements that exploits the ability of NGOs to reach the most deprived populations, and rapid adoption of context-specific innovative technologies and policies were thought to be important factors (El Arifeen, Christou, Reichenbach et al., 2013). In addition, the use of female agency remains a key explanation for the NGO-led social progress in health and education (Chowdhury et al, 2013; Sen, 2013). Large-scale engagement of female workers in service delivery in rural areas led to important changes in gender and mobility norms which positively

impacted other social indicators. At the same time, contextual factors such as high population density and homogeneous social structure made it easier for NGOs to spread innovative social practices (Devarajan, 2008). By the 1990s, approximately 80 percent of Bangladeshi villages were covered by some NGO program or project (World Bank 2005). Since NGOs primarily work with the poor and are effective in motivating them through social campaigns, the NGO-led approach has also led to broad-based social development (Mahmud, 2008). The NGO-led development also helped partially overcome "capacity deficit" arising from poor governance in the government social service delivery system. This may explain why Bangladesh was able to improve social indicators despite worsening governance quality.

The Bangladeshi experience should also be assessed in terms of the interplay between social development and growth. Ranis et al. (2000) have argued that economic growth may feed into human development, which in turn reinforces growth, starting a virtuous cycle. Could the Bangladeshi economy be experiencing such a cycle? [xvi] This may not be the case if the links channeling growth into development outcomes are not strong, or at least not strong enough. In policy terms, it may draw attention to the possibility that health and education expenditure may be insufficient or income concentration may be acting as a brake to further development. Ranis (2009) has recently argued that Bangladesh has a better chance to move into a virtuous cycle, given its strong human development base. Indeed, cross-country data suggests that Bangladesh is in already in a virtuous cycle, doing well on both the non-income and the income dimensions of the human development (UNDP, 2013). Whether this can be maintained depends on polices aimed at strengthening such links.

A closely related issue is whether improved development outcomes lead to pay-offs in terms of growth in per capita income? We speculate on these issues in the reminder of the section. In principle, development progress can aid growth in a number of ways. Firstly, investment in female schooling is widely believed to contribute to growth, and not just via the labor market channel. There are also potential returns to women's schooling in the household sector, where female schooling has important effects on the human capital of future generations If true, we can expect the boom in female secondary schooling in Bangladesh to reinforce the progress already made in terms of increase in life expectancy

and reduced infant mortality through the improved agency of women. However, such an effect cannot be captured in the short run. In addition, the level of female schooling is still low to have a growth effect.[xvii] Secondly, social development can create human capital and lead to growth pay-offs. Indeed, increased investment in education is often promoted as a key development strategy aimed at promoting economic growth. Microeconomic study of Bangladesh finds high private rates of return for additional years of schooling, as measured by increases in wages (Asadullah, 2006), implying that the rise in schooling should raise GDP. Equally, education of girls is believed to have substantial macroeconomic returns.

However, empirical studies of economic growth across a range of countries have often found a low, and frequently insignificant, coefficient on the growth of schooling (Pritchett, 2001; Easterly, 2003). The growth-enhancing effect of education could be greatly diminished if governance in the education sector and in the broader economy is poor, so that school attendance creates little human capital. Indeed, the lack of macroeconomic returns to education in many low-income countries is attributed to a number of factors, including poor quality of education (Pritchett, 2001) and the economy's inability to use schooling productively (Rogers, 2008). In case of Bangladesh, poor quality of education also weakens the link between human development and growth. Gains in human development in the form of increase in educational access have not gone hand-in-hand with improvement in quality. The level of basic competence is low amongst primary school completers (Asadullah and Chaudhury, 2013). This is partly because of governance problems in the education sector. Service provider absenteeism in the health and education sectors is a well-documented phenomenon (Chaudhury and Hammer, 2004; Chaudhury et al., 2006). Bangladeshi NGOs, despite their success as service providers, have been less effective in promoting civic activism, such as for demanding better service delivery by state providers (e.g., government primary schools). At the same time, some institutional arrangements involving non-government bodies ignored quality of service provision and hence may involve growth trade-offs. One case in point is the mainstreaming of non-state *madrasa* education through reforming their curricula and accepting their eligibility for participation in the female secondary school stipend programme (Asadullah and Chaudhury, 2009b).

This low-cost reform has led to a boom in female secondary schooling and facilitated the school participation of children from poor socioeconomic backgrounds. Existing evidence suggests that enrolment in these schools is associated with a slight learning disadvantage although the overall level of learning also remains low across all types of secondary school in rural areas (Asadullah, Chaudhury and Dar, 2007). This aspect may prove to be a binding constraint on the growth process if policy makers aim to increase the share of technology and skill-intensive manufacturing activities in the economy.

5. CONCLUSIONS

Given its income level, unfavorable initial conditions and existing challenges such as political instability, poor governance and frequent natural disasters, Bangladesh's achievements in social development are remarkable. In this study, we have empirically investigated Bangladesh's patterns of development, presenting regression-based evidence aimed at uncovering where, when, and along which dimensions of development, Bangladesh's exceptionality lies. The results support the view that Bangladesh has achieved significantly higher progress, compared to economies sharing similar levels of income, in terms of a wide range of social indicators. Component-wise, our analysis indicates that Bangladesh was amongst the losers in child mortality reduction in the 1970s and 1980s, but not in the 1990s and 2000s. Similarly, the gender disadvantage in primary and secondary education disappeared by the mid-1990s. This is significant considering the fact that Bangladesh belongs to a regional belt, stretching across North Africa and South Asia, which is characterized by patriarchal family structures along with female seclusion and deprivation. Overall, progress is also exceptional because it was achieved despite low budgetary allocations, low levels of physical inputs, poor governance, lower living standards and, in some cases, in a very short period of time.

Where does the exceptionality of Bangladesh's development come from? We find limited evidence in support of income-mediated and/or public expenditure (e.g. foreign aid, government spending) led channels. Instead, our analysis highlights several things that happened simultaneously to cause the so-called development surprise. First, an inclusive development strategy involving various non-government stakeholders (including religious bodies in case of schools), which complemented

public education and health interventions, was instrumental to the social progress achieved. In partnership with the government and support from international development and aid agencies, the NGOs helped reduced fertility and child mortality through a combination of low-cost solutions and social awareness campaigns. Second, the health and education indicators improved at varying pace and different intervals. This created useful synergies between different social indicators. The fertility decline began during the 1980s, when income and schooling levels were very low. This set the ground for later progress in education and health indicators. Equally, gender parity in schooling was triggered by the introduction of demand-side incentive schemes. Third, contextual factors such as history, demography, cultural heritage, and geography are likely to have shaped Bangladesh's development context. The proximity of settlements, for instance, facilitated the easy adoption of low-cost solutions and the quick spread of good practices. Political commitments to social development have ensured policy consistency across various political regimes since independence. Successive governments in Bangladesh recognized the need for controlling population growth, the importance of female education, and the role child and maternal immunization. Putting women in the forefront, scale-up of innovations and resilience against natural disaster were also significant.

Finally, we conjecture on the role of the Bangladesh development surprise for its long-term economic development. Following Ranis and Stewart (2006), such progress could place Bangladesh on a path of sustained growth, eventually starting a virtuous cycle whereby higher human and social development is followed by higher growth, igniting a positive feedback loop. But insufficient governance and institutional quality could be an obstacle. As the economy becomes complex and specializes in high value-added activities, the current institutional set-up may become a binding constraint (Collier, 2007). Progress achieved in social and human development can be helpful to overcome such obstacle, via an economic and a political channel. According to the economic channel, the growth effect due to improvements in human development could itself provide the resources to develop better institutions of governance. But the ultimate effect on the growth process may still depend on whether gains from development are large enough compared to governance-related inefficiencies (and provided that the governance deficit per se does not limit the beneficial effects of

social development on economic growth). The political channel, instead, would see an effect working through an increased demand for better institutions and governance. Advances in social development may make larger strata of the population politically active, demanding reforms of economic and political institutions so that those excluded may also benefit from the process of economic development. This would be one more reason to prioritize polices that sustain the human and social development momentum in Bangladesh. However, as Acemoglu and Robinson (2012) warn, the timing and the real effect of the political channel will depend on the elite's incentives and commitment to development.

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[i] For existing research on Bangladesh's development achievements, see Abdullah and Sen (1997), UNDP (2000), Ahluwalia and Hussain (2004), Devarajan (2005), Mujeri and Sen (2006), Sen, Mujeri, and Shahabuddin (2007), Mahmud (2008), Mahmud, Ahmed, and Mahajan (2008), Mahmud, Asadullah and Savoia (2013) and Chowdhury, Bhuiya, Chowdhury, Rasheed, Hussain, and Chen (2013).

[ii] There are other health statistics in which Bangladesh's progress is significant. For instance, the country ranks amongst the top 15 countries in terms of progress in annual percentage decrease in stunting (Save the Children, 2012). However, because of long time series, we have not considered this indicator.

[iii] We organize the data in five-year intervals throughout the tables below as well. This is necessary as the gaps in the yearly series are far too frequent for developing economies.

[iv] Its interpretation is equivalent to calculating studentised residuals (which correspond to the t-stat one would obtain by including the Bangladesh dummy). It should also be added that the actual sample size might vary over time in the regression tables presented in the paper, without any major consequences for the interpretation of our results and findings. The regression results reported in the paper are not based on the same sample over time. We preferred to use the largest possible sample in order to avoid any significant loss in degrees of freedom. However, once we restrict the analysis to same set of countries for each of the development outcomes under scrutiny, the set of results (available on request) is indeed quite similar to the one presented here.

[v] This is consistent with survey data-based evidence for Bangladesh which confirms higher female enrolment relative to males net of household income (Asadullah and Chaudhury, 2009a).

[vi] Indeed, cross country analysis further shows that the positive effects of both education and health spending on respective social outcomes are strongly influenced by the quality of governance (Rajkumar and Swaroop, 2008).

[vii] There is some evidence that household spending on health has increased over time. Household share in the total health spending increased from 57 percent in 1997 to 64 percent in 2007 (Rannan-Eliya, 2012).

[viii] Health expenditure as a percentage of GDP is particularly low considering the fact that only about a third of the spending on health comes from public resources. The remaining two-thirds comprise of private out-of-pocket payments, external assistance and NGOs budget for health programmes (Chowdhury et al, 2013).

[ix] Our own analysis of recent district-wise road density data shows significant positive correlation with health and education outcomes for the year 2011 even after controlling for public expenditure and poverty level (results not reported). However, total government expenditure on health and education showed no significant influence on our social indicators.

[x] Amongst other possible channels, the development 'surprise' may be explained by changing composition of public expenditure. For instance, the government may have prioritized basic education by allocating greater proportion of the overall education budget. However, cross-country data disaggregating public expenditure by sector is unavailable.

[xi] Net official development assistance (ODA) per capita consists of disbursements of loans made on concessional terms (net of repayments of principal) and grants by official agencies of the members of the Development Assistance Committee (DAC), by multilateral institutions, and by non-DAC countries to promote economic development and welfare in countries and territories in the DAC list of ODA recipients; and is calculated by dividing net ODA received by the midyear population estimate. It includes loans with a grant element of at least 25 percent (calculated at a rate of discount of 10 percent).

[xii] External resources for health are funds or services in kind that are provided by entities not part of the country in question. The resources may come from international organizations, other countries through bilateral arrangements, or foreign nongovernmental organizations. These resources are part of total health expenditure.

[xiii] Out of pocket expenditure is any direct outlay by households, including gratuities and in-kind payments, to health practitioners and suppliers of pharmaceuticals, therapeutic appliances, and other goods and services whose primary intent is to contribute to the restoration or enhancement of the health status of individuals or population groups. It is a part of private health expenditure.

[xiv] The share of NGO financing in the total health spending ranged between one and two percent over the period 1997-2007 (Rannan-Eliya, 2012).

[xv] Eastern divisions (particularly Chittagong and Sylhet) despite seeing significant poverty reduction have some of the worst outcomes (among the highest child and under-5 mortality rates and stunting rates) while Western division of Khulna stands out as having the best outcomes.

[xvi] Whilst this section highlights the role of high human development in growth, we also acknowledge that human development is an end in itself and hence desirable irrespective of its source or contribution to economic growth in Bangladesh.

[xvii] In their study on the determinants of economic growth in South Asia, Cooray and Mallick (2012) find that female schooling is an insignificant source of growth.

***Table(s)**

Table & Figures for WD-2407 (January 2014)

Table 1. *Economic performance in Bangladesh: 1980-2009*

Year	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2009**
Panel (a): Real per capita GDP							
Bangladesh vis-à-vis Pakistan and India							
BGD	716.05	757.35	811.97	874.71	987.70	1191.88	1397.26
Rank	10th perc.	10th perc.	12th perc.	14th perc.	14th perc.	16th perc.	16th perc.
PAK	1453.35	1695.82	1933.94	2052.91	1858.54	2112.40	2353.11
Rank	27th perc.	30th perc.	32nd perc.	31st perc.	26th perc.	25th perc.	25th perc.
IND	1019.63	1175.46	1407.22	1564.59	1860.24	2556.26	3237.84
Rank	20th perc.	23rd perc.	24th perc.	26th perc.	26th perc.	29th perc.	30th perc.
Asia (developing economies)							
Mean	1426.07	1627.99	1955.62	2345.49	2627.31	3420.63	4350.70
Sd	956.52	1066.08	1397.65	1863.66	1984.81	2505.64	3118.99
N	17	17	18	24	24	24	24
Rank	25th perc.	29th perc.	32nd perc.	37th perc.	32nd perc.	34th perc.	37th perc.
South Asia							
Mean	1001.75	1213.06	1416.97	1596.94	1867.28	2392.20	2803.75
Sd	298.46	390.41	552.11	746.50	1002.01	1404.28	1461.14
N	8	8	8	8	8	8	8
Rank	20th perc.	23rd perc.	24th perc.	26th perc.	26th perc.	28th perc.	28th perc.
Developing economies							
Mean	3479.06	3522.03	3653.27	3722.97	4182.07	4880.46	5526.74
Sd	3429.23	3582.07	3539.31	3608.21	4145.72	4831.05	5419.41
N	116	116	118	126	126	126	126
Rank	47th perc.	46th perc.	43rd perc.	44th perc.	43rd perc.	43rd perc.	42nd perc.
Year		**1980-85**	**1985-90**	**1990-95**	**1995-00**	**2000-05**	**2005-09**
Panel (b): Average real per capita GDP growth							
Bangladesh vis-à-vis Pakistan and India							
BGD		1.12	1.39	1.49	2.43	3.76	3.97
Rank		56th perc.	48th perc.	59th perc.	56th perc.	71st perc.	70th perc.
PAK		3.09	2.63	1.19	-1.99	2.56	2.70
Rank		78th perc.	67th perc.	52nd perc.	6th perc.	50th perc.	55th perc.
IND		2.84	3.60	2.12	3.46	6.36	5.91
Rank		76th perc.	76th perc.	69th perc.	71st perc.	82nd perc.	85th perc.
Asia (developing economies)							
Mean		2.92	2.96	2.04	2.42	5.20	5.96
Sd		2.59	3.60	5.64	2.65	3.51	3.67
N		17	17	18	24	24	24
Rank		77th perc.	71st perc.	68th perc.	56th perc.	79th perc.	86th perc.
South Asia							
Mean		3.63	2.48	1.28	2.18	4.90	5.02
Sd		2.28	4.55	4.42	3.19	3.59	4.33
N		8	8	8	8	8	8
Rank		81st perc.	66th perc.	56th perc.	50th perc.	78th perc.	78th perc.
Developing economies							
Mean		0.27	0.84	0.22	2.00	2.98	3.09
Sd		3.75	4.23	4.61	5.66	3.81	3.42
N		116	116	118	126	126	126
Rank		44th perc.	43rd perc.	42nd perc.	48th perc.	56th perc.	61st perc.

