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Do Countries with High Social Resilience Index (SRI) Manage Crises better?

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Abstract. Global shocks impact both developed and developing nations. Countries with higher State Resilience Index (SRI) are believed to be better equipped to handle such shocks than those with lower SRI. This study explores the relationship between SRI and GDP during economic crises. SRI assesses a nation's readiness across various dimensions, while GDP measures economic performance and resilience. Analyzing 135 countries during three global crises: the Hi-Tech crisis in 2000; the food crisis of 2007-2008; and the COVID-19 pandemic. Countries were grouped by SRI levels: Group I comprised nations with low SRI (ranging from 4.7 to 6.3), and Group II included countries with high SRI ≥ 6.4. Data from the Fund for Peace (FFP) for the SRI indicator and The World Bank were used for the GDP indicator. Statistical analysis revealed that: (1) SRI alone does not dictate crisis response capability. (2) Countries with low SRI demonstrated unexpected resilience. (3) Nations with high SRI experienced more severe impacts. (4) An inverse relationship between SRI and GDP during crises was observed.

Keywords. State Resilience Index (SRI); GDP (current US$); Global economic shocks; crisis response capability

1. Introduction

From time to time, global shocks emerge, exerting profound impacts on economies, societies, and the global community at large. These shocks, arising from a variety of factors including natural disasters, economic crises, pandemics, geopolitical events, and other, illuminate vulnerabilities, weaknesses, and strengths within global systems and individual countries. They often highlight areas in need of improvement, adaptation, or increased resilience. Moreover, these shocks serve as tests for global resilience and cooperation, prompting the strengthening of international partnerships and institutions to tackle common challenges (Rielaender, 2020; Siambabala, 2006; IFRC, 2004).

This study centered its focus on three significant global economic events: The Hi-Tech crisis in 2000, the food crisis of 2007-2008, and the COVID-19 pandemic of 2019-2020. The Hi-Tech crisis, also referred to as the "dot-com bubble" or "dot-com crash," marked a substantial economic event during the early 2000s. It characterized the rapid ascension and subsequent collapse of numerous internet-based companies and technology stocks. The late 1990s witnessed a surge in investment in internet-related businesses, fueled by the belief in a revolutionary impact on business and commerce. Investors eagerly purchased shares in internet startups, even those lacking profitability or concrete business models.

Consequently, stock prices of many technology companies skyrocketed. However, this exuberance was unsustainable, and the bubble began bursting by early 2000. Financial difficulties surfaced for numerous internet companies, causing their stock prices to plummet. This loss of investor confidence led to a widespread sell-off of tech stocks. The aftermath of the Hi-Tech crisis reverberated across the economy, impacting consumer spending, business investment, and overall economic growth. Post-crisis, the technology sector gradually recovered, with surviving companies implementing more sustainable business models (Ofek et al., 2003).

The food crisis of 2007-2008 emerged as a worldwide phenomenon marked by a swift surge in food prices, significantly impacting vulnerable populations, particularly in developing nations. It stands as one of the most notable food crises in recent history, affecting millions globally. Major agricultural commodities such as wheat, rice, corn, and soybeans experienced steep price hikes during this period. The

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escalating global demand for biofuels, notably derived from crops like corn and sugarcane, diverted agricultural production away from essential food crops, leading to disruptions in food supplies and prices.

This crisis unfolded amidst broader global economic uncertainties, intensifying the difficulties faced by vulnerable groups. Its consequences were severe, especially in relation to the global economy. The crisis's repercussions rippled across the global economic landscape, impacting trade, inflation rates, and economic stability in multiple countries. In response to this crisis, various international organizations, governments, and stakeholders implemented diverse measures to combat food insecurity and stabilize food prices. These initiatives encompassed increased investments in agriculture, the removal of export limitations, food assistance programs, and endeavors promoting sustainable agriculture and food production (Headey 2011; McMichael, 2009; Mittal, 2009).

The COVID-19 pandemic, originating in late 2019 and extending into 2021 and beyond, emerged as a global health crisis, significantly impacting economies, societies, and health systems worldwide. Virtually every country felt the effects of this pandemic, encountering various challenges that affected individuals, communities, and global economies. Key consequences of the COVID-19 pandemic included immense strain on healthcare systems due to the rapid virus spread, resulting in millions of global fatalities. The economic repercussions were profound, leading to business closures, job losses, reduced consumer spending, and disruptions in supply chains. This economic fallout disproportionately affected marginalized communities, exacerbating existing inequalities. The pandemic underscored the critical need for global cooperation, readiness, and equitable responses to health crises. Governments, international organizations, healthcare professionals, and communities collaborated to combat the virus and mitigate its widespread impacts. Vaccination efforts played a pivotal role in controlling the virus's spread and gradually easing restrictions in many regions. However, the pandemic's long-term effects on societies and economies continue to be subjects of ongoing analysis, with its consequences expected to persist for years to come (Rielaender, 2020; Siambabala, 2006).

When COVID-19 swept across the world in 2020, there was a belief that the U.S., possessing a high SRI, was best positioned to manage the pandemic compared to West Africa with a low SRI. However, West Africa, contrary to expectations, was not overwhelmed. This study examines countries' abilities to withstand and recover from economic crises, evaluating their performance using SRI and GDP. While GDP measures economic output, SRI assesses a state or region's resilience to face and rebound from diverse challenges. Although GDP potentially contributes to a state's resilience, SRI accounts for various factors determining its capacity to endure and recover from challenges. This study's research question explores whether countries with high SRI are more affected by crises or cope better during these situations. It distinguishes countries based on their SRI levels, delving into detailed explanations of each indicator later in the study (Malik et al., 2020).

2.SRI and GDP indicators

Various economic shocks can significantly impact the performance of countries' economies by disrupting economic activities, influencing key indicators, and affecting overall economic health. These shocks often have cascading effects on unemployment, inflation, investment, trade balances, and overall economic growth. To mitigate the negative impacts and stimulate recovery, governments, central banks, and policymakers implement various strategies. A country's ability to recover from these shocks depends on factors such as policy response, economic diversification, fiscal strength, and overall resilience. Two economic indicators that are particularly relevant to studying these impacts are the SRI (Social Resilience Index) and GDP (current US$). Both indicators provide valuable insights into different aspects of an economy's performance and health during crises.

In this study, the SRI utilized is as defined by the Fund For Peace (FFP), which measures resilience across seven pillars, integrating gender considerations throughout. These pillars encompass inclusion, social cohesion, state and individual capacities, environment and ecology, economy, and civic spaces. FFP categorizes the SRI into five levels: ≥ 8.3, ≥ 6.4, ≥ 4.7, ≥ 2.9, and ≤ 2.8. For each country, the SRI is computed as an average across the seven pillars, with a maximum score of 10. The top 10 most resilient

countries in 2022, according to the SRI Index of 154 countries, include Norway, Sweden, Finland, Switzerland, Denmark, New Zealand, Ireland, Netherlands, Germany, and Australia. Conversely, the top 10 least resilient countries in 2022 comprise Yemen, South Sudan, Syria, Chad, Somalia, Afghanistan, Sudan, the Central African Republic, the Democratic Republic of Congo, and Guinea. In this research, countries are categorized into two groups based on their SRI: those with high SRI ≥ 6.4 and those with low SRI ranging from 4.7 to 6.3 (Table 1). Two points of interest in this case study of 135 countries are notable. (I) Figure 1 demonstrates an exponential relationship between a country's GDP and its SRI index number. (II) researchers generally believe that countries with high SRI respond more effectively during crises compared to those with low SRI, which have a lesser capacity to withstand such challenges. The disparity in GDP (current US$) between these two groups, especially during times of crises, adds depth to the research question at hand (FFP, 2022; Development aid, 2022).

Table 1: Countries sample under this study case: high and low SRI verse GDP (current US$)

Countries SRI ≥ 6.4	****SRI** (2020)	***GDP (2020) (current billions of US$)**	**Countries SRI≤ 6.3**	**SRI** (2020)	**GDP (2020) (current billions of US$)**
Denmark	8.2	355	Cuba	5.6	28.6
Germany	7.9	3890	Bolivia	5.5	36
Canada	7.8	1650	Nepal	5.3	33.4
UK	7.7	2700	Tanzania	5.2	62.4
Japan	7.5	5040	Benin	4.9	15.7
France	7.5	2640	Nigeria	4.4	432
USA	7.4	21100	Ethiopia	4.3	108
Italy	7	1900	Angola	4	53.6

34 countries in this study case, SRI ≥ 6.4, GDP Median: 415 billion US$
74 countries in this study case, SRI 4.7-6.3, GDP Median: 58.9 billion US$
*GDP (current US$) source : The World Bank (2022)
https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=XL
** SRI source: FFP, 2022 https://reliefweb.int/report/world/state-resilience-index-annual-report-2022

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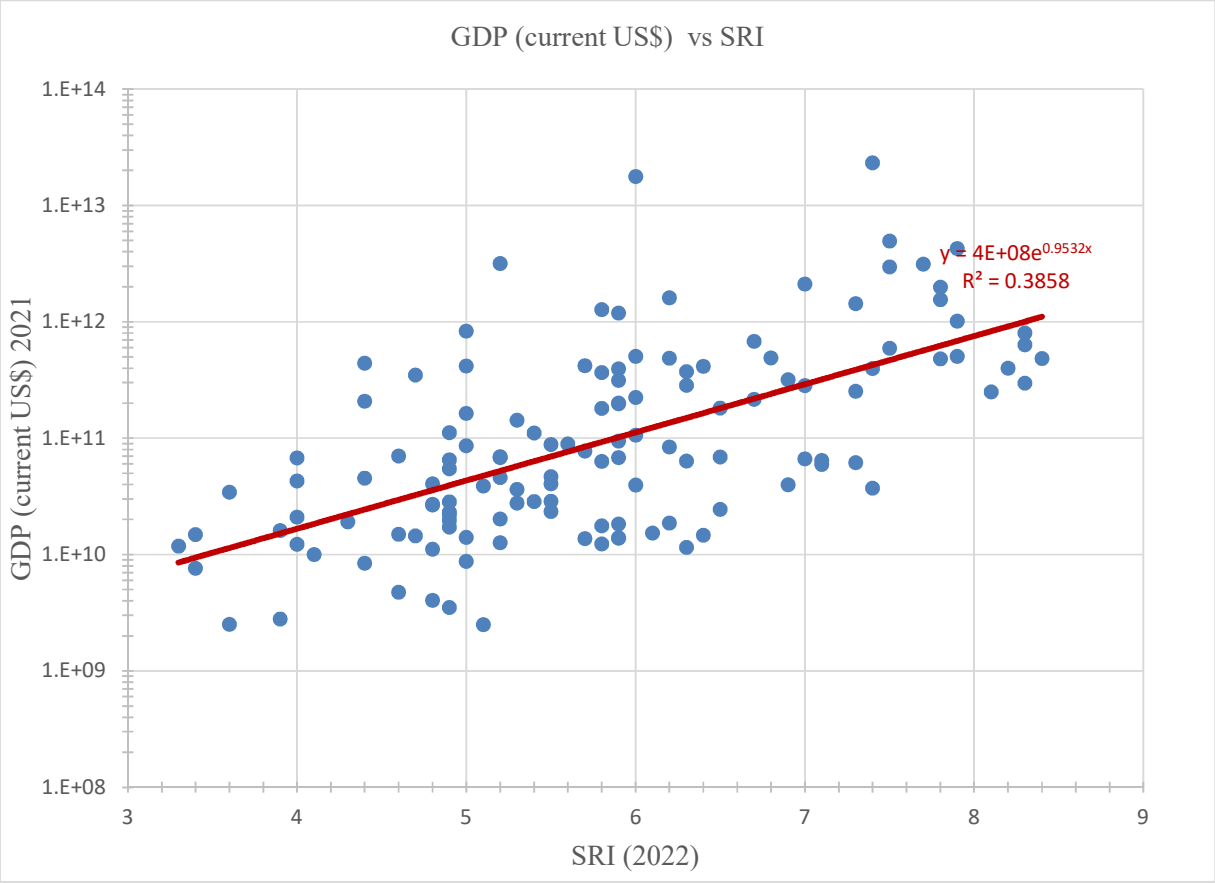

Figure 1: GDP (current US$) vs SRI; Exponential ratio between country's GDP and its SRI index number.

