Evaluation of Gross Domestic Product in India

Rohan
laharohan@gmail.com
NMIMS Anil Surendra Modi School of Commerce, Mumbai, Maharashtra

ABSTRACT

In this research paper with the assistance of some mathematical tools and ways, we'll analyse how Gross Domestic Product (GDP) in the Republic of India has modified over the years from 1960 to 2020. These ways can facilitate the Republic of India forecast the long-run gross domestic product nada. But these values would be supported by the previous trends and cannot take into thought any out of the blue external factors. We will conjointly use statistic tools like moving averages to seek out a general trend of growth rates.

1. INTRODUCTION

Gross Domestic Product (GDP) is that the price of all finished merchandise and services created among a rustic throughout a selected amount. GDP provides associate degree economic photograph of a rustic, accustomed estimate the scale of associate degree economy and rate of growth. Gross domestic product (GDP) is that the total price of everything created during a country, notwithstanding if its voters or foreigners created it. When economists say the "size" of the economy, they're relating gross domestic product. To avoid double-counting, the gross domestic product includes the ultimate price of the merchandise, however not the elements that get in it.

2. DATA

Table 1: Data

Year	GDP growth annual % (Y)	5 Yearly Total	5 Yearly Moving Average	X= Year-1989.5	Trend Value
1961	3.722742533			-28.5	3.050315104
1962	2.931127737			-27.5	3.127800184
1963	5.994353261	17.46540354	3.493080709	-26.5	3.205285264
1964	7.452950122	13.68733224	2.737466448	-25.5	3.282770344
1965	-2.63577011	18.58216753	3.716433507	-24.5	3.360255423
1966	-0.05532877	15.97574345	3.19514869	-23.5	3.437740503
1967	7.82596303	15.06249362	3.012498725	-22.5	3.515225583
1968	3.387929176	22.85549347	4.571098694	-21.5	3.592710663
1969	6.539700296	24.55375262	4.910750525	-20.5	3.670195743
1970	5.157229736	16.17448828	3.234897656	-19.5	3.747680823
1971	1.642930384	16.08208024	3.216416048	-18.5	3.825165902
1972	-0.553301312	10.7277162	2.145543241	-17.5	3.902650982
1973	3.295521135	14.72039848	2.944079696	-16.5	3.980136062
1974	1.18533626	14.74057173	2.948114347	-15.5	4.057621142
1975	9.149912015	22.54863763	4.509727527	-14.5	4.135106222
1976	1.663103637	24.96564859	4.993129717	-13.5	4.212591302
1977	7.254764586	18.54212962	3.708425925	-12.5	4.290076382
1978	5.712532089	16.12803914	3.225607827	-11.5	4.367561461
1979	-5.238182703	20.47113912	4.094227825	-10.5	4.445046541
1980	6.735821528	16.69210778	3.338421556	-9.5	4.522531621
1981	6.006203624	18.26846859	3.653693718	-8.5	4.600016701