Data is from Heston et al. (2011); GDP is calculated at PPP, 2005 constant prices. Countries are grouped following the World Bank classification. Throughout our analysis, developing countries include low, upper and lower middle-income economies. It also includes European and Central Asian economies that fall in the above classification..

Table 2. *Coefficient on Bangladesh dummy in health, education and demographic outcomes regressions: 1970-2010*

1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010
Panel (a): Health outcomes							
Low birth-weight babies (% of births)							
			35.13***	33.52***	15.73***	21.51***	8.17***
			(1.15)	(2.03)	(0.73)	(0.83)	(0.90)
			86	87	115	92	94
Mortality rate, infant (per 1,000 live births)							
31.21***	22.43***	13.21***	6	-2.39	-10.27***	-16.64***	-19.29***
(5.48)	(5.62)	(4.90)	(4.55)	(3.65)	(2.71)	(2.44)	(2.61)
107	115	122	123	134	147	147	147
Mortality rate, under-5 (per 1,000)							
29.95***	15.62	2.80	-7.86	-19.22***	-28.47***	-37.08***	-39.09***
(10.41)	(10.65)	(9.22)	(8.74)	(7.07)	(5.23)	(4.51)	(4.57)
107	115	122	123	134	147	147	147
Panel (b): Education outcomes							
Literacy rate, adult, total (% of people aged 15 and above)							
		-24.22**		-15.75**		-12.03***	-13.37***
		(10.12)		(6.39)		(3.52)	(2.50)
		25		43		83	123
Literacy rate, adult male (% of male aged 15 and above)							
		-23.82**		-15.80**		-15.17***	-15.52***
		(8.68)		(5.94)		(3.34)	(2.12)
		24		43		83	123
Literacy rate, adult female (% of female aged 15 and above)							
		-26.02**		-16.85**		-9.89**	-11.62***
		(11.45)		(7)		(3.77)	(2.94)
		24		43		83	123
School enrolment, primary (% gross)							
4.76	-2.28	-18.29***	-9.65**			5.73**	0.14
(3.82)	(4.81)	(6.04)	(4.46)			(2.76)	(2.98)
111	112	113	114			138	140
School enrolment, primary, male (% gross)							
15.02***	6.97	-10.56**	-8.53*			-1.88	-7.02**
(3.76)	(5.12)	(4.77)	(4.32)			(2.66)	(2.82)
107	106	105	111			137	140
School enrolment, primary, female (% gross)							
-5.59	-7.33	-14.78***	-9.62**			14.34***	7.63**
(4.32)	(5.28)	(5.36)	(4.85)			(3.10)	(3.22)
107	106	105	111			137	140
School enrolment, secondary (% gross)							
3.36	0.35	0.11	-2.83		10.76***	9.76***	1.31
(2.09)	(2.65)	(2.11)	(2.59)		(2.74)	(2.34)	(2.25)
110	108	108	108		129	135	131
School enrolment, secondary, male (% gross)							
9.07***	2.87	2.28	-0.77		8.30***	4.73*	-3.39
(1.94)	(2.82)	(2.26)	(2.68)		(2.66)	(2.41)	(2.34)
104	94	94	97		125	132	129
School enrolment, secondary, female (% gross)							
-0.82	-6.36**	-4.60**	-5.12*		13.80***	14.84***	6.12**
(1.81)	(2.73)	(2.30)	(2.66)		(2.92)	(2.57)	(2.35)
104	94	94	97		125	132	129
School enrolment, tertiary (% gross)							
0.47	1.26*	1.91***	1.69***		-1.12	-1.90	-2.72
(0.46)	(0.65)	(0.64)	(0.59)		(1.06)	(1.26)	(1.67)
92	101	97	102		118	114	107
School enrolment, tertiary, male (% gross)							
1.90***	2.14**	3.66***	3.51***		-0.67	-0.70	-1.25
(0.58)	(0.82)	(0.75)	(0.52)		(1.16)	(1.25)	(1.54)
79	88	81	80		107	111	102
School enrolment, tertiary, female (% gross)							
-0.46	0.05	0.69	0.72		-2.08*	-2.87**	-4.76**
(0.42)	(0.57)	(0.59)	(0.55)		(1.21)	(1.38)	(2.10)
79	88	81	80		107	111	102

Panel (c): Demographic outcomes							
Population growth (annual %)							
-1.24***	0.20	-0.05	0	0.04	-0.22	-0.32**	-0.62***
(0.16)	(0.21)	(0.15)	(0.15)	(0.23)	(0.17)	(0.14)	(0.22)
122	122	123	123	134	147	147	147
Fertility rate, total (births per woman)							
0.39***	0.02	-0.53***	-1.20***	-1.61***	-1.65***	-1.84***	-1.93***
(0.12)	(0.16)	(0.16)	(0.16)	(0.16)	(0.15)	(0.14)	(0.14)
120	119	121	123	133	147	146	142
Population, female (% of total)							
-1.56***	-1.45***	-1.74***	-1.81***	-2.28***	-2.21***	-1.97***	-1.60***
(0.18)	(0.23)	(0.22)	(0.17)	(0.33)	(0.28)	(0.27)	(0.32)
116	116	116	116	127	140	140	140
Age dependency ratio (% of dependents, younger than 15 and older than 64, to the working-age population)							
	0.82	-2.72*	-7.45***	-9.50***	-14.20***	-16.81***	-19.55***
	(1.44)	(1.45)	(1.46)	(1.26)	(1.16)	(1.28)	(1.47)
	116	116	122	140	140	140	140

The dependent variable in each regression is measured as a five-year average. All regressions control for one-year lagged level of per capita income (log) and are conducted on a sample of developing economies (including low, upper- and lower-middle income economies, following the World Bank classification). Development data is from the 2011 World Development Indicators (World Bank, 2011), while GDP data is from the PENN World Tables 7.0 (Heston et al 2011). Heteroskedasticity-robust standard errors are in parentheses; ***, ** and * indicate significance at 1%, 5% and 10% level (two-tailed test).

Table 3. *Coefficient on Bangladesh dummy in governance quality regressions: 1980-2010*

Year	**1980**	**1985**	**1990**	**1995/1996**	**2000**	**2005**	**2010**
Quality of legal system and property rights protection (Gwartney and Lawson 2007)							
	-1.29***	-1.36***	-1.44***	0.57***	-0.81***	-0.67***	-0.70***
	(0.26)	(0.22)	(0.21)	(0.18)	(0.16)	(0.13)	(0.14)
N	59	75	78	87	87	103	106
Regulatory quality (World Bank 2011)							
				0.48***	0.10	-0.13**	-0.11*
				(0.11)	(0.08)	(0.06)	(0.06)
N				141	145	145	146
Rule of law (World Bank 2011)							
				0.09	0.15**	0.03	0.07
				(0.07)	(0.06)	(0.06)	(0.05)
N				129	145	145	146
Political stability (World Bank 2011)							
				-0.13	0.30***	-0.86***	-0.68***
				(0.11)	(0.10)	(0.10)	(0.10)
N				138	140	145	146
Control of corruption (World Bank 2011)							
				0.22**	-0.17***	-0.50***	-0.25***
				(0.09)	(0.06)	(0.05)	(0.05)
N				114	145	145	146
Government effectiveness (World Bank 2011)							
				0.08	0.33***	0	-0.02
				(0.06)	(0.06)	(0.05)	(0.05)
N				141	145	145	146

The dependent variable in each regression is an indicator of governance quality. All regressions control for one-year lagged level of per capita income (log) and are conducted on a sample of developing economies (including low, upper- and lower-middle income economies, following the World Bank classification). Governance quality data is from Gwartney and Lawson (2007), World Bank (2011). GDP data is from the PENN World Tables 7.0 (Heston et al 2011). Heteroskedasticity-robust standard errors are in parentheses; ***, ** and * indicate significance at 1%, 5% and 10% level (two-tailed test).

Table 4. *Health and education public expenditure in Bangladesh: 1976-2010*

Period	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**
Panel (a): Health expenditure							
Bangladesh vis-à-vis Pakistan and India							
BGD				1.28	1.15	1.18	1.13
Rank				11th perc.	7th perc.	8th perc.	4th perc.
PAK				0.84	0.76	0.70	0.83
Rank				5th perc.	4th perc.	1st perc.	2nd perc.
IND				1.22	1.25	1.11	1.27
Rank				10th perc.	9th perc.	6th perc.	6th perc.
Asia (developing economies)							
Mean				1.81	1.90	1.94	2.07
Sd				1.01	1.01	1.08	1.25
N				26	27	27	27
Rank				28th perc.	26th perc.	21st perc.	24th perc.
Panel (b): Education expenditure							
Bangladesh vis-à-vis Pakistan and India							
BGD	0.94	1.26			2.40	2.35	2.47
Rank	1st perc.	3rd perc.			14th perc.	11th perc.	9th perc.
PAK	2.13	2.43			2.16	2.05	2.77
Rank	14th perc.	18th perc.			11th perc.	8th perc.	16th perc.
IND	2.87	3.19			4.16	3.40	3.09
Rank	30th perc.	34th perc.			46th perc.	27th perc.	20th perc.
Asia (developing economies)							
Mean	3.63	2.93			3.27	3.61	3.80
Sd	3.14	2.35			1.56	1.91	1.59
N	12	11			21	20	20
Rank	43rd perc.	30th perc.			28th perc.	31st perc.	33rd perc.
Panel (c): Coefficient on Bangladesh dummy in health and education expenditure regressions							
Public spending on education, total (% of GDP)							
	-2.85***	-2.89***			-1.66***	-1.97***	-2.14***
	(0.34)	(0.82)			(0.33)	(0.30)	(0.31)
N	79	80			117	114	106
Health expenditure, public (% of GDP)							
				-0.79***	-0.98***	-1.30***	-1.82***
				(0.18)	(0.14)	(0.15)	(0.19)
N				130	146	146	145

Both types of public expenditures are expressed as share of GDP and measured as five-year averages. The dependent variable in each regression is measured as a five-year average. Both regressions control for one-year lagged level of per capita income (log) and are conducted on a sample of developing economies (including low, upper- and lower-middle income economies, following the World Bank classification). Heteroskedasticity-robust standard errors are in parentheses. Data is from the 2011 World Development Indicators (World Bank, 2011), while GDP data is from the PENN World Tables 7.0 (Heston et al 2011).

Table 5. *Coefficient on Bangladesh dummy in health, demographic and education inputs regressions: 1971-2010*

1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010
Panel (a): Health inputs							
Immunization, DPT (% of children ages 12-23 months)							
		-26.49***	-22.39***	13.16***	12.38***	17.62***	14.51***
		(3.31)	(3.43)	(3.00)	(2.43)	(1.97)	(1.61)
N		115	119	131	146	146	146
Immunization, measles (% of children ages 12-23 months)							
		-28.43***	-24.85***	12.31***	3.71	6.33***	17.07***
		(3.31)	(3.03)	(2.63)	(2.26)	(1.91)	(1.61)
N		115	119	131	146	146	146
Births attended by skilled health staff (% of total)							
				-33.01***	-42.50***	-41.45***	-38.93***
				(4.27)	(2.90)	(2.97)	(2.69)
N				78	127	122	111
Hospital beds (per 1,000 people)							
	-1.91***	-1.63***	-0.94***	-0.85*	-2.45***	-1.46***	
	(0.39)	(0.33)	(0.15)	(0.43)	(0.54)	(0.25)	
N	55	55	104	73	96	120	
Panel (b): Education inputs							
Pupil-teacher ratio, primary							
9.60***	10.84***	5.75***	20.26***			5.96***	6.32***
(1.48)	(2.18)	(1.86)	(2.19)			(1.93)	(1.74)
103	94	91	90			129	130
Pupil-teacher ratio, secondary							
1.94***	-0.29	3.99**	4.21***		14.46***	6.77***	-0.13
(0.67)	(1.25)	(1.55)	(1.11)		(1.15)	(1.18)	(1.59)
101	93	87	84		109	121	108
Panel (c): Demographic inputs							
Contraceptive prevalence (% of women aged 15-49)							
	0.53	-3.45	3.96	18.52***	22.93***	27.99***	19.71***
	(4.84)	(6.48)	(4.42)	(3.68)	(2.28)	(2.58)	(2.46)
N	44	47	64	79	123	92	98

The dependent variable in each regression is measured as a five-year average. All regressions control for one-year lagged level of per capita income (log) and are conducted on a sample of developing economies, which includes low, upper- and lower-middle income economies, following the World Bank classification. Heteroskedasticity-robust standard errors are in parentheses. Data is from the 2011 World Development Indicators (World Bank, 2011), while GDP data is from the PENN World Tables 7.0 (Heston et al 2011).

Table 6. *Coefficient on Bangladesh dummy in infrastructure, external aid, poverty and private expenditure regressions: 1970-2010*

1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010
Panel (a): Foreign aid channel							
Net ODA received per capita (current US$)							
-8.83***	-15.25***	-26.98***	-41.85***	-59.04***	-39.31***	-43.61***	-71.61***
(2.10)	(4.23)	(5.33)	(7.07)	(9.61)	(7.21)	(5.21)	(8.93)
112	110	111	112	128	133	133	132
External resources for health (% of total expenditure on health)							
				-7.41***	-10.41***	-10.47***	-14.80***
				(1.43)	(2.36)	(1.91)	(1.77)
N				130	145	146	144
Panel (b): Public infrastructure channel							
Internet users (100 people)							
					0.01	-1.21**	-3.64***
					(0.11)	(0.47)	(0.94)
N					142	145	143
Mobile cellular subscriptions (per 100 people)							
		-0.00	0.01	0.13**	0.33	-2.16*	-5.40***
		(0.00)	(0.01)	(0.06)	(0.28)	(1.15)	(2.06)
N		120	120	129	144	145	144
Telephone lines (per 100 people)							
-0.11	0.27	0.49*	0.46	0.40	-1.18**	-2.19***	-3.25***
(0.18)	(0.21)	(0.27)	(0.35)	(0.42)	(0.55)	(0.64)	(0.63)
90	105	119	120	131	144	145	144
Roads, paved (share of total mileage)							
				-13.10***	-18.82***	-19.60***	-21.07***
				(2.99)	(3.36)	(2.55)	(3.41)
N				104	115	125	69
Roads density (km of road per 100 sq. km of land area)							
						72.73***	
						(4.01)	
N						134	
Panel (c): Poverty reduction channel							
1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010
Poverty headcount ratio at $1.25 a day (PPP) (% of population)							
		3.02	3.33	11.65***	7.65***	6.15***	2.86
		(6.17)	(4.30)	(3.15)	(2.88)	(2.05)	(2.51)
N		20	43	69	81	95	84
Poverty headcount ratio at $2 a day (PPP) (% of population)							
		8.51	5.56	14.31***	11.43***	11.85***	16.01***
		(5.82)	(5.27)	(2.89)	(2.34)	(1.74)	(2.05)
N		20	43	69	81	95	84
Poverty gap at 1.25$ a day (PPP) (%)							
		-2.07	-5.90*	-2.67	-3.05	-2.74**	-5.75***
		(3.03)	(3.03)	(2.41)	(2.07)	(1.26)	(1.77)
N		20	43	69	81	95	84
Poverty gap at 2$ a day (PPP) (%)							
		1.63	-1.35	3.78	2.15	2.16	0.56
		(4.08)	(3.16)	(2.47)	(2.11)	(1.43)	(1.80)
N		20	43	69	81	95	84
Panel (d): Private health expenditure channel							
Out-of-pocket health expenditure (% of total expenditure on health)							
				14.99***	10.46***	13.20***	18.79***
				(2.66)	(2.37)	(2.25)	(2.27)
N				130	145	146	144

The dependent variable in each regression is measured as a five-year average. All regressions control for one-year lagged level of per capita income (log) and are conducted on a sample of developing economies. Infrastructure, aid, poverty and health spending data are from World Bank (2011). GDP data is from the PENN World Tables 7.0 (Heston et al 2011). Heteroskedasticity-robust standard errors are in parentheses; ***, ** and * indicate significance at 1%, 5% and 10% level (two-tailed test).