3. Material and Methods

3.1 Sample description

This study introduces two economic indicators, namely the State Resilience Index (SRI) and Gross Domestic Product (GDP), to explore their relationship during times of crises. The countries under consideration are categorized into two groups: (I) countries with SRI ranging from 4.7 to 6.3, representing developing nations, and (II) countries with SRI ≥ 6.4, denoting developed nations. Data for the SRI indicator was obtained from the Fund For Peace (FFP, 2022), while data for the GDP indicator was sourced from The World Bank (World Bank indicators, 2022). The study analyzes 135 countries in the context of three major global economic crises: the Hi-Tech crisis in 2000, the food crisis of 2007-2008, and the COVID-19 pandemic of 2019-2020.

3.2 Measures and data analysis

Statistical modeling and analysis were conducted to investigate the correlations between SRI and GDP across three different economic crisis periods, distinguishing between countries with high and low SRI. In this study, "Unaffected" denotes countries that did not experience any adverse effects during a particular crisis, as evidenced by GDP growth at the time of the event. Conversely, "Affected" countries refer to those that encountered a slowdown or experienced negative growth in GDP during the crisis. Table 2 provides a summary of the "Affected" and "Unaffected" countries for the examined events of this study case.

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Table 2: Countries "Affected" and "Unaffected" and Economic crises

Crises	**Year**	**"Affected" Countries**	**"Unaffected" Countries**
Hi-Tech	2000	110	25
Food	2007-2008	97	38
Covid-19	2019-2021	102	33

4. Results

The results section of this study presents data analysis for a partial sample of the overall study, which encompassed 135 countries. The analysis focuses on 14 countries, with 7 countries allocated to each group: the "Affected" and "Unaffected" groups for each economic event (refer to Table 3). Each figure in the analysis delineates the time interval for each event. Additionally, for each country, a table provides a summary of GDP (current US$) during specific time intervals for each event. It also includes calculations of the %GDP growth rate between years and the total country % GDP growth rate over multiple years, spanning from 2000 to 2021.

The calculation of the GDP growth rate (%) is outlined as follows:

$$\boldsymbol{GrowthRate(x,y)} = \frac{\boldsymbol{dg}}{\boldsymbol{g}} = \left(\frac{\boldsymbol{GDP_y - GDP_x}}{\boldsymbol{GDP_x}}\right)$$

The GDP growth rate over multiple years, in our case from 2000 to 2021, is determined by the formula:

$$\boldsymbol{GrowthRate(2000,2021)} = \left(\frac{\boldsymbol{GDP_{2021} - GDP_{2000}}}{\boldsymbol{GDP_{2000}}}\right)$$

Table 3: This study case list of the "Affected" and "Unaffected" Countries

"Affected" country	SRI 2020
Finland	8.3
Italy	7
United Kingdom	7.7
Germany	7.9
Denmark	8.2
Japan	7.5

"Unaffected" country	SRI 2020
Tanzania	5.2
Ethiopia	4.9
Cuba	5.6
Bolivia	5.5
Nepal	5.3
China	6.0
Kenya	5.4

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4.1 Nepal

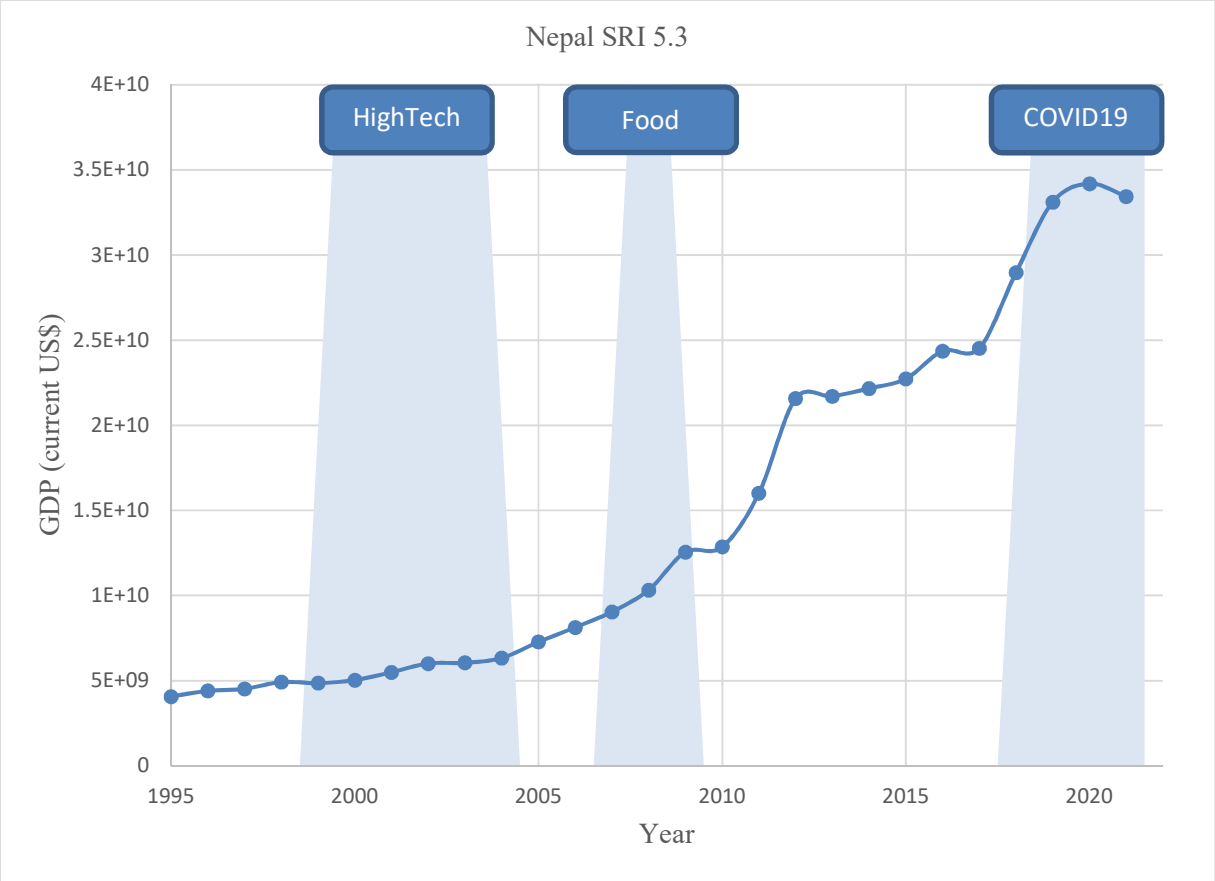

Figure 2: Nepal GDP of years 1995-2021

Table 4: Nepal's GDP (current US$) profile through three Economic Crises: the Hi-tech crisis, the Food crisis, and the COVID-19 pandemic. Total GDP growth rate over 2000-2021 is 561.2%

Crises	**Hi-tech 1999**	**Hi-tech 2000**	**Hi-tech 2001**	**Hi-tech 2002**	**Hi-tech 2003**	**Hi-tech 2004**
GDP (current US$)	5.03E+09	5.49E+09	6.01E+09	6.05E+09	6.33E+09	7.27E+09
GDP Growth Rate (%)	3.49	9.14	9.47	0.66	4.63	14.84
Crises	**Food 2006**	**Food 2007**	**Food 2008**	**Food 2009**		
GDP (current US$)	9.04E+09	1.03E+10	1.25E+10	1.29E+10		
GDP Growth Rate (%)	11.19	13.94	21.36	3.2		

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Crises	Covid-19 2018	Covid-19 2019	Covid-19 2020	Covid-19 2021
GDP (current US$)	3.31E+10	3.42E+10	3.34E+10	3.63E+10
GDP Growth Rate (%)	14.14	3.32	-2.34	8.68

Nepal experienced differing impacts on its GDP growth rate during each of the following crises:

Hi-Tech Crisis (2000): The Hi-Tech crisis in 2000 did not significantly affect Nepal's GDP. Given Nepal's limited reliance on advanced technology and information technology at the time, the direct impact on its economy was minimal compared to more technologically advanced nations. Despite this, Nepal still exhibited moderate GDP growth during this period. GDP (current US$): 5.49E+09 (2000); 6.01E+09 (2001); 6.05E+09 (2003).

Food Crisis (2007-2008): The food crisis in 2007-2008 did not have a negative impact on Nepal's GDP. Being primarily an agrarian economy, Nepal maintained positive GDP growth throughout the period of the food crisis. GDP (current US$): 9.04E+09 (2006); 1.03E+10 (2007); 1.25E+10 (2008).

COVID-19 Pandemic (2019-2020) had a negative impact on Nepal's GDP, with disruptions observed across various sectors, including tourism, which is a crucial component of Nepal's economy. During the period from 2019 to 2020, Nepal experienced a decline in GDP, evidenced by figures of GDP (current US$): 3.42E+10 (2019); 3.34E+10 (2020), resulting in a GDP Growth Rate of -2.34%.

The overall trend in GDP: Nepal's economy has encountered diverse challenges across different economic periods. While the GDP growth rates initially exhibited positive growth, they subsequently decelerated, particularly in recent years, attributed to the impact of the COVID-19 pandemic (World Bank Nepal, 2023). Consequently, it can be inferred that Nepal, despite being a developing country with a low SRI of 5.3, sustained a consistently impressive positive GDP growth rate during the three study events it underwent, with a cumulative GDP growth rate reaching 508.37%. This indicates that the country's GDP remained resilient to the tested events, notwithstanding its low SRI.

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4.2 Tanzania

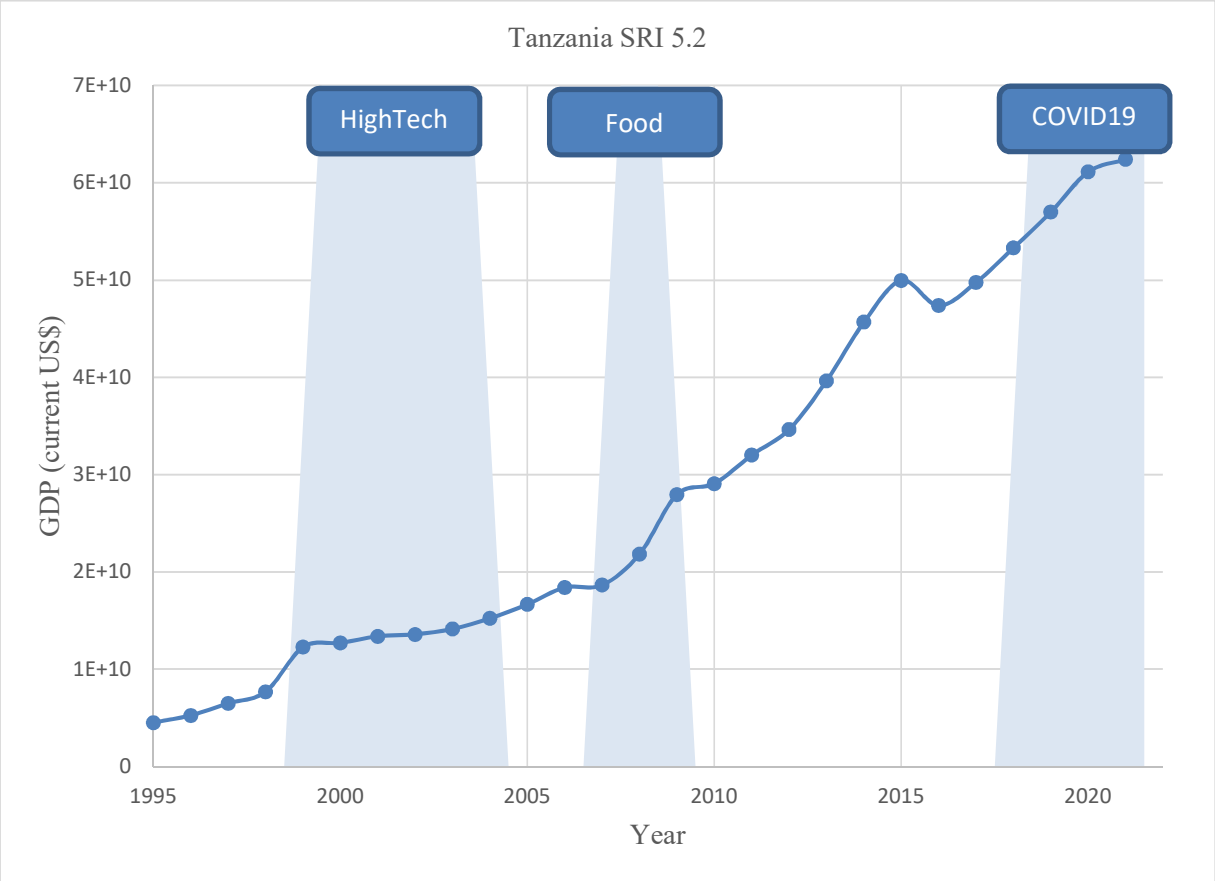

Figure 3: Tanzania GDP of years 1995-2021

Table 5: Tanzania's GDP (current US$) Profile Through Three Economic Crises: the Hi-Tech crisis, the Food crisis, and the COVID-19 pandemic. Total GDP growth rate over 2000-2021 is 405.9%

