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Cost of Trading in Stock Exchanges: a Perspective

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Abstract

This paper attempts to make a case for Securities Transaction Tax (STT) rationalization. The paper finds, that of the three major components of cost of trading viz. user charges (brokerage fees, exchange transaction charges and DP chargers), impact cost and statutory levies (STT, service tax on brokerage, stamp duty etc.), the user charges and the impact cost have been falling over the years due to rising competition and technology. This has led to a decline in India's cost of trading, though it remains high relative to other emerging economies such as Brazil and Russia primarily due to high STT levels. The paper advocates that India's STT regime should be reviewed because of negligible revenue collection by Government from the STT and also because high STT reduces trading volumes, slows prices discovery, increases businesses' cost of capital and impairs the competitiveness of domestic financial markets, given the increased cross border mobility of capital.

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Cost of Trading in Stock Exchanges: a Perspective

I Introduction

In India, capital markets have been playing an increasingly important role, determining the pace and pattern of economic growth and the stock exchanges are a vital institution of the capital markets. As an important intermediary in the capital market, a stock exchange provides an organized marketplace for transparent price discovery, where trading members (brokers) use a trading platform, typically an electronic one, to trade in securities such as equities or bonds either on behalf of their clients or on their own account. When a party trades with another on a stock exchange, he not only pays or receives the price (at the time of trading) of the securities he buys or sells, but also incurs certain additional costs. These additional costs are called costs of trading. Costs of trading in an exchange have an important bearing on the efficiency of the capital market and hence, call for a critical examination.

Why are costs of trading an important parameter to monitor and control? In a globalized world, capital moves not only in response to competing monetary policies, but also to competing securities markets. Inefficient financial systems are therefore likely to be increasingly penalized. Besides, high trading costs of securities distort the allocation of investible resources to securities vis-à-vis other assets. It also increases the cost of capital. By making it more expensive to exit, trading costs add to the liquidity risk and induce investors to ask for higher risk premium, implying a higher cost of capital. The aim of this paper is to critically examine the sources of the costs of trading on an exchange in the Indian context, analyze the trends and identify and discuss the emerging issues.

II Composition of trading costs in India

Investors/ traders incur trading costs that can be broadly classified into three main categories: (i) user charges, (ii) statutory levies and (iii) impact costs.

User charges

An investor/trader is required to pay user charges in return for the facility to use the infrastructure of three separate entities: brokers, stock exchanges and depository service providers; the charges made by these entities are brokerage fees, exchange transaction charges and depository charges respectively. The exchange transaction fee also includes the costs of clearing and settlement, undertaken by the clearing corporations. The depositories provide depository services to investors through depository participants (DPs). They do not charge the investors directly but charge their DPs, who are free to have their own fee structure for their clients. It may be noted that each of these three entities—brokers, exchanges and DPs—are for-profit entities and what they charge to the clients includes an element of profit. Bulk of the user charges is of ad valorem nature; that is, they are applied on transaction values.

Statutory levies

Transactions on exchanges attract four different types of statutory levies; they are: Securities Transaction Tax (STT), Service tax on brokerage, Stamp duty and SEBI turnover fees. STT and service tax on brokerages are revenues of the Central Government, while stamp duty is collected by respective state governments. SEBI turnover fees flow into SEBI General Fund. SEBI's budget is financed by this Fund. The base for all these levies is transaction value, except for service tax on brokerage, which is applied on the brokerage fees charged by the brokers. It may also be noted that all the levies are uniform across the country, except stamp duties, which are payable as per the rates prescribed by the state in which a transaction takes place. ²

Impact cost

Impact cost is an indicator of liquidity of a market. It arises because of the absence of perfect liquidity in the markets in the real world. The less liquid a market, the higher is the impact cost. The concept of 'impact cost' can be explained with an example. If someone buys a share of a company for Rs 100 and sell a share of the same company simultaneously, she may get Rs 99,

² Securities Transaction Tax (STT), Stamp duty and SEBI turnover fees vary across asset classes.

losing one rupee in the process, which is called the impact cost of transaction. For sophisticated investors, who trade in large quantities, it is a matter of high significance. In any given market, impact costs vary over time and across securities. To make ‘impact cost’ comparable across countries and over time, it is defined in terms of a given basket of stocks and a predefined order size.

