

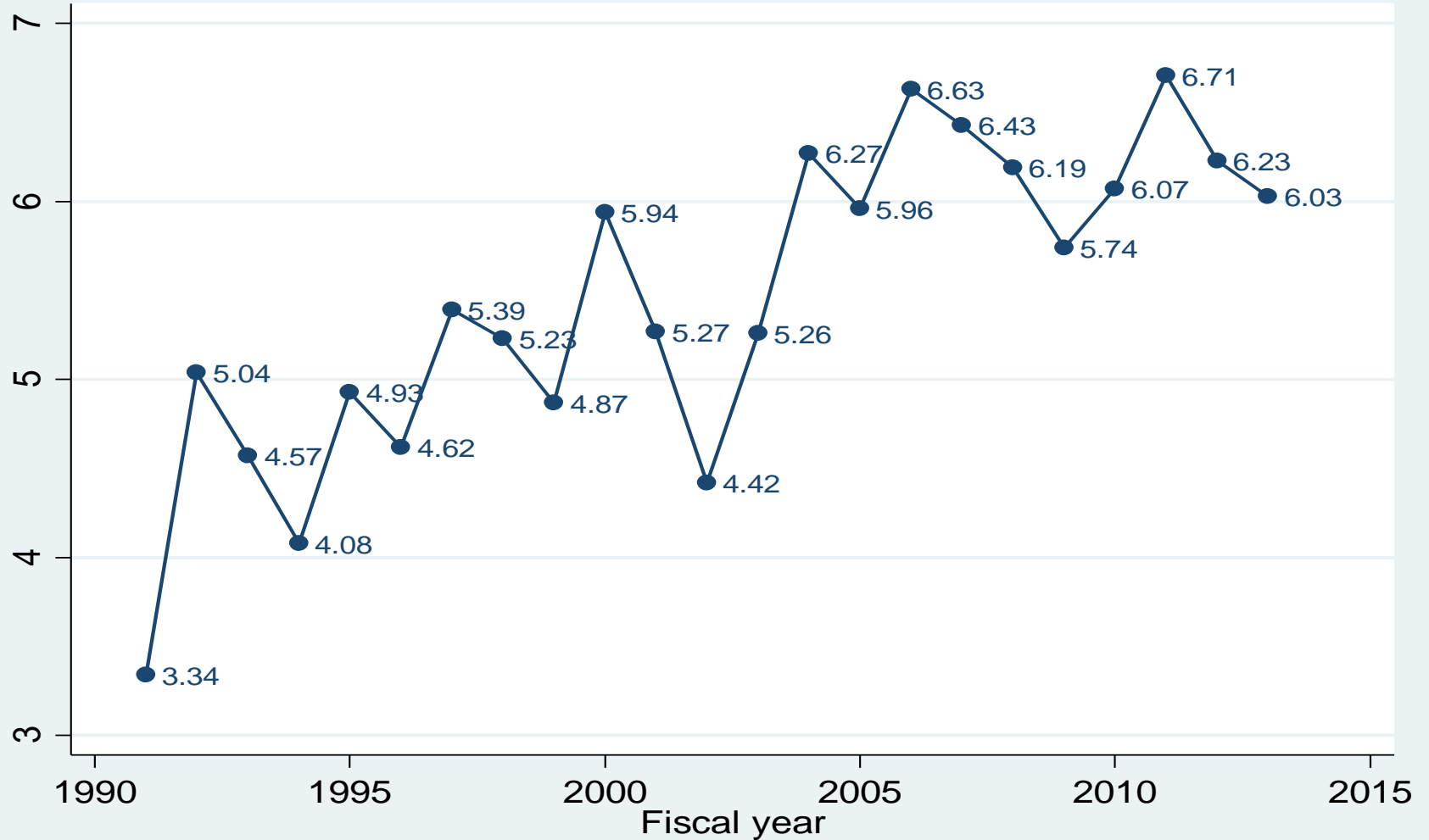
Economic Growth Forecast in 2021

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Outline

- Background
- Trend of Economic Growth
- Economic Transformation and Transition
- Vision 2021
- Forecasting Methodology
- Findings
- Challenges and limitations
- Conclusion

