

**DISSERTATION ON**

What are the similarities and differences between the Brazilian and Indian economies? What conclusions can you draw on the equity investment side?

**CRISIL YOUNG THOUGHT LEADER 2007**

*Submitted By*

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- Comparative analysis of Indian mutual funds (Large Cap and Mid Cap) and studied the factors affecting their risk-adjusted return.

**ACHIEVEMENTS:**

- Awarded “best speaker” at Infosys Toastmasters Club, Mysore both in the impromptu and prepared speech category (2005).
- Awarded Distinction in the “International Competition for Schools” in the Science Category (1997).
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## EXECUTIVE SUMMARY

Risk and return are two important facets to consider while investing. In search of higher returns and a lower probability of loss, investors diversify their portfolio by investing their capital across borders. In recent years, countries like Brazil and India have shown robust growth and have attracted investors from all over the world.

However, as investors pour capital into these economies, the level of risk would rise and hence continuity of returns would depend on economic sustainability. In the past (prior to year-1999), both nations viz. Brazil and India have seen volatility in terms of growth and sustenance. Their economies were marred by political and macroeconomic instability. However, post 2001; both the nations managed huge capital inflows, robust GDP growth rates and considerably low inflation rates.

Reflecting this growth, the capital markets of these countries have seen a huge appreciation. During the period, April, 2000 to April, 2007, the Brazilian and Indian stock index have seen an average year-on-year growth of 18.87% and 17.6% respectively.

From an investor's perspective, both the countries look equally attractive and in order to diversify one's portfolio, one should allocate funds in an optimal proportion so as to get the highest reward to variability. It can be said that as long as in-satiated demands exist, the growth story would continue and investors would continue to reap rewards.

## INTRODUCTION

The relationship between risk and return is one of the essential concepts to understand when investing in assets. Every investment carries with itself a certain amount of risk and correspondingly an expectation to earn substantial returns. Since the mid-1990s, financial institutions and portfolio investors have looked abroad in their search for higher yields on their investments. With the advent of “Globalization”, the world has become an integrated place and has created investment opportunities in foreign markets, offering better returns and a chance to reduce portfolio risk.

Investing across borders may seem an effective portfolio diversification tool; however, additional types of risks have to be taken into consideration. Country risk, which refers to the likelihood of a change in the business environment, can adversely affect operating profits or the value of assets in the specific country. Also, the economic, social or political imbalances affecting the country can affect the volatility of the investments’ rate of return.

While, Bevan & Estrin (2004) show that country risk has a significant impact on foreign investment decisions, Le and Zak (2006) argue that political instability is one of the most important factors associated with capital flight.

The cited studies conclude that risk is an important factor to consider when investing in foreign markets. Though investing across borders may help diversify one’s portfolio, it may also increase exposure to unwarranted risk.

The aim of this paper is to analyze two countries viz. India and Brazil from the perspective of a foreign portfolio investor and to study the conditions prevailing in these nations that are conducive for sustainable growth.

## **SUSTAINABLE GROWTH**

In the past decade, nations like India and Brazil have seen tremendous growth in terms of GDP, Industrial Production, Foreign Investments, etc. It is this humungous growth that has shifted the focus of the world from developed nations to these emerging market economies (Henceforth referred as EMEs).

For foreign investors or developed economy businesses, an EME provides an outlet for expansion by serving, for example, as a place for a new factory or for new sources of revenue. On the recipient side, the EMEs get a boost in terms of increase in employment, productivity and standard of living.

However, as investments pour into these economies, risk levels increase and hence the question arises: “Is this growth sustainable?”

The Goldman Sachs study called BRICs Report (2003), put down certain conditions for growth. It is mentioned that in-order to achieve sustainability in growth, the nation’s political leaders:

- Must commit them-selves to maintain policies and develop institutions that are conducive to growth.
- Must ensure growth in employment, education and technical progress.
- Must be open to trade and foreign investment.

Therefore, building a strong domestic demand, associated with a well-balanced income distribution, will be of crucial importance for long-term sustainable growth.

## ECONOMIC AND POLITICAL STABILITY

### BRAZIL

Over the past 25 years, economic growth in Brazil has demonstrated substantial volatility around a relatively low mean. Due to the “oil Shocks” of 1973, the Brazilian economy suffered a major set-back. During that period, the country’s balance of payment was drastically reduced; GDP growth rate fell to 6.9% (11.1% prior to 1973); foreign debt rose from US\$6.4 billion in 1963 to nearly US\$54 billion in 1980; and current-account deficits increased from US\$1.7 billion in 1973 to US\$12.8 billion in 1980.

To improve the economic situation, IMF assisted Brazil in the late 1979 and continued until 1984. The major concern during that period was the rising rate of inflation, which was growing at the rate of 30% per month. Investors lost confidence in the economy and sustainable growth seemed a distant dream.

In the midst of 1990’s, the government of Brazil introduced a stabilization program called Plano Real. This stabilization plan was implemented in three stages and aimed at reducing inflation, stabilizing the domestic currency (Cruzeiro Real) and improving the economic health of Brazil.

