Working paper

International Growth Centre

Paths to Development

Is there a Bangladesh Surprise?

M. Niaz Asadullah
Antonio Savoia
Wahiduddin Mahmud

September 2014

DIRECTED BY LSE UNIVERSITY OF OXFORD

FUNDED BY UKaid from the British people

ELSEVIER
www.elsevier.com/locate/worlddev

CrossMark

World Development Vol. 62, pp. 138–154, 2014

http://dx.doi.org/10.1016/j.worlddev.2014.05.013

Paths to Development: Is there a Bangladesh Surprise?

M. NIAZ ASADULLAH [a,b,c,d], ANTONIO SAVOIA [e] and WAHIDUDDIN MAHMUD [f,*]

[a] *University of Malaya, Kuala Lumpur, Malaysia*
[b] *University of Reading, UK*
[c] *University of Oxford, UK*
[d] *Institute for the Study of Labor (IZA), Bonn, Germany*
[e] *University of Manchester, UK*
[f] *Economic Research Group (ERG), Dhaka, Bangladesh*

Summary. — 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 programs. 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.

Key words — economic growth, human development, governance, institutions, NGOs, Bangladesh

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 (Devarajan, 2005; Drèze, 2004; 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, Ahmed, & Mahajan, 2008) and has also come to the fore in the media (Bowring, 2005; Dhume, 2010; Economist, 2012; Ramesh, Pande, & 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. [1]

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 & Stewart, 2006, 2012; Ranis, Stewart, & Ramirez, 2000). 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 & 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, Johnson, & Robinson, 2001; Easterly & Levine, 2003 and Rodrik, Subramanian, & Trebbi, 2004). The lack of growth in Sub-Saharan Africa, for instance, is attributed to the poor bureaucratic quality and public services in the region (Collier, 2007; Ndulu & O'Connell, 1999). 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 (Kaufmann, Kraay, & Mastruzzi, 2009; Transparency International Bangladesh, 2005. 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

* This research has been supported by the International Growth Centre (IGC). The first draft of the paper was prepared when Niaz Asadullah was visiting the Research and Evaluation Division (RED) of BRAC as a Distinguished Fellow. We are grateful to Syed Masud Ahmed of BRAC for helpful suggestions. Final revision accepted: May 7, 2014.

growth and social expenditure programs. We highlight, instead, the importance of low-cost solutions and NGOs, infrastructure development, public campaigns, and interlinkages between various indicators in achieving social progress.

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 among 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 are from the Penn World Tables, version 7.0 (Heston, Summers, & Aten, 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 afterward, 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 Kaufmann *et al.*, 2009).

(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.[2] 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 1981–85 and 2006–10, and the initial level of national income.[3] 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). During 1980–2010, Bangladesh's percentile rank in the cross-country data changed from 92 to 54, compared to only a modest improvement experienced by India (77–75), while the situation in Pakistan worsened (80–85) 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 (Drèze, 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% in the early 1980s to over 70% within ten years, a development described by UNICEF as a near miracle (Chowdhury, Bhuiya, & Aziz, 1999).

Turning to education outcomes, the progress made in female secondary school enrollment 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. During 1980–2010, Bangladesh's percentile rank in the cross-country data improved from 18 to 27, compared to a fall for India (32–25) and Pakistan (21–14).

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). During 1980–2010, Bangladesh's percentile rank in the cross-country female fertility data changed from 78 to 57, compared to only modest improvement experienced by Pakistan (78–74) and India (48–59). Lastly, the progress in fertility decline has been aided by the spectacular increase in contraception prevalence. During 1980–2010, the percentage of women using contraception jumped from 10 to nearly 60, while the 2005 figures for Pakistan and India were 30 and 53, respectively.

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

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 are 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.

of the exceptionality of Bangladesh's development progress using cross-country regressions. Ordinary least square (OLS) 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.[4] To observe its evolution, such OLS 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.

