

Trends in gross savings in the BRICS nations

K.S. DEEPTHI

Research Scholar

Department of Economics, University College
University of Kerala, Trivandrum (Kerala) India

ABSTRACT

Gross savings is the difference between gross disposable income and final consumption expenditure. In this paper an attempt has been made to study the broad trends in gross savings rate among the BRICS nations and to calculate the continuous compound annual growth rate of gross savings for the BRICS nations during the period 1994 to 2016 using the data from the World Development Indicators. The study reveals that the broad trends in savings are different across the BRICS nations due to various factors like inflation, recession, negative economic growth, etc. The gross savings continuous compound annual growth rate is the highest in China among the BRICS countries depicting the higher economic growth in China.

Key Words : Gross savings, BRICS, Continuous compound annual growth rate, GDP

INTRODUCTION

Gross saving is defined as gross disposable income minus final consumption expenditure. Gross savings rate is the totality of savings from the domestic households, business and government measured as a share of GDP. High gross savings rate indicates a nation's potential to invest in capital. Concern about saving has been augmented by the possible implications of low saving rates in the 1980s for the rate of capital formation and, in some countries, for the size of current account deficits (Shafer *et al.*, 1992). Savings and investment are the two significant factors of growth in the Harrod-Domar growth model. In the model, growth in an economy can be increased either by increasing the level of savings or by reducing the capital output ratio.

This paper is structured into five sections, with introduction in the first section. Broad trends in gross savings among the BRICS nations are examined in Section 2. Continuous compounded annual growth rate of gross savings for the BRICS nations during the period 1994 to 2016 is considered in Section 3. Section 4 deals with the conclusion of the study.

Conceptual framework :

The fundamental macro-economic identity has the following three keys, namely:

1. Consumption
2. Savings
3. Investment

As per the definition of System of National Accounts (SNA):

Gross savings = GNDI – final consumption expenditure

GNDI stands for Gross National Domestic Income; and final consumption expenditure includes households, government expenditure.

Gross saving as described in the 1993 SNA can be derived in three ways: Firstly, it is the gross disposable income less consumption. It is also equal to the sum of gross capital formation, net capital inflows from the rest of the world and changes in foreign reserves. Finally, it can be derived from net lending/borrowing to/from the rest of the world by adding gross capital formation and net capital transfers to the rest of the world. Net lending/borrowing to/from the rest of the world, in turn, can be obtained from the rest of the world account as, the current external balance plus net capital transfers from the rest of the world or, the financial account as, the net acquisition of financial assets less net disposal of financial liabilities.

BRICS

The acronym “BRICS” was initially formulated in 2001 by economist Jim O’Neill, of Goldman Sachs, in a report on growth prospects for the economies of Brazil, Russia, India and China – which together represented a significant share of the world’s production and population (Information about BRICS). South Africa joined BRICS in 2010. The main goals of the BRICS countries are cooperation among the member countries towards development, to deliver financial assistance, funding for infrastructure, etc. The five member countries together represent 43% of the world population with a combined nominal GDP of US\$ 16.039 trillion (approximately 37% of the gross world product) and nearly US\$ 4 trillion in foreign reserves (BRICS and the new emerging economic order, 2016).

BRICS Summits :

So far, nine BRICS meetings have taken place. The first summit was held in Yekaterinburg, Russia in 2009. BRICS convention was conducted twice in India. The first BRICS meeting in India took place in New Delhi in the year 2012. Next it was held in Benaulim, India from 15 to 16 October, 2016. The tenth BRICS conference is scheduled for this year from 3–5 September, 2018 in Johannesburg, South Africa. This will be the second time South Africa hosting the BRICS Summit. The chronology of the BRICS summits is given below in Table 1.

