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Growth of India's Foreign Exchange Reserves

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Abstract

This research paper focused on growth of India's foreign exchange reserves. India's foreign exchange reserves rank 4th globally, trailing only China, Japan, and Switzerland. To maintain exchange rate stability amid increased demand, the central bank can issue more domestic currency and purchase foreign currency, thereby expanding the country's foreign reserves. Over time, India's foreign exchange reserves have grown due to various factors, including surging foreign direct investment, booming IT and service exports, and prudent economic policies. Leveraging these substantial reserves, the Indian government and Reserve Bank of India effectively manage exchange rates and monetary policies.

Keywords: Special Drawing Rights, International Monetary Fund, Gold, Foreign Currency.

Introduction

Foreign exchange reserves, also known as reserve assets, include foreign banknotes, bank deposits, treasury bills, and government securities, as well as gold reserves, special drawing rights (SDRs), and IMF reserve positions. These reserve assets are recorded in the capital account of a central bank's balance of payments and categorized as financial assets such as gold, currency, debt securities, and derivatives. Reserve assets allow a central bank to purchase the domestic currency, which is considered a liability for the central bank. The quantity of foreign exchange reserves can change as the central bank implements monetary policy, depending on factors like capital mobility and the exchange rate regime. Under a fixed exchange rate regime with perfect capital mobility, a central bank must use its reserves to maintain the fixed rate, as market forces would otherwise push the currency's value up or down. This ties the domestic monetary policy to that of the base currency country, requiring long-term policy adjustments. In a pure floating exchange rate regime, reserves are not necessary, as the exchange rate is determined by the market. Central banks may instead use other monetary policy tools like interest rates. Some mixed exchange rate regimes still require foreign exchange operations to maintain the targeted rate, which can be sterilized or unsterilized. The level of foreign exchange reserves available to defend a currency is limited, so a currency crisis or devaluation could result if demand for the currency is very low. Conversely, reserves can theoretically be continuously accumulated for a currency in high demand, though this is costly due to the need for sterilization.

Review of Literature

Reddy Y. V (2002) this paper examines the key issues surrounding foreign exchange (forex) reserves in India. It addresses questions such as: What are forex reserves, and why do countries hold them? How has India's forex reserve policy evolved over time? What is the appropriate level of reserves, and how does India's current reserve position measure up? The paper also explores the implications of forex management for India's quasi-fiscal deficit and the Reserve Bank of India's communication policy. Finally, it offers some forward-looking perspectives on the challenges and considerations around India's forex reserve management.

Saba Abid & Neelam Jhawar (2017) in their analysis of the data reveals that foreign exchange reserves have undergone significant changes over the years. Total reserves have increased from $13,610 billion to $21,376 billion, a 57% rise. However, the composition of these reserves has shifted. Gold reserves have fallen to $1,192 billion, now accounting for only 5.5% of total reserves in 2015. Similarly, the reserve tranche position has declined to $81 billion, representing just 0.37% of total reserves. Special drawing rights stand at $249 billion, or 1.16% of the total. The primary driver of the increase in overall foreign exchange reserves has been foreign currency reserves, which have grown to $19,855 billion and now make up 92.88% of the total. This indicates that foreign currency is the dominant component backing the country's foreign exchange reserves.

Kritika Agarwal (2020) Foreign exchange reserves are the foreign currency assets held by a country's monetary authority. These reserves allow a nation to meet its external financial obligations and support its economic development. During the COVID-19 pandemic, India's foreign exchange reserves have risen significantly. This study analyzes the trends and adequacy of India's foreign exchange reserves, as well as explores effective ways to utilize these reserves to boost the economy. The analysis is based on data from secondary sources, including central bank reports, government websites, and international financial institutions. The findings show that India's foreign exchange reserves declined sharply in March 2020, but have since trended upwards, reaching levels well above the adequacy threshold. Given this excess of foreign exchange reserves, the government should leverage this position to support the country's economic recovery and development, particularly in the aftermath of the pandemic crisis.

Methodology

The purpose of this paper is to analyze the growth of India's foreign exchange reserves from 1990-91 to 2023-24. Secondary data on India's foreign exchange reserves were collected from the Handbook of Statistics of the Indian Economy and examined using various statistical models, including linear trend, semi-log, compound growth rate, percentage change, and index models. The analysis was conducted using SPSS 19 software.

Linear Trend

$$Y = \beta_0 + \beta_1 t + U_t$$

Semi-Log

$$\text{Log } Y = \beta_0 + \beta_1 t + U_t$$

Compound Growth Rate

$$CGR = [(\text{Antilog } b\text{-}1) \times 100]$$

Percentage Change

$$PC = \text{Final value} - \text{Initial value} / \text{Initial value} \times 100$$

Index

$$P = \text{Current year} / \text{Base year} \times 100$$

Results and Discussion

The table below showcases the growth of India's foreign exchange reserves from 1990-91 to 2023-24.