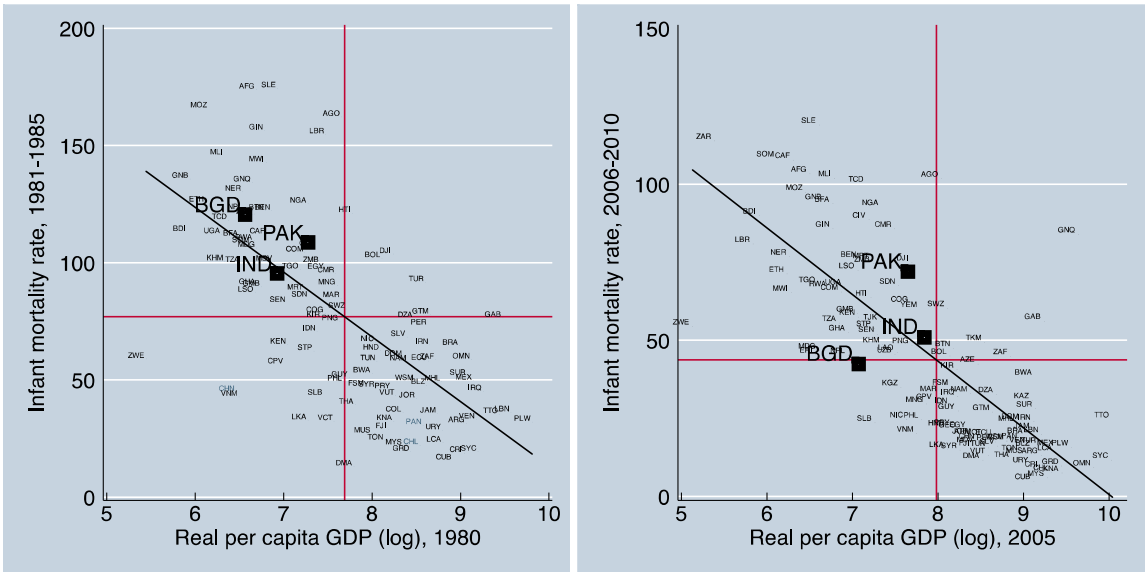


Figure 1. *Mortality rate, infant (per 1,000 live births)*

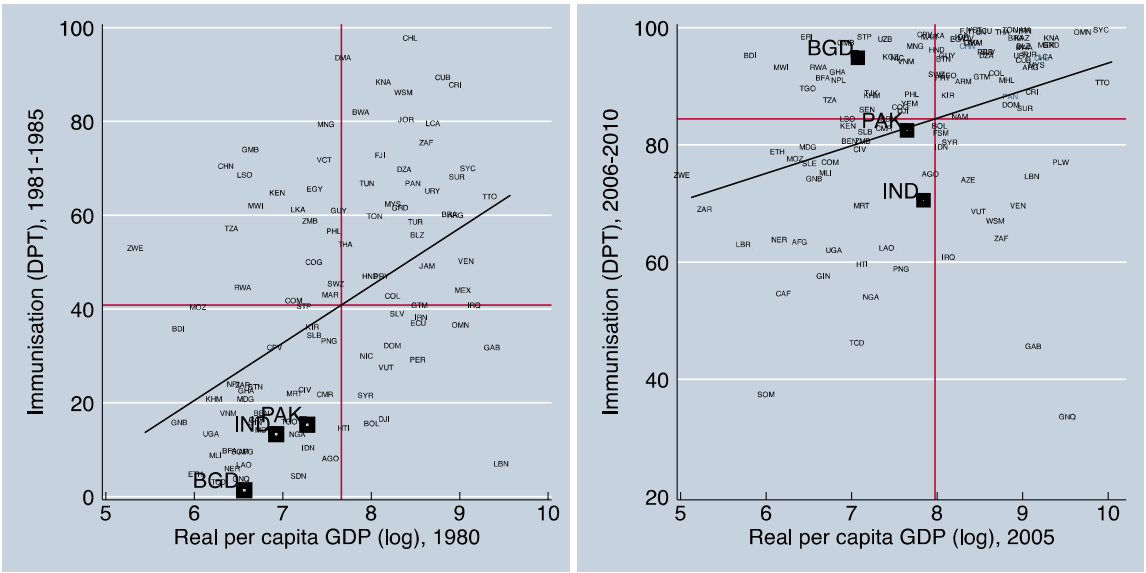


Figure 2. *Immunization, DPT (Diphtheria, Pertussis, Tetanus)*

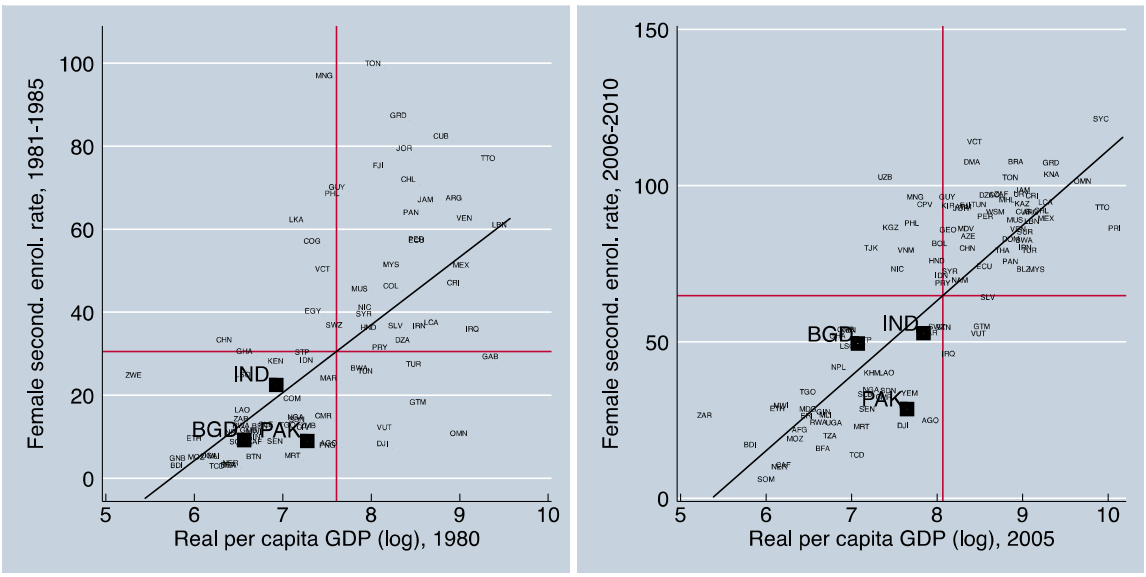


Figure 3. *Female secondary school enrolment rate*

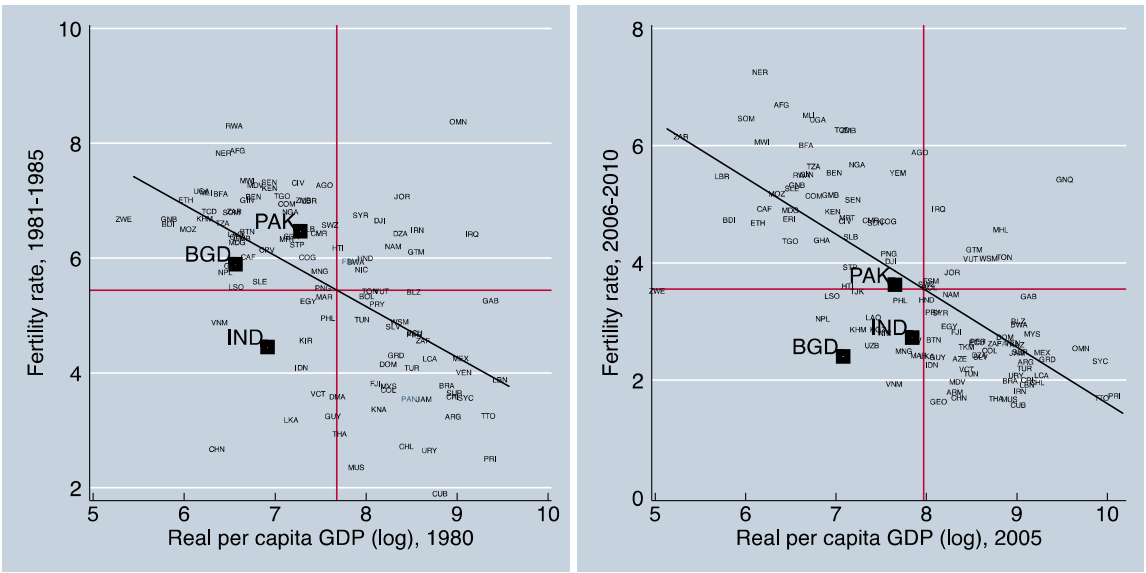


Figure 4. *Fertility rate, total (births per woman)*

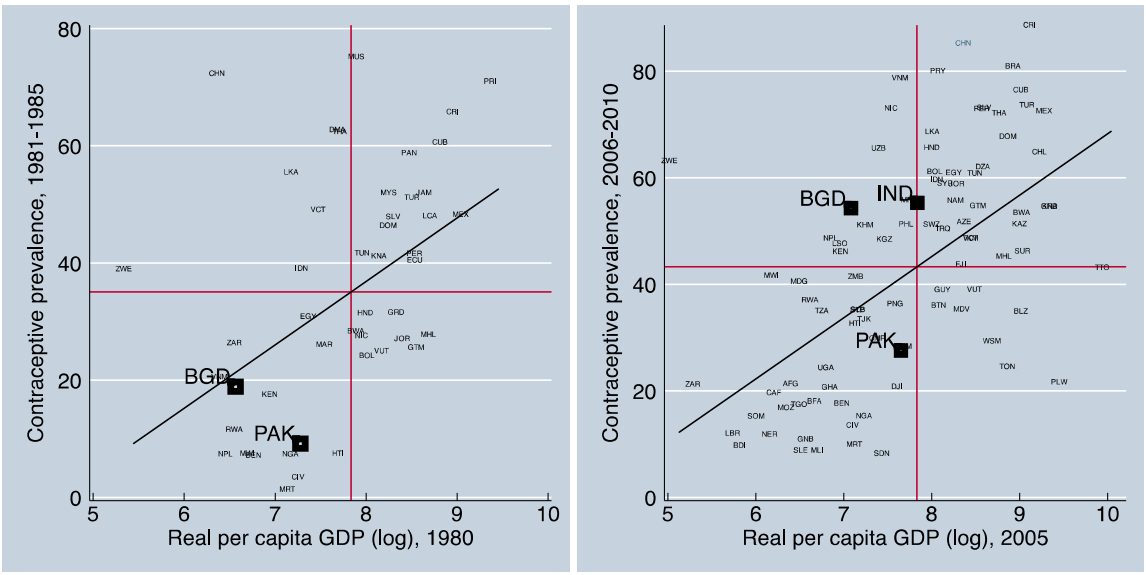


Figure 5. *Contraceptive prevalence (% of women ages 15-49)*

Notes on Revisions for WD-2407 (January 7, 2014):

In this document, we have outlined the revisions undertaken in response to the Editor's suggestions and the referees' reports.

Editor's comments:

Following the Editor's suggestions, **the article now fully complies with the formatting requirements specified in the 'guide for authors'**.

Moreover, in order to strengthen the article, we made the following changes:

i. Most, if not all, of Reviewer#1 and Reviewer#2 comments resulted in significant changes to the original draft, including the production of further econometric results, which we report below.
ii. Reflecting Reviewer#1 and Reviewer#2 comments, we changed the title of the paper to "Paths to development: Is there a Bangladesh Surprise".
iii. Reviewer 3 comments did not result into significant changes to the paper. We provide justification for that below.
iv. At the end of this document, we have listed new papers that we cite in the revised manuscript.

All changes are fully illustrated in the sections below, providing a point-by-point response to the comments of each reviewer.

Authors' reply to referee comments

Reviewers' comments:

Reviewer #1: Comments on "Bangladesh's path to development: is it a paradox?"

The paper provides new evidence that Bangladesh made exceptional gains in human development compared with countries with similar level of per capita income. The paper's main contribution is that it documents the so-called "human development surplus"-for a range of social indicators-- not only for the current period but also for the successive periods in the past, at least since 1985. The paper may be published subject to revisions in the light of the following comments.

I. Main comments:

1. The title is somewhat misleading. First, the paper is not about "paradox" for what it documents is the existence of "human development surplus" (HD surplus), which is different from explaining the "paradox". Even the term HD surplus is also problematic-as there is no theory provided in the paper that could guide such investigation. Generally, the absolute level of human development is very low in poorer countries and very high in richer countries. A particular country performing better in human development terms compared to the level predicted by its income is not necessarily an indication of its human development surplus in the absolute sense and hence, misleading.

Authors' reply: *To address the referee's concern, we have changed the title of the paper from "Bangladesh's path to development: is it a paradox?" to "Paths to development: Is there a Bangladesh surprise?" This title better describes the paper which in our opinion assesses both the likely existence of "development surprises" and the factors that may explain them. This title also does not embrace a priori the idea of a "Bangladesh paradox". In addition, we no longer refer to "Bangladesh paradox" in the main text and have also shifted the focus away from "human development" paradox or surplus.*

2. A country may have human development surplus without being paradoxical. The method of defining HD surplus in comparison to the predicted level of income only shows that the level of income is not always a good predictor of HD outcomes, as the income elasticity for some important social measures such as child mortality, vaccination or elementary education may be typically low. This is where the channels of poverty reduction, public infrastructural spending, and norms-changing institutions could matter. The paper does not discuss the first two channels (the role of NGOs is discussed as part of "institutions" but not so much as norms-changing intervention).