Table 1 : Calender of BRICS Summits

Summit	Date	Location
1	16 June 2009	Yekaterinburg ,Russia
2	15 April 2010	Brasília, Brazil
3	14 April 2011	Sanya ,China,
4	29 March 2012	New Delhi, India
5	26-27 March 2013	Durban, South Africa
6	14-16 July 2014	Fortaleza, Brazil
7	8-9 July 2015	Ufa, Russia
8	15–16 October 2016	Benaulim ,India
9	3–5 September 2017	Xiamen ,China
10	3–5 September 2018 (Forthcoming)	Johannesburg, South Africa

Growth profile of BRICS Nations :

Gross Domestic Product (GDP) portrays the economic growth of a country. GDP is the total value of all goods and services produced within a country in a year. It can be measured by using three methods, namely: the output method, the expenditure method, and the income method. Table 2 shows the GDP growth (annual %) of BRICS nations during 1999, 2000, 2010, 2016.

Table 2 : GDP growth (annual %) profile of BRICS Nations during 1999, 2000, 2010, 2016					
Year	Brazil	Russia	India	China	South Africa
1990	-3.1	-3.0	5.5	3.9	-0.3
2000	4.1	10.0	3.8	8.5	4.2
2010	7.5	4.5	10.3	10.6	3.0
2016	-3.6	-0.2	7.1	6.7	0.3

Source: World Development Indicators

Objectives of the study:

- (i) To study the broad trends in gross savings rate among the BRICS nations.
- (ii) To calculate the continuous compound annual growth rate of gross savings for the BRICS countries.

METHODOLOGY**Broad trends :**

Gross saving rates for the world economy were lower in the early 1980s, later in the late 1980s it rose to around 24 per cent of GDP and remained stagnant (Fig. 1). In 1991 gross savings fell steeply to 22 per cent mainly due to high inflation. Later it gradually increased to 24.785 per cent in the new millennium, showing signs of economic progress. In 2006 it reached its highest peak of 26.718 per cent mainly due to economic boom experienced in many several countries like USA, China, India. The impact of the recent global recession was reflected on the world's gross savings, it fell to as low as 23.346 per cent in 2009. Gross savings gradually rose to 24.395 per cent in 2016.

Brazil :

In early 1980's, the gross savings of Brazil as per cent of GDP was significantly low. Gross savings reached its height at 35.8 per cent in 1989 (Fig. 2). But it saw a sudden dip to 18.54 per cent in 1991, as Brazil experienced a period of hyperinflation in the early 1990s (Institute, 2006). Later between 1992 and 1994 it remained stagnant approximately at 20 per cent. In the late 1990s it cut down to 10.59 per cent. In 2004 the saving rates regained to 17.99 per cent. In 2016, it was 13.87 per cent.

Russia :

Russia also suffered from negative economic growth and high inflation from its start in 1992 up to 1998 (Institute, 2006). Hence, its gross savings rate was falling during this period. It reached as low as 17.15 per cent in 1998 (Fig. 3). However, Russia has maintained high economic growth from then onward (Institute, 2006) visible from the climb in its gross savings rate to 36.15 per cent in 2000. Until 2008 savings rate varied around 30 per cent only to fall sharply to 22.66 per cent in 2009. In 2016, Russia' gross savings rate was 25.35 per cent.

India and China :

China and India have been maintaining high stable growth since the 1990s. Although China's rate of economic growth is higher, India prevails in terms of stability (Institute, 2006). This is also reflected in their gross savings rate. For India, post LPG, the gross savings rate increased gradually, although fluctuating in the mid-1990s (Fig. 4). China also experienced an increasing gross savings rate in the 1990's. Gross savings rate started rising since 2000 from 36.45 per cent steadily to 51.96 per cent in 2007 (Fig. 5). In 2008, aggregate savings rate reached 53 per cent of GDP, whereas the current account surplus surpassed 9 per cent of GDP. Later, it remained stagnant till 2010 at around 51 per cent. This is mainly due to the high enterprise and government saving in China. India in the early 2000's, witnessed the gross saving rate rising steadily as an impact of the economic boom and reached at its maximum at 41 per cent in 2007. Post global recession India's gross saving has been falling. China's savings rate remained stagnant approximately at 48 per cent between 2011 and 2015.