Crises	**Hi-tech 1999**	**Hi-tech 2000**	**Hi-tech 2001**	**Hi-tech 2002**	**Hi-tech 2003**
GDP (current US$)	1.27E+10	1.34E+10	1.36E+10	1.41E+10	1.52E+10
GDP Growth Rate (%)	3.25%	5.51%	1.49%	3.67%	7.80%
Crises	**Food 2006**	**Food 2007**	**Food 2008**	**Food 2009**	
GDP (current US$)	1.86E+10	2.18E+10	2.8E+10	2.91E+10	

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GDP Growth Rate (%)	1.08	17.20	28.44	3.93
Crises	**Covid-19 2018**	**Covid-19 2019**	**Covid-19 2020**	**Covid-19 2021**
GDP (current US$)	5.7E+10	6.11E+10	6.24E+10	6.78E+10
GDP Growth Rate (%)	10.41	7.19	2.13	8.65

Tanzania's GDP exhibited varying trends during three economic crises:

Hi-Tech Crisis (2000): The Hi-Tech Crisis in 2000 had a limited direct impact on Tanzania's GDP, as the country, like many other African nations, was not heavily dependent on advanced technology and Information Technology sectors. Consequently, the issue had minimal effect on the overall economy. Despite the economic crisis, Tanzania demonstrated slow but positive GDP growth during this period. GDP (current US$): 1.34E+10 (2000); 1.36E+10 (2001); 1.41E+10 (2002).

Food Crisis (2007-2008): The food crisis in 2007-2008 did not negatively impact Tanzania's GDP. Despite challenges such as high food prices, drought, and supply chain issues, Tanzania maintained positive GDP growth, owing to the significance of agriculture in its economy. GDP (current US$): 2.18E+10 (2007); 2.8E+10 (2008).

COVID-19 Pandemic (2019-2020): Tanzania's key sectors, including tourism and exports, experienced setbacks due to the global economic downturn triggered by the COVID-19 pandemic. This led to a decline in business activity and investor confidence. Nevertheless, Tanzania's economy still recorded positive growth during this period. GDP (current US$): 5.7E+10 (2018); 6.11E+10 (2019); 6.24E+10 (2020); 6.78E+10 (2021). The momentum of GDP growth persisted in 2021 despite the ongoing backdrop of the pandemic.

The overall trend in GDP: Tanzania's economy has consistently grown over the years, with a focus on sectors such as agriculture, mining, and services. The country has implemented various economic reforms and development strategies to foster sustainable growth and alleviate poverty (World Bank Tanzania, 2023). Notably, Tanzania experienced a positive impact on GDP from 2000 to 2021. Despite its low SRI of 5.2, the country maintained steady positive GDP growth during the three events analyzed. The total GDP growth rate over the period from 2000 to 2021 amounted to 405.9%

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4.3 Cuba

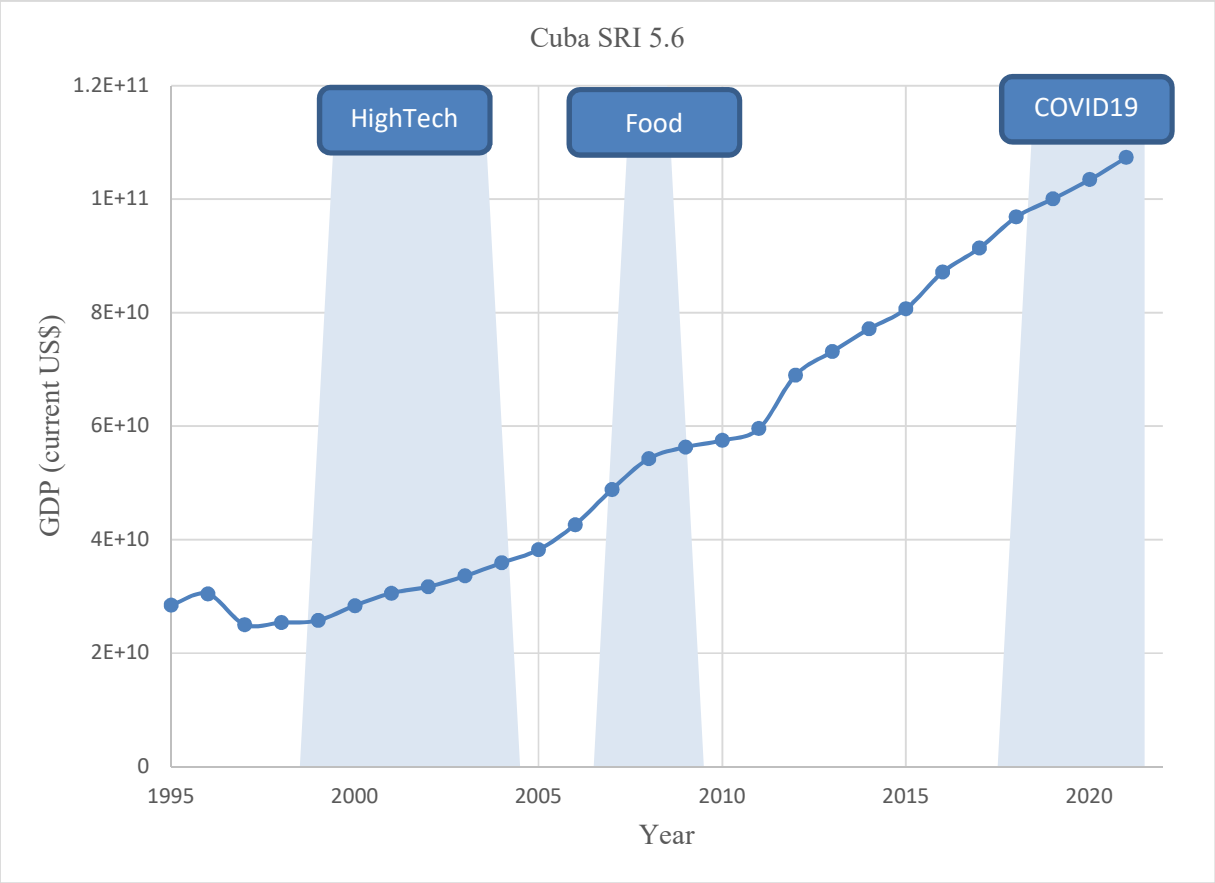

Figure 4: Cuba GDP of years 1995-2021

Table 6: Cuba's GDP (current US$) Profile Through Three Economic Crises: the Hi-Tech crisis, the Food crisis, and the COVID-19 pandemic; Total GDP growth rate over 2000-2021 is 249.7%

Crises	**Hi-tech 1999**	**Hi-tech 2000**	**Hi-tech 2001**	**Hi-tech 2002**	**Hi-tech 2003**	**Hi-tech 2004**
GDP (current US$)	2.84E+10	3.06E+10	3.17E+10	3.36E+10	3.59E+10	3.82E+10
GDP Growth Rate (%)	10.50%	7.45%	3.59%	5.99%	6.84%	6.41%
Crises	**Food 2006**	**Food 2007**	**Food 2008**	**Food 2009**		
GDP (current US$)	4.88E+10	5.43E+10	5.63E+10	5.75E+10		

GDP Growth Rate (%)	14.55	11.27	3.68	2.13
Crises	**Covid-19 2018**	**Covid-19 2019**	**Covid-19 2020**	**Covid-19 2021**
GDP (current US$)	9.69E+10	1E+11	1.03E+11	1.07E+11
GDP Growth Rate (%)	6.02	3.20	3.0	3.88

Throughout its history, Cuba has confronted numerous economic challenges, including periods of significant crises. Here is an account of Cuba's GDP (current US$) profile during three economic crises:

Hi-Tech 2000 Crisis: This crisis primarily impacted developed nations, resonating globally. Cuba, with limited integration into the global economy, experienced relatively mild effects compared to other nations. The country's restricted access to international markets shielded it from severe economic turmoil. Despite this, Cuba's GDP (current US$) demonstrated steady growth during the Hi-Tech crisis: 3.06E+10 (2000); 3.17E+10 (2001); 3.36E+10 (2002); 3.59E+10 (2003).

Food Crisis (2007-2008): Cuba faced the brunt of the global food crisis of 2007-2008, characterized by a steep surge in food prices. Securing affordable food imports became arduous, exerting pressure on the economy. Consequently, the country experienced sluggish GDP growth during this period. However, from 2009 onward, Cuba displayed commendable recovery, maintaining momentum in GDP (current US$) growth. GDP (current US$) during 2007-2009: 5.43E+10 (2007); 5.63E+10 (2008); 5.75E+10 (2009).

COVID-19 Pandemic (2019-2020): The COVID-19 pandemic disrupted Cuba's economy significantly, affecting vital sectors such as international trade, tourism, and supply chains. Stringent measures, including lockdowns and travel restrictions, were implemented to curb the virus spread, further dampening economic activity. Despite these challenges, Cuba managed to achieve positive GDP (current US$) growth throughout the pandemic: 9.69E+10 (2018); 1E+11(2019); 1.03E+11 (2020).

The overall trend in GDP: Cuba's economic trend has been characterized by resilience amid adversities, including the U.S. embargo, limited access to international markets, and a centralized economic system. The nation's pursuit of economic reforms aimed at opening up to private enterprise and foreign investment has bolstered economic activity and growth (BTI, 2024). Consequently, Cuba, a developing country with an SRI of 5.6, has exhibited stable GDP growth from 2000 to 2021, with an overall GDP growth rate of 249.7%

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4.4 Bolivia

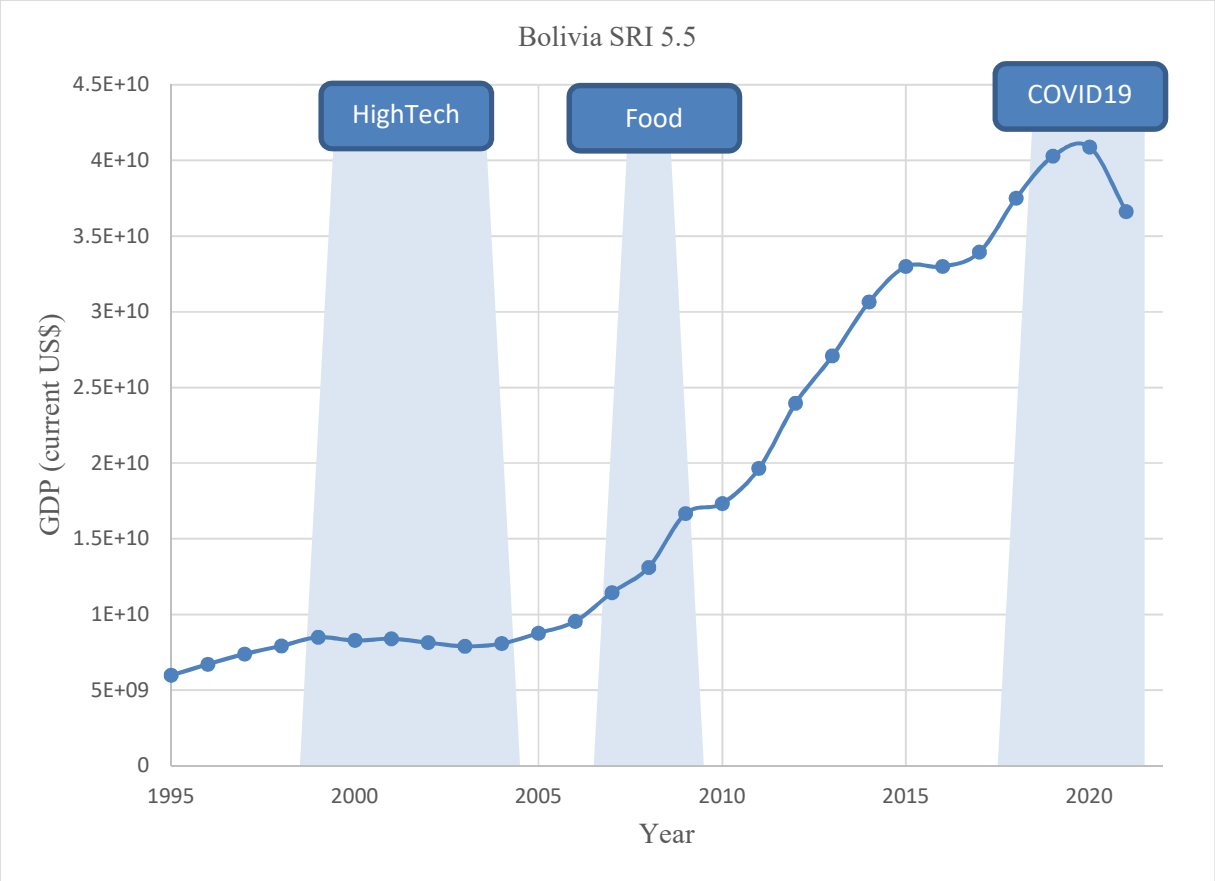

Figure 5: Bolivia GDP of years 1995-2021

Table 7: Bolivia's GDP (current US$) Profile Through Three Economic Crises: the Hi-tech, the Food crisis, and the Covid-19 pandemic; Total GDP growth rate over 2000-2021 is 386.9%