III. Relative contribution of different cost components

Costs of trading vary depending on a number of factors such as type of trade (delivery based or not), kind of security being traded (equity or debt or derivatives), type of investor (retail vs institutional), size of transaction, location of the broker and so on. To arrive at any estimate of total trading costs, one would necessarily have to make assumptions on these factors. Based on a certain set of assumptions, we have estimated the costs of trading securities valued at Rs 100,000 at NSE (See Table 1).³

Table-1: Transaction cost for trading in securities market (Average brokerage@10bps)

Value of Trade	Rs. 1,00,000		
	Cost (Rs.)	Percent of Total Cost	Basis Points of Traded Value
User charges	123.25	38	12.325
of which:			
Brokerage (at the rate of 10 bps)	100.00	31	10.0
Exchange Transaction Charges	3.25	1	0.3
DP charges	20.00	6	2.0
Statutory levies	145.50	44	14.5
of which:			
Securities Transaction Tax (STT)	125.00	38	12.5
Service tax on brokerage (@10.3 %)	10.30	3	1.0
Stamp duty	10.00	3	1.0
SEBI turnover fee	0.10	0	0
Impact Cost	60.00	18	6
Total	328.65	100	32.82

Source: NSE staff estimates

³ The assumptions include: (a) brokerage fees are 10 bps, (b) it is a delivery based equity transaction, (c) the transaction is made in Maharashtra, (d) the exchange transaction fee is at the highest possible rate and (e) the stock is a large cap stock.

In a separate exercise (Table 2), we retained all assumptions of Table 1, but changed the assumption on brokerage rate from 10 bps to 20 bps. It can be seen that both the total cost of trading as well as the contribution of individual cost sources in Table 2 differ from those in Table 1. This gives a sense of how the overall trading costs and the relative contribution of their components can vary from case to case. For example, the contribution of statutory levies fell from 44 percent in one case (Table 1) to 35 percent in another (Table 2). The point to note is that such variations from case to case (depending on brokerage charged, type of trade, size of trade etc) are normal to expect.

Table-2: Transaction cost for trading in securities market (Average brokerage@20bps)

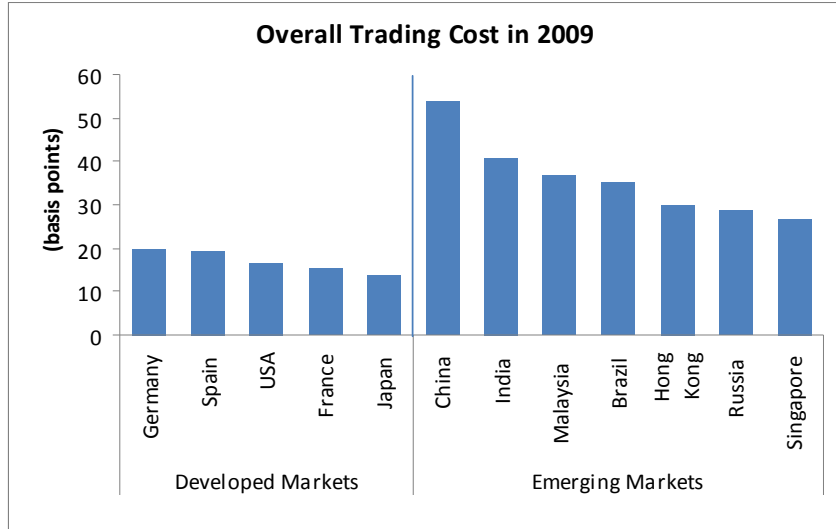
Value of Trade	Rs. 1,00,000		
	Cost (Rs.)	Percent of Total Cost	Basis Points of Traded Value
User charges	223.25	51	22.325
of which:			
Average Brokerage (at the rate of 20 bps)	200.00	45	20.0
Exchange Transaction Charges (at highest slab base rate)	3.25	1	0.3
DP charges	20.00	5	2.0
Statutory levies	155.80	35	15.5
of which:			
Securities Transaction Tax (STT)	125.00	28	12.5
Service tax on brokerage (@10.3%)	20.60	5	2.0
Stamp duty	10.00	2	1.0
SEBI turnover fee	0.10	0	0
Impact Cost	60.00	14	6
Total	439	100	43.82

Source: NSE staff estimate

Where does India stand vis-à-vis other countries? Standard and Poor's Global Stock Markets Factbook provide some interesting cross country data. To compare trading costs over time and across countries, Standard and Poor's makes a single estimate (based on average) for a given country in a given year. It may be seen from Chart 1 that the emerging markets typically have a higher overall cost of trading than the developed markets. Even when compared to other emerging markets, India's cost of trading (41 basis points in 2009) appears to be at the higher end. What is rather instructive is that India's achievements in cutting down trading costs over the

years has been more impressive than in most other countries, as we will see in the latter part of the paper.