Authors' reply: *We accept the referee's point that there can be human development surplus without being paradoxical. We are primarily documenting Bangladesh's social achievements in relation to its level of economic development. The text has been re-written to make this clear. As explained later on in the report, the revised draft also discusses the role of poverty reduction and public infrastructural development in greater detail. Lastly, we also explicitly acknowledge the norms-changing roles played by NGOs (see section 4(d)).*

The referee further observes that the income elasticity for some important social measures such as child mortality, vaccination or elementary education could be low in Bangladesh

context. This is an important point and if true further limits the role of economic growth in social development. However, at least in case of health, the evidence suggests that household demand for health care services remain strong. According to WDI 2011, private (i.e. out-of-pocket) expenditure accounted for 61.3% of the total health expenditure in Bangladesh, more than the low-income country average of 48% (see http://wdi.worldbank.org/table/2.15). Our updated econometric analysis also confirms that private health spending is significantly higher in Bangladesh compared to other countries of similar income level (see Table 6).

3. In the Bangladesh case, the literature suggests two kinds of major and minor paradox: (a) the major paradox is--how could Bangladesh achieve and sustain HD surplus in the face of persistently low governance rating (however defined); and (b) the minor paradox is: how could Bangladesh achieve and sustain HD surplus in the face of low level of public social spending per capita. The paper does not directly deal with the first one; the second paradox is dealt with, but with some incompleteness of the treatment of the public policy variable, as would be explained in the next two points below.

Authors' reply: *We thank the referee for stimulating us, with this comment, to explore further the role of governance in the "Bangladesh surprise". The reviewer is correct that we don't deal directly with this 'major paradox', as we considered it outside the remit of the paper and left it for future research. In response, now we address and discuss the role of governance quality in Bangladesh's development in section 4.*

In particular, the paper now further illustrates the evolution of governance quality in relation to the stage of economic development in Bangladesh. In addition to tables 2-4, and in the same methodological spirit, we produce a set of governance regressions including a Bangladesh dummy. This should illustrate to what extent, and if at all, Bangladesh's governance environment played a role in explaining the "surprise".

Table 3 tests whether governance quality in Bangladesh has been abnormally low by studying the sign and significance of the Bangladesh dummy in regressions looking at different aspects of the governance environment. Bangladesh has had significantly worse governance quality, in many aspects, than countries with the same income. Therefore, it is unlikely to have contributed to social development. It rather seems that social outcomes have improved despite substandard governance.

We utilize a set of popular indicators on areas of governance widely regarded as critical to economic development: corruption, state capacity, political stability and security of private property rights. Most of them are based on perceptions of 'experts', often from the business community. The Quality of legal system and property rights protection index, produced by the Fraser Institute, is the only variable offering a 'long-term' view. The results, using such index, show that Bangladesh has historically had significantly worse governance quality than countries with the same income: the Bangladesh dummy is always negative and significant expect for 1995. When looking at recent history (from the mid-1990s to 2010), it seems that the process of development has improved some dimensions of governance quality, at least in the sense that it is no longer abnormally low. But then Bangladesh continues to have lower ratings in terms of Political Stability and Control of Corruption than in countries with the same income level, for example.

Table 3 also reports the sample size for each regression we run (a concern related also to point 3 below). The results do not change significantly when the analysis is restricted to the same sample of countries over time.

The amendments to the paper are as follows:

- *In section 4, we have added a new sub-section titled "Does governance quality matter?", reporting and discussing the table below.*

Table 3. Coefficient on Bangladesh dummy in governance quality regressions: 1980-2010

Year	1980	1985	1990	1995/1996	2000	2005	2010
Quality of legal system and property rights protection (Gwartney and Lawson 2007)							
	-1.29***	-1.36***	-1.44***	0.57***	-0.81***	-0.67***	-0.70***
	(0.26)	(0.22)	(0.21)	(0.18)	(0.16)	(0.13)	(0.14)
N	59	75	78	87	87	103	106
Regulatory quality (World Bank 2011)							
				0.48***	0.10	-0.13**	-0.11*
				(0.11)	(0.08)	(0.06)	(0.06)
N				141	145	145	146
Rule of law (World Bank 2011)							
				0.09	0.15**	0.03	0.07
				(0.07)	(0.06)	(0.06)	(0.05)
N				129	145	145	146
Political stability (World Bank 2011)							
				-0.13	0.30***	-0.86***	-0.68***
				(0.11)	(0.10)	(0.10)	(0.10)
N				138	140	145	146
Control of corruption (World Bank 2011)							
				0.22**	-0.17***	-0.50***	-0.25***
				(0.09)	(0.06)	(0.05)	(0.05)
N				114	145	145	146
Government effectiveness (World Bank 2011)							
				0.08	0.33***	0	-0.02
				(0.06)	(0.06)	(0.05)	(0.05)
N				141	145	145	146

Governance quality data is from Gwartney and Lawson (2007), World Bank (2011), Teorell et al (2013). GDP data is from the PENN World Tables 7.0 (Heston et al 2011). The dependent variable in each regression is an indicator of governance quality. All regressions control for one-year lagged level of per capita income (log) and are conducted on a sample of developing economies. Heteroskedasticity-robust standard errors are in parentheses; ***, ** and * indicate significance at 1%, 5% and 10% level (two-tailed test).

We also updated the text to clarify the implications of poor governance for social development. First, we include new references on the link between governance and social performance and add the following to the text in section 4: "If anything, poor governance may undermine the effectiveness of social spending (e.g., Gupta et al 2002; McGuire, 2006). Indeed, cross country analysis further shows that the positive effects of both education and health spending on respective social outcomes are strongly influenced by the quality of governance (Rajkumar and Swaroop, 2008)." In addition, in sub-section 4(d) titled "Which lessons from the Bangladeshi experience?" we add: "By the 1990s, approximately 80 percent of Bangladeshi villages were covered by some NGO program or project (World Bank 2005). The NGO-led development also helped partially overcome "capacity deficit" arising from poor governance in the government social service delivery system. This may explain why Bangladesh was able to improve social indicators despite worsening governance quality."

4. The paper does not provide adequate explanations for the "paradox". It documents the human development surplus and allegedly refutes the two pathways (namely, the public social expenditure and aggregate economic growth) as explanations for the existence of such paradox. In the process, however, it pays no attention to the other channels (such as the role of public infrastructures) associated with public spending and other effects (such as the role of poverty) associated generally with growth. Without these additional econometric treatments of public policy and growth variables it seems premature for me to jump at the

conclusion that the "other factors" such as low-cost solutions, role of NGOs, and (complex) synergistic inter-relationship among different social indicators are the real pathways that might explain the exceptional HD gains enjoyed by Bangladesh. If the low-cost solutions technologically determine the favorable outcomes then one would have expected similar gains in other country contexts where such low-cost technology (fertility control, immunization) were tried out but not met with as much success as arguably in Bangladesh.

5. In particular, I find the two important channels that are missing in the paper: (a) that the paper did not make adequate allowance for the role of public infrastructural spending (rural roads and bridge) which had strong effects on health and educational outcomes through improved connectivity, lower transport costs and greater physical mobility of people for commuting and accessing schooling and health care services; (b) the paper did not explore the channel of private demand for human development via faster reduction of poverty. Hence, I am not convinced that without testing the effects of these two channels the author could come to any resolution of the debate between "income-mediated" and "support-led" human development. Amartya Sen would include poverty reduction in the income-mediated channel and public infrastructural spending in the support-led channel.

Authors' reply: *Points 4 and 5 are closely related, so we provide a unified response. Reviewer#1 raises two important issues here, namely the role of public infrastructures and the contribution of poverty income (highlighting the role of private income). We concede that they both deserve further scrutiny in the paper, if one wants to explain Bangladesh's path to development.*

In particular, the reviewer suggests that we econometrically test these two channels. Regarding the public infrastructure channel, the solution would be to use data on transport and communication infrastructure (e.g., road density). The World Development Indicators provide only five such variables with meaningful country coverage. However, apart from one variable (telephone lines per 100 people), the time coverage is quite short (and the country coverage can be erratic as well).

Regarding the role of private income, this is partly accounted for as we control for per capita income in the original draft (i.e. the estimated deviations for Bangladesh are net of the income-mediation effect). Even when compared to countries like India (which enjoyed much higher economic growth), social progress is higher and more broad-based (on this, see Dreze 2004). We now make this point clearer in sub-section 2(b). In addition, analysis of the timings of the development gains (particularly in immunization and fertility control) indicate that income-mediated explanation did not apply to Bangladesh for many indicators such as contraception prevalence and child mortality rate. Infant and child mortality rate started to decline since the mid-1980s when economic growth rate was rather modest. By the turn of the new millennium, there was therefore a consensus amongst policymakers on this. To quote from the UNDP's HDR on Bangladesh published in 2000, "All these impressive successes show that improvements in living standard need not be mediated through private income growth. There is room to a considerable extent for public action to directly influence the pace of social progress…..This is not to de-emphasise the rapid growth in per capita…" (UNDP, 2000).

However, poverty did reduce significantly during 2000-10 and this makes it plausible that much of the social progress seen in the last 10 years could be owing to increased household income. As per referee suggestion, therefore, we now systematically examine the poverty hypothesis using the same regression-based approach but making use of standard poverty

variables (e.g., poverty headcount and intensity). Table 6 (also copied below) tests whether and when Bangladesh has abnormally different levels of poverty or transport and communication infrastructure endowments than countries with the same level of national income. The results suggest that transport and communication infrastructures are unlikely to be the main drive to social development in Bangladesh. However, it does seem to have developed a significantly greater road density than countries with the same level of income, but the unavailability of data over time does not allow to assess when this advantage dates back to.

The regression results indicate that Bangladesh has had a higher number of poor compared to countries with the same level of income. However, there is also evidence that the intensity of poverty is decreasing faster, compared to countries with the same level of GDP, since the 1980s. This would indicate that poverty reduction could begin to have some impact subsequent progress in development outcomes. In particular, the 'private demand' for development may have originated from that segment of the population that still belongs to the bottom quintile or decile but, as a result of an increase in income, is about to transition out of poverty.

Table 6 also reports the sample size for each regression we run (a concern related also to point 3 below). The results do not change significantly when the analysis is restricted to the same sample of countries over time.

The amendments to the paper are as follows:

- *In section 4, we amend sub-section 4.2 reporting the new regressions results and a brief discussion of the above factors (public infrastructures and poverty reduction).*

Table 6. *Coefficient on Bangladesh dummy in infrastructure, external aid, poverty and private expenditure regressions: 1970-2010*

1971-1975	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**
Panel (a): Foreign aid channel							
Net ODA received per capita (current US$)							
-8.83***	-15.25***	-26.98***	-41.85***	-59.04***	-39.31***	-43.61***	-71.61***
(2.10)	(4.23)	(5.33)	(7.07)	(9.61)	(7.21)	(5.21)	(8.93)
112	110	111	112	128	133	133	132
External resources for health (% of total expenditure on health)							
				-7.41***	-10.41***	-10.47***	-14.80***
				(1.43)	(2.36)	(1.91)	(1.77)
N				130	145	146	144
Panel (b): Public infrastructure channel							
Internet users (100 people)							
					0.01	-1.21**	-3.64***
					(0.11)	(0.47)	(0.94)
N					142	145	143
Mobile cellular subscriptions (per 100 people)							
		-0.00	0.01	0.13**	0.33	-2.16*	-5.40***
		(0.00)	(0.01)	(0.06)	(0.28)	(1.15)	(2.06)
N		120	120	129	144	145	144
Telephone lines (per 100 people)							
-0.11	0.27	0.49*	0.46	0.40	-1.18**	-2.19***	-3.25***
(0.18)	(0.21)	(0.27)	(0.35)	(0.42)	(0.55)	(0.64)	(0.63)
90	105	119	120	131	144	145	144
Roads, paved (share of total mileage)							
				-13.10***	-18.82***	-19.60***	-21.07***
				(2.99)	(3.36)	(2.55)	(3.41)
N				104	115	125	69
Roads density (km of road per 100 sq. km of land area)							
						72.73***	
						(4.01)	
N						134	
Panel (c): Poverty reduction channel							
1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010
Poverty headcount ratio at $1.25 a day (PPP) (% of population)							

	3.02	3.33	11.65***	7.65***	6.15***	2.86
	(6.17)	(4.30)	(3.15)	(2.88)	(2.05)	(2.51)
N	20	43	69	81	95	84
Poverty headcount ratio at $2 a day (PPP) (% of population)						
	8.51	5.56	14.31***	11.43***	11.85***	16.01***
	(5.82)	(5.27)	(2.89)	(2.34)	(1.74)	(2.05)
N	20	43	69	81	95	84
Poverty gap at 1.25$ a day (PPP) (%)						
	-2.07	-5.90*	-2.67	-3.05	-2.74**	-5.75***
	(3.03)	(3.03)	(2.41)	(2.07)	(1.26)	(1.77)
N	20	43	69	81	95	84
Poverty gap at 2$ a day (PPP) (%)						
	1.63	-1.35	3.78	2.15	2.16	0.56
	(4.08)	(3.16)	(2.47)	(2.11)	(1.43)	(1.80)
N	20	43	69	81	95	84
Panel (d): Private health expenditure channel						
Out-of-pocket health expenditure (% of total expenditure on health)						
			14.99***	10.46***	13.20***	18.79***
			(2.66)	(2.37)	(2.25)	(2.27)
N			130	145	146	144

Infrastructure, aid, poverty and health spending data are from World Bank (2011). GDP data is from the PENN World Tables 7.0 (Heston et al 2011). GDP data is from the PENN World Tables 7.0 (Heston et al 2011). The dependent variable in each regression is measured as a five-year average. All regressions control for one-year lagged level of per capita income (log) and are conducted on a sample of developing economies. Heteroskedasticity-robust standard errors are in parentheses; ***, ** and * indicate significance at 1%, 5% and 10% level (two-tailed test).

6. The paper is exclusively focused on cross-country data, but could look for more national evidence in further support of the argument in favor of the role of NGOs as well as public social spending. A separate section on reviewing the national evidence could have better elucidated the role of NGOs and public infrastructural spending for accelerated pace of human development. For instance, the paper notes that "it is in this context that we conjecture on the role of NGOs, though this is not empirically tested because of a lack of data" (p.4). But, there are such data if one goes by the national evidence. First, the World Bank poverty assessment and other publications are available to show that the economically lagging (Western) regions of Bangladesh had higher social development in 1990s and 2000s due to the greater concentration of NGOs compared to the economically leading (Eastern) regions. Second, the important role of NGOs in Bangladesh-not found elsewhere-may also be an evidence of inclusive public support policy. Third, the role of NGOs may not be that crucial in adding extra-budgetary resources to public social spending (after all, "NGO-financing of total health spending was quite low during 1997-2007"-to the tune of 1-2%; see p.18). It is the more targeted health and education programs that are supported by NGOs and associated norms-changing behaviors which possibly made considerable difference at a relatively low level of social spending. Fourth, following the same logic one could argue that it is not the overall public social spending per capita that mattered in Bangladesh, but a clear intra-sectoral re-orientation since 1990 towards basic (primary and secondary education) and primary health that made important difference to exceptional human development outcomes. The two countries with same level of per capita income may have same spending per capita but with very different intra-sectoral reallocation patterns with implications for broad-based human development. Just considering the magnitude of public social spending per capita comparisons across countries that does not take into account the within-sector re-allocation favoring the rural areas would not reveal its true importance. Such reallocations can only be shown by national data. Fifth, the role of public social policy is important enough to take into account here. For instance, the training of the religious leaders since 1980 helped to consolidate favorable social attitude towards family planning. Before dismissing the channel of public social expenditure as a pathway to achieving exceptional gains in human development all the above five points need to be addressed.

