



RESEARCH ARTICLE

Building a Resilient Global Economy

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Published online: 10 November 2023

Abstract: In this paper we discuss the concept of economic resilience which is the ability of the economy to respond to a economic shock and recover at the fastest pace. We take into consideration the survey reports of RBI. The six surveys recently published by RBI depicts that India is becoming more resilient economy. The concept discussed only at the country level by earlier international studies although indicate India's relative international ranking as 65. We develop a state level index by appropriate modification of the concept of economic resilience to the state level context. Thus, our state level resilience index depicts Maharashtra and Jharkhand as highest and lowest resilient States respectively. However, our state level indices are in the nascent State and future research may be more useful to further develop it for more confident application in analytical studies.

Keyword: Economic resilience concept, RBI survey reports, State level resilience index

INTRODUCTION

As we all know, the devastating wave of COVID 19 has destroyed the economy of most of the countries. The same was true of India. However, upcoming hopes of a V-shaped recovery is now expected to surge the Indian economy. The Reserve Bank of India (RBI) has projected India's gross domestic product (GDP) growth at 7.2% for fiscal year 2022-23 from earlier estimate of 7.8%. ADB has estimated GDP growth of 7.5% in 2022-23 which is expected to pick up to 8% in 2023-24. UNCTAD has also estimated global growth to hit 5.3% in 2020-2021. To revive and sustain growth, action is needed both at the international and national levels. Action is also needed to mitigate the threat of global warming and addressing the inequities of finance world. Efforts are required to build resilience, which can only be delivered through investment. In this context, it is important to build a healthy, diversified economy.

In economic literature, the term has been used in at least three senses relating to the ability (a) to recover quickly from a shock; (b) to withstand the effect of a shock; and (c) to avoid the shock altogether.

METHODS

Ability of an economy to recover quickly: This is associated with the flexibility of an economy enabling it to bounce back after being adversely affected by a shock. This ability will be severely limited if, for example, there is a chronic tendency for large fiscal deficits or high rates of unemployment. On the other hand, this ability will be enhanced when the economy possesses discretionary policy tools which it can utilize to counteract the effects of negative shocks, such as a strong fiscal position, which would entail that policymaker can utilize discretionary expenditure or tax cuts to contrast the effects of negative shocks. This type of resilience is therefore associated with "shock-counteraction".

Ability to withstand shocks: This suggests that the adverse effect of a shock could be absorbed or neutered, so that the end effect is zero or negligible. This type of resilience occurs when the economy has in place mechanisms to endogenously react to negative shocks to reduce their effects, which we can refer to as "shock-absorption". For example, the existence of a flexible, multi-skilled labor force could act as an instrument of shock absorption, as negative external demand shocks affecting a particular sector of economic activity can be relatively easily met by shifting resources to another sector enjoying stronger demand. Ability of an economy to avoid shocks. This type of resilience is inherent and can be considered as the obverse of economic vulnerability¹.

It is hypothesized that elements of shock-absorbing and shock-counteracting resilience in an economy can be found in the following four dimensions which are macroeconomic stability, microeconomic market efficiency, good governance, and social development. All these areas feature

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variables which are highly influenced by economic policy, and which can serve for an economy to build its economic resilience to meet the consequences of adverse shocks.

The Resilience Index

The index has been computed by taking a simple average of the four components just described above as four dimensions of stability, efficiency, governance, and social development. Prior to taking simple average, all observations of the components are standardized. In this procedure each value is taken as the deviation from minimum and then computed as the ratio to maximum minus minimum. This transforms the values of observations in a particular variable array so that they take a range of values from 0 to 1. Using this transformation and computing resilience index, ranking of 87 countries is provided by the researchers (Briguglio et al 2005). According to this ranking India ranks 65 with top and bottom rankings of Senegal and Cote d' Ivoire respectively (Annexure 1).

Bloomberg website provides another index which is based on opening of the economy after Covid pandemic. In this ranking India stands 37 with Norway and Hong Kong being at the top and bottom of the list (see Annexure 2).

However, what we are mostly concerned with is economic resilience and rebuilding the economy on a faster recovery path following the receding wave of pandemic.

At the global level the GDP growth prospects by IMF point to 4.4 percent growth whereas it is 3.6 percent growth as per the estimates for 2022 by UNCTAD.

This paper is divided into four sections. The next section reviews the evidence of recovery and resilience based on the various surveys conducted by RBI. This is followed by our estimates of resilience index at the State level. This section 3 also provides resilience index for 20 major Indian States. Discussion and Conclusions comprise the final sections of the paper.

RESULTS AND DISCUSSIONS

Economic resilience as viewed by RBI' s recent surveys

Thus, taking into consideration various aspects in building a resilient economy, a recent release by RBI provides a description of six surveys conducted by different groups.

Among these surveys, for instance, relating to "Consumer Confidence Survey Today", the Reserve Bank released the results for the March 2022 roundⁱⁱ. The survey was conducted during March 02 to March 11, 2022, in 19 major cities. The survey obtains current perceptions (vis-à-vis a year ago) and one year ahead expectations on general economic situation, employment scenario, overall price situation and own income and spending from 5,984 households across these cities.

The major highlights of the survey indicate that: a. Consumer confidence for the current period continued its recovery path, witnessed since mid-2021 though the assessment compared to a year ago remained in negative zone. The current situation index (CSI) improved further in March 2022 on the back of improved sentiments on general economic situation, employment, and household income. b. One year ahead outlook, as measured by the future expectations index (FEI), also continued its recovery path which was interrupted by a dip in the January 2022 round at the peak of Omicron variant impact of COVID-19 and c.

Households' opinion about current and future spending remained in positive territory and was bolstered by a rise in both essential and discretionary spending.