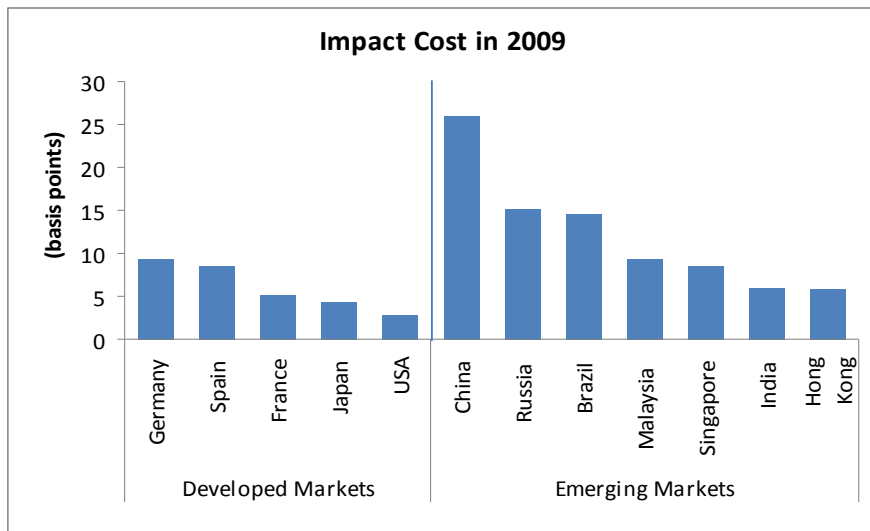
Chart-1: Overall trading cost of select countries in 2009



Source: Standard and Poor's, "Global Stock Markets Factbook 2010"

One factor that is worth noting however is that while the total trading costs in India is at the higher end compared to other emerging markets, the 'impact cost' is among the lowest (see Chart 2).

Chart-2: Impact cost of select countries in 2009

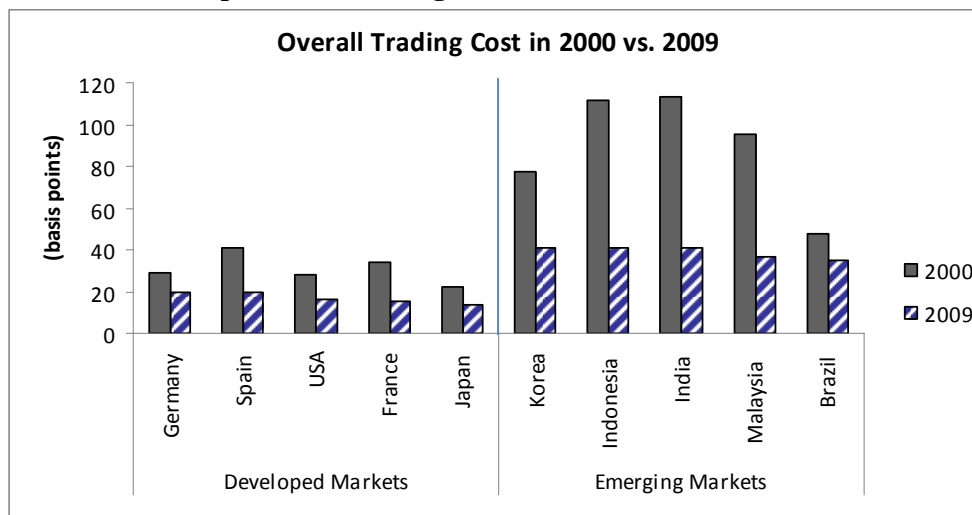


Source: Standard and Poor's, "Global Stock Markets Factbook 2010"

IV. Trends in trading costs

According to S & P estimates, there has been a declining trend in the total trading costs globally over the past few years and India has been no exception (see Chart 3). The point to note however is that India's trading costs are still higher than some major emerging markets and much higher than the developed markets.