Authors' reply: *The referee makes a number of very relevant and important points here. Indeed it is possible to empirically test the contribution of factors such as NGO activities using sub-national data. However, causally establishing the link between NGO and human development outcome on its own is an important line of query and outside the remit of the paper. Whilst it is widely acknowledged that NGOs as a group promoted innovative solutions to address issues of poverty, unemployment, health, and education, causal evidence on the developmental impact of NGO run programs is limited. There is some descriptive evidence on the positive effect of such programs on child survival and nutritional status, family planning practices and children's education (e.g. see Chowdhury and Bhuiya, 2004). Anecdotal evidence also attributes the progress in poverty reduction and human development in Western Bangladesh in the 2000s to NGO interventions. Nonetheless, we now discuss these issues in details in sub-section 4(d) (see page 26).*

The referee further suggests that we consider national evidence (e.g. regional patterns in human development) when in interpreting the results based on cross-country data. We have accordingly updated the discussion by citing national studies (e.g. World Bank, 2003; Chowdhury and Bhuiya, 2004; Sen, Mujeri, and Shahabuddin, 2007; World Bank, 2008; *Khandker, Bakht and Koolwal, 2009; Sen and Ali, 2009) which also include research on regional variations in social indicators. Since the paper is already long, we have kept this discussion short instead of being organized in a separate section; see last para of section 4(b) and footnote 27. Here, we also emphasise the issue of changes in the composition of public spending and how that may have mattered for social developments.*

II. Specific Component Based Comments:

1. The paper finds-though not commented upon-that Bangladesh already had some initial advantage even as early as 1971-75 with respect to school enrollment (for both boys and girls) and for population growth. It also discusses partly that the TFR and age-dependency ratio were already lower for Bangladesh during 1981-85 in cross-country comparisons. This shows the formation of favorable initial demographic conditions at the start of the growth process around the early 1980s when the per capita national income restored to the 1970 level. This finding seems to be a crucial departure from other country comparators: some role of favorable pre-existing institutions (including government policy response to the 1974 famine) may be cited here.

Authors' reply: We thank the referee for this comment which comment also gave us the opportunity to recalculate all the results originally reported in Table 2, as we found a minor mistake in Stata code we used relating the 1971-1975 and 1976-1980 periods. The revised version of Table 2, below, reports all the correct results (the amendments are in bold font). The differences with the results in the original version of the paper are generally negligible. However, while the 1971-1975 'surplus' in education is indeed genuine, it relates only to a sub-group (i.e. male population). What led to such allegedly favourable initial conditions is unclear to us. Also, we clarify that under-5 mortality rate and the total fertility rate were higher in 1971-1975 than countries with the same level on national income. Finally, the revised version of table 2 also reports the sample size for each regression we run, which relates to a concern raised by Reviewer#1 below (see point 3).

The amendments to the paper are as follows:

- In section 3.3, Table 2 regression results relating the 1971-1975 and 1976-1980 periods have been amended accordingly.

Table 2. *Coefficient on Bangladesh dummy in health, education and demographic outcomes regressions: 1970-2010*

1971-1975	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**
Panel (a): Health outcomes							
Low birth-weight babies (% of births)							
			35.13***	33.52***	15.73***	21.51***	8.17***
			(1.15)	(2.03)	(0.73)	(0.83)	(0.90)
			86	87	115	92	94
Mortality rate, infant (per 1,000 live births)							
31.21* **	**22.43*** **	13.21***	6	-2.39	-10.27***	-16.64***	-19.29***
(5.48)	**(5.62)**	(4.90)	(4.55)	(3.65)	(2.71)	(2.44)	(2.61)
107	115	122	123	134	147	147	147
Mortality rate, under-5 (per 1,000)							
29.95* **	**15.62**	2.80	-7.86	-19.22***	-28.47***	-37.08***	-39.09***
(10.41)	**(10.65)**	(9.22)	(8.74)	(7.07)	(5.23)	(4.51)	(4.57)
107	115	122	123	134	147	147	147
Panel (b): Education outcomes							
Literacy rate, adult, total (% of people aged 15 and above)							
		-24.22**		-15.75**		-12.03***	-13.37***
		(10.12)		(6.39)		(3.52)	(2.50)
		25		43		83	123
Literacy rate, adult male (% of male aged 15 and above)							
		-23.82**		-15.80**		-15.17***	-15.52***
		(8.68)		(5.94)		(3.34)	(2.12)
		24		43		83	123
Literacy rate, adult female (% of female aged 15 and above)							
		-26.02**		-16.85**		-9.89**	-11.62***
		(11.45)		(7)		(3.77)	(2.94)
		24		43		83	123
School enrolment, primary (% gross)							
4.76	**-2.28**	-18.29***	-9.65**			5.73**	0.14
(3.82)	**(4.81)**	(6.04)	(4.46)			(2.76)	(2.98)
111	112	113	114			138	140
School enrolment, primary, male (% gross)							
15.02* **	**6.97**	-10.56**	-8.53*			-1.88	-7.02**
(3.76)	**(5.12)**	(4.77)	(4.32)			(2.66)	(2.82)
107	106	105	111			137	140
School enrolment, primary, female (% gross)							
-5.59	**-7.33**	-14.78***	-9.62**			14.34***	7.63**
(4.32)	**(5.28)**	(5.36)	(4.85)			(3.10)	(3.22)
107	106	105	111			137	140
School enrolment, secondary (% gross)							
3.36	**0.35**	0.11	-2.83		10.76***	9.76***	1.31
(2.09)	**(2.65)**	(2.11)	(2.59)		(2.74)	(2.34)	(2.25)
110	108	108	108		129	135	131
School enrolment, secondary, male (% gross)							
9.07* **	**2.87**	2.28	-0.77		8.30***	4.73*	-3.39
(1.94)	**(2.82)**	(2.26)	(2.68)		(2.66)	(2.41)	(2.34)
104	94	94	97		125	132	129
School enrolment, secondary, female (% gross)							
-0.82	**-6.36** **	-4.60**	-5.12*		13.80***	14.84***	6.12**
(1.81)	**(2.73)**	(2.30)	(2.66)		(2.92)	(2.57)	(2.35)
104	94	94	97		125	132	129
School enrolment, tertiary (% gross)							
0.47	**1.26***	1.91***	1.69***		-1.12	-1.90	-2.72
(0.46)	**(0.65)**	(0.64)	(0.59)		(1.06)	(1.26)	(1.67)
92	101	97	102		118	114	107
School enrolment, tertiary, male (% gross)							
1.90* **	**2.14** **	3.66***	3.51***		-0.67	-0.70	-1.25
(0.58)	**(0.82)**	(0.75)	(0.52)		(1.16)	(1.25)	(1.54)
79	88	81	80		107	111	102
School enrolment, tertiary, female (% gross)							
-0.46	0.05	0.69	0.72		-2.08*	-2.87**	-4.76**
(0.42)	(0.57)	(0.59)	(0.55)		(1.21)	(1.38)	(2.10)
79	88	81	80		107	111	102

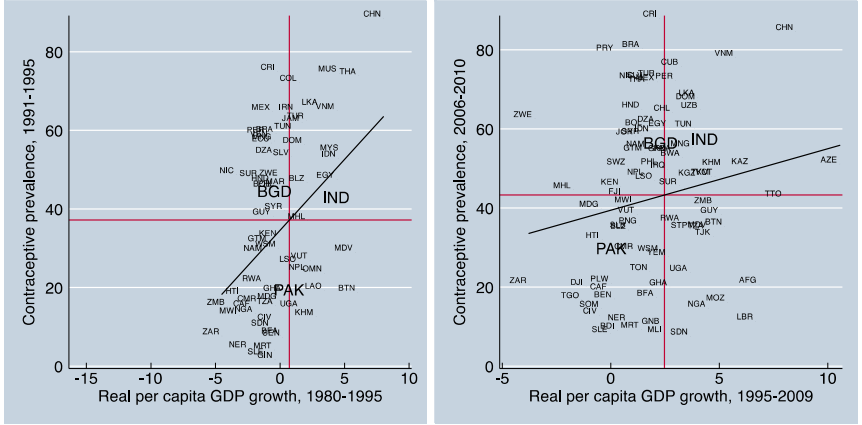
Panel (c): Demographic outcomes							
Population growth (annual %)							
-1.24* **	**0.20**	-0.05	0	0.04	-0.22	-0.32**	-0.62***
(0.16)	**(0.21)**	(0.15)	(0.15)	(0.23)	(0.17)	(0.14)	(0.22)
122	122	123	123	134	147	147	147
Fertility rate, total (births per woman)							
0.39* **	**0.02**	-0.53***	-1.20***	-1.61***	-1.65***	-1.84***	-1.93***
(0.12)	**(0.16)**	(0.16)	(0.16)	(0.16)	(0.15)	(0.14)	(0.14)
120	119	121	123	133	147	146	142
Population, female (% of total)							
-1.56* **	**-1.45*** **	-1.74***	-1.81***	-2.28***	-2.21***	-1.97***	-1.60***
(0.18)	**(0.23)**	(0.22)	(0.17)	(0.33)	(0.28)	(0.27)	(0.32)
116	116	116	116	127	140	140	140
Age dependency ratio (% of dependents, younger than 15 and older than 64, to the working-age population)							
	0.82	-2.72*	-7.45***	-9.50***	-14.20***	-16.81***	-19.55***
	(1.44)	(1.45)	(1.46)	(1.26)	(1.16)	(1.28)	(1.47)
	116	116	122	140	140	140	140

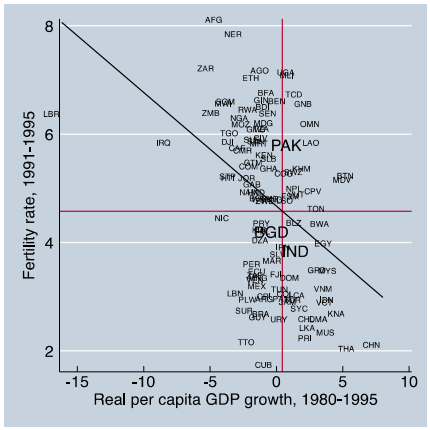
Data is from the 2011 World Development Indicators (World Bank, 2011), while GDP data is from the PENN World Tables 7.0 (Heston et al 2011). The dependent variable in each regression is measured as a five-year average. All regressions control for one-year lagged level of per capita income (log) and are conducted on a sample of developing economies. Heteroskedasticity-robust standard errors are in parentheses; ***, ** and * indicate significance at 1%, 5% and 10% level (two-tailed test).

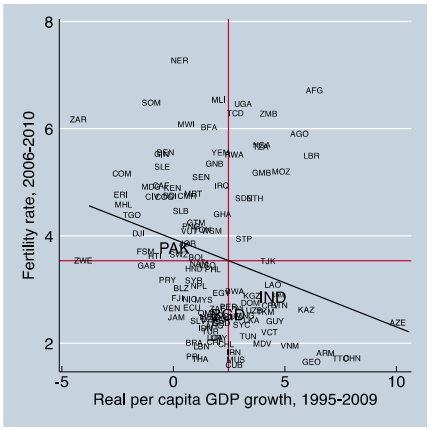
2. The Ranis diagram needs to be improved. Two points to be noted. First, the preferred diagram should be real per capita GDP growth on the x-axis and "non-income HDI" on the y-axis. The latter is available in the international data base. This would give a better idea as to where Bangladesh actually falls in terms of 4 quadrants. Second, such diagram should also be carried out for selected social indicators-fertility, child mortality, gender parity in education, and primary completion rate, etc. This will clearly show how Bangladesh's position has changed across quadrants depending on the indicator, and more clearly reveal the exceptional gains in human development.

Authors' reply: *As per the suggestion of Reviewer-2 (and concerns raised by Reviewer-3), we have taken Figure 6 out of the revised manuscript. Therefore, the point raised here by Reviewer-1 is no longer relevant. In addition to removing Figure 6, we also follow the above suggestion made by Referee-1 by producing a set figures, in the same spirit as the Ranis diagram, but based on (the same) selected social indicators (as Figures 1-5). We only present these here; they are not incorporated in the main paper for two reasons: (a) for some graphs don't permit a comparison of India, Pakistan and Bangladesh because of missing data for a particular time period and (b) the paper is already long and we've moved away from the earlier focus on HDI data and hence the Ranis diagram.*

Figure 6. *Social development and per capita income growth (selected indicators), 1980-2009*




Fertility rate, 1991-1995
Real per capita GDP growth, 1980-1995
PAK
BGD
IND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Real per capita GDP growth, 1995-2009
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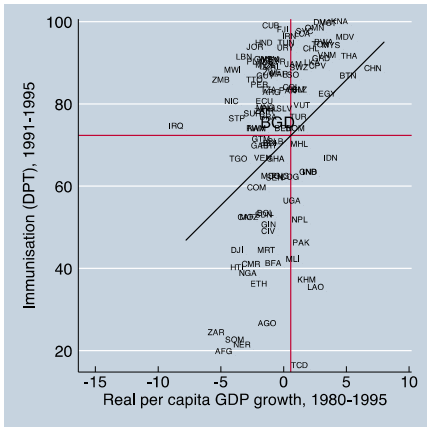
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Real per capita GDP growth, 1980-1995
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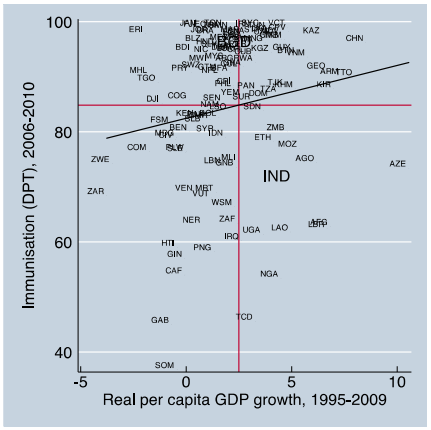
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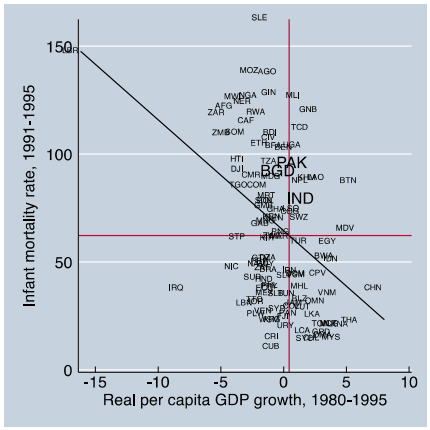
Infant mortality rate, 1991-1995
Real per capita GDP growth, 1980-1995
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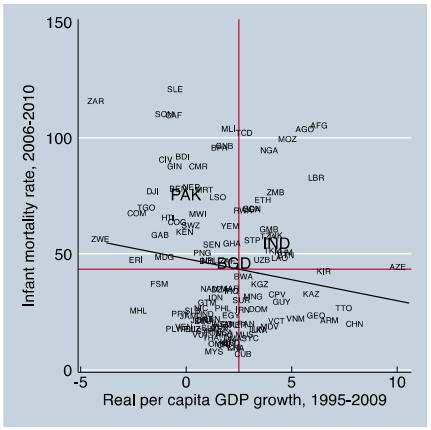
Infant mortality rate, 2006-2010
Real per capita GDP growth, 1995-2009
PAK
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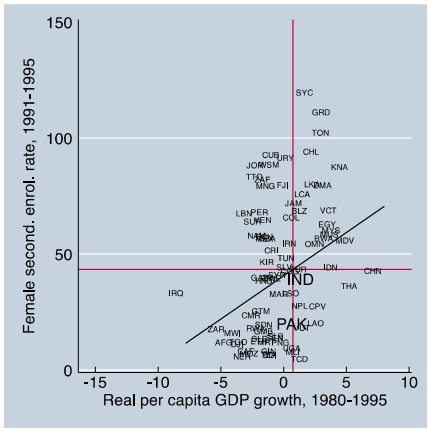
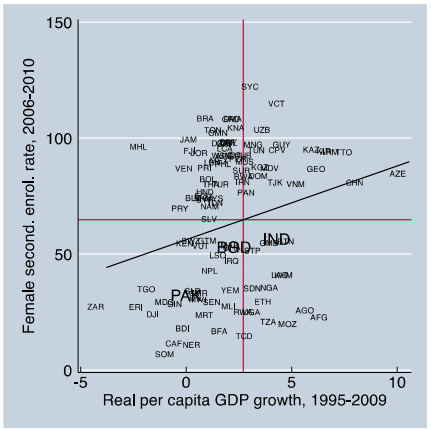

Female second. enrol. rate, 1991-1995
Real per capita GDP growth, 1980-1995
PAK
IND


Female second. enrol. rate, 2006-2010
Real per capita GDP growth, 1995-2009
PAK
BGD
IND

3. On interpreting the meaning of the coefficient on the Bangladesh dummy presented in Tables 2 and 3, one needs to be careful. The paper often compares the value of the Bangladesh dummy across the periods. However, the tables do not mention the number of country observations used in each regression. The matched coefficient for Bangladesh for a given social indicator can only be strictly compared across the sub-periods if the group of comparator countries also remains the same across all the sub-periods. I would therefore suggest that the author presents a summary table whereby the coefficient on the Bangladesh dummy is compared for a cohort of countries that remains unchanged for the entire period for a selected social indicator.