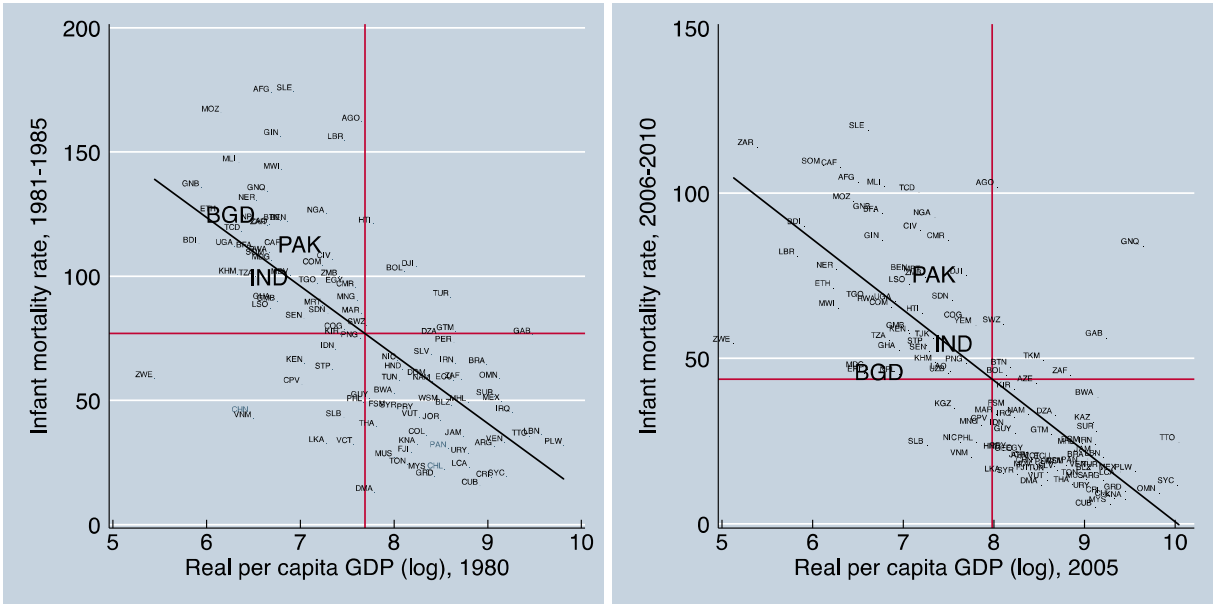

Figure 1. *Mortality rate, infant (per 1,000 live births).*

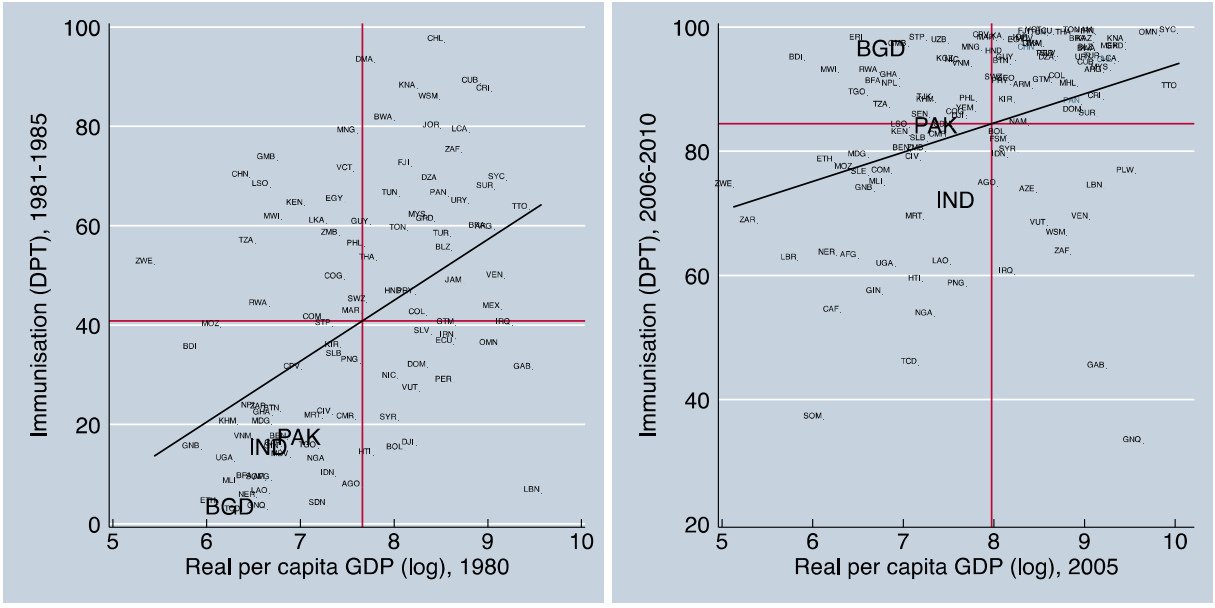

Figure 2. *Immunization, DPT (diphtheria, pertussis, tetanus).*

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 level, 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, Islam, Anwar, *et al.*, 2011). Similar factors are likely to have contributed to the fall in low birth babies. We discuss these factors in Section 4.