In another survey namely, Industrial Outlook Survey of the Manufacturing Sector for Q4:2021-22, the Reserve Bank released the results of the 97th round of the Industrial Outlook Survey (IOS)ⁱⁱⁱ. The survey encapsulates qualitative assessment of the business climate by Indian manufacturing companies for Q4:2021-22 and their expectations for Q1:2022-23. In all, 1,283 companies responded in this round of the survey conducted during January-March 2022. Owing to uncertainty driven by the COVID-19 pandemic, an additional block was included in this round of the survey for assessing the outlook on key parameters for two quarters ahead as well as three quarters ahead. Thus, an Assessment for Q4: 2021-22 include highlights of:

- Manufacturing enterprises assessed improvement in demand condition in terms of production, order books and employment situation in Q4:2021-22, albeit at a slower pace when compared to the previous survey round.
- Sentiments on capacity utilisation and availability of finance improved further in Q4:2021-22.
- Manufacturers perceived continued price pressures with some softening in the pace of increase in input cost and selling prices.
- Sentiments on profit margin turned negative due to lower optimism on demand conditions vis-à-vis the preceding quarter.
- Business sentiments remained positive though it waned marginally, as reflected in the business assessment index (BAI), which stood at 111.5 in Q4:2021-22 as compared with 115.0 in the previous quarter

B. Further Expectations for Q1: 2022-23 highlighted that

- Respondents expect expansion in the demand parameters such as production volumes, new orders, and job landscape in Q1:2022-23
- Capacity utilisation and overall financial situation are expected to improve further in Q1:2022-23.
- Pressure from purchase of raw materials are likely to intensify in Q1:2022-23; the respondents expressed higher optimism for growth in selling prices indicating more pricing power combined with input cost pressures vis-à-vis the previous survey round.
- Overall business expectations index (BEI) remained high though it moderated to 134.7 in Q1:2022-23 from 137.8 in the previous quarter.
- Likewise, Expectations for Q2:2022-23 and Q3:2022-23 highlighted that:
- Manufacturers perceive sequential improvements in demand conditions, capacity utilisation and overall business situation till Q3:2022-23.
- Respondents expect input cost pressures to continue and selling price to remain high in the ensuing quarters.

Further taking overall net responses after considering negative as well as positive responses, many interesting results include expectations pertaining to: Overall Business Situation, Turnover, Full-time Employees, Part-time Employees, Availability of Finance, Cost of Finance, Salary & Wages, Cost of Inputs, Selling Price Profit Margin, Inventories, Technical/Service Capacity and Physical Investment. Among these, except Cost of Finance, Salary & Wages and Cost of Inputs, all other expectations are positive with the values in the range of 47-68 percent, 47-76 percent respectively for the services and infrastructure sectors for the fourth quarter of 2021-22.

Overall inflation expectations are depicted to be in the median values^{iv}. These indicate current perceptions to be 9.7 percent. For three months period and one year ahead, the inflation expectations are 10.7 and 10.8 percent respectively. Keeping in view other factors as well as expectations of different segments, the growth of Gross Value added in Agriculture, Industry and services are projected to be 3.2, 6.2 and 8.4 percent in 2022-23. These are lower than gross value-added expectations for these three sectors in 2021-22. In fact, in 2021-22 these values are 3.3, 10.3 and 8.6 percent respectively. Thus, real GDP growth is forecasted to be 8.8 and 7.5 percent in 2021-22 and 2022-23 respectively.

Thus, overall present year expectations are more optimistic relative to next year. These expectations do not indicate a belief that Indian economy is not so much a resilient economy. Thus, more, and suitable Government interventions are needed that could raise optimism relating to Cost of Finance, Salary & Wages and Cost of Inputs. Considering the vital role of better health care sector certain pertinent observations from our studies are noteworthy. Despite lot of increase in public expenditure in last two central budgets, the bed capacity has not increased except in certain big and national level health institutions.

There has not been de facto any public expenditure increase relating to material and medicines at state level and primary health care sector in the country. As against above trends in healthcare sector, the health insurance schemes have provided a better successful picture. This is due to increase in choices of health insurance schemes which are including pandemic treatment expenditure. Most remarkable in this aspect are the new national insurance scheme known as Pradhan Mantri Jan Arogya yojana (PMJAY) and some state level schemes like Aam Admi health insurance in Delhi and some other state level schemes in few states like Gujarat, Maharashtra, Karnataka and Rajasthan.

These health insurance schemes sponsored or funded by the central or state budget have an element of reimbursement by the respective level of governments to either public sector or private sector insurance companies which is establishing a new direction to public-private collaboration in health insurance^v. Despite the laudable initiatives in health insurance, there continues a bias towards urban areas.

Thus, overall resilience of Indian economy has improved despite pessimistic expectations for 2022-23. It needs a better orientation of budgetary policies both at central and state level which is permissible with waning of Corona wave at least in India now.