Trend of Economic Growth



Economic Transformation and Transition

Indicators	Annual average growth rate (%)				
	1981-90	1991-00	2001-05	2005-10	2010-13
GDP	3.7	4.9	5.5	6.2	6.3
Population	2.2	2.1	1.5	1.4	1.3
Per capita GDP	1.5	2.8	4	4.8	5.0

Note: GDP is measured at constant 1995/96 prices.
Source: BBS, MoF (2014)

Economic Transformation and Transition

Indicators	2001-06	2009-14	2014-15/ Latest
GDP Growth Rate (% , Annual Change)	5.40	6.13	6.51 (Provisional)
Investment (as % of GDP)	25.2	27.8	28.97 (Provisional)
Public Investment (as % of GDP), last year	5.6	6.6	6.90 (Provisional)
Export (Average)[Billion US\$]	7.9	24.1	-
Export, end period (Billion US\$)	10.5	30.2	25.3 (July-April)
Remittance (Average)[Billion US\$]	3.5	12.8	12.6 (July-April)
Forex Reserve (end period) [Billion US\$]	3.5	21.5	23.7 (May 27, 2015)
Budget Amount, end period(crore Tk)	61,057	2,16,222	2,39,668 (Revised)
Per capita income (last Year)[US\$]	543	1,184	1,314 (Provisional)
Electricity Generation Capacity (end period)	5,245	10,446	13,675
Food Production (lac MT) (end period)	277.87	381.74	383.49 (Target)
Life Expectancy (year)	66.5	70.7	70.7
Poverty Rate (%) end period	40.0	24.30	22.40 (Projected)
Extreme Poverty Rate (%)	25.1	9.95	7.92 (Projected)

Sources: Finance Division, Bangladesh Bank, Bangladesh Bureau of Statistics

Economic Transformation and Transition

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15*
Agriculture and Forestry	15.33	15.17	14.89	14.58	14.65	14.27	13.7	13.09	12.81	12.27
Manufacturing	16.13	16.64	16.87	17.1	17.2	17.75	18.28	19	19.47	20.17
Construction	6.52	6.49	6.5	6.58	6.65	6.67	6.78	6.9	7.03	7.17
Real Estate, Rent and Other Business	8.29	8.03	7.87	7.77	7.61	7.41	7.22	7.07	6.95	6.83

Source: Economic Review of Bangladesh (2015)

Note: the figures are percentage of GDP (base year 2005-06)

Economic Transformation and Transition

Fiscal Year	GDP Growth	Agricultural Sector Growth	Industrial Sector Growth	Service Sector Growth	Investment (As % of GDP)	Private Investment (As % of GDP)	Public Investment (As % of GDP)	Average Inflation
2001-02	3.83	-0.12	5.80	4.84	24.34	18.61	5.73	2.79
2002-03	4.74	3.98	6.58	4.98	24.68	19.33	5.35	4.38
2003-04	5.24	4.97	7.05	5.21	24.99	19.61	5.38	5.83
2004-05	6.54	4.43	7.93	6.2	25.83	20.33	5.5	6.48
2005-06	6.67	5.5	9.80	6.6	26.14	20.58	5.56	7.16
2006-07	7.06	6.69	9.03	6.49	26.18	21.08	5.09	9.39*
2007-08	6.01	4.49	7.03	5.76	26.2	21.7	4.5	12.30*
2008-09	5.05	3.47	6.91	5.08	26.21	21.89	4.32	7.60*
2009-10	5.57	6.15	7.03	5.53	26.25	21.57	4.67	6.82*
2010-11	6.46	4.46	9.02	6.22	27.42	22.16	5.26	10.91*
2011-12	6.52	3.01	9.44	6.58	28.26	22.5	5.76	8.69*
2012-13	6.01	2.46	9.64	5.51	28.39	21.75	6.64	6.78*
2013-14	6.06	4.37	8.16	5.62	28.58	22.03	6.55	7.35*
2014-15 (P)	6.51	3.04	9.60	5.83	28.97	22.07	6.9	6.57**