Chart 3: Comparison of trading cost of select countries in 2000 and 2009



Source: Standard and Poor's, "Global Stock Markets Factbook 2010"

We observed in Table 1 and Table 2 that the exchange transaction charge, which an exchange charges for the various services that it provides, is less than 1 percent of the total costs of trading. For executing a trade of Rs 1 lakh, the exchange transaction charge is only Rs 3.25 and this Rs 3.25 covers the costs of a range of services including provision of a trading platform, surveillance, clearing and settlement, redress of investor grievance and so on. As exchange transaction charge is an insignificant part of total trading costs, even if the exchange transaction fee falls to zero—which is inconceivable—total trading cost would reduce only marginally.

Exchange transaction charge is not only low but also declining. At NSE, for example, it has seen a secular decline over the years primarily because NSE has been able to handle an enormously fast-growing trading volume through adoption of world class technology, vast reach and superior processes. Resultant gains in cost efficiency are passed on steadily to the members. For example, in the cash market segment, the exchange transaction charges have fallen from about

Rs 10 per transaction value of Rs 1 lakh over a decade ago to Rs 3.25 now. This amounts to a fall of about 68 percent. In real terms, the fall is even sharper.

Brokerage fee is still a fairly significant part of trading costs, although the current brokerage fees are significantly lower than what prevailed in the early 1990s. Until mid-1990s, which saw the emergence of demutualized exchanges, there was hardly any competitive pressure in the brokerage industry. As exchanges were constituted as 'closed clubs' run by brokers, the number of brokers was low and competition among them limited. As the demutualized exchanges appeared on the exchange landscape, the entry barrier for the brokers was lowered, since brokers could be recruited from any part of the country, so long as they complied with a transparent set of eligibility criteria. As a result, competition among brokers intensified, which led to a substantial fall in the brokerage fees--from over 2 percent of the traded value a decade and half ago to 10-20 basis points now.⁴

Similarly, the DP charges fell sharply over the years due to rising competition among the depository participants, whose number grew from 28 in 1997 to 758 in 2010. The current DP charges are about 2-3 basis points of traded value and are applicable only for sellers as compared to 4-5 basis points (applicable to both sellers and buyers) some 10 years ago. This has also been possible partly due to the cut in fees charged by the depositories to the DPs.

Overall, in case of all three sets of market infrastructure service providers that we discussed, it would be fair to say that user charges have been driven down because of competition. The economies of scale and ever improving technology have further contributed to the cost reduction.

As in the case of user charges, impact costs in India have fallen over the years--from 18.4 basis points in 2003 to 6.1 basis points in 2009. India's current impact cost (5-6 basis points for large cap stocks) is among the lowest in the emerging markets and is lower than several developed countries, such as Australia (7.9 bps), Germany (9.4 bps) and Singapore (8.6bps). (Source: S & P Factbook, 2010). One of the key contributors to this improved liquidity is the persistent up-gradation of technology by the stock exchanges.

⁴ In case of delivery based trades for retail traders, the brokerage fees are typically higher.

In sharp contrast to the trends in user charges and impact costs, the STT--which constitutes bulk of the statutory levies--have shown a general rising trend, with a small exception (see Table 4). It may be noted that the STT burden for the same level of transactions has risen for all categories over the years except in the case of sale of options, where the change in tax base from notional value to premium has meant a sharp decline in STT burden.

Table 4. Changes in Security Transaction Tax Rates (percent)

	Oct-04	Jun-05	Jun-06	Jun-08
Delivery based transactions in equity	0.0750	0.1000	0.1250	0.1250
Non-delivery based transactions in equity	0.0150	0.0200	0.0250	0.0250
Derivatives:				
Sale of option	0.0100	0.0133	0.0170	0.0170 ^{\$}
Sale of option, where option is exercised	0.1250
Sale of futures	0.0100	0.0133	0.0170	0.0170

\$: The tax base was changed from notional value to premium, while the rate was left unchanged.

Note: 1. STT is payable by

- both buyer and seller for delivery-based transactions in equity,
- seller alone in case of non-delivery based transactions in equity, sale of options and sale of future and
- buyers alone in cases where options are exercised.