Crises	**Hi-tech 1999**	**Hi-tech 2000**	**Hi-tech 2001**	**Hi-tech 2002**	**Hi-tech 2003**	**Hi-tech 2004**
GDP (current US$)	8.29E+09	8.4E+09	8.14E+09	7.91E+09	8.08E+09	8.77E+09
GDP Growth Rate (%)	-2.54%	1.33%	-3.09%	-2.82%	2.15%	8.54%
Crises	**Food 2006**	**Food 2007**	**Food 2008**	**Food 2009**		
GDP (current US$)	1.15E+10	1.31E+10	1.67E+10	1.73E+10		

GDP Growth Rate (%)	14.55	13.91	27.48	3.59
Crises	**Covid-19 2018**	**Covid-19 2019**	**Covid-19 2020**	**Covid-19 2021**
GDP (current US$)	3.75E+10	4.03E+10	4.09E+10	3.66E+10
GDP Growth Rate (%)	6.02	7.46	1.49	-10.51

Bolivia's GDP (current US$) underwent significant shifts across three economic crises:

High-Tech in 2000: Bolivia's economy, traditionally reliant on sectors like mining, agriculture, and natural resources, experienced a negative GDP growth, reflecting a departure from its usual trajectory. Specifically, GDP growth stood at 8.4E+09 (2000), 8.14E+09 (2001), and 7.91E+09 (2002), with a slow recovery seen in 2003 (8.08E+09) and continued growth in 2004 (8.77E+09).

Food Crisis in 2007-2008 exacerbated Bolivia's already high levels of poverty and food insecurity, challenging the country's ability to secure affordable food imports. Despite this, Bolivia saw GDP growth during this period, with figures of 1.15E+10 (2006), 1.31E+10 (2007), 1.67E+10 (2008), and 1.73E+10 (2009).

COVID-19 Pandemic in 2019-2020: It prompted significant government interventions to mitigate disruptions in global supply chains, which adversely affected various sectors of Bolivia's economy. Despite these challenges, Bolivia still managed to achieve positive GDP growth, with figures of 4.03E+10 (2019) and 4.09E+10 (2020).

Overall, Bolivia's economy has weathered various crises influenced by global economic conditions and domestic policies (World Bank Bolivia, 2020). Despite fluctuations, the country has shown a positive GDP growth trend from 2000 to 2021. Notably, despite a low SRI of 5.5, Bolivia's total GDP growth over this period reached 386.9%, indicating a resilient economic performance despite the challenges faced during these crises.

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4.5 China

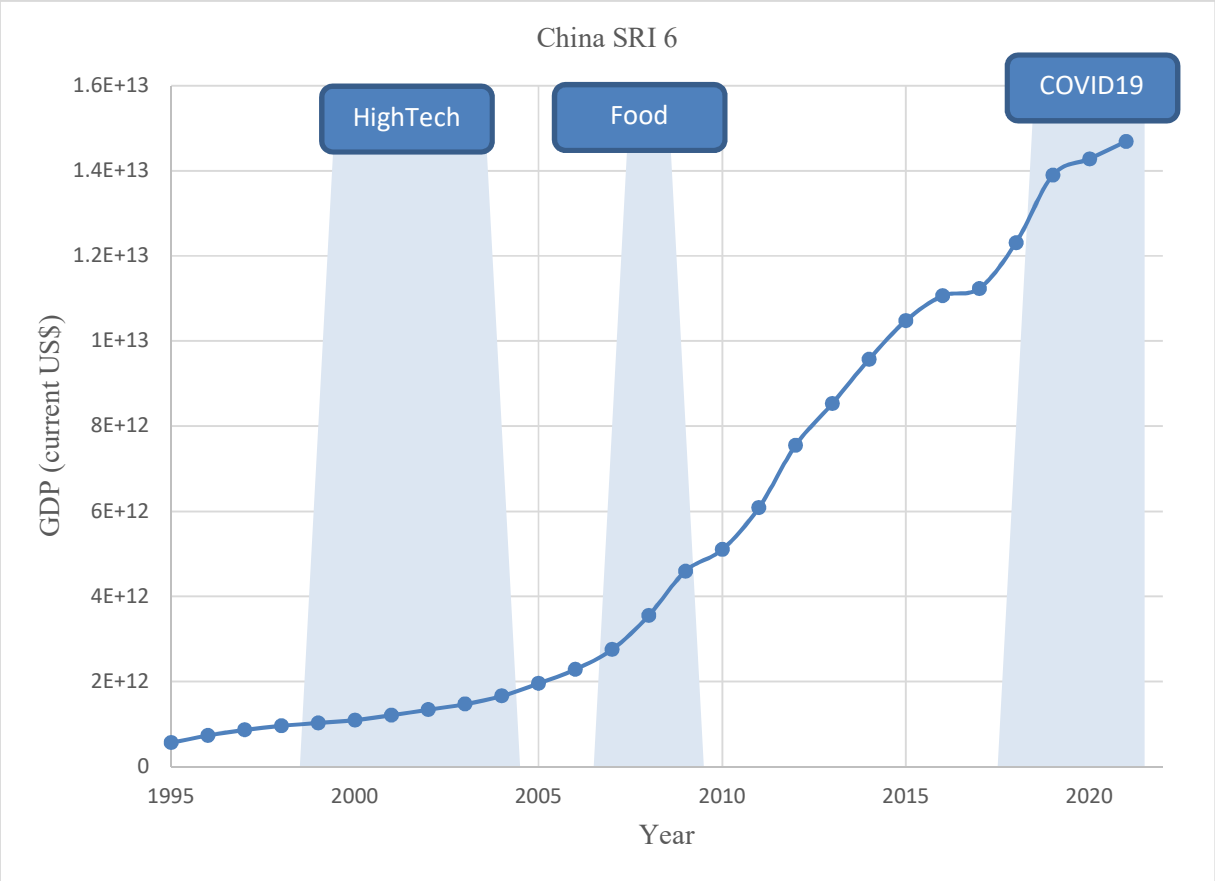

Figure 6: China GDP of years 1995-2021

Table 8: China's GDP (current US$) profile through three economic cries: the Hi-tech boom, the Food crisis, and the Covid-19 pandemic; Total GDP growth rate over 2000-2021 is 1,114%

Crises	**Hi-tech 1999**	**Hi-tech 2000**	**Hi-tech 2001**	**Hi-tech 2002**	**Hi-tech 2003**	**Hi-tech 2004**
GDP (current US$)	1.09E+12	1.21E+12	1.34E+12	1.47E+12	1.66E+12	1.96E+12
GDP Growth Rate (%)	5.82%	11.00%	10.74%	9.70%	12.92%	18.07%
Crises	**Food 2006**	**Food 2007**	**Food 2008**	**Food 2009**		
GDP (current US$)	2.75E+12	3.55E+12	4.59E+12	5.1E+12		

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GDP Growth Rate (%)	20.08	29.09	29.29	11.11
Crises	**Covid-19 2018**	**Covid-19 2019**	**Covid-19 2020**	**Covid-19 2021**
GDP (current US$)	1.23E+13	1.39E+13	1.43E+13	1.47E+13
GDP Growth Rate (%)	9.82	13.00	2.87	2.79

China's GDP (current US$) profile through three economic cries:

Hi-Tech Crisis of 2000: It caused a decline in international trade, alongside reduced consumer and business spending, causing a slowdown in economic growth globally. China, however, less affected compared to many other countries, partly due to its massive stimulus measures and its growing role in the global economy and its increasing integration into the global economy. GDP (current US$) during this period followed an upward trajectory: 1.21E+12 (2000); 1.34E+12 (2001); 1.47E+12 (2002); 1.66E+12 (2003); 1.96E+12 (2004).

Food Crisis of 2007-2008: China faced a significant food crisis due to a series of natural disasters, including floods and droughts, which severely impacted agricultural production Despite challenges, China's GDP continued to grow, albeit at a slower pace compared to previous years. GDP (current US$) during this time unfolded as follows: 2.75E+12 (2006); 3.55E+12 (2007); 4.59E+12 (2008); 5.1E+12 (2009).

COVID-19 Pandemic (2019-2020):This pandemic dealt a significant blow to China's economy, disrupting supply chains, curtailing consumer spending, and dampening international trade. Nonetheless, China managed a swift containment of the virus compared to many other nations, leading to a rebound in economic activity by late 2020. GDP (current US$) for this period was: 1.39E+13 (2019); 1.43E+13 (2020); 1.47E+13 (2021).

The overall GDP trend: Throughout these crises, China showcased resilience and adaptability, employing a blend of policy measures to mitigate economic and social fallout. Its capacity to recover and grow post-crises contributed to its stature as one of the world's leading economies (World Bank China, 2023). With an SRI of 6, China's overall GDP trend reflects exceptional growth, propelled by industrialization, export-led strategies, infrastructure development, and a burgeoning emphasis on technology and innovation. The cumulative growth rate from 2000 to 2020 stands at a 1,114% which is particularly high.