PLANO REAL	
STAGE	
1	Introduction of an equilibrium budget mandated by the National Congress
2	A process of general indexation (prices, wages, taxes, contracts, and financial assets)
3	Introduction of a new currency, the Brazilian real, pegged to the dollar.

Post “Plano Real” the economy of Brazil improved drastically. The economic growth resumed, (mainly the industrial sector), and after many years of erratic trend, the GDP growth rate was seen at 6% in 1994.

However, in the late 90’s (1997-99), the Real appreciated against the U.S. dollar as a result of the large amount of capital inflows in 1994 and 1995. It then began a gradual depreciation

process, culminating in the 1999 Brazilian currency crisis, when the Real suffered a maxi-devaluation, and fluctuated wildly.

## **INDIA**

Till 1991, India had an inward looking policy, wherein the nation's political leaders decided to depend on the country's domestic produce and achieve self sufficiency. The nation maintained a fixed exchange rate system, where the rupee was pegged to the value of a basket of currencies of major trading partners.

As a result of such policies, the nation suffered from a "Hindu rate" of growth of 3-4% per annum and started having balance of payments problems in 1985. By the end of 1990, it was in a serious economic crisis where the government was close to credit default and its foreign exchange reserves had reduced to the point that India could barely finance three weeks' worth of imports.

In 1991, India began "macro-balancing" its economy where it launched economic reforms under the finance minister, Dr. Manmohan Singh.

<b>MAJOR REFORMS</b>	
1	<b>Liberalisation</b> did away with regulatory hurdles and minimised licensing requirements.
2	<b>Privatisation</b> reduced the role of the state and public sector in business.
3	<b>Globalisation</b> made it easier for the MNCs to operate in India.

Post reforms, strong private investment spurred economic growth to levels in excess of 7 percent. However, the 1997 Asian Economic Crisis in Thailand, Indonesia, Singapore, Malaysia, Hong Kong, Japan and South Korea, hampered the Indian economy. India's stock index, the Bombay Stock Exchange's Sensitive Index, lost more than 9 percent of its value in a week and a half of trading, the GDP growth rate paused and the Rupee started to depreciate.

## **TOWARDS SUSTAINABLE GROWTH**

As an investor it is important to understand the past and act for the future. Both the countries, Brazil and India have faced a volatile and unstable past. Both of them have successfully implemented reforms and both have seen a promising period (post 2001). However, with the level of risk surrounding cross-border investing sustainability of development should be an investor's major concern.

Looking back, the period 2000-2006 for Brazil, on an average, saw a reasonable growth rate of 3.1%. Owing to the reforms of the earlier decade, the inflation rate had remained at historically moderate rates. In 2007, it is estimated that the Brazilian economy would grow at 4.50%, and that the interest rate would end at 14%. The market estimates that the foreign trade surplus for 2007 would be US\$ 40 billion, and that foreign direct investment would total US\$ 19.1 billion.

In the case of India the rapid economic growth on the order of 8 percent annually since 2003 has brought some increase in inflation. The economy in 2007 is expected to grow at 9% with a focus on reducing inflation. It is expected that under the leadership of a visionary prime-minister, India would see further reforms and increased foreign investments.

### **Are the two countries (Brazil and India) still vulnerable to a crisis?**

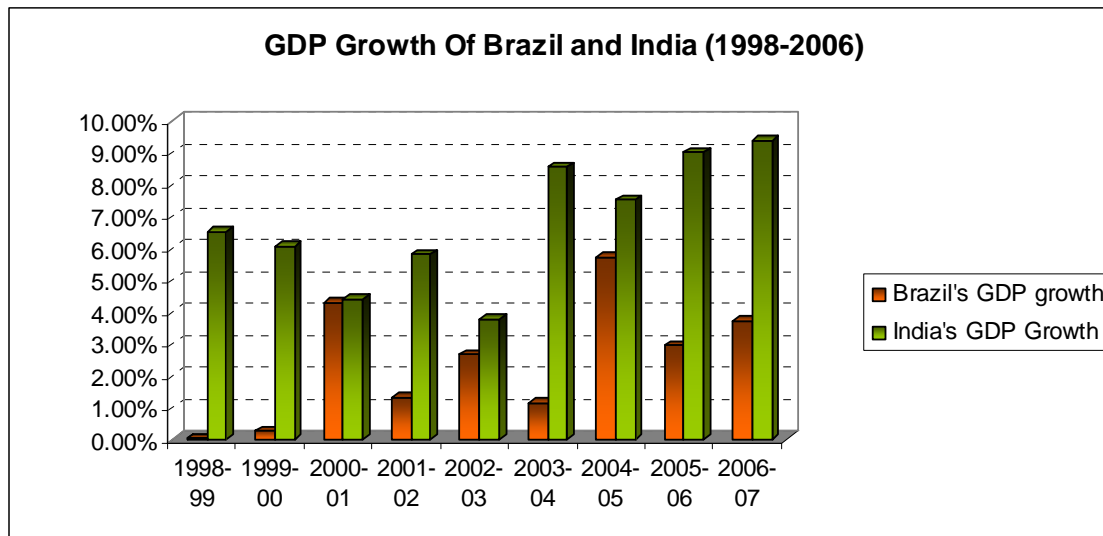
Brazil is far less financially vulnerable now, as it was ten years ago. With reforms in place, Brazil has reduced its vulnerability to foreign shocks. It imports 9% of the oil it consumes; it has halved its domestic debt through exchange rate-linked certificates and has seen exports grow, on an average, by 15% a year. The exchange rate does not put pressure on the industrial sector and does away with the possibility of a liquidity crisis. However, in a "globalized" world, nations are susceptible to external risk factors. With the current slow-down in the US economy, the possibility of a contagion effect in Brazil cannot be ruled out.