State level Economic Resilience Index:

We have attempted to construct Economic resilience index for major 20 States. For this purpose, we have chosen Gross Fiscal Deficit (GFD) as a ratio of Gross State Domestic Product (GSDP) i.e. $GFD/GSDP$, size of State's budget or total budgetary expenditure, good governing index (GGI) and human development index (HDI). These represent macroeconomic stability, microeconomic market efficiency, good governance, and social development respectively. The gross fiscal deficit as a percent of state domestic product represents macroeconomic stability as it captures the macroeconomic parameters of inflation and other macroeconomic fluctuations thus influencing fiscal deficit of government. The share of government in the economy is considered to have a crowding-out effect on private sector involvement, thereby reducing the degree of autonomous resilience which freely operating markets can produce, thus

represent microeconomic market efficiency. The situation of governance in the state is represented by good governing index which is published by Department of Administrative Reforms and Public Grievances. The human development index published by UNDP provides HDI indices.^{vi} By its methodology of constructing HDI it covers health, education and income differentials; thus, representing social development. These parameters and their standardised values are presented below for 20 major States in Tables 1a and b which include Andhra Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttarakhand, Uttar Pradesh, and West Bengal. The maximum and minimum values of these parameters is also presented in these Tables. Thus, highest and lowest values respectively for HDI it is for Kerala and Bihar, for GGI it is for Gujarat and Assam, for Gross fiscal deficit it is Assam, and Gujarat and for size of State budget it is Uttar Pradesh and Goa (Tables 1a and b). The Standardised values of GGI, Gross fiscal deficit, State Budgetary expenditure and HDI are presented in Figures 1 to 4. The Correlation matrix for HDI index, GGI, GFD/GSDP and Exp 2021 presented in Table 2. Though it indicates a value more than .50 for GGI and HDI, we have decided to retain the both due to their importance as discussed above.

DISCUSSION

Using RBI surveys, we observe that overall resilience of Indian economy has improved despite pessimistic expectations for 2022-23. However, we feel that it needs a better orientation of budgetary policies both at central and state level which is permissible with waning of Corona wave at least in India now.

Using the values of mainly four parameters we estimated Resilience index for 20 major Indian States which are presented in Table 3 and Figure 5 which indicate Maharashtra and Jharkhand respectively as most and least resilient States.

CONCLUSION AND RECOMMENDATION

Our discussion above indicates that viewed from the survey reports of RBI, India is becoming more resilient although the ranking presented in Annexure 1 indicate its relative international ranking as 65. Also, our state level resilience indicates that the application of this concept with appropriate modification at the State level, depict Maharashtra and Jharkhand as highest and lowest resilient States respectively. However, our State level indices are in the nascent State and future research may be more useful to further develop it for more confident application in analytical studies.

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Table 1a. HDI and GGI values

States	HDI Index	standardised HDI	GGI	standardised GGI
Andhra Pradesh	0.649	0.3606	4.47	0.2654
Assam	0.613	0.1875	4.04	0.0000
Bihar	0.574	0.0000	4.62	0.3580
Chhattisgarh	0.611	0.1779	4.86	0.5062
Goa	0.763	0.9087	5.35	0.8086
Gujarat	0.672	0.4712	5.66	1.0000
Haryana	0.708	0.6442	5.33	0.7963
Jharkhand	0.599	0.1202	4.76	0.4444
Karnataka	0.683	0.5240	5.11	0.6605
kerala	0.782	1.0000	5.22	0.7284
Madhya Pradesh	0.603	0.1394	4.89	0.5247
Maharashtra	0.75	0.8462	5.43	0.8580
Odisha	0.606	0.1538	4.58	0.3333
Punjab	0.724	0.7212	4.97	0.5741
Rajasthan	0.628	0.2596	4.88	0.5185
Tamil Nadu	0.709	0.6490	5.05	0.6235
Telangana	0.669	0.4567	4.84	0.4938
Uttarakhand	0.683	0.5240	4.84	0.4938
Uttar Pradesh	0.596	0.1058	4.63	0.3642
West Bengal	0.641	0.3221	4.52	0.2963
min	0.574		4.04	
max	0.782		5.66	
max-min	0.208		1.62	

Source: our estimates

Table 1b: Gross Fiscal Deficit and Budgetary Size

States	GFD/GSDP (RE 20-21)	standardised GFD/SDP	Expenditure (RE 20-21)	standardised exp
Andhra Pradesh	5.5	0.4068	172432	0.4169
Assam	9	1.0000	119893	0.2746
Bihar	7.1	0.6780	217977	0.5403
Chhattisgarh	6.5	0.5763	91182	0.1968
Goa	4.6	0.2542	18544	0.0000
Gujarat	3.1	0.0000	183685	0.4474
Haryana	3.3	0.0339	102648	0.2279
Jharkhand	3.2	0.0169	77195	0.1589
Karnataka	3.5	0.0678	218058	0.5405
kerala	4.3	0.2034	128105	0.2968
Madhya Pradesh	5.7	0.4407	189447	0.4630
Maharashtra	3.3	0.0339	377195	0.9717
Odisha	3.3	0.0339	124965	0.2883
Punjab	5.4	0.3898	100508	0.2221
Rajasthan	6.1	0.5085	206609	0.5095
Tamil Nadu	5.5	0.4068	285199	0.7224
Telangana	4.3	0.2034	160158	0.3837
Uttarakhand	4.4	0.2203	47813	0.0793
Uttar Pradesh	4.7	0.2712	387653	1.0000
West Bengal	4	0.1525	198321	0.4871
min	3.1		18543.6	
max	9		387653.1	
max-min	5.9		369109.5	

Source: our estimates

Table 2: Correlation matrix for Hdi index, GGI, Gfdsdp and Exp 2021.

pwcorr hdiindex ggi gfdsdp2021 expenditure2021, star(.05) bonferroni				
	hdiindex	ggi	gfdsdp2021	exp2021
hdiindex	1			
ggi	.6768*	1		
gfdsdp2021	-0.3706	-0.5992	1	
exp2021	-0.1094	0.0409	-0.052	1