Table 1
India's Foreign Exchange Reserves during 1990-91 to 2023-24
(US $ Million)

Year	FER	% Change	Index	Year	FER	% Change	Index
1990-91	5834	-	-	2007-08	309723	55.50	147.98

1991-92	9220	58.04	100.09	2008-09	251985	-18.64	95.40
1992-93	9832	6.64	96.60	2009-10	279057	10.74	187.80
1993-94	19254	95.83	120.65	2010-11	304818	9.23	127.72
1994-95	25186	30.81	107.16	2011-12	294397	-3.42	117.63
1995-96	21687	-13.89	104.37	2012-13	292047	-0.80	95.07
1996-97	26423	21.84	88.88	2013-14	304224	4.17	83.94
1997-98	29367	11.14	83.65	2014-15	341639	12.30	88.27
1998-99	32490	10.63	87.29	2015-16	360177	5.43	105.66
1999-00	38036	17.07	100.47	2016-17	369955	2.71	98.78
2000-01	42281	11.16	91.63	2017-18	424545	14.76	108.13
2001-02	54106	27.97	111.82	2018-19	412871	-2.75	107.39
2002-03	76100	40.65	115.98	2019-20	477807	15.73	132.54
2003-04	112959	48.43	118.79	2020-21	576484	20.65	109.16
2004-05	141514	25.28	107.19	2021-22	607309	5.35	127.47
2005-06	151622	7.14	127.89	2022-23	578448	-4.75	106.23
2006-07	199179	31.37	117.88	2023-24	646419	11.75	116.54

Source: Handbook of Statistics of Indian Economy, Various issues.

The value of India's foreign exchange reserves has fluctuated significantly over the years. From 1990-91 to 1991-92, the reserves increased from \$5,834 million to \$9,220 million. This accelerated further, reaching \$19,254 million by 1993-94. However, the reserves then decelerated, dropping to \$21,687 million in 1995-96. After a slight acceleration to \$32,490 million in 1998-99, the reserves continued to grow, reaching \$54,106 million in 2001-02. This upward trend continued, with the reserves accelerating to \$141,514 million by 2004-05 and peaking at \$309,723 million in 2007-08. Since then, the value of India's foreign exchange reserves has been more volatile, decelerating to \$251,985 million in 2008-09 before rebounding. However, the reserves have declined in recent years, dropping from \$304,818 million in 2010-11 to \$292,047 million in 2012-13. Overall, India's foreign exchange reserves have grown substantially over the past two decades, though the pace of growth has fluctuated considerably during this period.

The value of India's foreign exchange reserves has experienced significant fluctuations over the years. From 2014-15 to 2015-16, the reserves increased tremendously from \$341,639 million to \$360,177 million. This upward trend continued, with the reserves accelerating further from \$477,807 million in 2019-20 to \$576,484 million in 2020-21. However, the reserves have also registered negative growth during certain years, including 1995-96, 2008-09, 2011-12, 2012-13, 2018-19, and 2022-23. The highest annual growth was observed in 1993-94 at 95.83%, while the lowest was in 2016-17 at 2.71%. Notably, the value of

India's foreign exchange reserves has increased more than 110-fold from 1990-91 to 2023-24, demonstrating the substantial growth and importance of this crucial economic indicator over the past three decades.

Table 2
Results of Trend Analysis of India's Foreign Exchange Reserves during 1990-91 to 2023-24

Model	a	b	SEb	t	F	R^2	A. R^2	Sig.
Linear	-108982.166	19382.166**	933.055	20.773	431.509	0.931	0.929	0.000
Semi-log	9.321	0.135**	0.007	19.796	391.897	0.925	0.922	0.000
Compound	11171.444	1.145**	0.008	146.351	391.897	0.925	0.922	0.000

Source: Authors own calculation.
**One per cent level of significant.

The results of the trend analysis in Table 2 indicate that India's foreign exchange reserves increased by an average of $19,382.17 million annually from 1990-91 to 2023-24. The regression coefficients of the semi-log linear model and compound growth rate model suggest that India's foreign exchange reserves grew at annual rates of 13.5% and 14.5% respectively. All three models were statistically significant at the 1% level. The adjusted R-squared values were 0.929, 0.922, and 0.922 for the simple linear regression, semi-log, and compound growth rate models respectively. This means the independent variables in these models explained around 92.9%, 92.2%, and 92.2% of the variation in the dependent variable.

Conclusion

India's foreign exchange reserves rank 4th globally, trailing only China, Japan, and Switzerland. To maintain exchange rate stability amid increased demand, the central bank can issue more domestic currency and purchase foreign currency, thereby expanding the country's foreign reserves. Over time, India's foreign exchange reserves have grown due to various factors, including surging foreign direct investment, booming IT and service exports, and prudent economic policies. Leveraging these substantial reserves, the Indian government and Reserve Bank of India effectively manage exchange rates and monetary policies.

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