India, on the other hand, looks much healthier from its state during the 1990-91 and 1997-99 economic crisis. It has a surplus of foreign reserves and seems an attractive destination for investments. However, a recession in the US and Asian economies may slow-down economic growth (especially in India's IT-service sector).

**SUMMARY OF KEY SIMILARITIES OF BRAZIL AND INDIA  
FROM AN INVESTOR'S PERSPECTIVE**

- Brazil and India have maintained a robust GDP growth during the period 2000-2006. India vis-à-vis Brazil has seen a higher rate of growth (especially due to its booming Information Technology Sector) (Graph 1).

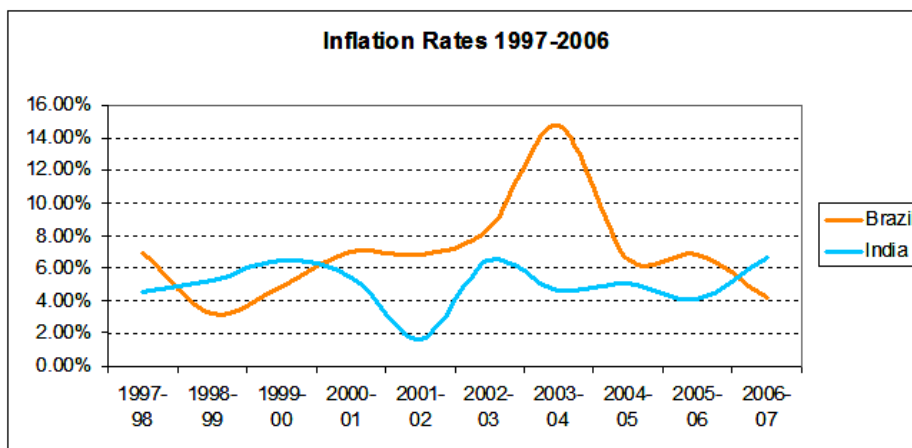
Graph 1: GDP Growth Rate of Brazil (1998-2006)



\* Source: Statistics Department of the International Monetary Fund

- During the period 1997-2006, both the nations have maintained a modest inflation rate. However from graph 2, it can be seen that Brazil has a higher average rate of inflation than India.

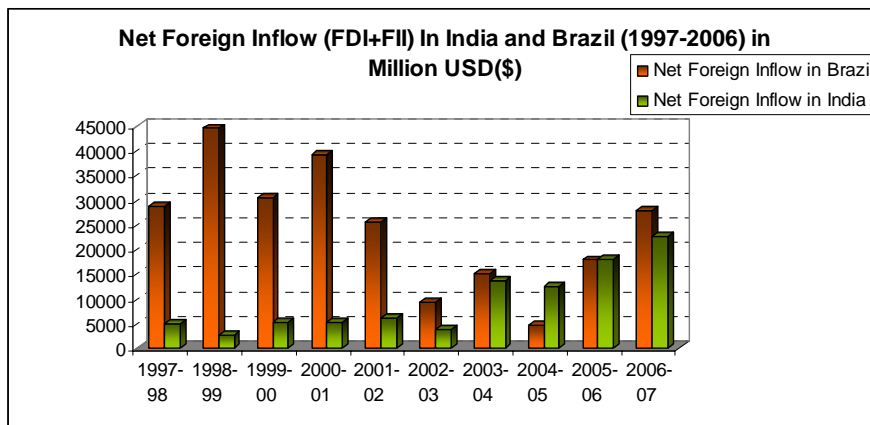
Graph 2: Inflation Rates of India and Brazil (1997-2006)



\* Source: Statistics Department of the International Monetary Fund

- Both the countries, Brazil and India, are framing and maintaining expansionary policies. Such policies require huge capital for infrastructure development. Foreign countries are a good source for such capital. As seen from graph 3, foreign funds, (both direct investment and portfolio investment) are growing at an increasing pace. Though India lagged behind Brazil during 1997-2001, the period 2003 onwards has seen strong inflows.