Source: our estimates

Figure 1: Standardised GGI

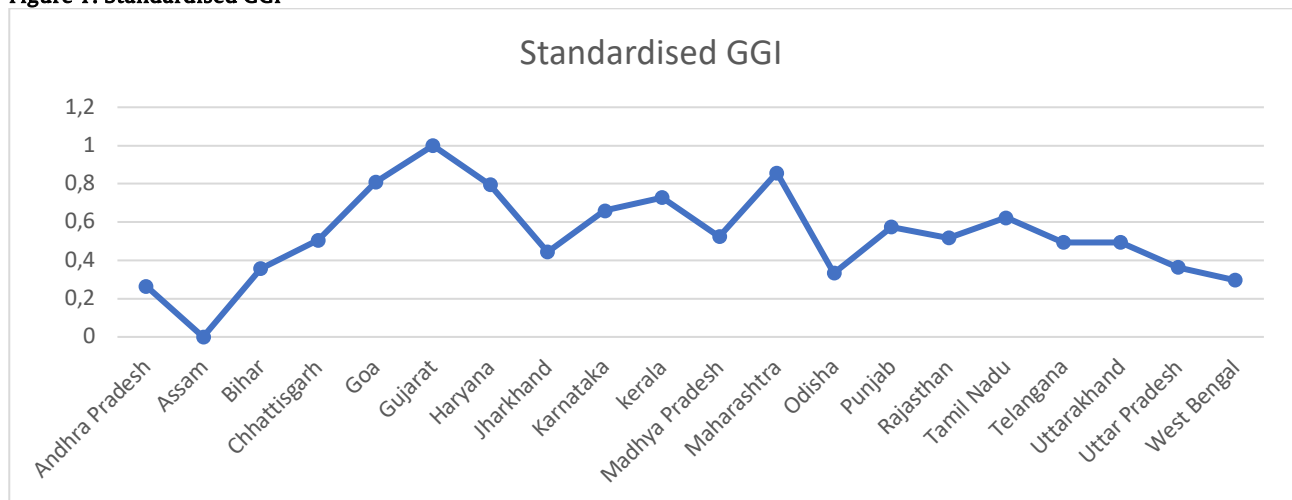


Figure 2: Standardised Gross fiscal deficit

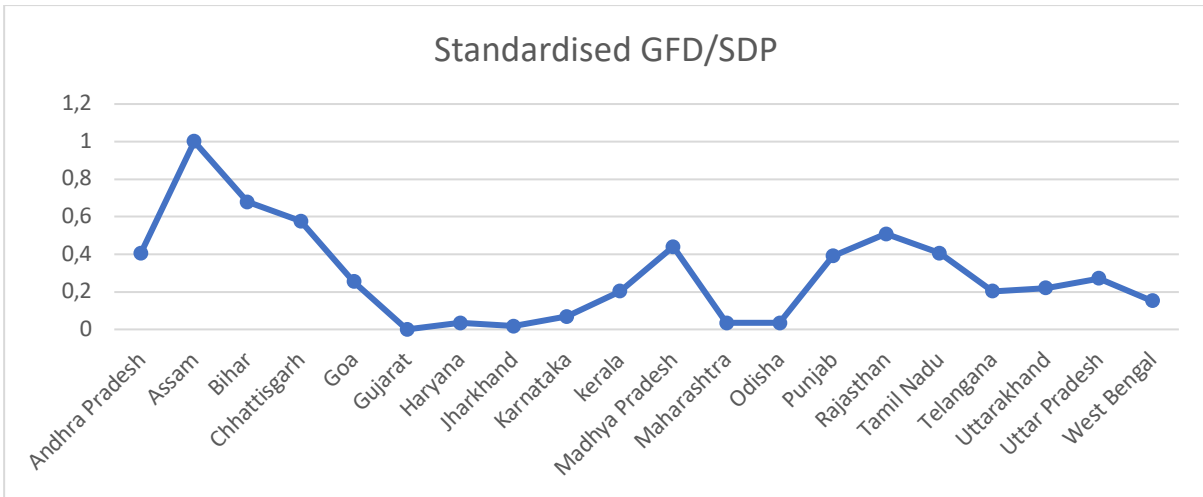


Figure 3: Standardised State Budgetary expenditure

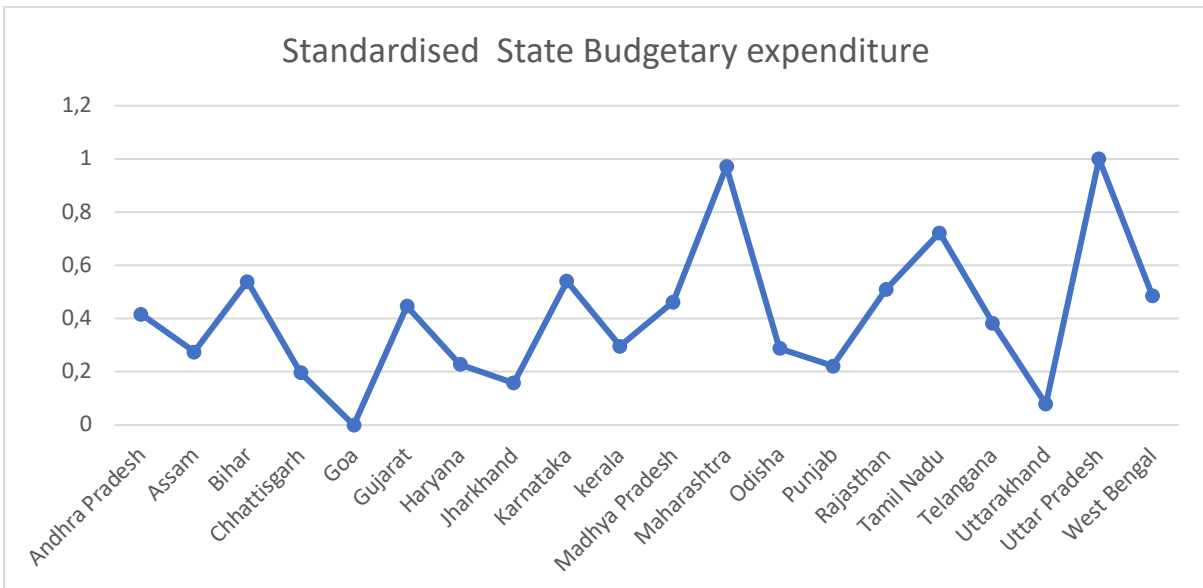
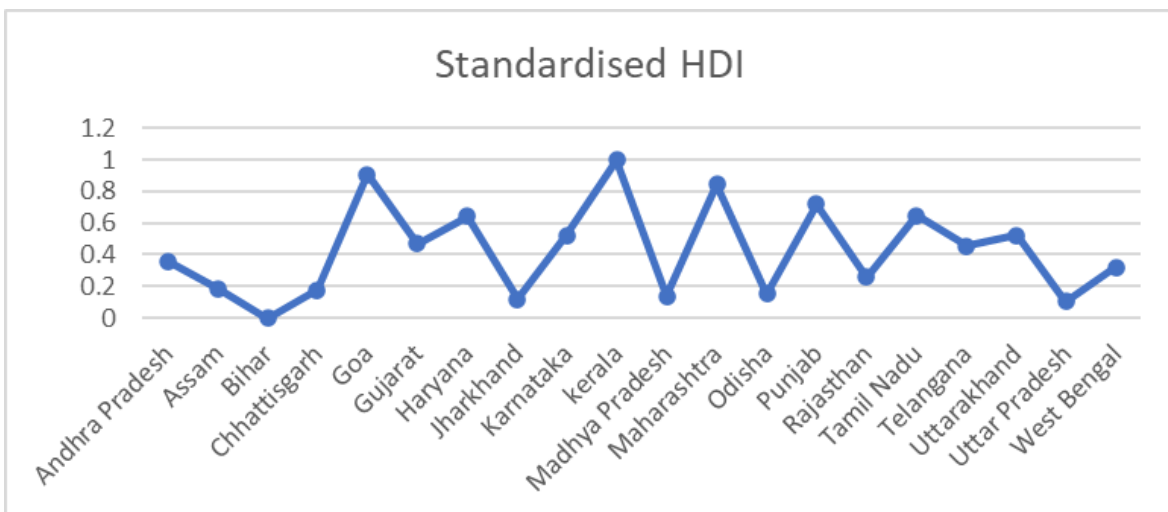


Figure 4: Standardised HDI



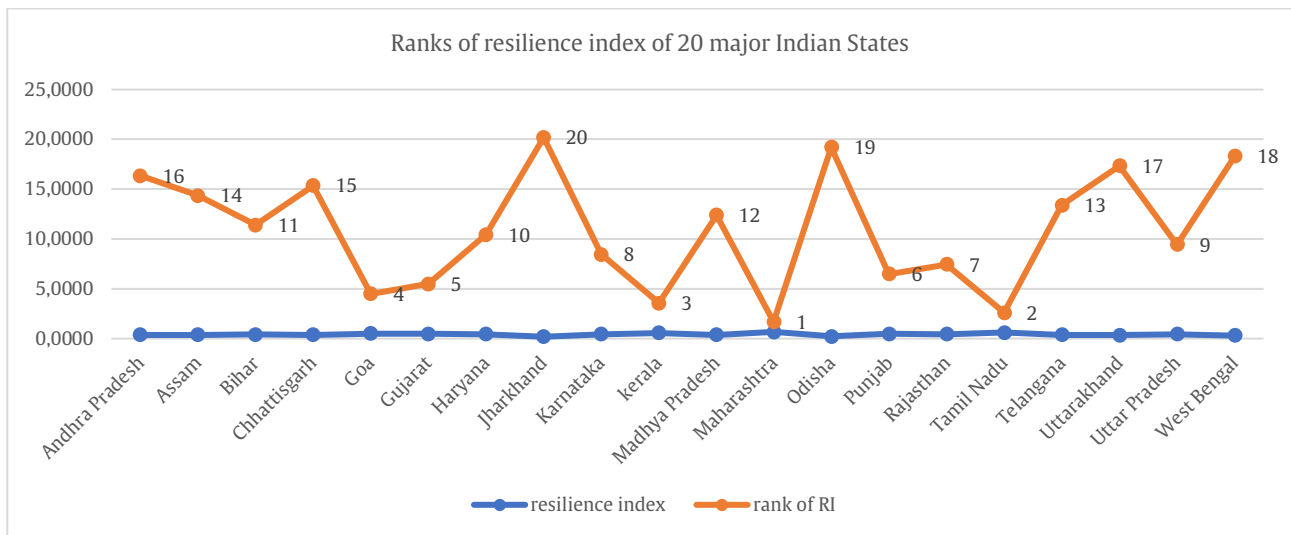
Source: above Tables 1a and b

Table 3: Resilience index of 20 major Indian States

States	State level Resilience Index (SRI)	Rank of SRI
Andhra Pradesh	0.3624	16
Assam	0.3655	14
Bihar	0.3941	11
Chhattisgarh	0.3643	15
Goa	0.4929	4
Gujarat	0.4796	5
Haryana	0.4256	10
Jharkhand	0.1851	20
Karnataka	0.4482	8
Kerala	0.5572	3
Madhya Pradesh	0.3920	12
Maharashtra	0.6774	1
Odisha	0.2023	19
Punjab	0.4768	6
Rajasthan	0.4490	7
Tamil Nadu	0.6004	2
Telangana	0.3844	13
Uttarakhand	0.3294	17
Uttar Pradesh	0.4353	9
West Bengal	0.3145	18