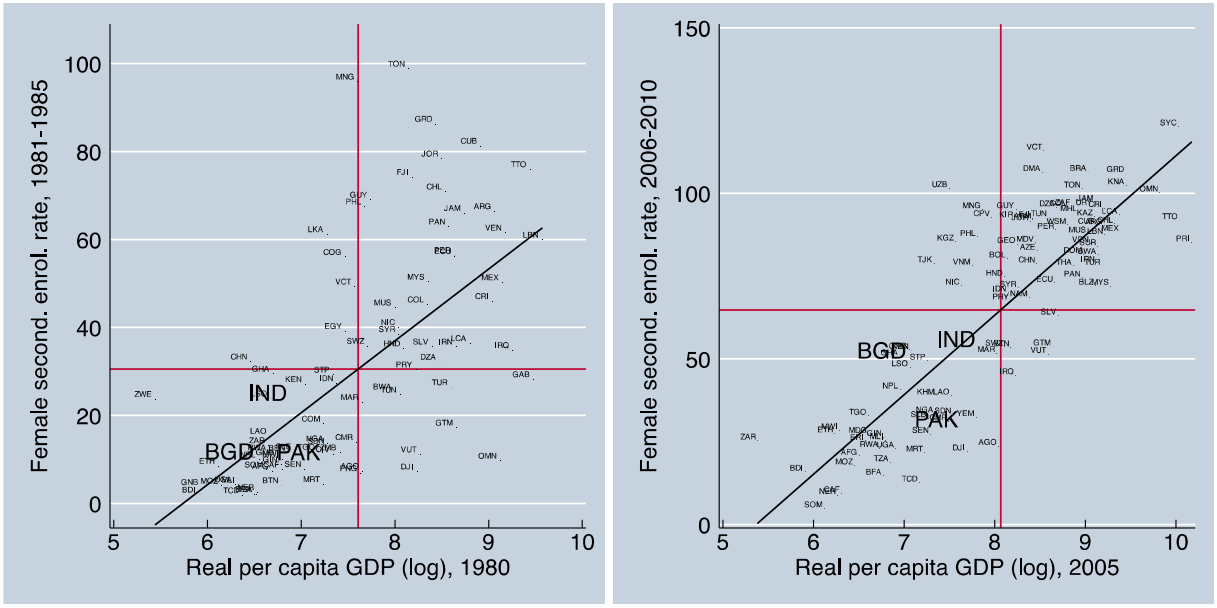

Figure 3. *Female secondary school enrollment rate.*

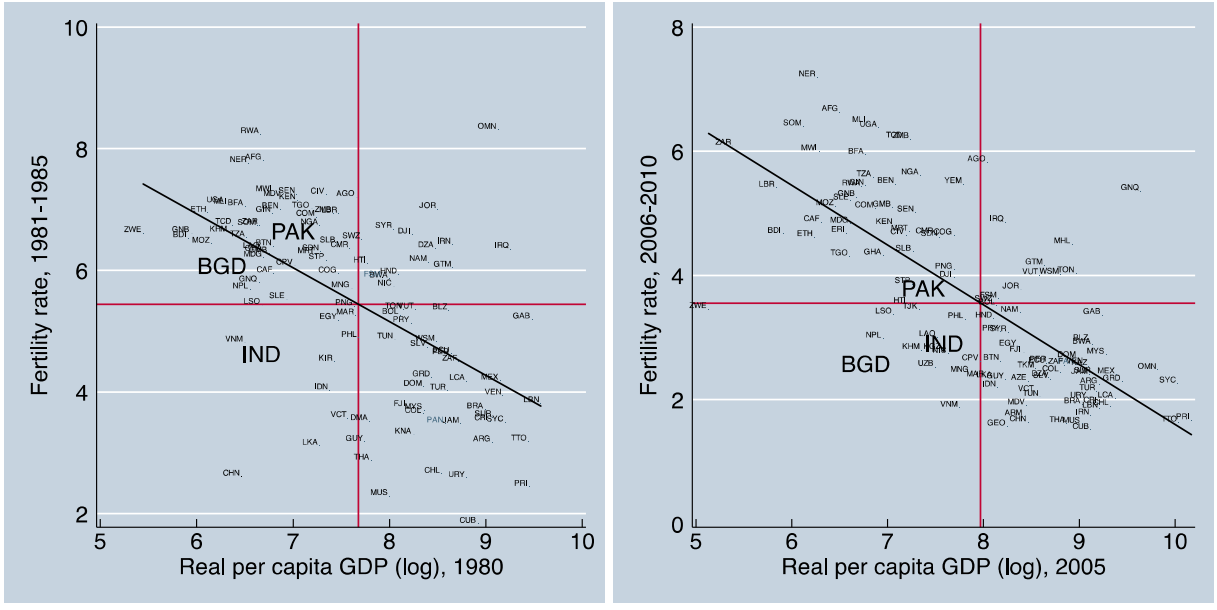

Figure 4. *Fertility rate, total (births per woman).*

(b) *Education regressions*

Bangladesh's progress in education has been somewhat mixed (Table 2; panel (b)). In the 2006–10 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 enrollment 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 enrollment is explained mainly by a 14-percentage point abnormally high record for females in 2001–05.[5] Tertiary enrollment 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 1981–85, with the rate of decline increasing in the 1990s. Bangladesh has also had an

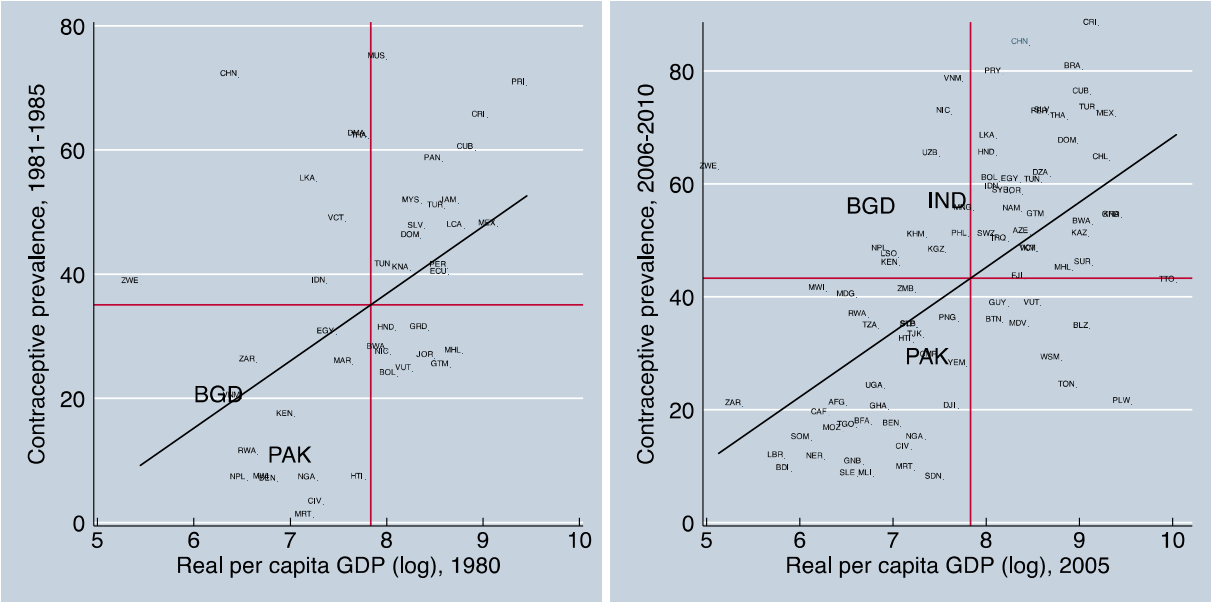

Figure 5. *Contraceptive prevalence (% of women ages 15–49).*

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).

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, chap. 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 programs 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 except 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 has 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, Verhoeven, & Tiongson, 2002; McGuire, 2006).[6]

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

1971–75	1976–80	1981–85	1986–90	1991–95	1996–2000	2001–05	2006–10
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 enrollment, 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 enrollment, 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 enrollment, 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 enrollment, 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 enrollment, 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 enrollment, 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 enrollment, 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

(*continued on next page*)

Table 2 (*continued*)

1971–75	1976–80	1981–85	1986–90	1991–95	1996–2000	2001–05	2006–10
School enrollment, 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 enrollment, 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 are from the 2011 World Development Indicators (World Bank, 2011), while GDP data are from the PENN World Tables 7.0 (Heston *et al.*, 2011). Heteroskedasticity-robust standard errors are in parentheses.
*** Indicate significance at 1% level (two-tailed test).
** Indicate significance at 5% level (two-tailed test).
* Indicate significance at 10% level (two-tailed test).