2. Prior to June 2008, no STT was levied when an option was exercised.

3. Current tax base for STT is:

- Volume weighted average price times quantity for delivery and non-delivery based transactions in equity
- Option premium for sale of option
- Settlement price for sale of option when option is exercised
- Price at which future is traded for sale of future.

Further, following the budget announcement in 2008, there was a change in the Income Tax regime relating to the treatment of STT; in cases where income from securities transactions is treated as business income, STT began to be treated like any other deductible expenditure against business income rather than a rebate against tax liability, which was the case earlier. The effect of this change can be explained with an example. Assume that a company which has an income of Rs 100 has paid Rs 10 as STT. At 30 per cent corporate tax, in the earlier case, Rs 10 was deducted from Rs 30 and the income tax outgo was Rs 20, resulting in a total tax liability of Rs

30. Now, according to the revised criteria, STT of Rs 10 will be deducted from the income of Rs 100 and the net income of Rs 90 will be taxed at 30 per cent, resulting in an income tax outgo of Rs 27. The total tax burden in the current scenario is Rs 37 as compared to Rs 30 earlier. Thus, the transition of STT from being an offset against tax payable to a deductible expenditure has raised the overall tax burden and hence the cost of trading, significantly.

Similarly, service tax (on brokerage) has been raised from 5 percent of brokerage fees in mid-1990s to 10.3 percent now; but its impact has been offset in varying degrees depending on the decline in brokerage fees. In any case, the share of service tax on brokerage in total trading costs is relatively very small (see Table 1) and so is the share of stamp duties.

V High securities transaction tax—a matter of concern?

Securities transaction taxes were rationalized to some extent in 2008, but it continues to be very high (0.125 percent) in case of delivery based transactions in equity and upon exercise of options. Now, why is a tax rate of 0.125 percent considered high; are not the other tax rates higher, whether in India or abroad? Compared to most tax rates, 0.125 percent might seem low; however, because the tax base is gross transaction value, rather than net income from a trade, 12.5 basis points in practice is very high. Clearly, to address India's still (relatively) high trading costs, it is necessary to review the tax regime (governing the securities transactions), particularly the STT. But is there any economic rationale for such a move?

To answer this question, it would be useful to know why STT was introduced. In 2004, to simplify the tax regime on financial market transactions, STT (considered a clean, efficient and easy to administer instrument) was introduced, while the tax on long-term capital gains was abolished and the short-term capital gains reduced from 33 percent to 10 percent.^{5 6} As we observed, the STT rates have generally been raised progressively over the years, probably because of the ease in collection of a tax whose base has been rising rapidly over the years.

⁵ Capital gains taxes were considered difficult to administer.

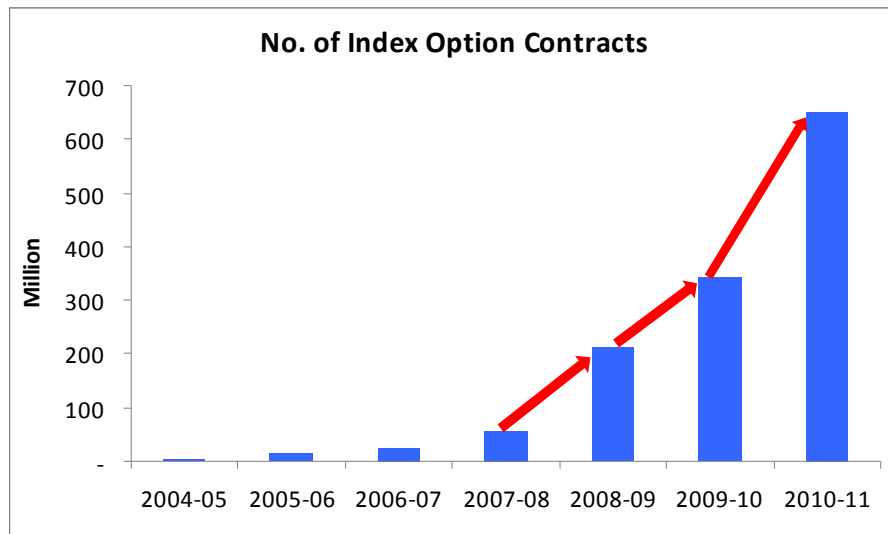
⁶ Short term capital gains tax rate has since been raised to 15 percent.