Source: Finance Division, Bangladesh Bank, Bangladesh Bureau of Statistics

; * Base 2005-06;

**represents April 2015

Visions

Projected sectoral growth and GDP share

	2014	2015	2021
Agriculture	4.3	4.3	4.5
Industry	10.7	11.5	12
of which manufacturing	10.7	11.7	14
Services	7.3	7.8	8
Share of GDP			
Agriculture	16.2	15.5	15
Industry	31.3	32	37
of which manufacturing	20.4	21.1	28
Services	52.5	52.5	48

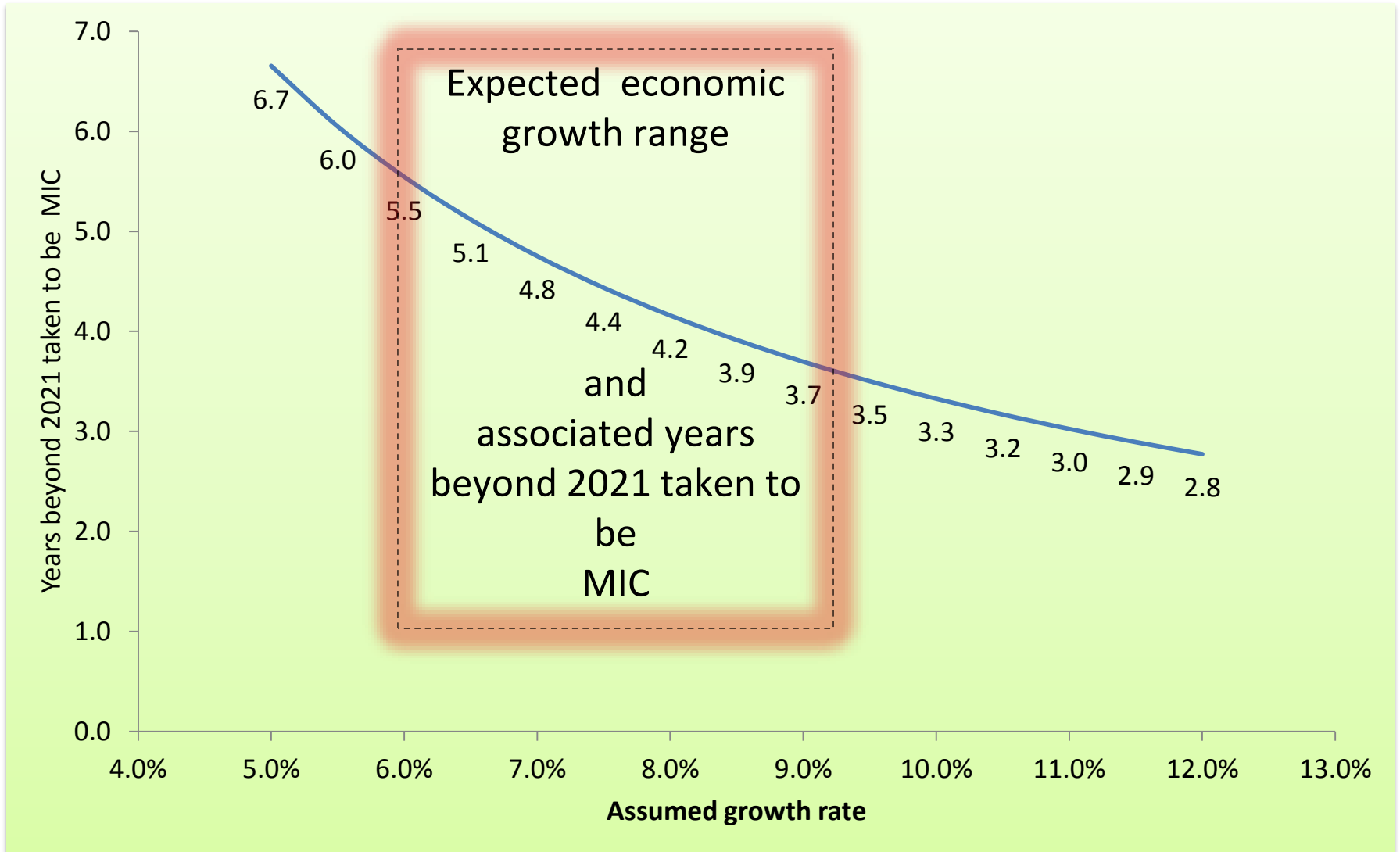
Visions

Progress in Graduation Criteria: Exit from LDC

Indicators	2006	2009	2012	2015	Graduating Criteria (2015)
Economic Vulnerability (EVI)	25.8	23.2	32.4	25.1	<32.0
Human Asset (HAI)	50.1	53.3	54.7	63.8	>66.0
Per capita income (US\$, Atlas method)	403.3	453.3	636.7	926.3*	>1242.0

Source: Triennial review database, Committee for Development Policies (CDP), UNDESA; *GNI per capita is generally measured as a three year annual average during each triennial review of the list of LDCs by CDP. For the 2015 review, averages for the period 2011-13 were used. According to World Bank Atlas Method, per capita GNI in Bangladesh was \$US 1010 in 2013 whereas per capita GNI in 2014-15 is \$US 1,314 according to the provisional estimate of BBS.

Visions



Forecasting Methodology

- Business cycle pattern
- Assumed Growth Boundaries