Graph 3: Net foreign fund inflows (FDI and FII) in India and Brazil (1997-2006)

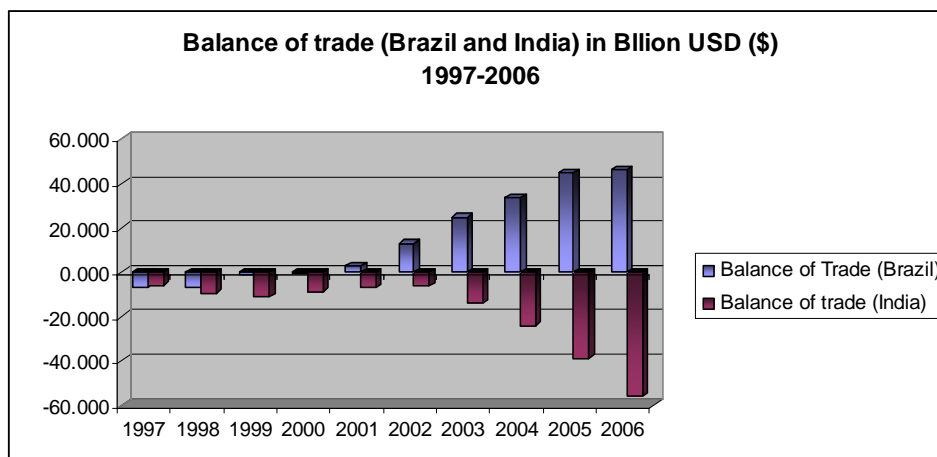


\* Source: Statistics Department of the International Monetary Fund

**SUMMARY OF KEY DIFFERENCE BETWEEN BRAZIL AND INDIA**

- It can be seen from graph 4 that India's balance of trade deficit is growing at an increasing pace. On the other hand, Brazil's balance of trade shows a surplus and is increasing exponentially. From this it could be concluded that India is more import dependant vis-à-vis Brazil.

Graph 4: Balance of trade of Brazil and India (in Billion USD (\$)) for 1997-2006



\* Source: Statistics Department of the International Monetary Fund

## CAPITAL MARKETS

The story of the Indian and Brazilian stock markets seems breath-taking. From a quarterly average of 15471 in March-July 2000, the Brazilian stock index moved to a quarterly average of 51872 in March-July 2007 (a Year on Year Growth of 18.87%). India's BSE SENSEX grew Year on Year 17.6 % from a quarterly average of 4613.31 in March-July 2000 to a quarterly average of 14355.78 in March-July 2007.

The spectacular growth of these index values could be attributed to the strong growth in these economies and the flow of foreign funds in these countries. Most market participants today talk of the economic fundamentals and say that as long as strong demands in these countries exist, the growth story would continue.

Keeping this growth in mind, a projected value of the Brazilian Stock index (Bovespa) and the Indian Stock Index (BSE Sensex) has been arrived at using multivariate regression analysis. Though it is true that the short-term values of these indices depend on market sentiments, however in the long-run they are mostly a reflection of the economic health of the nation.

Regression analysis is used to determine the value of the indices (dependant variable) of two countries viz. Brazil and India based upon certain assumptions made on the independent variables.

$$Y = \beta_0 + \beta_1.X_1 + \beta_2.X_2 + \beta_3.X_3 + \beta_4.X_4 + \beta_5.X_5 + \beta_6.X_6$$

Here Y: The dependant variable, is the value of the index

$X_1, X_2, X_3, X_4, X_5, X_6$  are the independent variables where:

$X_1$  is the Gross Domestic Product (GDP) of the nation

$X_2$  is the Index of Industrial Production (IIP) of the nation

$X_3$  is the WPI/CPI (WPI for India and CPI for Brazil) of the nation.

$X_4$  is the net Foreign Direct Investment (FDI) inflow of the nation

$X_5$  is the net Foreign Portfolio investment (FII) inflow of the nation

$X_6$  is the interest rate prevailing in the nation

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$  are the coefficients of the model and  $\beta_0$  is the constant factor.

**Table 1:** 2007-08 to 2014-15 estimates for Brazil

YEAR	GDP (2000Prices) (R\$ Billion)	Index Of Industrial Production (IIP)	Consumer Price index (CPI)	FDI Inflow (Million USD)	FII Inflow (Million USD)	Interest rate
1997-98	1127.52	96.40	86.33	17877	10908	25.003
1998-99	1127.92	94.41	89.09	26002	18582	29.501
1999-00	1130.79	93.85	93.42	26888	3542	26.261
2000-01	1179.48	100.00	100.00	30497	8651	17.588
2001-02	1194.93	101.61	106.84	24715	872	17.467
2002-03	1226.72	104.37	115.87	14085	-4797	19.113
2003-04	1240.83	104.37	132.92	9894	5129	23.367
2004-05	1311.68	112.80	141.69	8695	-3996	16.244
2005-06	1350.24	116.67	151.42	12676	5168	19.123
2006-07	1400.20	120.00	157.76	18780	9050	15.278
2007-08E	1456.21	126.46	175.64	26212	9000	16.00
2008-09E	1514.46	131.99	188.87	27260	9000	16.00
2009-10E	1575.03	137.75	202.09	28351	9000	16.00
2010-11E	1638.04	143.73	215.31	29485	9000	16.00
2011-12E	1703.56	149.96	228.54	30664	9000	16.00
2012-13E	1771.70	156.43	241.76	31891	9000	16.00
2013-14E	1842.57	163.16	254.98	33166	9000	16.00
2014-15E	1916.27	170.16	268.21	34493	9000	16.00