South Africa :

The BRIC nations formally invited South Africa to join the group and on December 24, 2010, the group was renamed as BRICS, with "S" standing for South Africa (BRICS and the new emerging economic order, 2016). In 1980 gross savings rate in South Africa reached its peak at 35 per cent. But it fell to 22.16 per cent in 1989 (Fig. 6). It fluctuated till 1989 and began to fall since, showing little signs of recovery in 2008. The gross saving rate remained stagnant during 2008, 2009 and 2010 at around 17 per cent.

RESULTS AND DISCUSSION

Continuously compounded annual growth rate of gross savings for BRICS Nations between 1994 to 2016 :

In this section an attempt is made to determine the per-period continuously compounded rate of growth, by using the below given equation:

$$r = (\ln (P_t/P_0)/t)*100 \dots\dots (Lewis, 2012) (pp.213)$$

where, r= continuously compounded annual growth rate

P_t = final value

P_0 = initial value

t = time period

Table 3 shows the gross savings (current US\$) for the five BRICS nations. The continuously compounded annual growth rates of gross savings (current US\$) for each of the BRICS countries are calculated using the above formula for the time period during 1994 to 2016 and represented in Table 4.

From Table 4, it is precise that China has the highest continuously compounded rate of growth (CCAGR) among the BRICS nations, since China experienced higher economic growth. Followed by India with 8.72 per cent; Russia with 4.45 per cent; and Brazil with 3.57 per cent of continuously compounded rate of growth. South Africa has the lowest CCAGR of 2.84 per cent among the BRICS countries. An increase in the national savings leads to an increase in the net investment which contributes to larger capital stock in the economy. This will increase the real GDP which in turn leads to higher national savings.

TRENDS IN GROSS SAVINGS IN THE BRICS NATIONS

Table 3 : Gross savings (current US\$) from 1994 to 2016					
Year	Brazil	Russia	India	China	South Africa
1994	109744543876.12	116848183718.22	92003096312.09	241960231915.95	24779356980.00
1995	111674021684.65	110833692896.22	100216165419.51	296682947233.61	27302747544.00
1996	107876517858.92	103894761187.76	105346257379.44	344938142689.45	24967307062.00
1997	107484480519.48	88861283751.08	122132462981.05	377198103608.17	24808691359.00
1998	99606372253.34	46492478418.34	111907485921.55	402939120388.30	22414733079.00
1999	63505482228.47	55334448269.70	133951083316.96	409288241598.40	22595398794.00
2000	82047984923.48	93894997923.92	129148562591.11	441639613313.46	22143186655.00
2001	69071840809.80	101057256986.63	135653067410.96	512294836910.51	19467836531.00
2002	73843634645.84	99102578596.49	147703950435.72	585747273605.56	19884456387.00
2003	85610820394.22	125147526780.92	192339162425.75	730826255613.99	28524528211.00
2004	120456246495.13	182180414168.69	258011341306.73	921663369189.16	35944161406.00
2005	152396496659.97	237840656071.90	307165683222.41	1094174831864.97	39140653687.00
2006	186327540688.49	304154032721.86	357071618755.87	1389757266756.97	42657596959.00
2007	241550945295.20	391593045905.99	492468819681.66	1845922459459.17	46654098527.00
2008	286179914022.23	523674766913.68	433323446868.58	2387250937835.64	50526093691.00
2009	231070832196.00	277134967754.91	505589877801.33	2611354822757.59	53403149865.00
2010	396616956403.83	414586089264.78	633413355976.27	3141657137867.91	67610071580.00
2011	485729405297.51	600680405459.61	646651137175.53	3746066184082.02	72951972315.00
2012	444970657367.63	615332473720.45	621920619791.32	4259015731572.11	58816382964.00
2013	453430323303.24	566361912870.33	618035461907.25	4700957542110.73	56389809123.00
2014	393410917242.64	515777684081.54	684158242515.46	5205178814335.33	54510620393.00
2015	260226840460.71	373138257146.37	679090740750.69	5354518856582.03	51795319561.00
2016	249253112243.22	325530058453.38	683194774685.03	5157538426546.21	47636278396.00