 - Upper boundary model: $\hat{Y}_{t+1}^U = \alpha_1 + \beta_1 \text{time} + \epsilon_1$
 - Lower boundary model: $\hat{Y}_{t+1}^L = \alpha_2 + \beta_2 \text{time} + \epsilon_2$
- Smoothing Techniques including Trend
- Unobserved Component Models (UCMs)

$$y_t = \mu_t + \varphi_t + \omega_t + \varepsilon_t$$

- Where μ_t , φ_t and ω_t denotes the stochastic trend, stochastic cycle and seasonal component respectively

Findings

- Business cycle pattern: The growth of real GDP followed a one period increase in growth while a two-period successive declines. The average one year increase in growth is estimated at 0.9, while the average one year decrease in growth is estimated at 0.4.
- Assumed growth boundaries:
 - Upper boundary model: $\hat{Y}_{t+1}^U = 4.6 + 0.15 \text{ time}$
 - Lower boundary model: $\hat{Y}_{t+1}^L = 3.6 + 0.125 \text{ time}$

Findings ...

- In the early 1990s, the economy moves up 1 year steadily at the higher rate but moves down slowly almost two years in terms of the size of growth rate. That is the higher economic growth did not sustain.
- The fluctuation or volatility has somewhat increased in 2000s. In the last decade, the economy, on average, has achieved incremental growth for two years followed by two years successive lower growth.