**ASSUMPTIONS:**

- The Gross Domestic Product (GDP) is expected to grow at 4% year on year from 2007-08 to 2014-15.
- The Index of Industrial Production (IIP) has been estimated using regression analysis with the GDP as the independent variable.  

$$IIP = (-11.881) + (0.095 * GDP) \quad (R^2 = 0.991)$$
- The Consumer Price Index (CPI) has been estimated using regression analysis with the GDP as the independent variable.  

$$CPI = (-2279.975) + ((337.144) * (\ln(GDP))) \quad (R^2 = 0.969)$$
- The Net - FDI inflow (in million USD) has been estimated at 1.8% of the GDP (in billion Real) for the period 2007-08 to 2014-15. (Using Historical trends)
- The net - FII inflow has been kept constant at 9000 million USD for the period 2007-08 – 2014-15.
- The interest rate has been kept constant at 16 % for the period 2007-08 to 2014-15

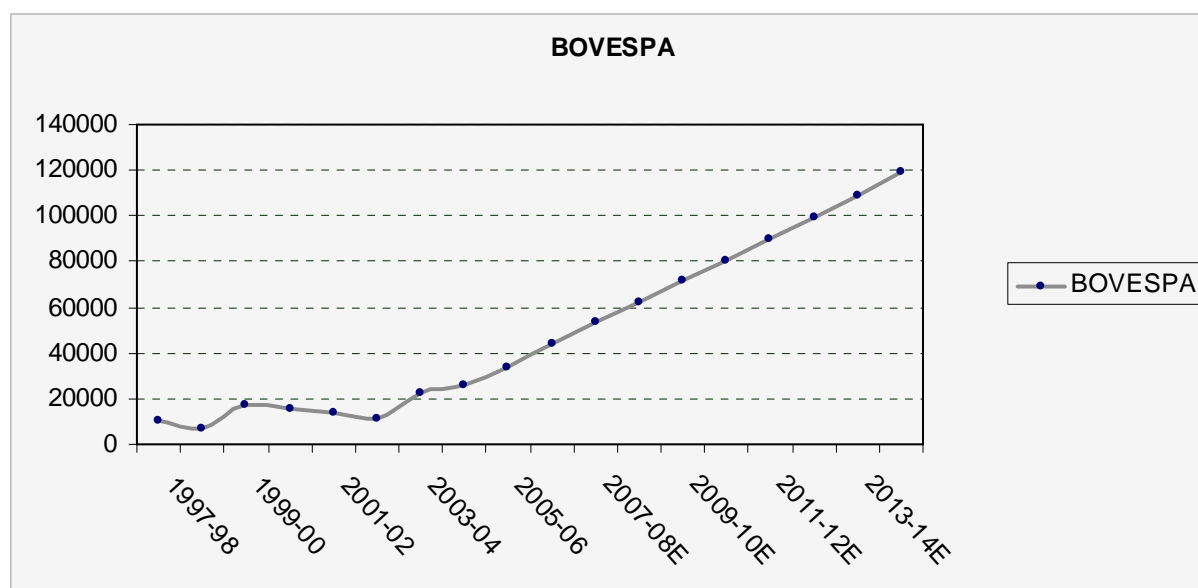
Based on the above assumptions and the estimates for the independent variables a multivariate regression model was constructed to estimate the value of the index for the period 2007-08 to 2014-15.

$$\text{BOVESPA} = (-141512) + (131.593 * \text{GDP}) + (-387.828 * \text{IIP}) + (196.06 * \text{CPI}) + (0.426 * \text{FDI}) + (0.058 * \text{FII}) + (425.415 * \text{Interest Rate})$$

**Table 2:** Past and Future -Estimated Values for the Brazilian Stock Index (BOVESPA)

1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
10197	6784	17092	15259	13578	11268	22236	26196	33456
2006-07	2007-08E	2008-09E	2009-10E	2010-11E	2011-12E	2012-13E	2013-14E	2014-15E
44474	53989	62542	71334	80375	89674	99242	109090	119229

**Graph 5:** BOVESPA 1997-98 to 2014-15



\* Source: Yahoo Finance (HISTORICAL DATA ON BOVESPA) 1997-2006

**Table 3:** 2007-08 to 2014-15 estimates for India

YEAR	GDP (99Prices) (Rs. Billion)	Index Of Industrial Production (IIP)	Wholesale Price index (WPI)	FDI Inflow (Million USD)	FII Inflow (Million USD)	Interest rate
1997-98	15815.26	83.70	85.68	3178	1828	9.00
1998-99	16844.39	86.52	90.72	2683	-61	9.00
1999-00	17865.25	93.07	93.85	2239	3026	8.00
2000-01	18647.73	100.00	100.00	2463	2760	8.00
2001-02	19729.12	102.15	104.82	4065	2021	6.50
2002-03	20477.33	107.28	107.47	2722	979	6.25
2003-04	22225.91	114.16	113.29	2225	11377	6.00
2004-05	23896.60	123.74	120.74	3219	9315	6.00
2005-06	26045.32	133.54	126.44	5546	12492	6.00
2006-07	28481.57	147.34	132.44	15726	7003	6.00
2007-08E	30760.10	157.75	139.97	6767	9000	7.00
2008-09E	33220.90	170.05	146.24	7309	9000	7.00
2009-10E	35878.58	183.34	152.50	7893	9000	7.00
2010-11E	38748.86	197.69	158.77	8525	9000	7.00
2011-12E	41848.77	213.19	165.03	9207	9000	7.00
2012-13E	45196.67	229.93	171.29	9943	9000	7.00
2013-14E	48812.41	248.01	177.56	10739	9000	7.00
2014-15E	52717.40	267.53	183.82	11598	9000	7.00