Year					
1982	3.47573324	27.32738915	5.46547783	-7.5	4.677501781
1983	7.288892901	25.84586684	5.169173369	-6.5	4.754986861
1984	3.820737856	24.61622739	4.923245478	-5.5	4.83247194
1985	5.254299223	25.10584978	5.021169957	-4.5	4.90995702
1986	4.77656417	27.4447398	5.488947961	-3.5	4.9874421
1987	3.965355634	29.57134528	5.914269055	-2.5	5.06492718
1988	9.62778292	29.85050062	5.970100123	-1.5	5.14241226
1989	5.947343328	26.13076788	5.226153576	-0.5	5.21989734
1990	5.533454563	27.64780827	5.529561653	0.5	5.297382419
1991	1.056831433	22.77080157	4.554160313	1.5	5.374867499
1992	5.482396022	23.4823823	4.696476461	2.5	5.452352579
1993	4.75077622	25.52341958	5.104683916	3.5	5.529837659
1994	6.658924067	32.0161104	6.40322208	4.5	5.607322739
1995	7.57449184	30.58353523	6.116707045	5.5	5.684807819
1996	7.549522249	32.01717483	6.403434965	6.5	5.762292899
1997	4.049820849	34.20400632	6.840801264	7.5	5.839777978
1998	6.184415821	30.47050564	6.094101127	8.5	5.917263058
1999	8.845755561	27.74494965	5.54898993	9.5	5.994748138
2000	3.840991157	27.49910412	5.499820825	10.5	6.072233218
2001	4.823966264	29.17506978	5.835013956	11.5	6.149718298
2002	3.803975321	28.25225083	5.650450166	12.5	6.227203378
2003	7.860381476	32.3346903	6.466938059	13.5	6.304688457
2004	7.922936613	35.5714566	7.114291321	14.5	6.382173537
2005	7.923430621	39.42829635	7.88565927	15.5	6.459658617
2006	8.060732573	34.65461293	6.930922586	16.5	6.537143697
2007	7.660815065	34.59356515	6.91871303	17.5	6.614628777
2008	3.08669806	35.16771923	7.033543846	18.5	6.692113857
2009	7.861888833	32.3483314	6.46966628	19.5	6.769598936
2010	8.497584702	30.14387529	6.028775058	20.5	6.847084016
2011	5.241344743	33.44328363	6.688656726	21.5	6.924569096
2012	5.456358951	32.9916224	6.59832448	22.5	7.002054176
2013	6.386106401	32.49029149	6.498058297	23.5	7.079539256
2014	7.410227605	35.41847325	7.08369465	24.5	7.157024336
2015	7.996253786	37.13000316	7.426000632	25.5	7.234509416
2016	8.169526505	37.55526608	7.511053217	26.5	7.311994495
2017	7.167888861			27.5	7.389479575
2018	6.811369326			28.5	7.466964655
Forecast				29.5	7.544449735
				30.5	7.621934815
				31.5	7.699419895
				32.5	7.776904974
				33.5	7.854390054