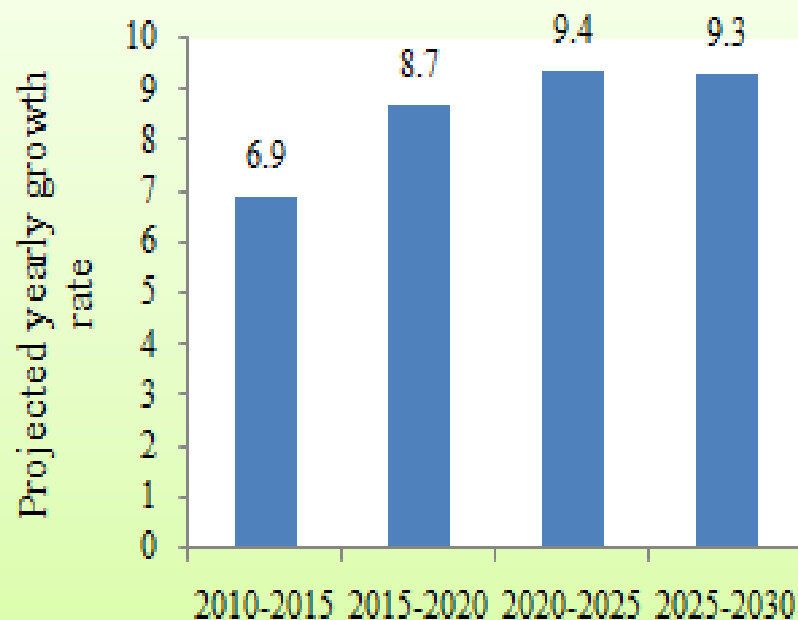
Findings

Year	Case	Upper	Lower	Linear Fit	Linear Combination: $\alpha \hat{Y}_{t+1}^U + (1 - \alpha) \hat{Y}_{t+1}^L$						
					Values of α						
					0.2	0.3	0.4	0.5	0.6	0.7	0.8
2014	6.93	8.20	6.60	6.7	6.68	6.07	6.71	6.72	6.33	6.71	6.64
2015	6.53	8.35	6.73	6.81	6.79	6.18	6.83	6.84	6.44	6.83	6.76
2016	6.13	8.50	6.85	6.91	6.90	6.29	6.94	6.96	6.55	6.95	6.88
2017	7.03	8.65	6.98	7.02	7.01	6.40	7.06	7.07	6.67	7.07	6.99
2018	6.63	8.80	7.10	7.12	7.12	6.51	7.18	7.19	6.78	7.18	7.11
2019	6.23	8.95	7.23	7.23	7.23	6.62	7.29	7.31	6.89	7.30	7.23
2020	7.13	9.10	7.35	7.33	7.33	6.73	7.41	7.43	7.00	7.42	7.34
2021	6.73	9.25	7.48	7.44	7.44	6.84	7.53	7.55	7.12	7.53	7.46

Source: Author's calculation

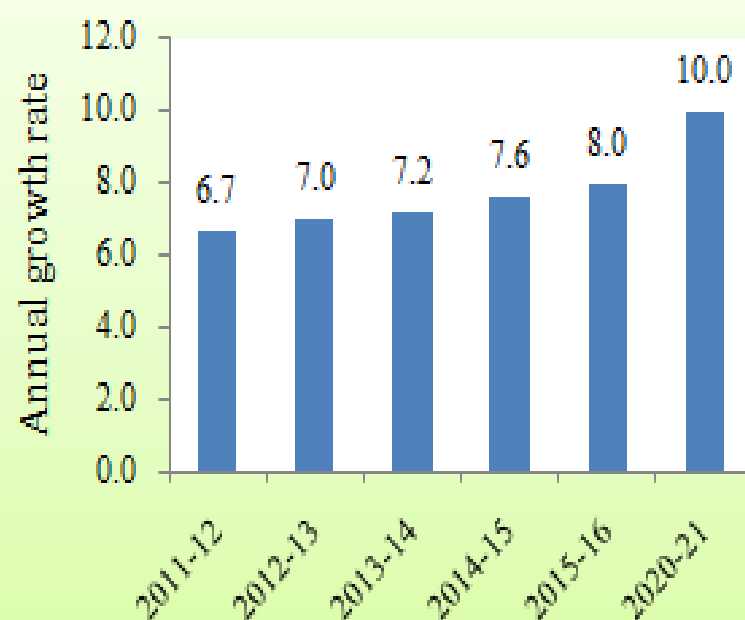
Findings

Figure 2: Projection of real GDP growth in Bangladesh: 5-year period moving average