(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.[7] 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)).

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% less in 2006–10).[8] Similarly, public spending on education is, for example, 2.1 percentage points lower than in countries with the same income level in 2006–10.

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 toward 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 *et al.*, 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 & Ali, 2009). This finding is supported by evidence based on household panel data from Bangladesh (Khandker, Bakht, and Koolwal, 2009).[9] We revisit the issue of infrastructure development in Section (c).

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 are from Gwartney and Lawson (2007), World Bank (2011). GDP data are from the PENN World Tables 7.0 (Heston *et al.*, 2011). Heteroskedasticity-robust standard errors are in parentheses.
*** Indicate significance at 1% level (two-tailed test).
** Indicate significance at 5% level (two-tailed test).
* Indicate significance at 10% level (two-tailed test).

(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).[10] 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$*)[11] and *external resources for health* (*% of total expenditure on health*).[12] 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.[13]

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 & 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.

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

Period	1976–80	1981–85	1986–90	1991–95	1996–2000	2001–05	2006–10
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 are from the 2011 World Development Indicators (World Bank, 2011), while GDP data are from the PENN World Tables 7.0 (Heston *et al.*, 2011).
*** Indicate significance at 1% level (two-tailed test).

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 on 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.

(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. [14] As part of an innovative social policy, the government allowed a variety of NGOs to operate

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

1971–75	1976–80	1981–85	1986–90	1991–95	1996–2000	2001–05	2006–10
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 are from the 2011 World Development Indicators (World Bank, 2011), while GDP data are from the PENN World Tables 7.0 (Heston *et al.*, 2011).

*** Indicate significance at 1% level (two-tailed test).

** Indicate significance at 5% level (two-tailed test).

* Indicate significance at 10% level (two-tailed test).

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, diarrhea accounted for one-third of all childhood deaths in the 1970s and 1980s, while 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 & Cash, 1998). OTEP also provided a platform to scale up child-targeted health programs, thereby assisting the government to achieve the target of 80% 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 program 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 programs and developed a community healthcare program 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 (Rhode, 2005). During 1986–90, 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

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

1971–75	1976–80	1981–85	1986–90	1991–95	1996–2000	2001–05	2006–10
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							
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 are from the PENN World Tables 7.0 (Heston *et al.*, 2011). Heteroskedasticity-robust standard errors are in parentheses.

*** Indicate significance at 1% level (two-tailed test).

** Indicate significance at 5% level (two-tailed test).

* Indicate significance at 10% level (two-tailed test).

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 1986–90—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, Cowling, Lozano, & Murray, 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 programs 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 program were reinforced by the large presence of BRAC-run single-teacher non-formal schools, and helped to achieve gender parity in enrollment. BRAC schools targeted dropouts and non-enrolled children, particularly girls, in marginalized communities. However, the boom in female enrollment in secondary education is largely credited to a government- and donor-led gender-targeted cash transfer scheme, i.e., Female Secondary School Stipend program (FSSSP). A partnership was formed with pre-existing Islamic schools (i.e., madrasas) to scale up the program (Asadullah & Chaudhury, 2009b).

While 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 & Bhuiya, 2004). Anecdotal evidence also attributes the progress in human development in relatively poorer divisions to NGO interventions (World Bank., 2008). [15] 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% 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? [16] 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 suggest 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. [17] 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 (Easterly, 2003; Pritchett, 2001). 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 among primary school completers (Asadullah & 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 & Hammer, 2004; Chaudhury, Hammer, Kremer, Muralidharan, & Rogers, 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 program (Asadullah & 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 enrollment 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, & 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 among 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 reduce 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.

NOTES

1. For existing research on Bangladesh's development achievements, see Abdullah and Sen (1997), BIDS/UNDP (2001), Ahluwalia and Hussain (2004), Devarajan (2005), Mujeri and Sen (2006), Sen, Mujeri, and Shahabuddin (2007), Mahmud (2008), Mahmud *et al.* (2008), Mahmud, Asadullah, and Savoia (2013) and Chowdhury *et al.* (2013).