Source: our estimates

Figure 5: Ranks of 20 major Indian States based on resilience index



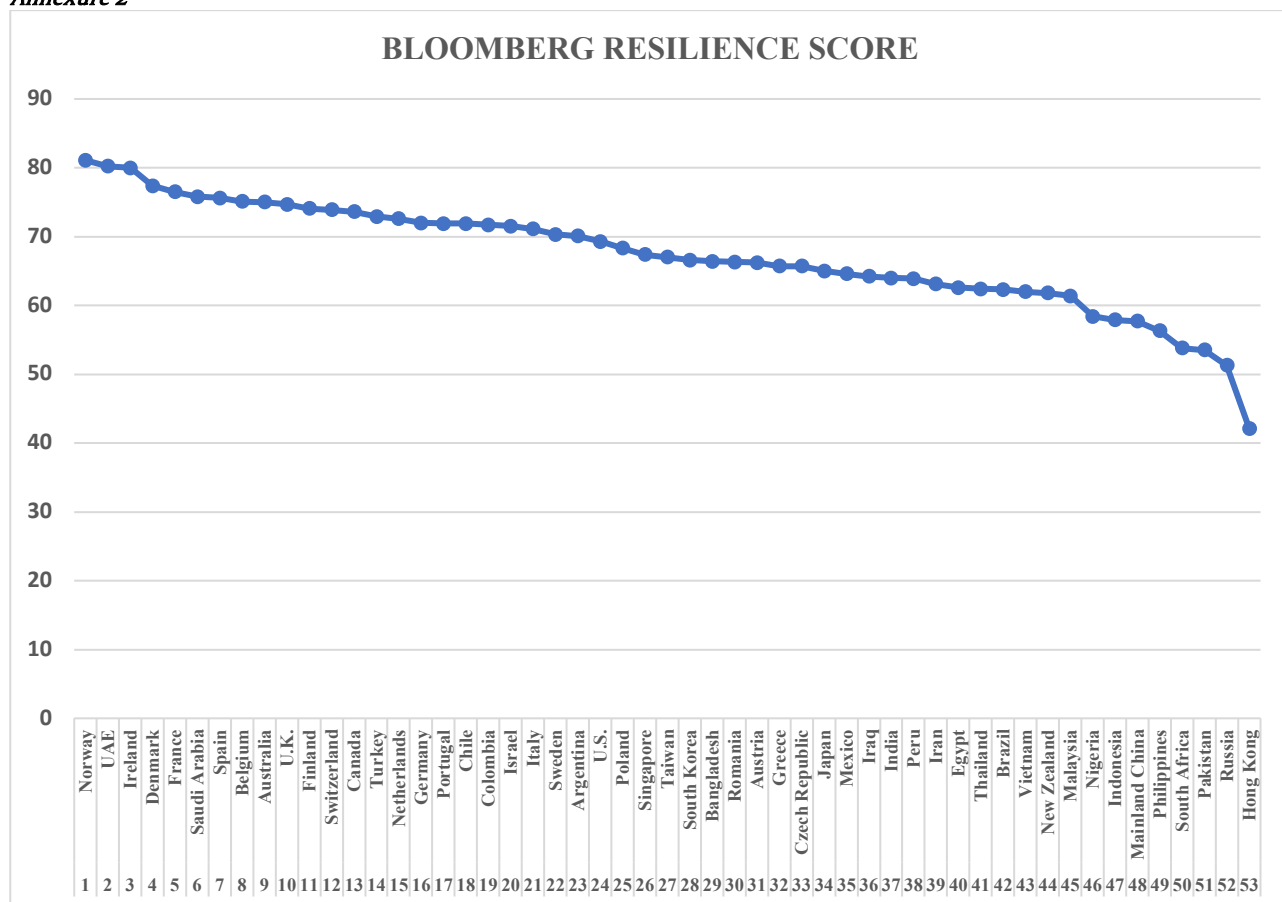
Annexure 1: Economic Resilience Index

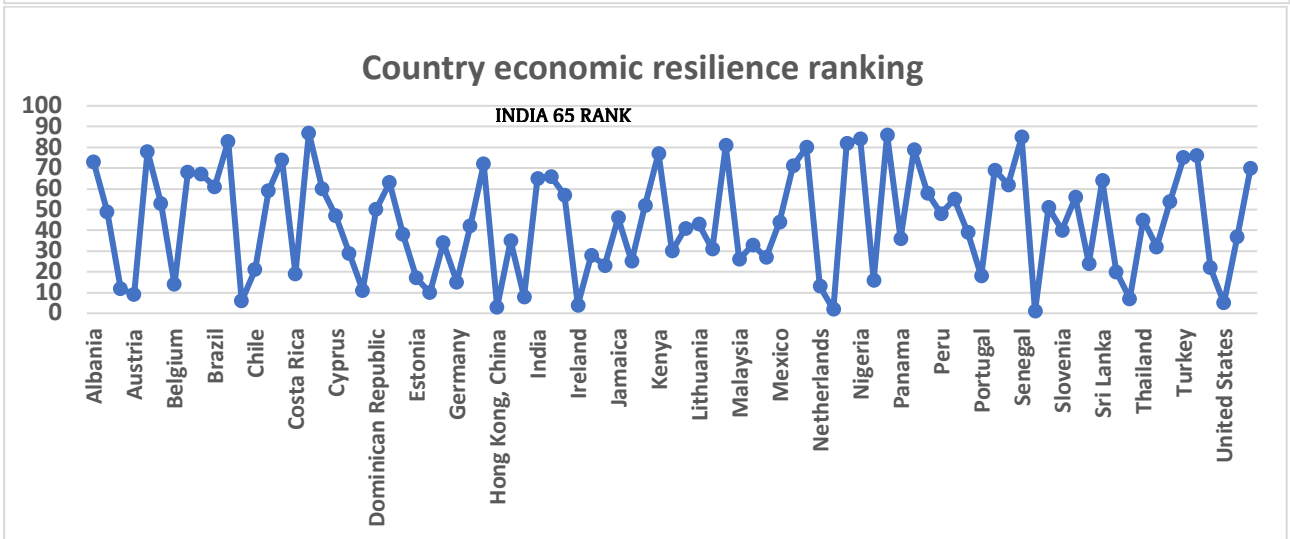
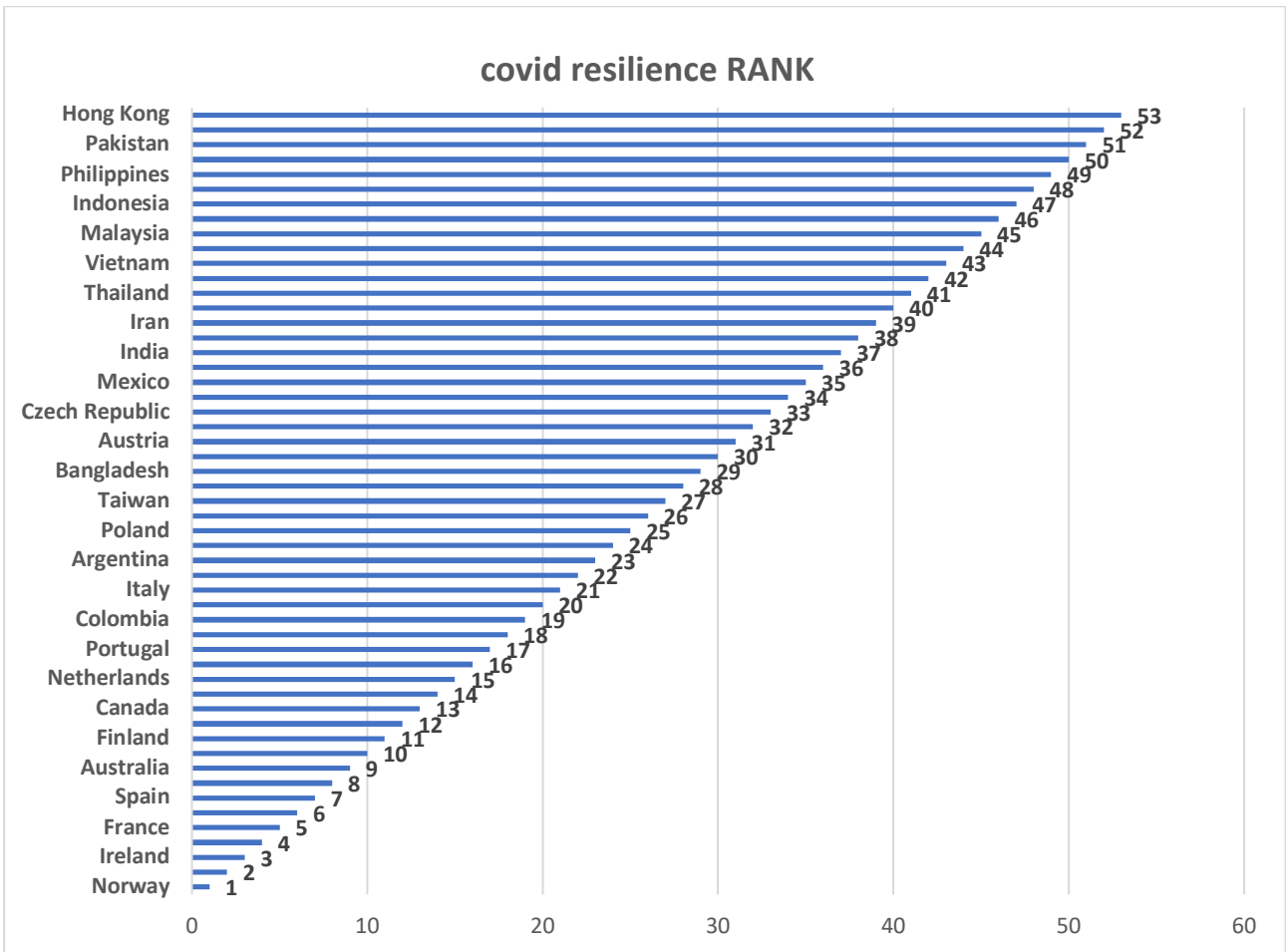
Country	Macroeconomic stability	Microeconomic market efficiency	Social development	Good governance	Resilience Index	Country Ranking
Albania	0.281	0.198	0.782	0.331	0.398	73
Argentina	0.553	0.511	0.877	0.242	0.546	49
Australia	0.494	0.500	0.989	0.990	0.743	12
Austria	0.706	0.399	0.959	0.940	0.751	9
Bangladesh	0.650	0.457	0.278	0.117	0.376	78
Barbados	0.647	0.000	0.921	0.539	0.527	53
Belgium	0.676	0.422	0.984	0.791	0.718	14
Belize	0.220	0.253	0.771	0.545	0.447	68
Bolivia	0.490	0.573	0.646	0.095	0.451	67
Brazil	0.414	0.375	0.741	0.380	0.478	61
Cameroon	0.466	0.239	0.286	0.280	0.318	83
Canada	0.648	0.560	0.978	0.924	0.778	6
Chile	0.651	0.564	0.869	0.567	0.663	21
China	0.668	0.209	0.725	0.388	0.497	59
Colombia	0.442	0.232	0.771	0.147	0.398	74
Costa Rica	0.625	0.616	0.864	0.589	0.674	19
Cote d'Ivoire	0.446	0.402	0.071	0.198	0.279	87
Croatia	0.544	0.121	0.837	0.462	0.491	60
Cyprus	0.387	0.302	0.894	0.645	0.557	47
Czech Republic	0.589	0.418	0.866	0.603	0.619	29
Denmark	0.728	0.314	0.948	0.998	0.747	11
Dominican Republic	0.671	0.580	0.678	0.253	0.546	50
Egypt, Arab Rep.	0.605	0.370	0.540	0.392	0.477	63
El Salvador	0.670	0.719	0.670	0.288	0.587	38
Estonia	0.650	0.612	0.861	0.583	0.677	17
Finland	0.653	0.372	0.973	1.000	0.750	10
France	0.515	0.183	0.965	0.736	0.600	34