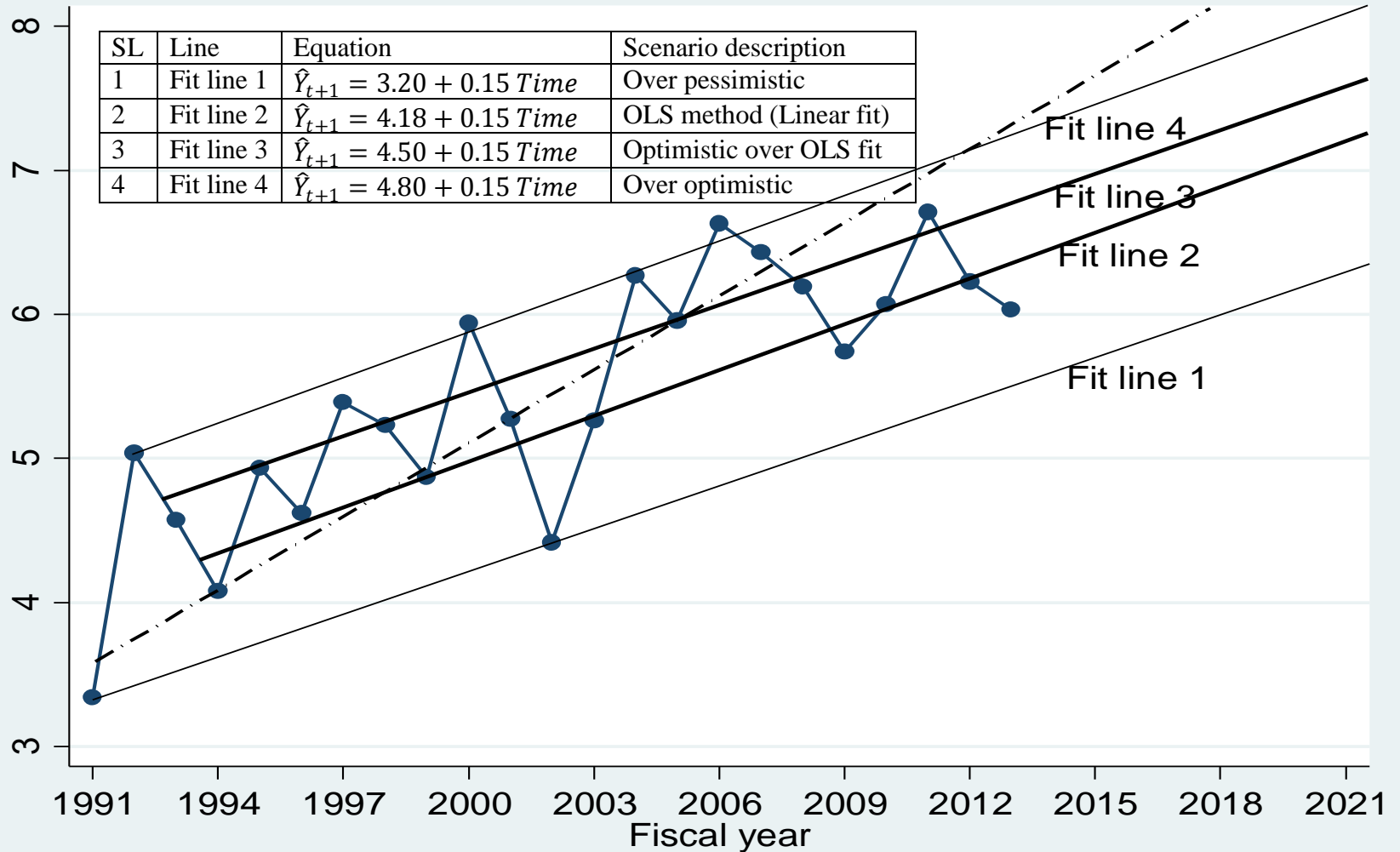
Source: Mujeri (2014)