There are, however, two reasons why the STT regime in India needs to be reviewed. First, the revenue received by the Government from this source has been negligible—in the range of 0.1-0.2 percent of GDP. Predictably, the STT revenue rises or falls with financial market activity; in 2007, for example, when the market had boomed, the STT revenue peaked at 0.19 percent of GDP. Even so, it is unlikely that it can ever generate much higher revenue as percent of GDP. It is useful to note that France, Germany, Japan and Italy, which eliminated their stock market transaction taxes in the last two decades, collected at most 0.2 percent of their GDP.

Second, would it then be possible to raise revenue from this source by raising the tax rate? It is difficult to answer this question, as it would depend on a large number of factors. It is however useful to note that given the ever increasing integration of the world financial markets, it is possible that relatively high STTs could drive out financial activity to other countries. Also, a hike in STT rates discourages trading volumes in any given country. This can be explained with an example. If STT is $X\%$ of the value of a security, for a person to make profit out of trading, the security price must increase by at least $2X$ percent, because the trader has to both enter and exit to make profit. In case of situations, where STT is applicable either on buyers or on sellers, the security price needs to rise by more than X percent for the trade to be profitable. In either case, as STT rises, the chances of a trade being profitable reduce and traders are discouraged to trade. While this is true of other components of trading costs as well, our focus is on STT, because we have seen that it is primarily the STT which has been putting upward pressure on total trading costs. Besides, traders are particularly sensitive to statutory levies than other trading cost components, such as brokerage, exchange transaction fee and DP charges, where choices are available. It is for this reason that high STTs can and do affect trading volumes; lower trading volumes in turn reduce liquidity and slow price discovery.

In India, there is strong evidence that trading volumes in securities markets are highly sensitive to the tax regime. Index options, which were introduced in June 2001 remained unattractive because of high tax burden till June 2008. In June 2008, when the STT tax burden on option contracts was reduced by changing the tax base from notional value of option contract to option premium, trading volumes immediately picked up (Chart 4) and today India is among the top few countries in the index option trading. This underscores the impact that turnover taxes can have on the build-up of liquidity and usage of financial instruments.

Chart 4: Number of Index Option Contracts in India



Source: SEBI Bulletin, April 2011.

VI. Summary and conclusion

In this paper, we have seen that in line with the global trend, the cost of trading in Indian exchanges has declined over the years. Yet, trading costs in India remain relatively high compared to other countries. Because trading occurs on the exchange platform, there is a perception that the exchange as the intermediary in trading transactions is responsible for this. A decomposition of total trading costs debunks this myth, as exchanges account for a miniscule part of total trading costs. Further, an analysis of the trends of various components of trading costs shows that while the user charges (that is, charges made by brokers, exchanges and DPs) and impact costs have declined, the statutory levies, particularly the STT rate has risen. While there is no need for complacency for the market infrastructure service providers to further reduce the trading costs, there appears to be a case for review of the STT regime, as there are concerns that it may be raising businesses' cost of capital and impairing the development and competitiveness of domestic financial markets, given increased cross border mobility of capital. At the same time, the objective of revenue collection is not found to be well served by STT, although it is often cited as the rationale for its imposition.

Reference:

Kelkar, Vijay (2011). “On the Economics of Stock Exchange” Annual (second) Shri R. Venkataraman Endowment Lecture, March 29.

Matheson, Thornton. (2011). “Taxing Financial Transactions: Issues and Evidence”, *IMF Working Paper*, March. <http://www.imf.org/external/pubs/ft/wp/2011/wp1154.pdf>

Sahoo, M. S. and Ramkrishna, C. (2010). “Equity Markets”, Capital Markets in India, Edited by Rajesh Chakrabarti and Sankar De.

Shah, Ajay and Thomas, Susan. (2000). “David and Goliath: Displacing a Primary Market”, Global Financial Markets. http://www.mayin.org/ajayshah/PDFDOCS/ShahThomas2000_jgfm.pdf

Singh, Kavaljit. (2004). “India Introduces Securities Transaction Tax”, Macroscan, July. http://www.macrosan.org/cur/jul04/pdf/equitable_equity.pdf

Standard & Poor’s (2010). “Global Stock Markets Factbook” Elkins/McSherry Global Universe.