2. There are other health statistics in which Bangladesh's progress is significant. For instance, the country ranks among 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.

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

4. Its interpretation is equivalent to calculating studentized 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.

5. This is consistent with survey data-based evidence for Bangladesh which confirms higher female enrollment relative to males net of household income (Asadullah & Chaudhury, 2009a).

6. 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 & Swaroop, 2008).

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

8. 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 programs (Chowdhury *et al*., 2013).

9. 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.

10. Among 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 are unavailable.

11. 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% (calculated at a rate of discount of 10%).

12. 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.

13. 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.

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

15. 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.

16. While 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.

17. 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.

REFERENCES

Abdullah, A., & Sen, B. (1997). 25 years of Bangladesh: An optimistic perspective (Bangladesher pochish bochor: ekti itibacok prekkhit). *Bangladesh Unnayan Shomikhya, 14*, 1–14, [in Bangla].

Acemoglu, D., Johnson, S., & Robinson, J. A. (2001). The colonial origins of comparative development: An empirical investigation. *The American Economic Review, 91*, 1369–1401.

Acemoglu, D., & Robinson, J. A. (2012). *Why nations fail*. London: Profile Books.

Ahluwalia, I. J., & Hussain, Z. (2004). Development achievements and challenges. *Economic and Political Weekly, 39*(36), 4013–4022.

Asadullah, M. N. (2006). Returns to education in Bangladesh. *Education Economics, 14*(4), 453–468.

Asadullah, M. N., & Chaudhury, N. (2013). *Primary schooling, school quality and student learning*. CGD working paper 349. Washington DC: Centre for Global Development.

Asadullah, M. N., & Chaudhury, N. (2009a). Reverse gender gap in schooling in Bangladesh: Insights from urban and rural households. *The Journal of Development Studies, 45*(8), 1360–1380.

Asadullah, M. N., & Chaudhury, N. (2009b). Holy alliances: Public subsidies, Islamic high schools and female schooling in Bangladesh. *Education Economics, 17*(3), 377–394.

Asadullah, M. N., Chaudhury, N., & Dar, A. (2007). Student achievement conditioned upon school selection: Religious and secular secondary school quality in Bangladesh. *Economics of Education Review, 26*(6), 648–659.

BIDS/UNDP. (2001). *Fighting Human Poverty: Bangladesh Human Development Report 2000*. Bangladesh Institute of Development Studies (BIDS). United Nations Development Programme (UNDP).

Bowring, P. (2005). *The puzzle of Bangladesh*. The New York Times, May 7.

Chaudhury, N., & Hammer, J. S. (2004). Ghost doctors: Absenteeism in Bangladesh health facilities. *World Bank Economic Review, 18*(3), 423–441.

Chaudhury, N., Hammer, J., Kremer, M., Muralidharan, K., & Rogers, H. (2006). Missing in action: Teacher and health worker absence in developing countries. *Journal of Economic Perspectives, 20*(1), 91–116.

Chowdhury, A. M. R., & Bhuiya, A. (2004). The wider impacts of BRAC poverty alleviation programme in Bangladesh. *Journal of International Development, 16*, 369–386.

Chowdhury, A. M. R., Bhuiya, A., & Aziz, K. M. A. (1999). *The 'near miracle revisited: Social science perspectives of the immunization programme in Bangladesh*. Amsterdam: Het Spinhuis.

Chowdhury, A. M. R., Bhuiya, A., Chowdhury, M. E., Rasheed, S., Hussain, Z., & Chen, L. (2013). The Bangladesh paradox: Exceptional health achievement despite economic poverty. *Lancet*, S0140-6736(13)62148-0.

Chowdhury, A. M. R., & Cash, R. (1998). *A simple solution: Teaching millions to treat diarrhoea at home*. Dhaka: University Press Limited.

Collier, P. (2007). *The bottom billion: Why the poorest countries are failing and what can be done about it*. Oxford: Oxford University Press.

Cooray, A., & Mallick, S. (2012). *What explains cross-country growth in South Asia? Female education and the growth effect of international openness*. BWPI Working Paper 145. University of Manchester.

Devarajan, S. (2005). South Asian surprises. *Economic and Political Weekly, 40*(37), 4013–4015.

Devarajan, S. (2008). Two comments on "governance indicators: Where are we, where should we be going? by Daniel Kauffmann and Aart Kraay. *World Bank Research Observer, 23*(1), 31–36.