**ASSUMPTIONS:**

- The Gross Domestic Product (GDP) is expected to grow at 8.5% year on year from 2007-08 to 2014-15
- The Index of Industrial Production (IIP) has been estimated using regression analysis with the GDP as the independent variable.  

$$\text{IIP} = 3.947 + (0.005 * \text{GDP}) \quad (R^2 = 0.996)$$
- The Wholesale Price Index (WPI) has been estimated using regression analysis with the GDP as the independent variable.  

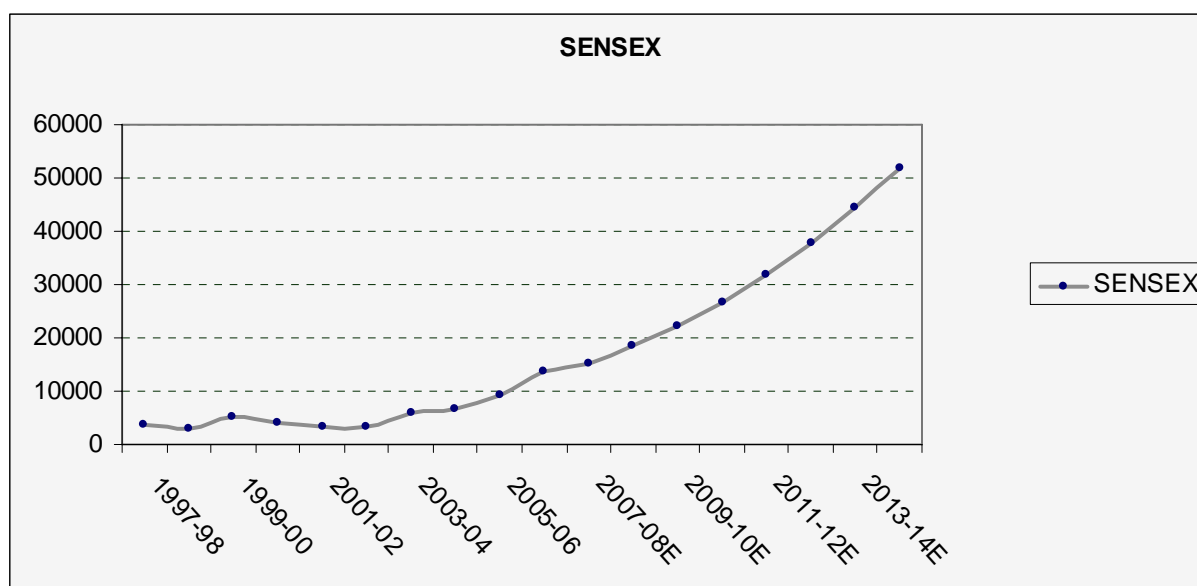
$$\text{WPI} = (-701.203) + ((81.399) * (\text{Ln}(\text{GDP}))) \quad (R^2 = 0.996)$$
- The FDI inflow (in million USD) has been estimated at 0.022% of the GDP (in Billion INR) for the period 2007-08 to 2014-15. (Using Historical trends)
- The FII inflow has been kept constant at 9000 million USD for the period 2007-08 – 2014-15.
- The interest rate has been kept constant at 7 % for the period 2007-08 to 2014-15.

$$\text{SENSEX} = (5335.122) + (1.687 * \text{GDP}) + (223.626 * \text{IIP}) + (-577.925 * \text{WPI}) + (0.1 * \text{FDI}) + (0.119 * \text{FII}) + (243.48 * \text{Interest Rate})$$

**Table 4:** Past and Future -Estimated Values for BSE-SENSEX (\*)

1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
3659	3055	5006	3972	3262	3377	5839	6603	9398
2006-07	2007-08E	2008-09E	2009-10E	2010-11E	2011-12E	2012-13E	2013-14E	2014-15E
13696	15045	18380	22271	26763	31903	37745	44343	51759

**Graph 6:** SENSEX 1997-98 to 2014-15



\* Source: Yahoo Finance (BSE SENSEX HISTORICAL DATA) 1997-2006

(\*) For the sake of simplicity only the BSE SENSEX has been taken into consideration. A similar analysis could be performed for the index of the National Stock Exchange of India (NSE – S&P CNX NIFTY).