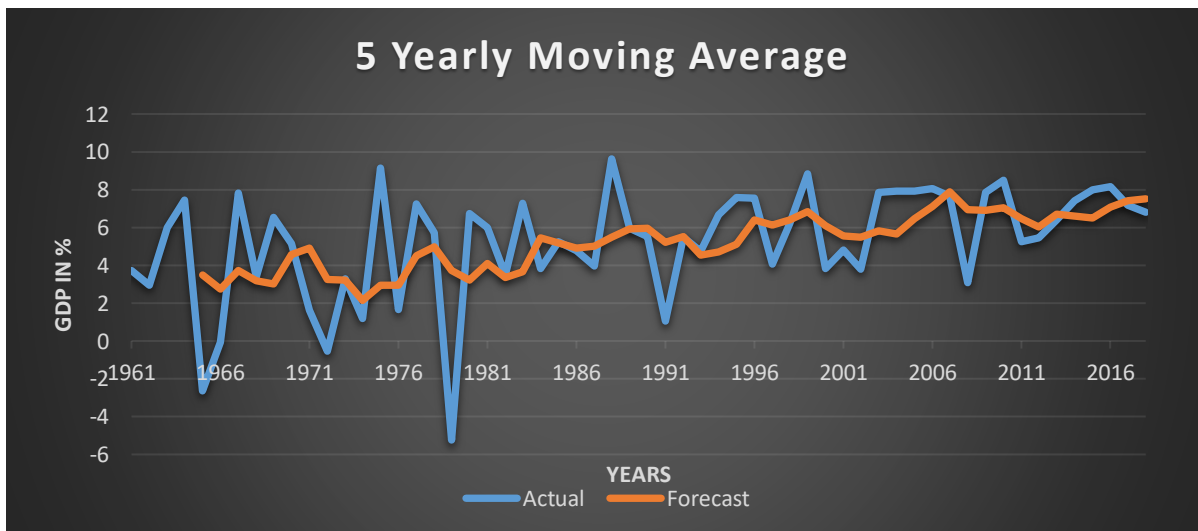## 3. ANALYSIS
3.1 Moving Average

Fig. 1: 5 Yearly moving average graph

The graph on top indicates the moving averages of five years of Gross Domestic Product (GDP) in our way from 1961 to 2018. The graph shows the trend. The gross domestic product was extremely unsteady in initial stages from 1961 to 1981. 1969 and 1979 were notable years wherein the gross domestic product even went negative thanks to erratic rainfall. Since the country back then was solely dependent on its agriculture and farmers such natural factors hit the country's turn out greatly. However once 1981 the gross domestic product fluctuations reduced because the country became advanced and commenced moving towards the path of a developed country which supports secondary and tertiary sector. Hence very little deviations is seen from the moving averages.
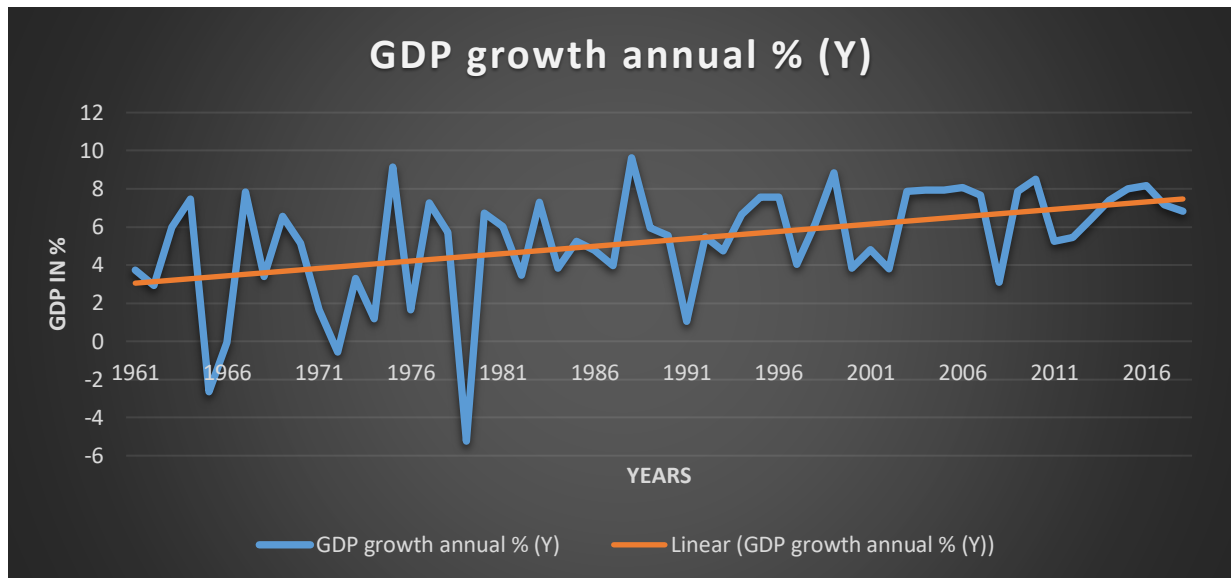
3.2 Trend Line

Fig. 2: GDP Growth Annual Percentage graph

The line is among the foremost vital tools utilized by technical analysts. Trend lines is applied to the highs and also the lows to make a channel. The fundamental quantity being analysed and also the precise points accustomed produce a line vary from dealer to dealer.

Finding the line exploitation least sq. method:

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.4447369
R Square	0.1977909
Adjusted R Square	0.1834658
Standard Error	2.6585906
Observations	58

ANOVA

	df	SS	MS	F	Significance F
Regression	1	97.591	97.591	13.80724	0.000469
Residual	56	395.8138	7.068104		
Total	57	493.4048			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	5.2586399	0.34909	15.06385	2.37E-21	4.559328	5.957951	4.559328	5.957951
X= Year-1989.5	0.0774851	0.020853	3.715809	0.000469	0.035712	0.119258	0.035712	0.119258

4. CONCLUSION

To conclude, the article analyses, however, the gross domestic product of the Republic of India has fluctuated throughout the past sixty years. The simple mathematical tool of moving averages and line are accustomed to predict the long-run price. These don't take into account any unforeseen factors and is solely theoretical supported by the previous trends.

5. REFERENCES

[1] https://www.investopedia.com
[2] https://data.worldbank.org
[3] Thebalance.com