Dhume, S. (2010). Bangladesh, "basket case" no more. *The Wall Street Journal*, 29 September.

Drèze, J. (2004). *Bangladesh shows the way*. The Hindu, September 17.

Easterly, W. (2006). Reliving the 1950s: The big push, poverty traps, and takeoffs in economic development. *Journal of Economic Growth, 11*(4), 289–318.

Easterly, W., & Levine, R. (2003). Tropics, germs, and crops: How endowments influence economic development. *Journal of Monetary Economics, 50*(1), 3–39.

Easterly, W. (2003). The political economy of growth without development: A case study of Pakistan. In D. Rodrik (Ed.), *In search of prosperity: Analytic narratives on economic growth*. Princeton, NJ: Princeton University Press.

Economist. (2012). *Bangladesh: Out of the basket*. 3 November, print edition.

El Arifeen, S., Christou, A., Reichenbach, L., *et al.* (2013). Community-based approached and partnerships: Innovations in health-service delivery in Bangladesh. *Lancet*, S0140-6736(13), 62149-2.

Gakidou, E., Cowling, K., Lozano, R., & Murray, C. J. L. (2010). Increased educational attainment and its effect on child mortality in 175 countries between 1970 and 2009: A systematic analysis. *The Lancet, 376*(9745), 959–974.

Gupta, S., Verhoeven, M., & Tiongson, E. (2002). The effectiveness of government spending on education and health care in developing and transition economies. *European Journal of Political Economy, 18*(4), 717–737.

Gwartney, J.G., & Lawson, R.A. (2007). Economic freedom of the world: 2007 annual report. Available online at www.freetheworld.com

Heston, A., Summers, R., & Aten, B. (2011). *Penn world table version 7.0*. Philadelphia, PA: Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, May.

Kaufmann, D., Kraay, A. & Mastruzzi, M. (2009). Governance matters VIII: Aggregate and individual governance indicators 1996–2008. *Policy Research Working Paper Series 4978*. Washington, DC: The World Bank.

Khandker, S. R., Bakht, Z., & Koolwal, G. B. (2009). The Poverty Impact of Rural Roads: Evidence from Bangladesh. *Economic Development and Cultural Change, 57*(4), 685–722.

Koehlmoos, T., Islam, Z., Anwar, S., *et al.* (2011). Health transcends poverty: The Bangladesh experience. In D. Balabanova, M. McKee, & A. Mills (Eds.), *Good health at low cost' 25 years on: What makes a successful health systems* (pp. 47–81). London: London School of Hygiene and Tropical Medicine.

Mahmud, W. (2008). Social development in Bangladesh: Pathways, surprises and challenges. *Indian Journal of Human Development, 2*(1), 79–92.

Mahmud, W., Asadullah, M. N., & Savoia, A. (2013). Bangladesh's achievements in social development indicators: Explaining the puzzle. *Economic and Political Weekly, 48*(44), 26–28.

Mahmud, W., Ahmed, S. & Mahajan, S. (2008). *Economic reforms, growth and governance: The political economy aspects of Bangladesh's development surprise*. Working Paper No. 22. World Bank on behalf of the Commission on Growth and Development, Washington, DC.

McGuire, J. W. (2006). Basic health care provision and under-5 mortality: A cross-national study of developing countries. *World Development, 34*(3), 405–425.

Mujeri, M. K., & Sen, B. (2006). Economic growth in Bangladesh, 1970–2000. In Kirit Parikh (Ed.), *Explaining growth in South Asia* (pp. 45–122). Oxford University Press.

Ndulu, B. J., & O'Connell, S. A. (1999). Governance and growth in Sub-Saharan Africa. *Journal of Economic Perspectives, 13*(3), 41–66.

Pritchett, L. (2001). Where has all the education gone?. *World Bank Economic Review, 15*, 367–391.

Rajkumar, A. S., & Swaroop, V. (2008). Public spending and outcomes: Does governance matter?. *Journal of Development Economics, 86*(1), 96–111.

Ramesh, J., Pande, V., & Bhandari, P. (2012). *Heard of the "Bangladesh shining" story?*. The Hindu, 7 September.

Ranis, G., & Stewart, F. (2006). *Successful transition towards a virtuous cycle of human development and economic growth: Country studies*. Growth Center Discussion Paper No. 943. Yale University.