Germany	0.570	0.410	0.951	0.929	0.715	15
Greece	0.402	0.489	0.935	0.482	0.577	42
Honduras	0.449	0.556	0.613	0.092	0.428	72
Hong Kong, China	0.665	1.000	0.875	0.687	0.807	3
Hungary	0.459	0.455	0.842	0.636	0.598	35
Iceland	0.734	0.370	0.970	0.942	0.754	8
India	0.522	0.404	0.439	0.504	0.467	65
Indonesia	0.444	0.581	0.659	0.150	0.459	66
Iran, Islamic Rep.	0.612	0.285	0.657	0.504	0.514	57
Ireland	0.759	0.620	0.932	0.866	0.794	4
Israel	0.615	0.169	0.937	0.756	0.619	28
Italy	0.582	0.384	0.935	0.729	0.657	23
Jamaica	0.429	0.592	0.798	0.409	0.557	46
Japan	0.495	0.335	0.975	0.730	0.634	25
Jordan	0.414	0.334	0.747	0.623	0.529	52
Kenya	0.510	0.481	0.349	0.189	0.382	77
Kuwait	0.597	0.444	0.766	0.653	0.615	30
Latvia	0.542	0.412	0.837	0.519	0.578	41
Lithuania	0.567	0.439	0.858	0.431	0.574	43
Luxembourg	0.204	0.469	0.902	0.883	0.615	31
Madagascar	0.389	0.377	0.308	0.237	0.328	81
Malaysia	0.743	0.450	0.766	0.533	0.623	26
Malta	0.506	0.344	0.880	0.679	0.602	33
Mauritius	0.618	0.531	0.722	0.619	0.623	27
Mexico	0.623	0.628	0.793	0.231	0.569	44
Morocco	0.517	0.235	0.447	0.539	0.434	71
Nepal	0.513	0.226	0.313	0.338	0.347	80
Netherlands	0.504	0.446	0.981	0.988	0.730	13
New Zealand	0.703	0.629	0.975	0.948	0.814	2
Nicaragua	0.064	0.488	0.597	0.151	0.325	82
Nigeria	0.494	0.342	0.286	0.146	0.317	84
Norway	0.575	0.282	0.984	0.876	0.679	16
Pakistan	0.420	0.303	0.262	0.165	0.287	86
Panama	0.600	0.607	0.820	0.348	0.594	36
Papua New Guinea	0.529	0.350	0.341	0.261	0.370	79
Paraguay	0.596	0.616	0.749	0.071	0.508	58