Authors' reply: *This point is well taken. The referee is correct in remarking that we should have been explicit about how we conducted the comparison over time of the key regression results. The results reported in the paper are not based on the same sample over time. We preferred to use the largest possible sample in order to avoid any significant loss in degrees of freedom. For some of the variables the country coverage can significantly fluctuate over time (countries that were observed in a given five-year episode may not be all included in the next period, without any consistent pattern).*

In order to show that such choice does not affect the key results, below we report the regression estimates in tables 2, 3 and 4, once we restrict the analysis to same set of countries for each of the development outcomes under scrutiny. This new set of results (Table 2bis and 3bis) is indeed quite similar to the one present in the original draft: same sign of Bangladesh dummy, while its magnitude is usually slightly different. In most cases this reflects the fact that altering an already small sample size may indeed produce this effect (as well as increasing the standard errors).

The amendments to the paper are as follows:
In section 3, we have extended footnote (iv), adding a short paragraph describing the sample size and clarifies that it may vary over time, without any major consequences for the interpretation of our results and findings.

Table 2bis. *Coefficient on Bangladesh dummy in health, education and demographic outcomes regressions: 1970-2010*

1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010
Panel (a): Health outcomes							
Low birth-weight babies (% of births) (86 developing economies)							
			35.13***	32.92***	14.33***	20.69***	8.12***
			(1.15)	(2.84)	(1.04)	(1.07)	(0.93)
Mortality rate, infant (per 1,000 live births) (107 developing economies)							
31.21***	21.21***	12.30**	5.51	-5.19	-13.60***	-18.80***	-20.62***
(5.48)	(5.66)	(5.36)	(5.01)	(4.10)	(2.96)	(2.63)	(2.88)
Mortality rate, under-5 (per 1,000) (107 developing economies)							
29.95***	13.06	0.61	-9.31	-25.63***	-36.23***	-42.32***	-42.40***
(10.41)	(10.82)	(10.12)	(9.65)	(7.97)	(5.75)	(4.79)	(4.97)
Panel (b): Education outcomes							
Literacy rate, adult, total (% of people aged 15 and above) (25 developing economies)							
		-24.22**		-27.88**		-13.23*	-18.53**
		(10.12)		(10.65)		(6.63)	(6.80)
Literacy rate, adult male (% of male aged 15 and above) (24 developing economies)							
		-23.82**		-28.48***		-17.67***	-19.83***
		(8.68)		(8.46)		(5.35)	(5.60)
Literacy rate, adult female (% of female aged 15 and above) (24 developing economies)							
		-26.02**		-28.17*		-9.62	-17.41**
		(11.45)		(12.81)		(8.22)	(8.03)
School enrolment, primary (% gross) (111 developing economies)							
4.76	0.35	-15.44**	-6.75			6.17**	-1.00
(3.82)	(4.80)	(6.21)	(4.46)			(3.11)	(3.29)
School enrolment, primary, male (% gross) (105 developing economies)							
15.02***	8.55*	-8.39*	-6.60			-1.73	-8.49***

(3.76)	(5.07)	(4.92)	(4.46)			(3.06)	(3.14)
School enrolment, primary, female (% gross) (105 developing economies)							
-5.59	-4.45	-12.12**	-6.98			15.80***	6.82*
(4.32)	(5.19)	(5.55)	(5.02)			(3.49)	(3.62)
School enrolment, secondary (% gross) (108 developing economies)							
3.36	1.17	0.22	-2.48		16.85***	14.81***	5.65***
(2.09)	(2.61)	(2.09)	(2.64)		(2.70)	(2.17)	(2.08)
School enrolment, secondary, male (% gross) (94 developing economies)							
9.07***	5.73**	3.47	0.39		13.99***	10.47***	0.95
(1.94)	(2.34)	(2.22)	(2.76)		(2.73)	(2.30)	(2.27)
School enrolment, secondary, female (% gross) (94 developing economies)							
-0.82	-3.32	-3.34	-3.86		20.35***	20.92***	10.98***
(1.81)	(2.32)	(2.18)	(2.69)		(2.90)	(2.44)	(2.16)
School enrolment, tertiary (% gross) (92 developing economies)							
0.47	1.08	2.08***	1.58**		0.22	0.13	-2.35
(0.46)	(0.68)	(0.70)	(0.65)		(1.12)	(0.92)	(1.77)
School enrolment, tertiary, male (% gross) (79 developing economies)							
1.90***	1.92**	3.92***	3.58***		1.51	2.06**	1.45
(0.58)	(0.93)	(0.87)	(0.56)		(1.47)	(0.82)	(1.60)
School enrolment, tertiary, female (% gross) (79 developing economies)							
-0.46	-0.05	0.75	0.68		-0.54	-0.56	-1.41
(0.42)	(0.67)	(0.72)	(0.57)		(1.53)	(1.14)	(2.27)
Panel (c): Demographic outcomes							
Population growth (annual %) (122 developing economies)							
-1.24***	0.20	-0.06	-0.00	-0.03	-0.51***	-0.57***	-0.97***
(0.16)	(0.21)	(0.15)	(0.15)	(0.21)	(0.16)	(0.11)	(0.13)
Fertility rate, total (births per woman) (119 developing economies)							
0.39***	0.02	-0.53***	-1.20***	-1.73***	-1.94***	-2.05***	-2.08***
(0.12)	(0.16)	(0.16)	(0.16)	(0.15)	(0.14)	(0.13)	(0.14)
Population, female (% of total) (116 developing economies)							
-1.56***	-1.45***	-1.74***	-1.81***	-1.73***	-1.58***	-1.38***	-0.98***
(0.18)	(0.23)	(0.22)	(0.17)	(0.16)	(0.13)	(0.11)	(0.10)
Age dependency ratio (% of dependents, younger than 15 and older than 64, to the working-age population) (116 developing economies)							
	0.82	-2.72*	-6.88***	-10.45***	-15.34***	-17.95***	-20.67***
	(1.44)	(1.45)	(1.40)	(1.15)	(1.12)	(1.29)	(1.54)

Data is from the 2011 World Development Indicators (World Bank, 2011), GDP data is from the PENN World Tables 7.0 (Heston et al 2011). The dependent variable in each regression is measured as a five-year average. All regressions control for one-year lagged level of per capita income (log) and are conducted on a sample of developing economies. Heteroskedasticity-robust standard errors are in parentheses; ***, ** and * indicate significance at 1%, 5% and 10% level (two-tailed test).

Table 3bis. *Health and education public expenditure in Bangladesh: 1976-2010*

Period	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**
Panel (c): Coefficient on Bangladesh dummy in health and education expenditure regressions							
Public spending on education, total (% of GDP) (71 developing economies)							
	-2.85***	-3.17***			-2.14***	-2.07***	-1.85***
	(0.34)	(1.06)			(0.59)	(0.49)	(0.46)
Health expenditure, public (% of GDP) (130 developing economies)							
				-0.79***	-1.02***	-1.39***	-1.90***
				(0.18)	(0.15)	(0.16)	(0.21)

Data is from the 2011 World Development Indicators (World Bank, 2011), while GDP data is from the PENN World Tables 7.0 (Heston et al 2011). Both types of public expenditures are expressed as share of GDP and measured as five-year averages. The developing countries group includes low, upper- and lower-middle income economies, following the World Bank classification. The dependent variable in each regression is measured as a five-year average. Both regressions control for one-year lagged level of per capita income (log) and are conducted on a sample of developing economies.

Table 4bis. *Coefficient on Bangladesh dummy in health, demographic and education inputs regressions: 1970-2010*

1971-1975	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**
Panel (a): Health inputs							
Immunization, DPT (% of children ages 12-23 months) (115 developing economies)							
		-26.49***	-22.39***	13.16***	12.38***	17.62***	14.51***
		(3.31)	(3.43)	(3.00)	(2.43)	(1.97)	(1.61)
Immunization, measles (% of children ages 12-23 months) (114 developing economies)							
		-28.43***	-24.76***	12.87***	6.43**	7.95***	17.94***
		(3.31)	(3.11)	(2.88)	(2.60)	(2.13)	(1.84)
Births attended by skilled health staff (% of total) (78 developing economies)							
				-33.01***	-37.44***	-34.87***	-34.11***

				(4.27)	(4.27)	(2.93)	(3.43)
Hospital beds (per 1,000 people) (55 developing economies)							
	-1.91***	-1.79***	-1.18***	-0.40	-0.70**	-0.79**	
	(0.39)	(0.44)	(0.24)	(0.59)	(0.34)	(0.37)	
Panel (b): Education inputs							
Pupil-teacher ratio, primary (90 developing economies)							
9.60***	10.32***	5.01**	19.66***			3.54	4.36**
(1.48)	(2.31)	(1.94)	(2.24)			(2.18)	(1.95)
Pupil-teacher ratio, secondary (84 developing economies)							
1.94***	-0.66	3.49**	3.51***		14.12***	6.26***	-1.16
(0.67)	(1.32)	(1.61)	(1.11)		(1.01)	(1.19)	(1.78)
Panel (c): Demographic inputs							
Contraceptive prevalence (% of women aged 15-49) (44 developing economies)							
	0.53	3.76	10.94**	25.39***	27.86***	28.38***	16.01***
	(4.84)	(7.86)	(5.13)	(4.47)	(4.94)	(4.42)	(5.76)

Data is from the 2011 World Development Indicators (World Bank, 2011), while GDP data is from the PENN World Tables 7.0 (Heston et al 2011). Both types of public expenditures are expressed as share of GDP and measured as five-year averages. The developing countries group includes low, upper- and lower-middle income economies, following the World Bank classification. The dependent variable in each regression is measured as a five-year average. Both regressions control for one-year lagged level of per capita income (log) and are conducted on a sample of developing economies.

4. Two minor points regarding the estimation. First, the regressions used for prediction should use regional (South Asia, Sub-Saharan Africa, etc) fixed effects because natural and human resources may significantly vary among countries falling under the different regions even within the group of similar level of current per capita income. Second, it is not clear how the "developing country sample" has been defined. Does it include the developing countries clubbed under "Europe and Central Asia"? If not, the exercise should include those countries.

Authors' reply: *Reviewer#1 here makes two fair comments on the methodology. Both need some elaboration.*

Starting with the (second) point on the sample composition, we now clarify in ***table 1 notes*** *that the sample of developing countries is composed all middle- and low-income countries following the World Bank classification (as reported in the World Development Indicators 2011). It includes also European and Central Asian economies that fall in the above classification. It also includes European and Central Asian economies that fall in the above classification.*

Regarding the other point, Reviewer#1 wonders why our regressions control only for GDP and not also for regional fixed effects, such as a South Asia dummy. Our regressions only control for GDP because this is in line with the hypothesis we planned to test: Bangladesh does better in social development than countries with the same level of income. In fact, our main interest is to assess the links between economic and social development in Bangladesh.[1] *However, Reviewer#1 is suggests that we should also assess Bangladesh social development in relation to regional fixed effects. This is interesting and plausible, but it is an extension of our testable hypothesis that perhaps would not add as much as one would hope. Suppose we introduce in our regressions a South-Asia dummy and the BGD dummy looses significance (which in econometric terms would imply that the BGD dummy picks the effect of an omitted variable, i.e., a regional effect). This would not deny our argument that Bangladesh indeed*

[1] Incidentally, such methodological approach using regressions analysis is consistent with at least another important country case study in the literature, i.e., Easterly's study on assessing human development progress of Pakistan (Easterly, W. (2003). 'The political economy of growth without development: a case study of Pakistan', in Rodrik D. (ed.), *In Search of Prosperity: Analytic Narratives on Economic Growth*, Princeton, NJ: Princeton University Press.).

enjoys some form of exceptionality. It would simply mean that Bangladesh' performance is as 'exceptional' as the average South Asian economy. But it would not be very insightful in terms of revealing where Bangladesh's exceptionality come from, because the South Asia regional fixed effect remains unspecified. That is why we prefer to investigate specific channels: the roles of public expenditure and governance quality, as well as poverty reduction and public infrastructure (as suggested by Reviewer#1). Moreover, introducing a South Asia dummy would be unlikely to be econometrically feasible, as it would also increase collinearity and make the regressions results less interpretable.

III. Missing Antecedent References:

The paper could also acknowledge a few past works in this area. The method of comparing the predicted vs. actual value for assessing Bangladesh's exceptional human development gains has been attempted earlier. The paper under the review is a more elaborate exercise along this line. Here I give below two missing references which can be profitably cited:

(a) Mujeri, M.K. and B. Sen (2006), "Economic Growth in Bangladesh, 1970-2000" in Kirit S. Parikh (ed.), Explaining Growth in South Asia, Oxford University Press, pp. 45-122. The Table 2.1 of this published paper (p. 54) gives the comparison between predicted and actual values for Bangladesh for 8 indicators based on similar approach adopted by the author. The table demonstrated that Bangladesh had improved performance compared to its income-predicted values for population growth rate, TFR, contraceptive prevalence rate, CBR, CDR, IMR, male life expectancy and male life expectancy even by the late 1990s.