Ranis, G. (2009). Reflections on Bangladesh in comparison to East Asia. In Q. Shahabuddin, & R. I. Rahman (Eds.), *Development experience and emerging challenges: Bangladesh*. Dhaka: The University Press Ltd.

Ranis, G., & Stewart, F. (2012). Success and failure in human development, 1970–2007. *Journal of Human Development and Capabilities, 13*(2), 167–195.

Ranis, G., Stewart, F., & Ramirez, A. (2000). Economic growth and human development. *World Development, 28*(2), 197–219.

Rannan-Eliya, R. (2012). *Bangladesh national health accounts 1997–2007*. Health Economics Unit, Ministry of Health and Family Welfare, Government of Bangladesh.

Rhode, J. E. (2005). *Learning to reach health for all*. Dhaka: The University Press Ltd.

Rodrik, D., Subramanian, A., & Trebbi, F. (2004). Institutions rule: The primacy of institutions over geography and integration in economic development. *Journal of Economic Growth, 9*(2), 131–165, 06.

Rogers, M. L. (2008). Directly unproductive schooling: How country characteristics affect the impact of schooling on growth. *European Economic Review, 52*, 356–385.

Save the Children. (2012). *State of the world's mothers 2012*.

Schultz, T. P. (2009). The gender and intergenerational consequences of the demographic dividend: an assessment of the micro- and macro-linkages between the demographic transition and economic development. *World Bank Economic Review, 23*(3), 427–442.

Schurmann, A. T., & Mahmud, S. (2009). Civil society, health, and social exclusion in Bangladesh. *Journal of Health Population and Nutrition, 27*, 536–544.

Sen, A. (1999). *Development as freedom*. Oxford: Oxford University Press.

Sen, A. (2013). What's happening in Bangladesh?. *Lancet*, S0140-6736(13), 62162-5.

Sen, B., & Ali, Z. (2009). Spatial inequality in social progress in Bangladesh. *Bangladesh Development Studies, 32*(2), 53–78.

Sen, B., Mujeri, M. K., & Shahabuddin, Q. (2007). Explaining pro-poor growth in Bangladesh: Puzzles, evidence, and implications. In Timothy Besley, & Louise Chord (Eds.), *Delivering on the promise of pro-poor growth*. Washington, DC: The World Bank.

Transparency International Bangladesh. (2005). *Corruption in Bangladesh: A household survey*. Dhaka: Transparency International Bangladesh.

UNDP. (2011). *Human development report 2011: Sustainability and equity*. Palgrave Macmillan, Available online: <http://hdr.undp.org/en/reports/global/hdr2011/>.

UNDP. (2013). *Human development report 2013: The rise of the south: Human progress in a diverse world*.

World Bank. (2003). *Bangladesh: Public expenditure review 2003*. Washington, DC: World Bank.

World Bank (2005). *Bangladesh: Attaining the millennium development goals in bangladesh, How likely and what will it take to reduce poverty, Child mortality and malnutrition, gender disparities, and to increase school enrollment and Completion?*. Washington, DC: World Bank.

World Bank. (2007). *Economics and governance of non-governmental organizations in Bangladesh*. Dhaka: University Press Limited, Published for World Bank, Dhaka.

World Bank. (2008). *Poverty assessment for Bangladesh: Creating opportunities and bridging the east–west divide*, Bangladesh Development Series Paper No. 26.
World Bank. (2011). *World development indicators 2011*. Available online: <http://data.worldbank.org/data-catalog/world-development-indicators>.
World Bank. (2012a). *Bangladesh: Towards accelerated, inclusive and sustainable growth – Opportunities and challenges*. Washington, DC: World Bank.
World Bank. (2012b). *World development report 2013*. Washington, DC: World Bank.

The International Growth Centre (IGC) aims to promote sustainable growth in developing countries by providing demand-led policy advice based on frontier research.

Find out more about
our work on our website
www.theigc.org

For media or communications
enquiries, please contact
mail@theigc.org

Subscribe to our newsletter
and topic updates
www.theigc.org/newsletter

Follow us on Twitter
@the_igc

Contact us
International Growth Centre,
London School of Economic
and Political Science,
Houghton Street,
London WC2A 2AE

IGC
International
Growth Centre

DIRECTED BY
LSE
UNIVERSITY OF OXFORD

FUNDED BY
UKaid
from the British people

Designed by soapbox.co.uk