Source: World Development Indicators, World Bank Data Base

Table 4 : Continuously (Per-period) compounded rate of growth (CCAGR) of gross savings (current US\$) for the BRICS Nations between 1994 to 2016					
Particular	Brazil	Russia	India	China	South Africa
CCAGR (%)	3.57	4.45	8.72	13.3	2.84

Sources: Compiled by the author

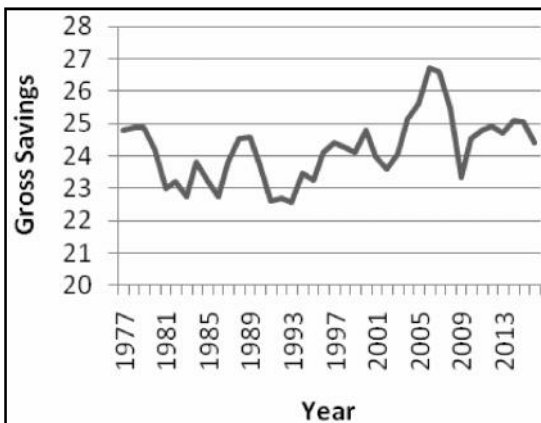


Fig. 1 : Gross savings as % of GDP-World

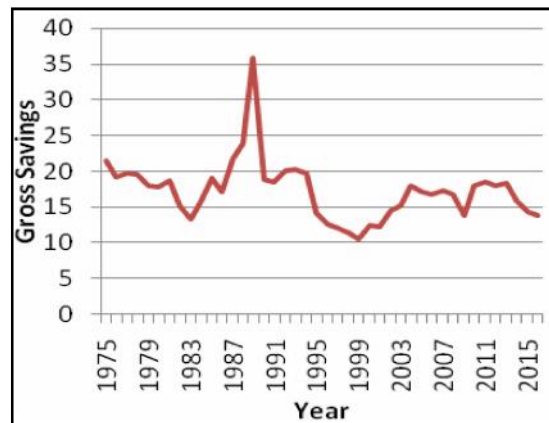


Fig. 2 : Gross savings as % of GDP-Brazil

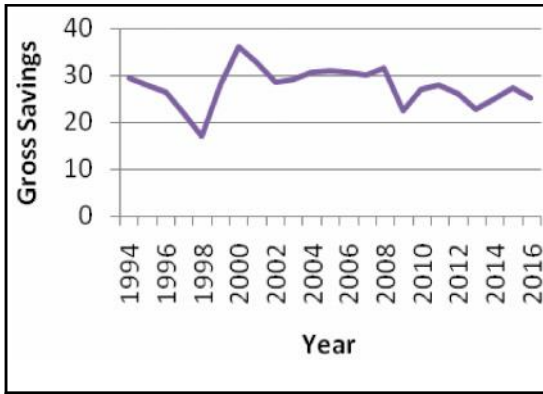


Fig. 3 : Gross savings as % of GDP-Russia

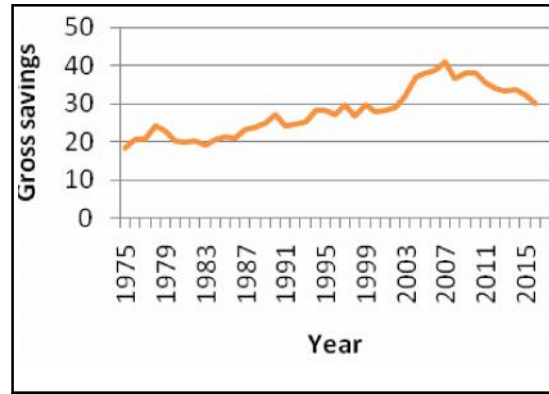


Fig. 4 : Gross savings as % of GDP-India

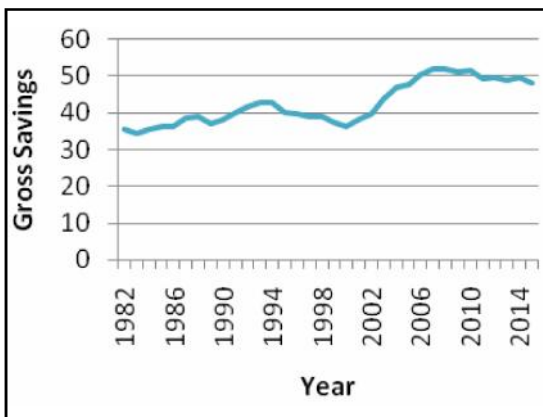


Fig. 5 : Gross savings as % of GDP-China

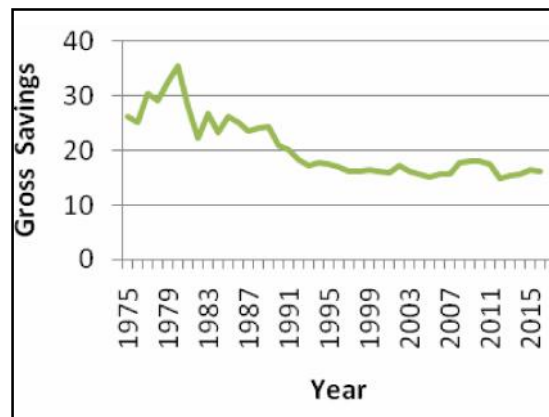


Fig. 6 : Gross savings as % of GDP-South Africa

Source: Fig. 1, 2, 3,4,5,6 (World Bank Data Base)

Conclusion :

This study is an effort to study the broad trends in gross savings rate among the BRICS nations and to calculate the continuous compounded annual growth rate of gross savings for the BRICS countries from the period 1994 to 2016. Trend analysis is completed by plotting graphs of gross savings as per cent of GDP for each of the BRICS nations and world economy and conclusions were drawn from graphical interpretations. Continuous compounded annual growth rate of gross savings for the BRICS countries from the period 1994 to 2016 were calculated from the gross savings (current US\$) data taken from the World Development Indicators, World Bank Data Base. The result concludes that the broad trends in savings are different across the BRICS nations due to various factors like inflation, recession, negative economic growth, etc. High continuous compounded annual growth rate of gross savings of China