## CONCLUSION

Table 5 shows the expected returns on the Brazilian stock index (BOVESPA) and the Indian stock index (BSE SENSEX). In order to maximize one's returns and simultaneously reduce risk, the investor could go for three options:

- 1) Invest all his/her funds in the Indian stock exchange.
- 2) Invest all his/her funds in the Brazilian stock exchange.
- 3) Invest funds in the Indian and Brazilian stock exchange (in a proportion of  $W_1$ :  $W_2$ )

**Table 5:** Y-O-Y (%age) Returns of Brazil's BOVESPA and India's SENSEX

	BOVESPA RETURNS	SENSEX RETURNS
2007-08E	21.39	9.85
2008-09E	15.84	22.16
2009-10E	14.06	21.17
2010-11E	12.67	20.17
2011-12E	11.57	19.21
2012-13E	10.67	18.31
2013-14E	9.92	17.48
2014-15E	9.29	16.72

**Case 1)** The investor could allocate 100% of his/her funds in BSE SENSEX

If the foreign investor would allocate all his/her funds to BSE SENSEX, he/she would enjoy a mean return ( $R_{BSE}$ ) of 18.13% with a standard deviation of 3.81% ( $\sigma_{BSE}$ ). In this case, the investor gets a reward to variability ratio <sup>(1)</sup>  $((R_{BSE}) - R_f^{(2)}) / \sigma_{BSE}$  of 3.45

**Case 2)** The investor could allocate 100% of his/her funds in BOVESPA

If the foreign investor would allocate all his/her funds to BOVESPA, he/she would enjoy a mean return ( $R_{BOVESPA}$ ) of 13.18% with a standard deviation ( $\sigma_{BOVESPA}$ ) of 3.97%. In this case, the investor gets a reward to variability ratio  $((R_{BOVESPA}) - R_f) / \sigma_{BOVESPA}$  of 2.06

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(1) Ratio of returns above risk free returns and variance of the portfolio

(2)  $R_f$  is the Return on Risk Free Assets. In the following computation, the value of  $R_f$  is taken as 5%.

**Case 3)** The investor could allocate  $W_1\%$  of his/her funds in BSE SENSEX and  $W_2\%$  of his/her funds in BOVESPA.

The Expected return would thus become:

$$E(\mathbf{R}) = W_1 R_{(BSE)} + W_2 R_{(BOVESPA)}$$

And the Variance would become:

$$\sigma_P^2 = W_1^2 \sigma_{(BSE)}^2 + W_2^2 \sigma_{(BOVESPA)}^2 + 2 * W_1 * W_2 * \sigma_{(BSE)} * \sigma_{(BOVESPA)} * \rho_{(BSE, BOVESPA)}$$

Where:

$E(R)$  is the expected return on the portfolio

$\sigma_P$ ,  $\sigma_P^2$  is the variance and Standard Deviation of the portfolio

$W_1, W_2$  are the Weight assigned to BSE SENSEX and BOVESPA respectively.

$\sigma_{(BSE)}, \sigma_{(BOVESPA)}$  is the standard deviation of BSE SENSEX and BOVESPA respectively.

$\rho_{(BSE, BOVESPA)}$  is the correlation coefficient of BSE SENSEX and BOVESPA

For the period 2007-08 to 2014-15 the correlation coefficient of BOVESPA and SENSEX comes out to be (-0.474) suggesting that an investor could diversify his/her portfolio by investing in both the markets. Based upon the risk return trade-off theory, one would try to invest in a proportion so as to maximize ones reward-to-variability.

Table 7: Reward to Variability

		E ( R )	R <sub>f</sub>	E ( R ) - R <sub>f</sub>	$\sigma_P^2$	$\sigma_P$	(E ( R ) - R <sub>f</sub> ) / $\sigma_P$
$W_1$	$W_2$						
1	0	18.13	5	13.13	14.52	3.81	3.45
0.9	0.1	17.64	5	12.64	10.79	3.28	3.85
0.8	0.2	17.14	5	12.14	7.91	2.81	4.32
0.7	0.3	16.65	5	11.65	5.89	2.43	4.80
0.6	0.4	16.15	5	11.15	4.73	2.17	5.13
0.5	0.5	15.66	5	10.66	4.43	2.10	5.06
0.4	0.6	15.16	5	10.16	4.98	2.23	4.55
0.3	0.7	14.67	5	9.67	6.39	2.53	3.83
0.2	0.8	14.17	5	9.17	8.66	2.94	3.12
0.1	0.9	13.68	5	8.68	11.78	3.43	2.53
0	1	13.18	5	8.18	15.76	3.97	2.06

The reward-to-variability matrix (Table 7) for the two countries (viz. Brazil and India) suggests that in order to arrive at an optimal diversification, the foreign investor should invest 60% of his capital in the Indian stock index while 40% should be invested in the Brazilian Stock Index. By this, he/she would get the highest reward to variability of 5.13.

Hence it can be said that on the equity investment side, the Indian capital market seems to outperform the Brazilian capital market and the foreign investor should allocate a higher proportion of his/her capital to the former. It should be noted that the basis of this conclusion rests on the robust growth shown by the two countries. To conclude, India and Brazil have strong macroeconomic fundamentals and have seen huge demands in yester-years. The long term growth story now depends on which country sustains this demand.