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4.6 Ethiopia

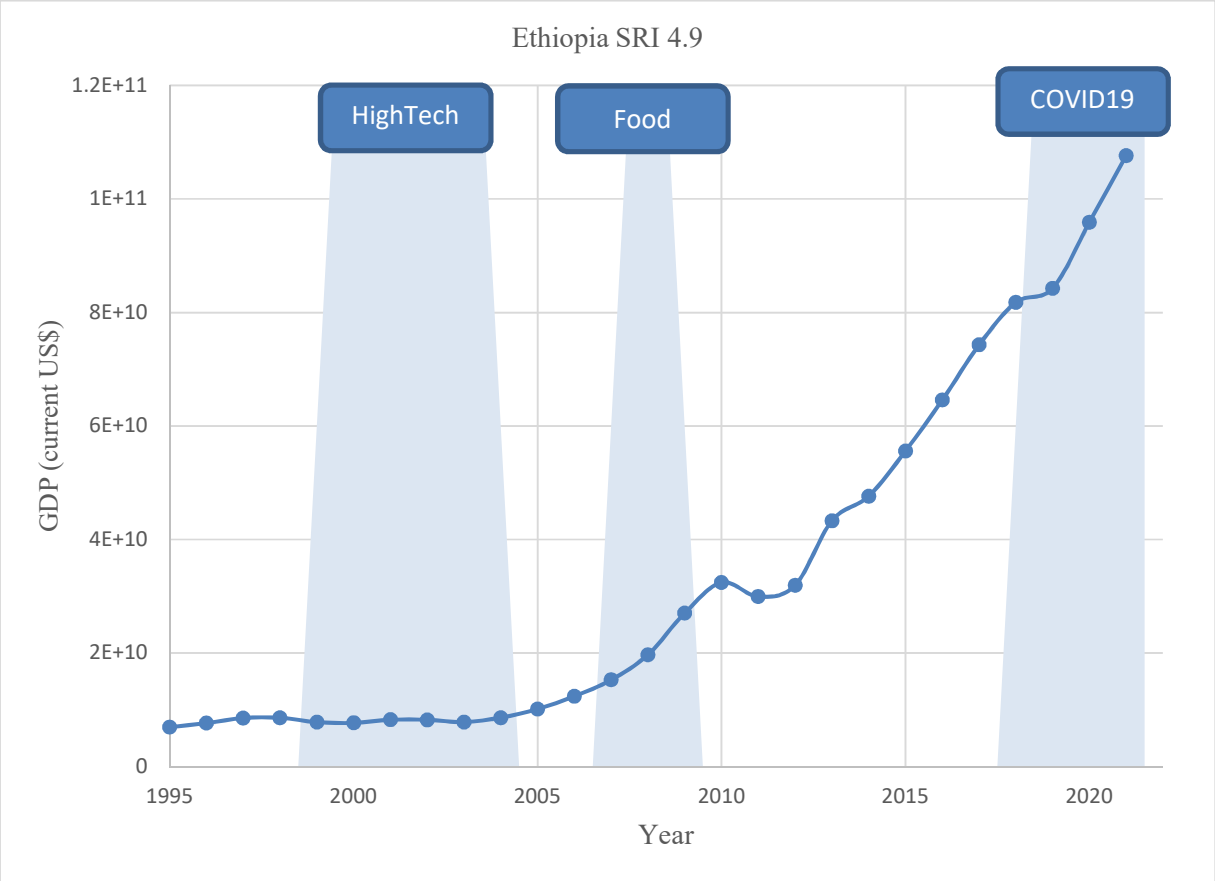

Figure 7: Ethiopia GDP of years 1995-2021

Table 9: Ethiopia's GDP (current US$) profile through three economic crises: the Hi-tech boom, the Food crisis, and the Covid-19 pandemic; Total GDP growth rate over 2000-2021 is 1063.8%.

Crises	**Hi-tech 1999**	**Hi-tech 2000**	**Hi-tech 2001**	**Hi-tech 2002**	**Hi-tech 2003**	**Hi-tech 2004**
GDP (current US$)	7.7E+09	8.24E+09	8.23E+09	7.85E+09	8.62E+09	1.01E+10
GDP Growth Rate (%)	-1.53%	7.01%	-0.12%	-4.62%	9.81%	17.17%
Crises	**Food 2006**	**Food 2007**	**Food 2008**	**Food 2009**		
GDP (current US$)	1.53E+10	1.97E+10	2.71E+10	3.24E+10		

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GDP Growth Rate (%)	23.39	28.76	37.56	19.56
Crises	**Covid-19 2018**	**Covid-19 2019**	**Covid-19 2020**	**Covid-19 2021**
GDP (current US$)	8.18E+10	8.43E+10	9.59E+10	1.08E+11
GDP Growth Rate (%)	10.09	3.06	13.76	12.62

Ethiopia's GDP (current US$) has exhibited resilience throughout three economic crises:

Hi-Tech Crisis of 2000: Ethiopia grappled with a severe drought and famine, leading to a food crisis. GDP (current US$) figures for that year were lower than in non-crisis years: 8.24E+09 (2000); 8.23E+09 (2001); 7.85E+09 (2002); 8.62E+09 (2003).

Food Crisis of 2007-2008: This event presented another challenge, with poor rainfall and soaring food prices impacting Ethiopia's economy. Despite this, the country's GDP (current US$) showed a positive growth: 1.53E+10 (2007); 1.97E+10 (2008); 2.71E+10 (2009).

COVID-19 Pandemic (2019-2020): This pandemic posed new hurdles, disrupting sectors like tourism, trade, and manufacturing. However, Ethiopia managed to implement measures to mitigate the economic impact, resulting in positive GDP (current US$) growth: 8.18E+10 (2018); 8.43E+10 (2019); 9.59E+10 (2020); 1.08E+11 (2021).

The overall GDP trend: Ethiopia's economy has shown consistent growth over the years, driven by sectors such as agriculture, services, and increasingly manufacturing. The country has pursued infrastructure development and economic reforms to promote growth and reduce poverty (World Bank, Ethiopia, 2022). Ethiopia navigated through various challenges while maintaining a steady GDP growth rate. As a developing country with an SRI of 4.9, Ethiopia remains one of Africa's fastest-growing economies. Its GDP growth rate from 2000 to 2021 stands at an impressive 1063.8%.

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4.7 Kenya

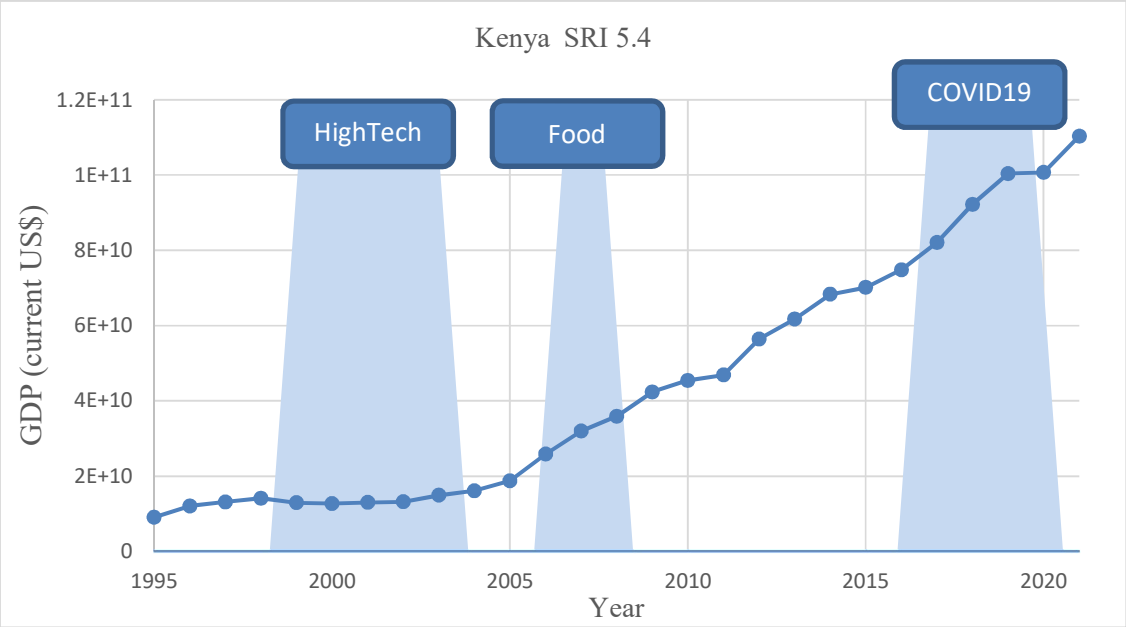

Figure 8: Kenya GDP of years 1995-2021

Table 10: Kenya's GDP (current US$) profile through three economic cries: the Hi-tech, the Food crisis, and the Covid-19 pandemic. Total GDP growth rate over 2000-2021 is 695%.

Crises	**Hi-tech 1999**	**Hi-tech 2000**	**Hi-tech 2001**	**Hi-tech 2002**	**Hi-tech 2003**	**Hi-tech 2004**
GDP (current US$)	1.29E+10	1.27E+10	1.3E+10	1.31E+10	1.49E+10	1.61E+10
GDP Growth Rate (%)	-8.51%	-1.55%	2.36%	0.77%	13.74%	8.05%
Crises	**Food 2006**	**Food 2007**	**Food 2008**	**Food 2009**		
GDP (current US$)	2.58E+10	3.2E+10	3.59E+10	4.23E+10		
GDP Growth Rate (%)	37.96	24.03	12.19	7.08		
Crises	**Covid-19 2018**	**Covid-19 2019**	**Covid-19 2020**	**Covid-19 2021**		
GDP (current US$)	8.20E+10	9.22E+10	1E+11	1.01E+11		

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GDP Growth Rate (%)	9.62	12.44	8.46	1.0

Kenya's GDP was influenced by three significant crises, each leaving its mark on the economic landscape.

Hi-Tech Crisis of 2000: Kenya experienced a positive economic growth during that period. Figures for GDP (current US$) were: 1.27E+10 (2000), 1.3E+10 (2001), 1.31E+10 (2002), and 1.49E+10 (2003).

Food Crisis of 2007-2008: This event characterized by soaring food prices and shortages, did not hinder Kenya's GDP growth. Despite economic instability caused by the crisis, Kenya's GDP remained positive: 3.2E+10 (2007), 3.59E+10 (2008), and 4.23E+10 (2009).

COVID-19 Pandemic: From 2019-2020 slowed Kenya's GDP growth. Government responses, including lockdowns and restrictions, curtailed economic activity. Despite this, Kenya's GDP maintained a positive trajectory: 1.0038E+11 (2019) and 1.0066E+11 (2020).

The overall GDP trend: Each crisis posed distinct challenges, but Kenya's response involved a combination of government initiatives, international support, and community resilience. Kenya adapted and developed strategies to navigate these crises and mitigate their impacts on the population and economy (World Bank Kenya,2023). Kenya, a developing country with an SRI of 5.4, exhibited impressive GDP growth from 2000 to 2021. Starting at 1.27E+10 (2000), Kenya's GDP climbed to 1.01E+11 (2021), reflecting a total growth rate of 695%

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4.8 Finland

Figure 9: Finland GDP of years 1995-2021

Table 11: Finland's GDP (current US$) profile through three economic cries: the Hi-tech, the Food crisis, and the Covid-19 pandemic. Total GDP growth rate over 2000-2021 is 99.25%.

Crises	**Hi-tech 1999**	**Hi-tech 2000**	**Hi-tech 2001**	**Hi-tech 2002**	**Hi-tech 2003**	**Hi-tech 2004**
GDP (current US$)	1.35E+11	1.26E+11	1.3E+11	1.4E+11	1.72E+11	1.97E+11
GDP Growth Rate (%)	0.75%	-6.67%	3.17%	7.69%	22.86%	14.53%
Crises	**Food 2006**	**Food 2007**	**Food 2008**	**Food 2009**		
GDP (current US$)	2.17E+11	2.56E+11	2.86E+11	2.53E+11		

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GDP Growth Rate (%) **Crises**	5.85 **Covid-19 2018**	17.97 **Covid-19 2019**	11.72 **Covid-19 2020**	-11.54 **Covid-19 2021**
GDP (current US$)	2.56E+11	2.76E+11	2.69E+11	2.72E+11
GDP Growth Rate (%)	6.22	7.81	-2.54	1.11

Finland's economy has experienced fluctuations over time, driven by global economic conditions, technological shifts, and changes in export demand. Renowned for its robust technology sector and export-driven industries, Finland navigated through three significant economic crises.

Hi-Tech Crisis in 2000: Following the aftermath of the dot-com bubble, Finland, home to Nokia, a key player in mobile phone manufacturing, experienced reduced economic activity. The GDP (current US$) figures reflect this: 1.35E+11 (1999); 1.26E+11 (2000); with a recovery seen in 2001 to 1.3E+11.

Food Crisis of 2007-2008: Despite facing the impact of rising food prices, Finland managed to maintain positive GDP growth: 2.17E+11 (2006); 2.56E+11 (2007); 2.86E+11 (2008).

COVID-19 Pandemic 2019-2021: It presented challenges for Finland's export-oriented economy and strong technology sector due to disruptions in global trade and economic activity. GDP (current US$) figures for this period are: 2.56E+11 (2018); 2.76E+11 (2019); 2.69E+11 (2020).

The overall GDP trend: Finland, with a high SRI of 8.3, exemplifies how a country's economy can be influenced by both global and domestic factors (Economy and Finance EU. Finland, 2024). Between 2009 and 2021, Finland's GDP exhibited fluctuation, indicating sensitivity to local and global scenarios. During this period, GDP ranged between 2.85E+11 and 2.34E+11, suggesting stagnation, with a GDP growth rate of -4.91%. Economic events, whether global or domestic, significantly impact Finland's GDP growth. The total GDP growth rate from 2000 to 2021 was 99.25%.