(b) Abdullah, A. and B. Sen (1997), "25 years of Bangladesh: An Optimistic Perspective" (bangladesher pochish bochor: ekti itibacok prekkhit), Bangladesh Unnayan Shomikhya, Vol. 14, Annual Number, February, 1997, BIDS, Dhaka, pp. 1-14 (in Bangla). This may not have been accessible to the author for the obvious practical reason as it is published in the vernacular. The Tables 7 and 8 of this published paper done by Late Abu Abdullah carries out comparison for 5 indicators (expected life expectancy 1993, adult female illiteracy 1990, adult illiteracy 1990, TFR 1993, and contraceptive prevalence rate, 1988-1993) based on similar approach adopted by the author. The findings were that Bangladesh had better performance compared to its income-predicted values for TFR and contraceptive prevalence rate.

Authors' reply: *We thank the referee for bringing to our attention these two important studies. The referee comment has also encouraged us to review the existing literature more carefully. Since the revised version is already long, we did not discuss these papers in detail in the manuscript. Instead, we made the following amendment to the paper: "For existing research on Bangladesh's development achievements, see Abdullah and Sen (1997), UNDP (2000), Ahluwalia and Hussain (2004), Devarajan (2005),* Mujeri and Sen (2006), Sen, Mujeri, and Shahabuddin (2007), *Mahmud (2008), Mahmud, Ahmed, and Mahajan (2008), Mahmud, Asadullah and Savoia (2013) and Chowdhury, Bhuiya, Chowdhury, Rasheed, Hussain, and Chen (2013)." See footnote 1.*

Reviewer #2: Report on "Bangladesh's Path to Development: Is It a Paradox?" WD-2407

To summarize this paper briefly: the paper is interested in the relationship of human development measures, given (which is to say, conditional on) income levels for Bangladesh roughly over the years from 1980 to 2010 (the years vary depending on the specific empirical relationship examined in the paper). The author(s) is motivated in particular what has been labeled in economics writings in the media and academic circles as the `Bangladesh conundrum' or `Bangladesh paradox'. As I discuss in my comments below, the notion that this is a paradox, or even a puzzle, is a bit of a stretch, but the paper has identified Bangladesh as a useful case study of a country that has prioritized human development, despite its starting point well to the rear of most of the countries of the world, both in income levels, as well as in initial human development measures.

I say more on this point below, but while I think the `paradox' notion might be a useful motivator at the outset of the paper (i.e. in the Introduction), I think it has the hazard of making things less clear. Instead, I think the author's own work has identified useful ways of explaining the Bangladesh experience, and in my comments below, I expand on how reorganizing the paper, building on the existing work in the current draft, will make for a far more readable contribution. With that comment in mind, let me continue summarizing the paper: the author first shows in Table 1 that roughly around 1995, Bangladesh experienced a significant uptick in its economic growth, and thus its position in the world ranking of income levels (moving from the 10th percentile in 1980 to the 16th percentile by 2005). Their growth was not as substantial as India's over this time period, but it definitely outpaced Pakistan in the latter half of this time span. The bottom panel (c) of Table 1 sets scene of the `paradox', in that Bangladesh nearly kept pace with India in terms of its position ranked by the Human Development Index (HDI), whereas Pakistan's position as ranked by HDI remained essentially unchanged over this time span.

Let me turn now from mainly summarizing the paper, to now mainly offering comments, critiques, and suggestions on the remaining work in the paper. First, given the facts just discussed in the above two paragraphs, it would be interesting to know how much of the rapid improvement in Bangladesh's HDI was due to its rapid economic growth? For argument's sake, let's say it is 100% - if that is the case, then there is no `paradox' (though to be honest, even if it were less than 100%, I would still see no `paradox', but let me not raise that distracting issue here). There is no paradox in that hypothetical case, because Bangladesh - perhaps like India - has kept a roughly constant prioritization of human development, even as its economic growth accelerated. But even if there is no paradox, I still find the contribution of the paper quite useful, since it would be interesting to document the sources of the HD prioritization. So, for example, tabulations such as Table 3 on the share of public expenditure devoted to health and education are precisely the kind of empirical relationships we want to see, since even if the share of spending was constant, assuming the overall budget is a constant share of GDP, then given the increase in economic growth around 1995, we would expect to see this start to show up as an increase in the HDI in the 2000s.

Authors' reply: *Given the referee's concern over the interpretation of Bangladesh's development experience as a 'paradox', we have avoided doing so in the revised text. The referee also provides a detailed roadmap of how to reorganize the paper. As per referee advice, we have removed* ***figure 6*** *and the associated Table from the revised manuscript.*

The referee further asks: "how much of the rapid improvement in Bangladesh's HDI was due to its rapid economic growth?" Two points should be noted here. The revised version no longer focuses on Bangladesh's HDI ranking to describe its social progress. Therefore the link between growth and changes in HDI ranking is not examined directly. However, we do acknowledge the significance of economic growth for the observed social progress. To this end, the revised version discusses changes in poverty incidence over time holding the country's income level constant (see section 4(c)). If growth has succeeded in reducing more poverty in Bangladesh (considering its income level), that could then have aided social progress. Our results suggest some evidence to support this view though we did not find this to be statistically significant.

However, what I just described as what I would like to see, is not what the author actually does in the current version of the paper. Instead, driven by the need to show the `paradox' in the data, he presents Figures 1 to 4 in the paper, which are graphs of various (4) human development measures (in levels) on the y-axes, against GDP income levels on the x-axes. There are two panels for each HD measure, as the author shows the extent to which Bangladesh is an outlier given its distance to the fitted regression line for the early period (using the initial 1980 GDP per capita) and the later period (using GDP per capita in 2005 as the initial income measure). The graphs are rather small, but visually, it does seem apparent that, as we would expect, given the rapid growth Bangladesh had over the `later' period, its human development levels are more of an outlier given its initial income level. (If the editor requests a revision, let me suggest to the author to be sure to blow up the size of these Figures substantially - ideally a page each - and choose graphing symbols to help highlight, for example, the South Asian countries, etc.)

Authors' reply: *As per referee advice, we have revised the Figures 1-5 to make them more readable, blowing up the font size.*

Now like I said, this may be useful to visually display the `paradox', but I actually think that showing us Figure 1 is a backwards step in terms of the empirical exercise of showing us why Bangladesh experienced a rapid rise in its human development measures. What I would do is instead perhaps keep a `levels on levels' figure such as Figures 1 to 4 in the paper to set the stage of the paradox, though I would drop the idea of having the `early' and `later' panels for each of the 4 human development measures. Instead, I would then move on to a plot of growth (or improvement) in the human development measures against economic growth. In doing this, you will need to be careful about using simple percentage (or log) changes in the human development measures, since some of them, like literacy rates, infant mortality rates, and life expectancy rates, suffer from `ceiling effects' due to the fact that they are bounded above (or below, in the case of infant mortality), and so you need to make use of the so-called `shortfall (or gap) reduction' measures instead. But these changes on changes (or growth rate on growth rate) graphs will go a long way to showing us if there really is a paradox. It may well be that Bangladesh's improvement in HDI is really `non-spectacular' (i.e. not an outlier with respect to the regression line) given its rapid economic growth experience from 1995 to 2010. Furthermore, if Bangladesh lies above (or below) this regression line, then we can tell if Bangladesh has a relatively stronger (or weaker) prioritization of HD given its rapid growth experience.

Authors' reply: *The referee here suggests an alternative strategy for visual representation of the data. The referee is ok to retain Figure 1-4 but advises to do away with the `early' and `later' panels. These four Figures (along with Figure 5) are central to our analysis and hence*

we chose not to temper with them. The referee suggests that we re-organize the data analysis to pursue the hypothesis that "….Bangladesh's improvement in HDI is really `non-spectacular' (i.e. not an outlier with respect to the regression line) given its rapid economic growth experience from 1995 to 2010". To this end, the referee advice is to report "changes on changes" graphs. When revising the results, we have retained the focus on income level but have added extra results to investigate the role of economic growth. This has been done in two ways. First, we have checked whether Bangladesh experienced significant fall in poverty during periods of high macroeconomic growth. Second, we have examined the change in private spending on health (across high and low growth period). In all these analysis, per capita income has been kept constant. Our attempt to produce "changes on changes" graphs led to a drastic fall in sample size (since it required restricting analysis to countries for which social indicator data is present for all comparison years), reducing the scope for meaningful statistical analysis.

Given the visual evidence in Figures 1 to 4, I found Table 2 rather superfluous. The only added benefits of Table 2 relative to Figure 1 to 4 are: (1) you do this by 5 year interval, as opposed to the `early' and `later' splits you do in the graphs, and (2) you get a formal test on the hypothesis that Bangladesh is an outlier from the coefficient on the Bangladesh dummy. But given that Table 2 is very lengthy and actually hard to read, I would suggest dropping the table in favor of the Figures, you can just report the statistical significance of Bangladesh being an outlier in the text (by including the discussion that you ran these regressions to do the formal test). That will save you some space, and you also won't have to re-hash what is essentially the same empirical relationships that are in Figures 1 to 4. That saved space will then allow you to present much larger and better labeled Figures 1 to 4 to make your point.

Authors' reply: *The referee also suggested that we drop Table 2 in favour of graphical representation of the data. We could not agree on this point. We only used graphs to present descriptive evidence using unconditioned data and motivate the discussion (a point the referee also acknowledges in the earlier para) before we go into formal tests. Table 2 on the other hand allowed us to carry out formal test of the hypothesis of Bangladesh's positive/negative deviation in a social outcome given its income level. All other result tables (i.e. tables 3-6) in the paper are organized in the same manner. As such, we consider table 2 central to our analysis and future replication of the study.*

While I am on the point of converting Tables to Figures, let me return briefly to Table 1. This Table could also very usefully be converted to Figures. Looking down the rows of Table 1, you essentially have three panels: (i) Levels of GDP per capita (ii) growth of GDP per capita and (iii) levels of the Human Development Index. The columns just represent the time series, and the rows within each panel give Bangladesh and the two comparison countries: Pakistan and India, along with averages for Asia, South Asia, and the global sample of developing countries. In other words, you could just present three time-series graphs for each of these measures, and then have different line markers for Bangladesh, Pakistan, India, and the 3 comparison averages. I think those graphs will make your points with respect to income levels, income growth and HDI levels far easier for the reader to see, and here again, if you want to make reference to the percentile rank changes that you currently include in Table 1, you can reference or discuss those in the main text of the paper.

Authors' reply: *The referee again advises in favour of graphical presentation of the data by suggesting to drop Table 1. As pointed out earlier, we have already shortened Table 1 by dropping data related to HDI. Income level and growth data have been used as explanatory*

variables in our data. Alongside other input data, they have been presented in Tables. To maintain symmetry, only social outcomes data have been presented in Figures.

So that is how I would structure the first half of the paper. The next part of the paper is where I think you need more work to make this a publishable paper. The way I read the initial submission of the paper, for the most part it largely documents a fact about Bangladesh - albeit a very interesting fact - but it doesn't tell us much in the way of the reasons or mechanisms as to why Bangladesh is a country that prioritizes human development, despite the other features of its governance environment. The re-structuring of the paper I suggested above will hopefully indicate in the revised version if HD improved faster, or about the same, as other countries given its economic growth rate. If HD improved faster, this would tend to indicate Bangladesh has had a shift in its HD priorities, and this is where I think you need not only your current Table 3, but potentially some extra empirical work as well. In Table 3, we will be able to see if Bangladesh increased its share (of GDP) of governmental spending on health and education programs. By the way, the comment I made above about converting Table 1 to time-series figures could also be applied to Table 3 - Table 3 might best be displayed by also converting it to a figure. Furthermore, it would help if you added to Table 3, especially if you indeed convert it to Figure form, what happens in levels of human development spending. As it stands, Table 3 tells us that as a share of GDP, health and education expenditures fell, but this could be due to the rapid economic growth, and so in level terms, expenditures in these areas may be relatively constant. That would be an interesting fact to document, since it may be that while Bangladesh's HD priorities have slipped in terms of growth, this priority may not have changed so much in terms of levels of spending.

Authors' reply: *The revised draft already reports extra empirical work to complement Table 3 (no. 4 in the revised version). The referee here also makes an informal suggestion about converting Table 3 into figures. We have however left Table 3 (currently numbered 4) unchanged as none of the other referees raised any issue about it. Moreover, this approach is consistent with other country case studies in the literature (e.g. Easterly's work on assessing human development progress of Pakistan).*

This brings us to the next set of questions, which are touched upon in the current draft of the paper, but in a very limited way. First, if the improvement in HD outcomes are observed to be above-and-beyond what is expected (i.e. given the regression line in the growth on growth figures I suggested above) given economic growth, then since the budget shares are falling, how is the deficit being made up? Is it something about the composition or efficiency of domestic expenditures, or is it domestic NGOs such as BRAC, that are mentioned on pages 17 to 20, or even foreign aid agencies - or some combination of these three parties - that are helping drive the rapid improvement in human development, even conditional on the rapid economic growth in Bangladesh? The paper is quite weak in terms of shedding light on the answer to this last question. And yet, I think to be a publishable paper, it needs to answer this question. I will leave it to you as to how best fill in the added documentation of source of the HD surplus (NGO's like BRAC, foreign aid, shifts in the composition of domestic spending, etc)?

Authors' reply: *The referee makes an important comment on whether the development 'surprise' may be explained by domestic expenditure or by aid influx. Both need some elaboration. In particular, we provide an econometric treatment of these two channels.*

Regarding the role of expenditure composition or efficiency, the solution would require to use disaggregate data which is not available. However, the World Development Indicators provide a couple of useful proxies with meaningful country coverage (the time coverage is quite short). We use Out-of-pocket health expenditure (% of total expenditure on health). Out of pocket expenditure is any direct outlay by households, including gratuities and in-kind payments, to health practitioners and suppliers of pharmaceuticals, therapeutic appliances, and other goods and services whose primary intent is to contribute to the restoration or enhancement of the health status of individuals or population groups. It is a part of private health expenditure. We also use External resources for health (% of total expenditure on health). External resources for health are funds or services in kind that are provided by entities not part of the country in question. The resources may come from international organizations, other countries through bilateral arrangements, or foreign nongovernmental organizations. These resources are part of total health expenditure.)

Regarding the role of aid, this is now systematically explored using Net ODA received per capita (current US$). Net official development assistance (ODA) per capita consists of disbursements of loans made on concessional terms (net of repayments of principal) and grants by official agencies of the members of the Development Assistance Committee (DAC), by multilateral institutions, and by non-DAC countries to promote economic development and welfare in countries and territories in the DAC list of ODA recipients; and is calculated by dividing net ODA received by the midyear population estimate. It includes loans with a grant element of at least 25 percent (calculated at a rate of discount of 10 percent).

Table 6 *(which is expanded version of* ***Table 5*** *in the original submission; also copied below) tests whether and when Bangladesh has abnormally different levels of health or aid resources than countries with the same level of national income. The results suggest that external resources (either ODA or health resources) are unlikely to be the main drive to social development in Bangladesh. However, it does seem to have developed significantly greater health expenditure for households than countries with the same level of income, but the unavailability of data over time does not allow to assess when this advantage dates back to.* ***Table 6*** *also reports the sample size for each regression we run. Although it changes for each regression, the results are not significantly affected when the analysis is restricted to the same sample of countries over time.*

Amongst other things, it should be noted that Table 6 further scrutinizes the contribution of domestic expenditure in terms of physical infrastructure development (which we added in response to referee-1 comment). In section 4(d), we expand the discussion on the role of NGO's like BRAC. On composition of domestic expenditure, we add a new para at the end of section 4(b) whilst we shed some light on foreign aid flow in section 4(c).