Peru	0.586	0.609	0.757	0.235	0.547	48
Philippines	0.474	0.574	0.787	0.244	0.520	55
Poland	0.587	0.334	0.883	0.525	0.582	39
Portugal	0.612	0.415	0.921	0.748	0.674	18
Romania	0.414	0.205	0.782	0.360	0.440	69
Russian Federation	0.537	0.340	0.768	0.263	0.477	62
Senegal	0.428	0.379	0.134	0.273	0.303	85
Singapore	1.000	0.844	0.886	0.884	0.903	1
Slovak Republic	0.469	0.342	0.842	0.497	0.538	51
Slovenia	0.674	0.115	0.910	0.618	0.579	40
South Africa	0.594	0.392	0.485	0.597	0.517	56
Spain	0.564	0.407	0.970	0.627	0.642	24
Sri Lanka	0.347	0.478	0.768	0.286	0.470	64
Sweden	0.496	0.243	1.000	0.926	0.666	20
Switzerland	0.575	0.649	0.954	0.923	0.775	7
Thailand	0.424	0.548	0.752	0.548	0.568	45
Trinidad and Tobago	0.656	0.434	0.796	0.530	0.604	32
Tunisia	0.531	0.264	0.676	0.624	0.524	54
Turkey	0.042	0.513	0.698	0.328	0.395	75
Uganda	0.536	0.481	0.256	0.303	0.394	76
United Kingdom	0.101	0.601	0.973	0.975	0.663	22
United States	0.661	0.650	0.948	0.903	0.791	5
Uruguay	0.543	0.456	0.883	0.483	0.591	37
Venezuela, RB	0.531	0.427	0.793	0.000	0.438	70

Source: Briguglio L., Cordina G., Bugeja S. and Farrugia N. (November 2005), Conceptualising and measuring economic resilience, DOI: [10.22459/PIRIG.11.2005.03](https://doi.org/10.22459/PIRIG.11.2005.03); In book: Pacific Islands Regional Integration and Governance

Annexure 2





Source: Briguglio L., Cordina G., Bugeja S. and Farrugia N. (November 2005), Conceptualising and measuring economic resilience, DOI: [10.22459/PIRIG.11.2005.03](https://doi.org/10.22459/PIRIG.11.2005.03); In book: Pacific Islands Regional Integration and Governance.

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