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4.9 Italy

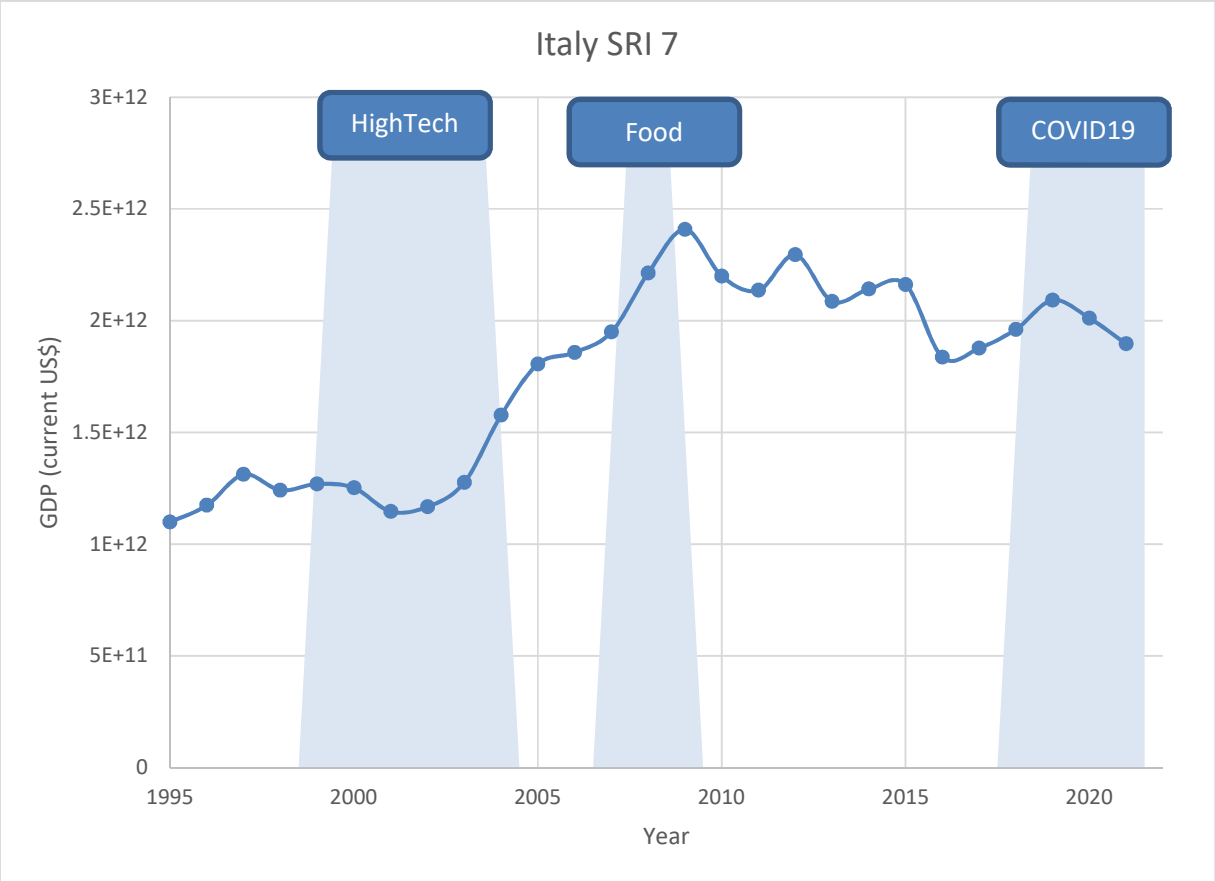

Figure 10: Italy GDP of years 1995-2021

Table 12: Italy's GDP (current US$) profile through three economic cries: The Hi-tech Crisis; the Food Crisis; and The Covid-19 pandemic The total GDP rate over 2000-2021 is 74.78%

Crises	**Hi-tech 1999**	**Hi-tech 2000**	**Hi-tech 2001**	**Hi-tech 2002**	**Hi-tech 2003**	**Hi-tech 2004**
GDP (current US$)	1.25E+12	1.15E+12	1.17E+12	1.28E+12	1.58E+12	1.81E+12
GDP Growth Rate (%)	-1.57%	-8%	1.74%	9.40%	23.43%	14.56%
Crises	**Food 2006**	**Food 2007**	**Food 2008**	**Food 2009**		
GDP (current US$)	1.95E+12	2.21E+12	2.41E+12	2.2E+12		

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GDP Growth Rate (%)	4.84	13.33	9.05	-8.71
Crises	**Covid-19 2018**	**Covid-19 2019**	**Covid-19 2020**	**Covid-19 2021**
GDP (current US$)	1.96E+12	2.09E+12	2.01E+12	1.9E+12
GDP Growth Rate (%)	4.25	6.63	-3.83	-5.47

Italy's GDP, as a prominent member of the European Union, has experienced fluctuations over the years, influenced by various factors including global economic conditions, domestic policies, and significant events such as the three global financial crises examined in this study.

Hi-tech Crisis of 2000: It saw the collapse of numerous internet-based companies and a sharp decline in technology-related stocks globally. While Italy felt the effects of this crisis as part of the interconnected global economy, its economy was not as heavily reliant on the technology sector as some other nations. Consequently, the impact may have been somewhat mitigated. GDP (current US$) growth during this period showed a slight decline: 1.25E+12 (1999); 1.15E+12 (2000); 1.17E+12 (2001); 1.28E+12 (2002).

Food Crisis of 2007-2008: Driven by various factors including a significant increase in basic food prices, raised concerns about food security and inflation globally. Italy, however, managed to maintain positive GDP growth rates despite the crisis: 1.95E+12 (2006); 2.21E+12 (2007); 2.41E+12 (2009).

COVID-19 Pandemic 2019 – 2020: It plunged Italy into recession amidst a period of slow economic recovery following previous challenges such as high unemployment and a banking crisis. The pandemic-induced lockdowns and economic disruptions caused a notable contraction in GDP during 2019. Italy was particularly hard-hit during the early stages of the pandemic, leading to disruptions across various sectors of the economy. GDP (current US$) figures for this period were: 2.09E+12 (2019); 2.01E+12 (2020); 1.9E+12 (2021).

The overall GDP trend: Italy's GDP trend from 2000 to 2021 displayed a lack of robust and sustained growth, marked by fluctuations and a tendency towards negative growth rates. Factors such as high public debt, political instability, and structural issues in the economy contributed to Italy's economic performance during these years (Economy and Finance EU. Italy, 2024). Despite being a developing country with a high SRI of 7.0, Italy illustrated how its economy was affected by various global and domestic factors. The total GDP growth rate over 2000-2021 was 74.78%, indicating a lack of significant growth momentum throughout the period.

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4.10 United Kingdom

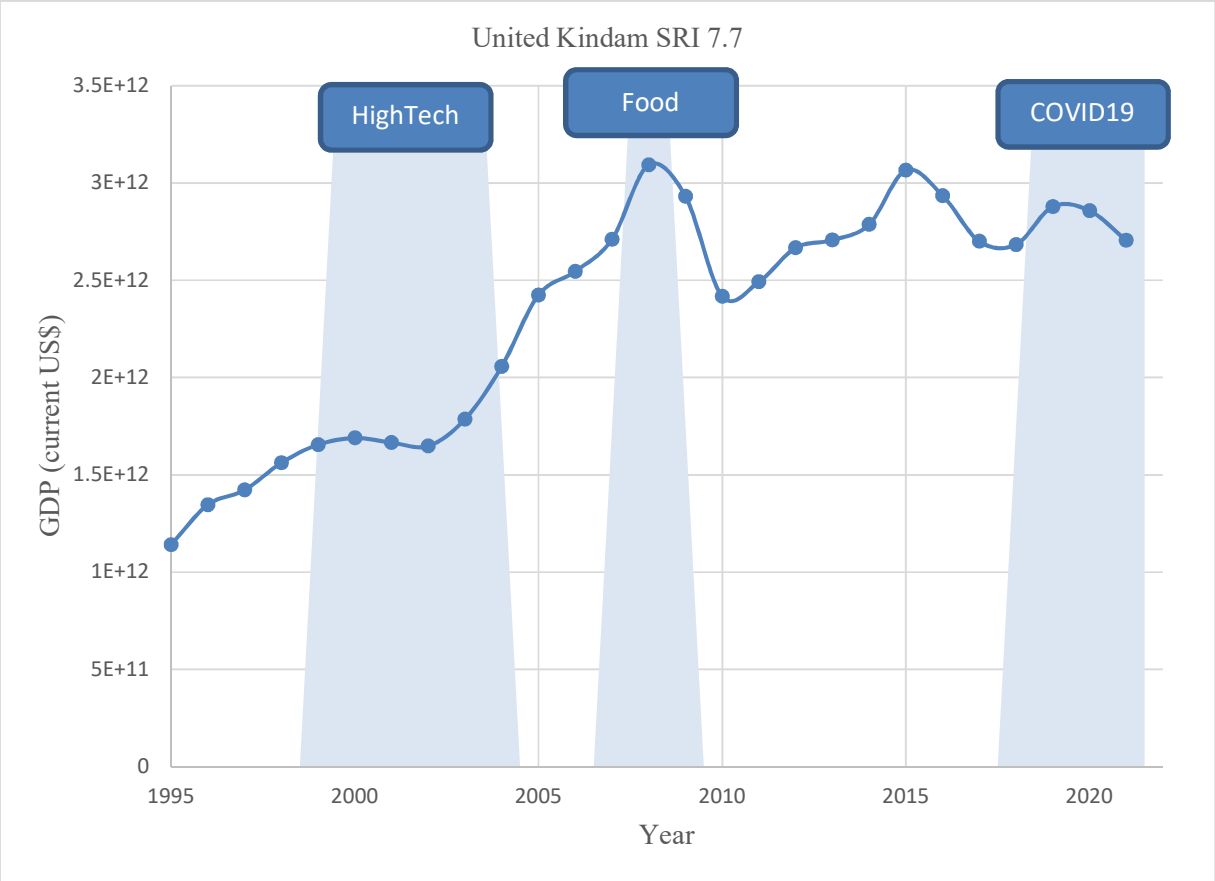

Figure 11: United Kingdom GDP of years 1995-2021

Table 13: The United Kingdom's GDP (current US$) profile through three economic crises: the Hi-tech, the Food crisis, and the Covid-19 pandemic.The total GDP rate over 2000-2021 is 71.26%

Crises	**Hi-tech 1999**	**Hi-tech 2000**	**Hi-tech 2001**	**Hi-tech 2002**	**Hi-tech 2003**	**Hi-tech 2004**
GDP (current US$)	1.69E+12	1.67E+12	1.65E+12	1.79E+12	2.06E+12	2.42E+12
GDP Growth Rate (%)	1.81%	-1.18%	-1.19%	8.48%	15.08%	17.47%
Crises	**Food 2006**	**Food 2007**	**Food 2008**	**Food 2009**		
GDP (current US$)	2.71E+12	3.09E+12	2.93E+12	2.42E+12		

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GDP Growth Rate (%) **Crises**	4.84 **Covid-19 2018**	13.33 **Covid-19 2019**	9.05 **Covid-19 2020**	-8.71 **Covid-19 2021**
GDP (current US$)	2.68E+12	2.88E+12	2.86E+12	2.7E+12
GDP Growth Rate (%)	4.25	6.63	-3.83	-5.47

The United Kingdom's GDP exhibited a general upward trend, albeit with fluctuations triggered by significant economic events, including global financial crises.

Hi-tech Crisis 2000: Akin to other developed nations, the UK grappled with the aftermath, characterized by the collapse of numerous technology firms. Although the impact on the UK's GDP was discernible, it proved relatively short-lived. GDP (current US$) figures for this period were: 1.69E+12 (1999); 1.67E+12 (2000); 1.65E+12 (2001), followed by a recovery in 2002, with GDP (current US$) reaching 1.79E+12.

Food Crisis 2007-2008: This crisis marked by surging food prices and concerns about inflation and food security, also affected the UK's GDP. Figures during this time were: 3.09E+12 (2007); 2.93E+12 (2008); 2.42E+12 (2009). The ensuing global financial crises in 2000 and 2007-2008 precipitated an economic downturn and sluggish recovery in the UK, with government intervention influencing economic growth.

COVID-19 Pandemic 2019 – 2020: This pandemic had a profound impact on the UK's economy, precipitating significant contractions in economic activity. GDP rates plummeted to -3.83% in 2020 and further to -5.47% in 2021.