shows relatively higher economic growth of China among the other BRICS nations. A policy suggestion as per this study is, since savings is the difference between consumption and investment. If more is saved in the economy, thereby boosting the capital formation, the country will progress economically. Higher economic growth leads to further higher national savings which leads to higher capital formation.

REFERENCES

- Athukorala, P.C. and Sen, K. (2001). The Determinants of Private Saving in India. *Economic Development and Cultural Change*.
- BRICS and the new emerging economic order (2016, August 31). Retrieved may 2018, from The Economics Times: https://economictimes.indiatimes.com/articles/brics-and-the-new-emerging-economic-order/brics_show/53946132.cms
- Callen, T. and Thimann, C. (1997). Empirical determinants of household saving: evidence from OECD countries.
- Ersado, L., Alderman, H. and Alwang, J. (2003). Changes in consumption and saving behavior before and after economic shocks: Evidence from Zimbabwe. *Economic Development & Cultural Change*, **52** (1) :187-215.
- <http://ec.europa.eu/eurostat/web/products-datasets/-/teina100>
- <https://data.worldbank.org/indicator/NY.GNS.ICTR.ZS>
- http://www.un.org/esa/sustdev/natlinfo/indicators/methodology_sheets/econ_development/gross_saving.pdf
- <https://stats.oecd.org/glossary/detail.asp?ID=1182>
- Institute, M. R. (2006). *Comparative Analysis of the BRICs (abstract)*. Mizuho Research Institute Ltd.
- Pickersgill, J. (1980). Recent evidence on Soviet households saving behavior. *Rev. Econ. & Statistics*, **LXII** (4) : 628-633.
- Shafer, J.R., Elmeskov, J. and Teas, W. (1992). Saving trends and measurement issues. *Scand. J. Econ.* , 155-175.
- United Nations (1993) System of National Accounts. Washington, D.C.: United Nations.