Figure 2: Projection of real GDP in Bangladesh: PP projection

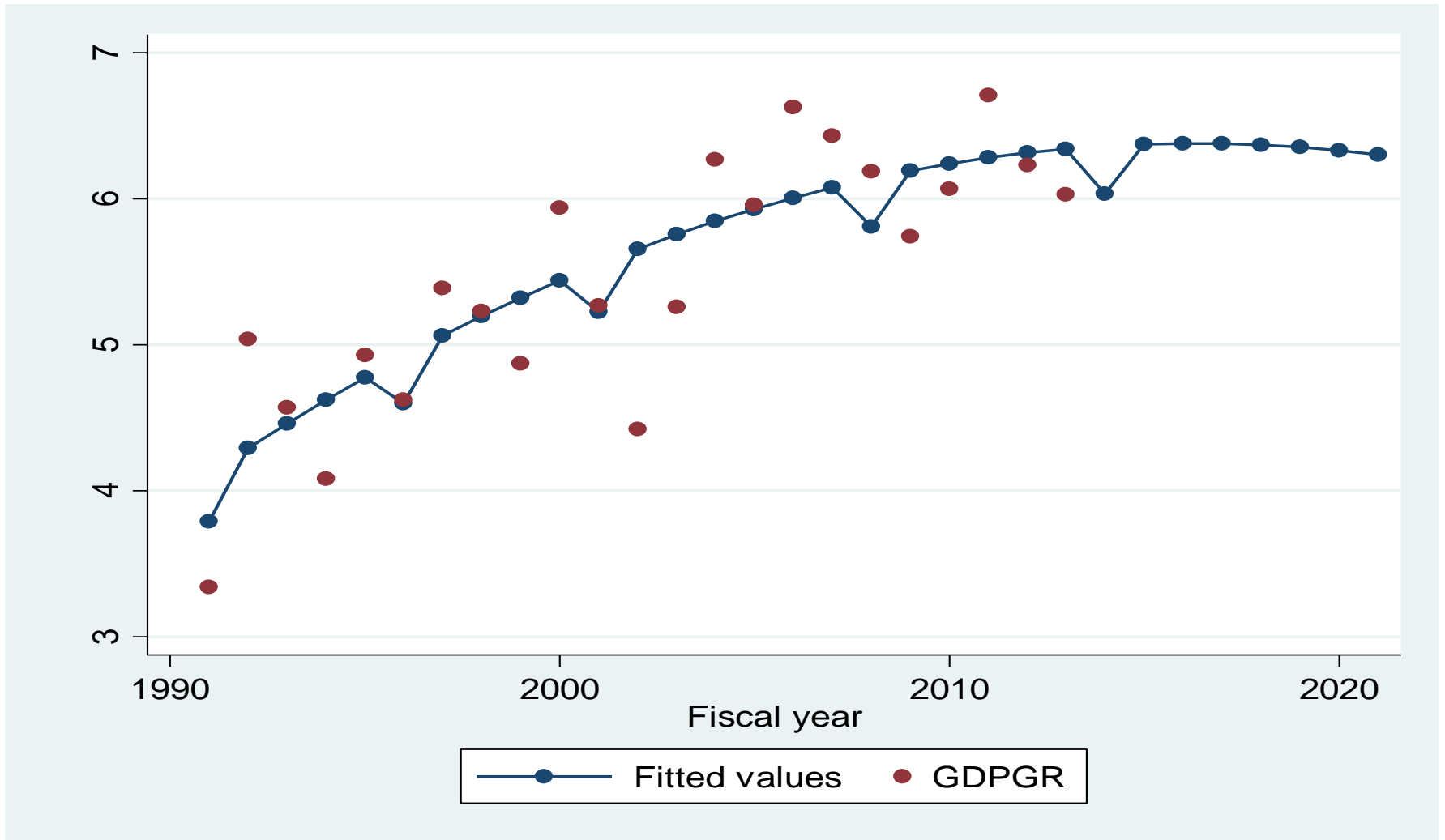


Source: BBS and PP projection

Findings ...



Findings ...



Findings ...

		Coefficient	SE	Z	P Value	Confidence Interval	
Level	var(level)	0.4815318	0.145187	3.32	0.000	0.197	0.766
	var(level)	0.0849218	0.069824	1.22	0.112	0.000	0.222
Cycle	var(gdpgr)	0.2101408	0.091675	2.29	0.011	0.030	0.390
	var(level)	0.0924511	0.066255	1.4	0.081	0.000	0.222
	var(cycle1)	0.1142356	0.10097	1.13	0.129	0.000	0.312

Source: Author's calculation using UCM

Cycle	Coef.	Std. Err.	[95% Conf. Interval]	
Period	2.898	0.324	2.264	3.533
Frequency	2.168	0.242	1.693	2.643
Damping	0.686	0.231	0.233	1.139

Source: UCM based estimates

Challenges and limitations

- The limitation of this study is that it predominantly focuses on the nature of the growth variables.
- The growth is determined by a vector of explanatory variables either given as exogenous or endogenously determined.
- Role of higher government expenditure and growth supportive mega projects.
- The slowing but stable growth path suggests achieving higher growth in near future is challenging unless the growth supportive projects and programs bring the benefits to the country

Thank You All