The overall GDP trend: Despite being a developed nation with a high SRI of 7.7, the UK exhibited sensitivity to economic events. Fluctuations in economic growth were influenced by various factors, including global trade dynamics and uncertainty surrounding Brexit—the UK's decision to exit the European Union (OECD United Kingdom, 2024). GDP rates fluctuated between 3.09E+12 and 2.42E+12, indicating a lack of robust growth from 2009 to 2021. The total GDP Growth Rate (%) over 2000-2021 was 71.26%

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4.11 Germany

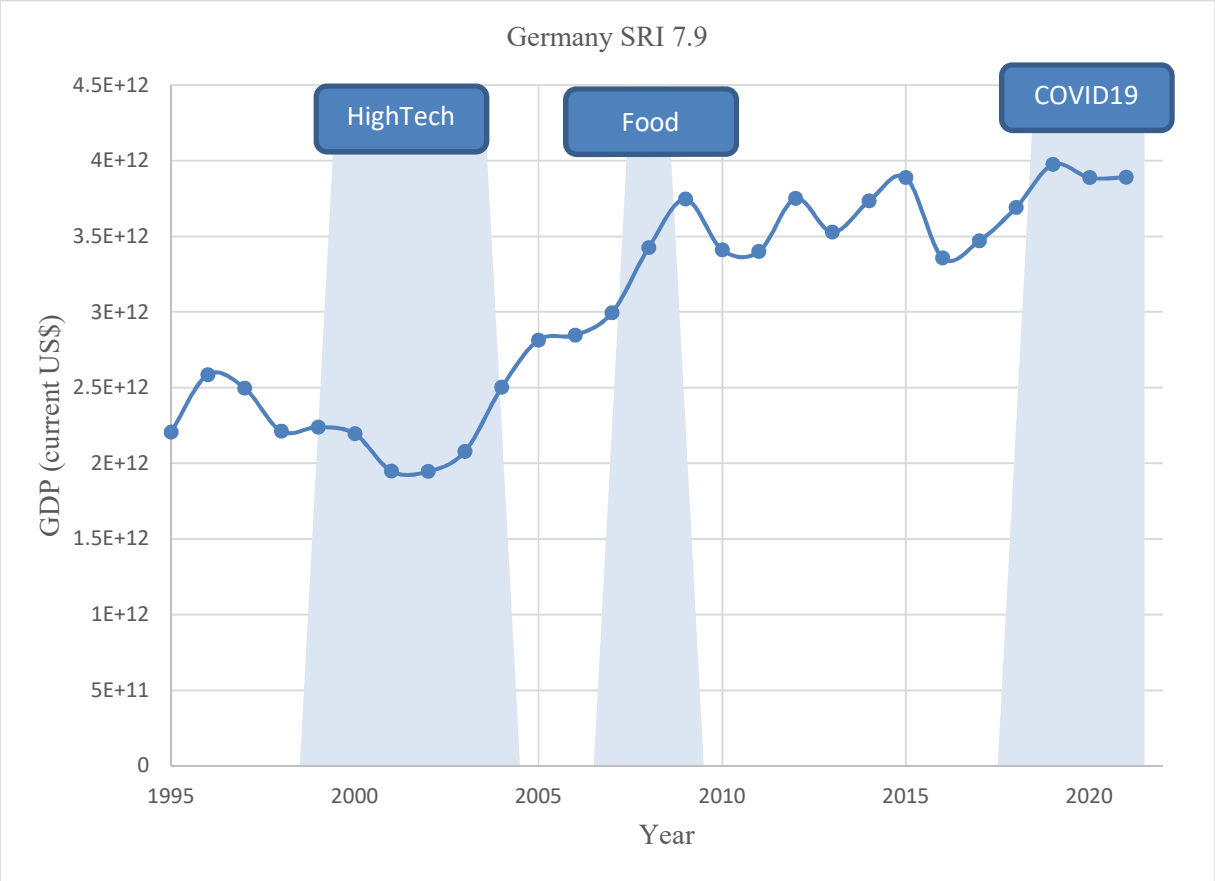

Figure 12: Germany GDP of years 1995-2021

Table 14: Germany's GDP (current US$) profile through three economic cries: the Hi-tech boom, the Food crisis, and the Covid-19 pandemic. The total GDP rate over 2000-2021 is 99.07 %

Crises	**Hi-tech 1999**	**Hi-tech 2000**	**Hi-tech 2001**	**Hi-tech 2002**	**Hi-tech 2003**	**Hi-tech 2004**
GDP (current US$)	2.19E+12	1.95E+12	1.94E+12	2.08E+12	2.5E+12	2.81E+12
GDP Growth Rate (%)	-2.23%	-10.96%	-0.53%	7.22%	20.19%	12.4%
Crises	**Food 2006**	**Food 2007**	**Food 2008**	**Food 2009**		
GDP (current US$)	2.99E+12	3.43E+12	3.75E+12	3.41E+12		
GDP Growth Rate (%)	4.91	14.71	9.33	-9.06		

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Crises	Covid-19 2018	Covid-19 2019	Covid-19 2020	Covid-19 2021
GDP (current US$)	3.69E+12	3.97E+12	3.887E+12	3.882E+12
GDP Growth Rate (%)	6.34	7.58	2.64	-0.13

Germany's GDP (current US$), reflects a pattern of growth and occasional fluctuations influenced by significant economic events such as the Hi-tech Crisis, the Food crisis, and the Covid-19 pandemic.

Hi-tech Crisis 2000: Germany, renowned for its robust manufacturing and export-oriented industries, experienced economic effects similar to other developed nations. While the impact on Germany's GDP wasn't as pronounced as in nations more reliant on technology, there was a noticeable decline. GDP (current US$) figures for this period were: 2.19E+12 (1999); 1.95E+12 (2000); 1.94E+12 (2001).

Food Crisis 2007-2008: driven by various factors including rising oil prices and speculation in commodities markets, also affected Germany. However, as a highly developed nation with significant agricultural and industrial activities, Germany didn't experience a slowdown despite the effects of rising food prices. GDP (current US$) during this time exhibited growth: 2.99E+12 (2006); 3.43E+12 (2007); 3.75E+12 (2008), followed by a contraction in 2009 to 3.41E+12.

Covid-19 Pandemic 2019 - 2020: Germany's strong economic position helped maintain a positive trend. However, there was a reduction in GDP in 2020, with figures standing at: 3.97E+12 (2019), 3.887E+12 (2020).

The overall GDP trend: Germany's economic performance during these events fluctuated, influenced by various factors (OECD, Germany, 2023). GDP (current US$) trends fluctuated between 3.35E+12 and 3.97E+12 during 2009-2021. While Germany, a developed country with a high SRI score of 7.9, didn't exhibit impressive growth rates throughout this period, it still showed resilience. The total GDP growth rate over 2000-2021 was 99.07%

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4.12 Denmark

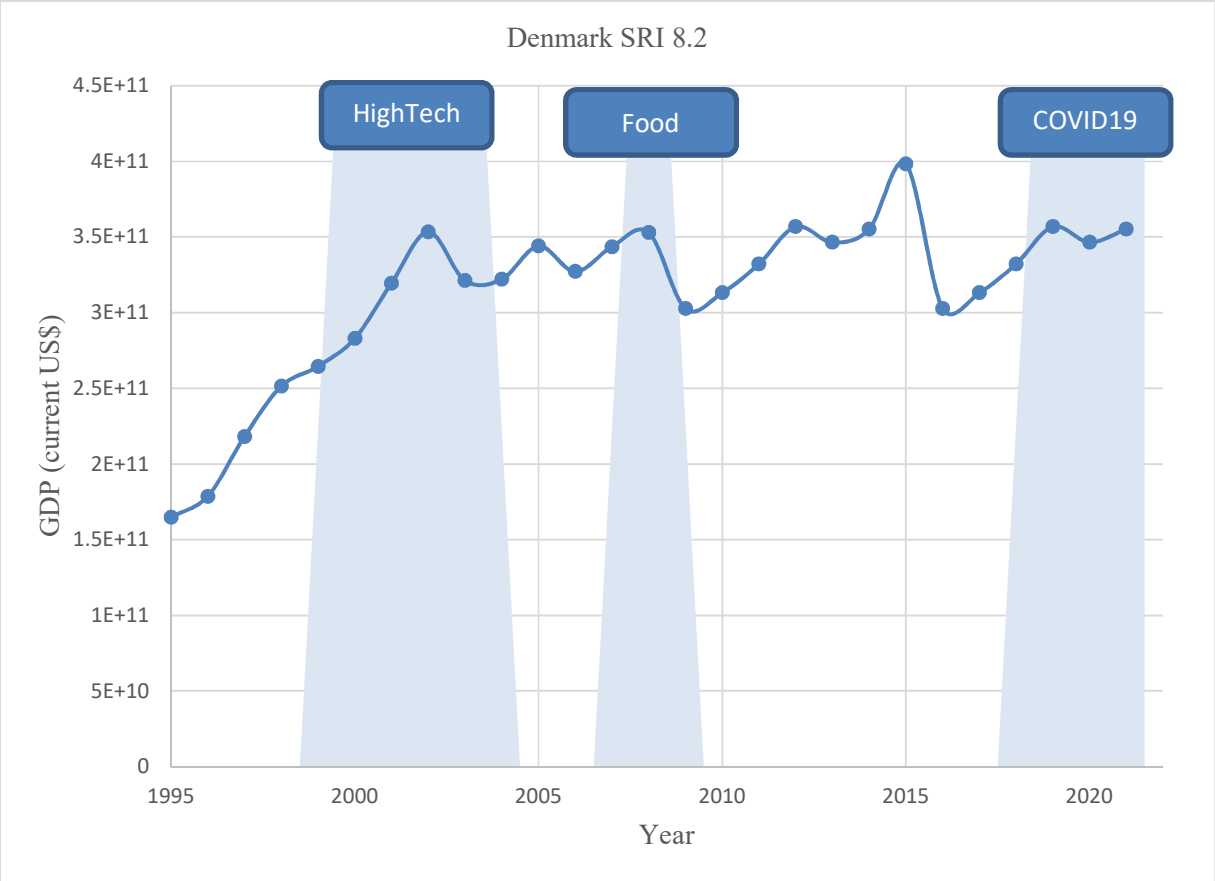

Figure 13: Denmark GDP of years 1995-2021

Table 15: Denmark's GDP (current US$) profile through three economic cries: the Hi-tech crisis, the Food crisis, and the Covid-19 pandemic. The total GDP rate over 2000-2021 is 11.28%

Crises	**Hi-tech 1999**	**Hi-tech 2000**	**Hi-tech 2001**	**Hi-tech 2002**	**Hi-tech 2003**	**Hi-tech 2004**
GDP (current US$)	2.83E+11	3.19E+11	3.53E+11	3.21E+11	3.22E+11	3.44E+11
GDP Growth Rate (%)	7.19%	12.72%	10.66%	-9.06%	0.31%	6.83%
Crises	**Food 2006**	**Food 2007**	**Food 2008**	**Food 2009**		
GDP (current US$)	3.44E+11	3.53E+11	3.03E+11	3.13E+11		

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GDP Growth Rate (%)	5.19	2.62	-14.16	3.30
Crises	**Covid-19 2018**	**Covid-19 2019**	**Covid-19 2020**	**Covid-19 2021**
GDP (current US$)	3.32E+11	3.57E+11	3.46E+11	3.55E+11
GDP Growth Rate (%)	6.07	7.53	-3.08	2.60

Denmark's GDP (current US$) profile through three economic crises:

Hi-tech Crisis (2000): During the Hi-tech crisis, Denmark's economy remained resilient with no downturn observed. The country's GDP (current US$) increased consistently during this period: 2.83E+11 (1999); 3.19E+11 (2000); 3.53E+11 (2001)

Food Crisis (2007-2008): The rise in global food prices during the Food Crisis affected Denmark's economy, leading to a temporary GDP decline. However, a recovery was evident by 2009: 3.53E+11 (2007); 3.03E+11 (2008), 3.13E+11 (2009).

Covid-19 Pandemic (2019-2020): The Covid-19 pandemic had a significant impact on global economies, yet Denmark managed to sustain a general trend of GDP growth despite the crisis: 3.32E+11 (2018); 3.57E+11 (2019); 3.46E+11 (2020); 3.55E+11 (2021).