Table 6. *Coefficient on Bangladesh dummy in infrastructure, external aid, poverty and private expenditure regressions: 1970-2010*

1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010
Panel (a): Foreign aid channel							
Net ODA received per capita (current US$)							
-8.83***	-15.25***	-26.98***	-41.85***	-59.04***	-39.31***	-43.61***	-71.61***
(2.10)	(4.23)	(5.33)	(7.07)	(9.61)	(7.21)	(5.21)	(8.93)
112	110	111	112	128	133	133	132
External resources for health (% of total expenditure on health)							
				-7.41***	-10.41***	-10.47***	-14.80***
				(1.43)	(2.36)	(1.91)	(1.77)
N				130	145	146	144
Panel (b): Public infrastructure channel							
Internet users (100 people)							
					0.01	-1.21**	-3.64***

					(0.11)	(0.47)	(0.94)
Mobile cellular subscriptions (per 100 people)							
		-0.00	0.01	0.13**	0.33	-2.16*	-5.40***
		(0.00)	(0.01)	(0.06)	(0.28)	(1.15)	(2.06)
Telephone lines (per 100 people)							
-0.11	0.27	0.49*	0.46	0.40	-1.18**	-2.19***	-3.25***
(0.18)	(0.21)	(0.27)	(0.35)	(0.42)	(0.55)	(0.64)	(0.63)
Roads, paved (share of total mileage)							
				-13.10***	-18.82***	-19.60***	-21.07***
				(2.99)	(3.36)	(2.55)	(3.41)
Roads density (km of road per 100 sq. km of land area)							
						72.73***	
						(4.01)	
Panel (c): Poverty reduction channel							
1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010
Poverty headcount ratio at $1.25 a day (PPP) (% of population)							
		3.02	3.33	11.65***	7.65***	6.15***	2.86
		(6.17)	(4.30)	(3.15)	(2.88)	(2.05)	(2.51)
Poverty headcount ratio at $2 a day (PPP) (% of population)							
		8.51	5.56	14.31***	11.43***	11.85***	16.01***
		(5.82)	(5.27)	(2.89)	(2.34)	(1.74)	(2.05)
Poverty gap at 1.25$ a day (PPP) (%)							
		-2.07	-5.90*	-2.67	-3.05	-2.74**	-5.75***
		(3.03)	(3.03)	(2.41)	(2.07)	(1.26)	(1.77)
Poverty gap at 2$ a day (PPP) (%)							
		1.63	-1.35	3.78	2.15	2.16	0.56
		(4.08)	(3.16)	(2.47)	(2.11)	(1.43)	(1.80)
Panel (d): Private health expenditure channel							
Out-of-pocket health expenditure (% of total expenditure on health)							
				14.99***	10.46***	13.20***	18.79***
				(2.66)	(2.37)	(2.25)	(2.27)
N				130	145	146	144

Infrastructure, aid, poverty and health spending data are from World Bank (2011). GDP data is from the PENN World Tables 7.0 (Heston et al 2011). GDP data is from the PENN World Tables 7.0 (Heston et al 2011). The dependent variable in each regression is measured as a five-year average. All regressions control for one-year lagged level of per capita income (log) and are conducted on a sample of developing economies. Heteroskedasticity-robust standard errors are in parentheses; ***, ** and * indicate significance at 1%, 5% and 10% level (two-tailed test).

Lastly, I think while you can usefully keep the discussion of the usefulness of HD prioritization in maintaining a strong growth trajectory as in the paper by Ranis et al, I do not think you need any tables or figures for that, as it starts to take you in a different direction from the main point of this paper. I would suggest moving that discussion to the Conclusion, and dropping Figure 6. Like I said, echoing the Ranis et al points is useful to make when discussing the full spectrum of benefits of strong human development prioritization, but I think that goes into the discussion of the existing results, as opposed to replicating the results (and figures) of their papers.

Authors' reply: *As per referee advice, we have removed* ***figure 6*** *from the text; we've also revised the associated Table (no. 2) deleting the bottom panel that presented data on HDI.*

Reviewer #3: This paper explores a well-defined theme and does so with considerable thoroughness. It first seeks to show (pp. 7-14) the country's "exceptionality" relative to human development in terms of the composite HDI and several basic indicators related to mortality, education, and demography. Then the authors consider whether public expenditure on health and education has helped toward the human-development achievement, and suggest that is not likely. They seem to conclude (p. 18) that the "progress was achieved through a combination of low-cost solutions and non-government service providers.(and) the NGO sector played an important role". Then the possibility of a "virtuous cycle" in HD-growth relation is considered, but the link is considered weak, and the authors reflect on the potential role of "human development surplus" in health and education in enhancing growth given the low governance quality. Finally, they summarize their findings and reflect on the country's prospectus for growth and development in the context of a "human-development surplus" and a "governance deficit".

Despite the well-defined theme of the paper, thoroughness of the work, and the potential that such "case studies" might have toward a better understanding of growth and development, I have several reservations about the suitability of the work for publication in Word Development. My main worry is that I am unable to see clearly any major human-development "exceptionality", "development surprise" or a "human development surplus" in the country. Therefore, the further discussion that looks at the sources of "exceptionality" and its possible role in future growth and development seem to be of limited usefulness. The following paragraphs indicate the general of my thoughts.

Authors' reply: *We agree with the referee that no major human-development "exceptionality" is visible when we compare HDI data of Bangladesh with a number of other low-income countries. Our focus was more on specific social indicators (e.g. health, education and demography related) in which Bangladesh certainly shows exceptional progress. Perhaps for this reason, referee-2 points out that "But even if there is no paradox, I still find the contribution of the paper quite useful…". For the sake of completeness, we discussed the HDI data in the original submission. We have now re-written the text to make this point clearer by shifting the discussion away from HDI data and putting greater emphasis on patterns relating to individual social indicators. This revision is also in line with referee-2's suggestion: "Lastly, I think while you can usefully keep the discussion of the usefulness of HD prioritization in maintaining a strong growth trajectory as in the paper by Ranis et al, I do not think you need any tables or figures for that, as it starts to take you in a different direction from the main point of this paper." It also builds on referee-1's observation that "Generally, the absolute level of human development is very low in poorer countries". Therefore, focusing on ranks related to absolute HDI may not be very informative in judging exceptionality of Bangladesh's social progress. For these reasons, we have removed HDI data from Table 1. The referee below makes 4 substantive points about our analysis all of which however focus on HDI data. Since we have now taken out analysis directly related to HDI data, we felt it unnecessary to respond to the following 4 comments.*

1. The following numbers provide a summary picture of some of the aspects that the authors consider in much greater detail. The main focus is on the three South Asian countries included by the authors along with Nepal. The period covered is mainly 1990-2012 which seems to be the most relevant to the work.

	GDP per capita PPP$, 2011 (WDI 2013)	HDI 2012 (HDR 2013)	HDI rank 1990 (HDR 1992)	HDI rank 2000 (HDR 2002)	HDI rank 2012 (HDR 2013)
Bangladesh	1,940	0.515	135/160	145/173	146/186
India	3,640	0.554	121/160	124/173	136/186
Nepal	1,260	0.463	140/160	142/173	157/186
Pakistan	2,870	0.515	120/160	138/173	146/186

	GDP per capita growth rate (c) 1990-2010 (%)	HDI growth rate (a) (1990-2012, annual, %)	Non-income HDI growth rate (b)	HDI income elasticity a/c)	Non-HDI income elasticity (b/c)
Bangladesh	3.46	1.65	1.67	0.48	0.48
India	4.72	1.44	1.36	0.31	0.29
Nepal	1.89	1.42	1.64	0.75	0.87
Pakistan	1.91	1.49	1.89	0.78	0.99

Looking at the current HDI picture, it is evident that despite substantial income differences, the four countries are in a similar HDI range, and it is difficult to identify a criterion that will make Bangladesh look exceptional. As noted in a later paragraph, Bangladesh ranks 9 places higher in HDI than in income, but Nepal ranks 11 places higher.

Considering the change during 1990-2010, the first thing to note is that Bangladesh's global rank in HDI has changed only marginally during the 20-year period. Therefore, the country's performance does not seem exceptional in a global context. Second, even relative to India, Nepal and Pakistan, Bangladesh's rank has not changed much over the period. It was 14 places lower than India in 1990, and now it is 10 places lower. Relative to Nepal, it was 5 places higher in 1990 and is now 11 places higher, which is a small change in groups of nearly 200. Relative to Pakistan, its position has improved by about 15 ranks, but that hardly makes it exceptional.

Perhaps more important, the change in HDI should be considered in the context of the rate of economic growth in each country. For that purpose, the second panel above takes information from our HDI-elasticity project which computes income elasticity of HDI in a manner similar to the income (growth) elasticity of poverty by taking the ratio of annual percentage changes in HDI and per-capita income. Since income is one component in HDI, it is even more useful to compare rates of growth of income and non-income HDI. The table shows that relative to rates of income growth during the period, rates of increase in HDI and non-income HDI in Bangladesh are much lower than in Pakistan and Nepal, implying that income growth has translated into human development at a much lower rate in Bangladesh than in Pakistan and Nepal. The elasticities for India are, of course, much lower than for Bangladesh, but that is just a reflection of the well-known poor response of human development (and poverty decline) to income growth in India during the "post-reform" era.

2. Even aside from the position summarized above, several earlier studies have not identified Bangladesh as an exceptional case in human development. For instance, HDR 2000 (p. 150) considered cases of fastest and slowest human development progress during 1975-1998 in different HDI categories and identified Indonesia, Egypt and Nepal as cases of fastest growth in the low-HDI category. Similarly, Ranis and Stewart (2012) identified Nepal as the top performer during 1970-2007among the low-HDI group, and Bangladesh was noted as a relatively distant second with HDI growth at 1.25% per year as compared with 1.73% growth in Nepal.
3. Since the authors consider single indicators also in addition to HDI, the table below shows the ranks of these four countries in maternal mortality rate during the period 1990-2010. These are taken from TRENDS IN MATERNAL MORTALITY 1990-2010 (WHO, 2012). Although the authors have considered some other indicators, MMR is an important measure of women's status, women's health and even child and infant health. All ranks are in a group of 181 countries.

	1990 rank	1995 rank	2000 rank	2005 rank	2010 rank
Bangladesh	154	147	140	140	133
India	140	136	137	132	127
Nepal	152	143	133	125	123
Pakistan	135	134	136	137	139

It can be seen that there is an improvement in Bangladesh's position during this period, some of which may reflect the deterioration in SSA due to HIV/AIDS. However, the improvement in Nepal is substantially greater despite a much lower income growth, and thus Nepal seems more like an exceptional case than Bangladesh.
4. Although higher in terms of both income and HDI, Sri Lanka is perhaps a well-known case of exceptional human development. HDR 2013 shows that while Bangladesh ranked 9 places higher in HDI than in income, Nepal ranked 11 places higher, and Sri Lanka was 18 places higher and was among the top 10% in terms of the excess of HDI rank over the income rank despite its relatively decent income at 5,520 PPP$ per capita.

The following are some relatively minor aspects.

1. I am uncertain about the discussion on pp. 20-29 in terms of the possibility of a "virtuous cycle" from high human development, and the role of governance quality, in economic growth. The authors seem to focus on the role of high human development (capital) in economic growth. It is possible to take the view that human development is an end in itself and economic growth is really a means to human development. In that context, a high human development is to be welcome irrespective of its source or its contribution to growth.

Authors' reply: *The referee makes a good point here which we now acknowledge in* ***footnote XVI****.*

2. My observations are not meant to undervalue the role of NGOs. My belief is that BRAC and Grameen Bank have rendered an extraordinary service to the poor in Bangladesh and have made great contributions in health, education and poverty reduction. However, it is hard to quantify their contribution at the national level and it is difficult to say that their work has led to an "exceptional performance" by Bangladesh in human development. Moreover, as the above number suggest, Nepal has, despite the turmoil it has been going through (and the

associated "governance deficit"), done at least as well as Bangladesh, and there does not seem to be an abundance of NGOs there. On the contrary, India's poverty and human-development performance has been weak despite there being a huge number of NGOs.

Authors' reply: *We agree with the referee on the point of quantification of the role of NGOs. Precisely for this reason, we did not attempt to do so in the paper. Instead, it is proposed as a possible (testable) hypothesis. To develop our argument, we do cite a number of studies and present a clear discussion of timing of various NGO led initiatives and how that coincided with rapid development in social indicators (see section 4(d)).*

Challenging the NGO hypothesis, the referee further notes that Nepal has poor governance and yet shares Bangladesh's human development record. On the other hand, India has a huge number of NGOs and yet poor human development outcomes. We could not agree with the referee on these claims.

First, Nepal does not share Bangladesh's success in fertility decline, immunization coverage, child mortality and female schooling. Since these indicators do not feature directly in HDI, assessment of Nepal and Bangladesh only in terms of HDI masks this point. Bangladesh's progress happened despite low literacy, schooling and per capita income (factors that directly matter for HDI ranking). Second, NGOs have only recently been active throughout India. Compared to Bangladesh, India has not benefited from a nationwide coverage of NGOs like Grameen and BRAC spanning more than 2 decades. Moreover, in case of BRAC, its health program in Bangladesh expanded rapidly even as early as 1980s.

3. The nature of the regressions for which Bangladesh dummy is reported in Table 2 is not clear and the multiplicity of the periods and the large number of dependent variables impedes the comprehension of the main point that the authors seek to make. Somewhat similarly, partly due to the multiplicity of the periods, the message from Table 3 and Table 4 is not easily comprehended.

Authors' reply: *The reason why we report results period-by-period is to detect the time periods when the Bangladeshi dummy switches sign (capturing positive/negative deviance). This then helps us interpret our results by linking the discussion to underlying policy regimes during that period.*

As a minor matter, a few possible typing errors in an otherwise well-written paper include "places Bangladesh third of 178 countries" (p. 7), "Table 2" (p. 7), "through which.future growth process is likely to benefit from" (p. 14), "Table 2" (p. 16), "lessons of countries like China Pre-reform stage.in these countries" (p. 23), "comprising" (p. 23, footnote 8), "improved with various pace" (p. 27), "our study support" (p. 28), "large labor forces" (p. 28), "polices" (p. 29), and "Macrolinkages" (p. 35).

Authors' reply: *We thank the reviewer for bringing these typos to our attention. Following changes have been made:*

- *"places Bangladesh third of 178 countries" has been corrected as "places Bangladesh third out of 178 countries"*
- *"through which.future growth process is likely to benefit from" has been revised as "…through which Bangladesh's future growth process is likely to benefit"*

- *"lessons of countries like China Pre-reform stage.in these countries" has been revised as "the lessons from countries like China is that their pre-reform…"*
- *"Comprising" appeared in a footnote which we have now deleted.*
- *"improved with various pace" revised to "improved at varying pace"*
- *"our study support" as "our study supports"*
- *"large labor forces" appear in the sentence "The path to economic success was conventional high-labor manufacturing, a sector that does not require too much government intervention to make things work in countries with large labor forces and ports". We have replaced this with "large labor forces".*
- *"Macrolinkages" appears in the reference section and relates to title of a published paper. Hence, it can't be changed.*

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