*“Any development that is not sustainable is not development.” - Anonymous*

## APPENDIX

### INDIA

Table 1 Economic Structure of India

	2003(a)	2004(a)	2005(a)	2006(a)	2007(b)
GDP at market prices (Rs bn)(c)	27,654.90	31,266.00	35,671.80	41,257.30	46,379.0(d)
GDP (US\$ bn)	596.1	692.7	805.6	922.3	1,124.0(d)
Real GDP growth (%) (e)	8.4	8.3	9.2	9.4	8.4(d)
Consumer price inflation (av; %)	3.8	3.8	4.2	6.2	5.7
Population (m)	1049.7	1065.1	1080.3	1,095.4(b)	1110.4
Exports of goods fob (US\$ m)	60,895	77,939	102,328	123,208	144,427
Imports of goods fob (US\$ m)	-75,537	-105,975	-149,200	-184,362	-225,473
Current-account balance (US\$ m)	8,773	781	-7,810	-10,357	-16182.3
Foreign-exchange reserves excl gold (US\$ m)	98,938	126,593	131,924	170,738	236,524
Total external debt (US\$ bn)	112.9	124.4	123.1	131.1(b)	138.6
Debt-service ratio, paid (%)	18.8	13.7	13.0(b)	7.8(b)	7.3
Exchange rate (av) Rs:US\$	46.58	45.32	44.1	45.31	41.49

(a) Actual. (b) Economist Intelligence Unit estimates. (c) Fiscal year (beginning April 1st of year indicated); seasonally adjusted; includes statistical discrepancy. (d) Economist Intelligence Unit forecasts. (e) Fiscal year (beginning April 1st of year indicated).

Table 2 GDP of India

Origins of gross domestic product 2006(a)	% of total	Components of gross domestic product 2006(a)	% of total
Agriculture	17.5	Private consumption	56.4
Industry	27.9	Government consumption	11.3
Manufacturing	16.1	Fixed investment	29.5
Services	54.6	Stockbuilding	2.9
Statistical discrepancy	0	Exports of goods&services	23
		Imports of goods&services	25.8

Table 3 Import and Exports of India

Principal exports 2006(ab)	US\$ bn	Principal imports 2006(ab)	US\$ bn
Engineering goods	26.2	Petroleum&petroleum products	57.1
Petroleum products	18.6	Machinery	32.7
Textiles&clothing	16.1	Electronic goods	15.9
Gems&jewellery	15.6	Gold&silver	14.6
Agricultural&allied products(c)	11.2	Chemicals	7.8
Main destinations of exports 2006	% of total	Main origins of imports 2006	% of total
US	19.1	China	7.3
UAE	9.4	US	6.5
China	8.4	Germany	5.2
UK	4.9	Singapore	4.8

(a) Fiscal year (beginning April 1st). (b) Department of Commerce. (c) Includes plantation and marine products.

**BRAZIL**

Table 4 Economic Structure of Brazil

	2002(a)	2003(a)	2004(a)	2005(a)	2006(a)
GDP at market prices R bn	1,477.80	1,699.90	1,941.50	2,147.90	2,322.80
GDP US\$ bn	505.9	552.2	663.6	882	1,067.40
Real GDP growth (%)	2.7	1.2	5.7	2.9	3.7
Consumer price inflation (av; %)	8.5	14.7	6.6	6.9	4.2
Population (m)	176.4	179	181.6	184.2	186.8(b)
Exports of goods fob (US\$ m)	60,362	73,084	96,475	118,309	137,470
Imports of goods fob (US\$ m)	-47,241	-48,290	-62,835	-73,606	-91,355
Current-account balance (US\$ m)	-7,637	4,177	11,679	13,985	13,276(b)
Foreign-exchange reserves excl. gold (US\$ m)	37,684	49,111	52,740	53,574	85,561
Total external debt (US\$ bn)	233.1	236.6	220.4	188	191.1(b)
Debt-service ratio, paid (%)	69.4	65.9	46.2	55.3(b)	26.0(b)
Exchange rate (av) R:US\$	2.92	3.08	2.93	2.44	2.18

(a) Actual. (b) Economist Intelligence Unit estimate.

Table 5 GDP of Brazil

Origins of gross domestic product 2006	% of total	Components of gross domestic product 2006	% of total
Agriculture	5.1	Final consumption	80.3
Industry	30.9	Fixed investment	16.8
Services	64	Trade balance (goods&services)	2.9

Table 6 Import and Exports of Brazil

Principal exports 2006	US\$ m	Principal imports 2006	US\$ m
Transport equipment&parts	20098	Machinery&electrical equipment	23560
Metallurgical products	15068	Chemical products	14414
Soybeans, meal&oils	10481	Oil&derivatives	15201
Chemical products	3936	Transport equipment&parts	10301
Main destinations of exports 2006	% of total	Main origins of imports 2006	% of total
US	18	US	16.3
Argentina	8.5	Argentina	8.8
China	6.1	China	8.7
Germany	4.1	Netherlands	0.9

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