Overall GDP Trend: Over the period from 2000 to 2021, Denmark, a developed country with a high Social Resilience Index (SRI) of 8.2, experienced an overall GDP growth rate of 11.28%. Despite some fluctuations in GDP value during global economic events, Denmark's growth rate was not exceptionally high, highlighting the nation's economic sensitivity to various global crises (OECD Denmark, 2024).

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4.13 Japan

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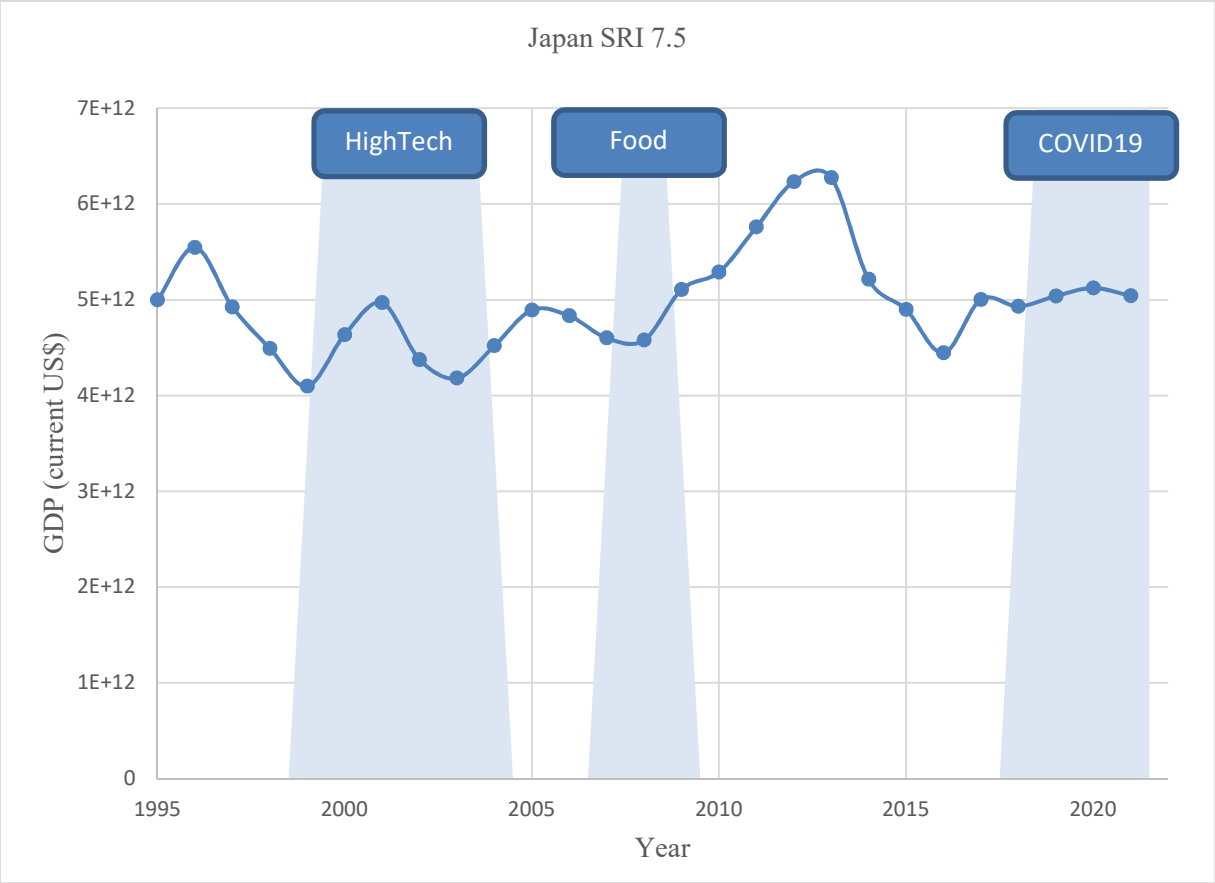

Figure 14: Japan GDP of years 1995-2021

Table 16: Japan's GDP (current US$) profile through three economic cries: the Hi-tech crisis, the Food crisis, and the Covid-19 pandemic. The total GDP rate over 2000-2021 is 1.41%

Crises	**Hi-tech 1999**	**Hi-tech 2000**	**Hi-tech 2001**	**Hi-tech 2002**	**Hi-tech 2003**	**Hi-tech 2004**
GDP (current US$)	4.64E+12	4.97E+12	4.37E+12	4.18E+12	4.52E+12	4.89E+12
GDP Growth Rate (%)	13.17%	7.11%	-12.67%	-4.35%	8.13%	8.18%
Crises	**Food 2006**	**Food 2007**	**Food 2008**	**Food 2009**		
GDP (current US$)	4.6E+12	4.58E+12	5.11E+12	5.29E+12		

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GDP Growth Rate (%)	-4.76	-0.43	11.57	3.52
Crises	**Covid-19 2018**	**Covid-19 2019**	**Covid-19 2020**	**Covid-19 2021**
GDP (current US$)	4.93E+12	5.04E+12	5.12E+12	5.04E+12
GDP Growth Rate (%)	-1.4	2.23	1.59	-1.56

Japan's GDP in current US dollars reflects its economic trajectory during three notable crises: the Hi-tech crisis, the Food crisis, and the Covid-19 pandemic.

Hi-tech crisis 2000: Japan faced reduced consumer and business spending, declining exports, and decreased investment activities, leading to a period of negative economic growth. The aftermath extended into 2001, with further economic contraction. GDP (current US$) figures were: 4.64E+12 (1999); 4.97E+12 (2000); and 4.37E+12 (2001).

Food crisis 2007-2008: This crisis started to manifest in 2006. Despite challenges, Japan's GDP displayed positive growth during this period. Government measures such as increased investment in agriculture and promotion of sustainable farming practices contributed to this growth. GDP (current US$) values were: 4.6E+12 (2006); 4.58E+12 (2007); 5.11E+12 (2008); and 5.29E+12 (2009).

Covid-19 pandemic 2019-2020: It presented significant challenges for Japan's economy. Reduced exports, decreased consumer spending due to lockdowns, and disruptions in supply chains led to economic contraction. GDP (current US$) figures for this period were: 4.93E+12 (2018); 5.04E+12 (2019); 5.12E+12 (2020), and 5.04E+12 (2021).

The overall Japan's GDP: It displayed fluctuations, indicating sensitivity to both global and local economic conditions (OECD, Japan, 2024). Despite efforts, Japan's GDP growth over the period 2000-2021 was modest, reflecting its economic sensitivity to various events. With an SRI of 7.5, Japan demonstrated resilience but lacked significant growth, with a total GDP rate over 2000-2021 of 1.41%.

5. Discussion

Different indicators provide crucial insights into a country's profile, reflecting its strengths across various dimensions such as economic, social, and governmental. In times of crisis, these indicators test a country's resilience and ability to navigate economic challenges. The concept of country resilience indicators is relatively recent. In this study, we use the Social Resilience Index (SRI), a comprehensive metric that assesses a country's capacity to withstand and adapt to economic challenges like epidemics and natural disasters. The focus of this study is to examine the relationship between the SRI and the economic indicator GDP.

We aim to answer whether countries with a high SRI are more robust during economic crises compared to those with a low SRI. This study analyzes three distinct economic events: the Hi-Tech crisis in 2000, the Food crisis of 2007-2008, and the COVID-19 pandemic of 2019-2020. Table 18 categorizes the countries examined into two groups: those with low SRI ("Unaffected") and those with high SRI ("Affected").

Traditionally, it is believed that countries with a high SRI can better withstand economic crises due to their stronger economic foundations. However, this study reveals a surprising relationship between SRI and GDP performance during economic events. Contrary to expectations, countries with a low SRI ("Unaffected") often demonstrated a better capacity to maintain positive GDP growth or experienced less economic impact during crises. Their total GDP growth rate over the three economic crises from 2000 to 2021 ranged between 250% and 1100% (Table 17). While, countries with a high SRI ("Affected") showed

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greater sensitivity to economic events, often reflected in negative GDP growth or significant fluctuations. Over the same period, their total GDP growth rates varied between 11% and 99% (Table 17).

This study challenges the assumption that higher SRI mostly equates to greater economic resilience, suggesting that countries with high SRI may sometimes be better equipped to navigate certain economic challenges.

Table 17: Case Study: SRI vs. Total GDP growth (2000-2021)

Country	SRI	Total GDP rate % growth (2000-2021)
Nepal	5.3	561.2
Tanzania	5.2	405.9
Cuba	5.6	249.7
Bolivia	5.5	386.9
China	6.0	1114
Ethiopia	4.9	1063.8
Kenya	5.4	695
Finland	8.3	99.25
Italy	7	74.78
U K	7.7	71.26
Germany	7.9	99.07
Denmark	8.2	11.28
Japan	7.5	1.41

Table 18 provides a detailed summary of the 135 countries evaluated in the study. It reveals that countries with a low SRI exhibited greater resilience during the economic events. Specifically, these "Unaffected" countries maintained a growth trend in GDP throughout the three economic crises, demonstrating better economic stability compared to those with a high SRI. For example, during the Food Crisis, countries that were affected had a higher average SRI of 5.8, while unaffected countries had a lower average SRI of 5.13. Similarly, in the Hi-Tech crisis, affected countries had a higher SRI of 5.8 compared to 5.6 for unaffected countries. During the COVID-19 pandemic, affected countries again had a higher SRI of 5.9, whereas unaffected countries had a lower SRI of 5.28.

Table 18: Summary of the 135 Countries under the test in the study

Crisis	# Countries		Years	SRI	Average Civic Space	Econ-omy	Envir-onment	Inclu-sion	Indivi-dual	So cial	Stat e
Food	97	**Affected**	2007-8	**5.80**	6.33	5.09	5.22	6.04	5.79	5.18	5.31
	38	**Unaffected**	2007-8	**5.13**	5.27	4.53	4.95	5.26	5.36	5.05	5.03
HI Tech	110	**Affected**	2000	**5.80**	6.33	5.09	5.22	6.04	5.79	5.18	5.31
	25	**Unaffected**	2000	**5.62**	5.76	5.08	5.12	5.76	5.78	5.44	5.08
Covid-19	102	**Affected**	2019-20	**5.92**	6.39	5.24	5.26	6.11	6.10	5.29	5.38
	33	**Unaffected**	2019-20	**5.28**	5.69	4.61	5.04	5.60	4.94	5.08	4.94

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6. Conclusion

The findings of the study suggest a relationship between State Resilience Index (SRI) and a country's response to global shocks as expressed by its GDP behavior in a time of economic crisis. Here are some key points to consider based on the study's results:

SRI is not the sole predictor of crisis response capability: The study challenges the notion that higher institutional capacity, as measured by SRI, directly translates to better crisis management. While countries with high SRI are assumed to have greater resources and institutional capacity, the findings indicate that this alone does not guarantee an effective response to global crisis.

Low SRI countries exhibited unexpected resilience: Despite having lower institutional capacity and fewer resources, countries with low SRI were found to fare better during the examined crises. These countries managed to maintain GDP growth, suggesting that factors beyond SRI might contribute to resilience during crises.

High SRI countries faced more severe impacts: In contrast, high SRI nations despite their robust economies and institutional capacity, suffered more severe impacts during the crises. This suggests that factors such as reliance on certain sectors or global interdependencies might make these countries more vulnerable to economic downturns.

Inverse relationship between SRI and GDP during in a time of crises: The study highlights an inverse relationship between SRI and GDP during crises, implying that higher institutional capacity, as measured by SRI, does not necessarily buffer countries from economic shocks.

Implications for policy and practice: These findings challenge researchers to look about the role of institutional capacity in crisis response. Policy makers may need to reconsider assumptions about what constitutes effective crisis management and prioritize factors beyond SRI, such as diversification of the economy, social safety nets, and adaptive governance astructures.

Further research and exploration: The study opens avenues for further research to understand the specific mechanisms through which low SRI countries exhibit resilience during crises and to identify potential strategies for enhancing crisis preparedness and response across different types of economies.

In conclusion, while SRI remains an important metric for assessing a country's institutional capacity, this study suggests that other factors play a significant role in determining crisis response capability. Policymakers and researchers should consider a holistic approach to resilience-building that takes into account a range of economic, social, and governance factors.

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