

## Measuring Volumes in the Indian Financial Markets Some Conceptual and Terminological Issues

### I. Measuring Trading Activity

The magnitude of trading activity in a financial market is a measure of its breadth and depth. Both breadth and depth are necessary conditions for an efficient financial market. An efficient market is necessarily a liquid market, which enables execution of large transactions with little, if any impact on prices. Several parameters are used to measure trading activity. Unfortunately, the nomenclature of those parameters quite often is not standardized within a market and across the markets. Thus, the term 'transaction' is used to denote business done between two parties, but the words 'trade' and 'deal' are also in common use. The quantities and monetary values of transactions are both termed alternatively and inter-changeably as 'volume' or 'turnover' or by twin terms like 'volume of turnover' and 'turnover of transactions'. It is suggested that use of multiple parameters and multiple nomenclature of trading activity are a cause of disharmony and inconsistency in communication over time and markets, which, in turn, become a cause of misunderstanding and misinterpretation of this significant financial statistics.

It seems rather odd that while trading in financial markets around the world has progressed enormously in recent decades - global spread, innovative instruments, new techniques, path-breaking technology, on-line trading – the concepts and terminology of its trading activity remain non-uniform and non-standard. While the means of communication of market activity have been revolutionised and its scope has been re-defined by technology, the language of communication – its terminology - has remained fragmented. Even at the national levels, for example in India, the scene is unsatisfactory. Look at the terminology of the Indian debt market; the Reserve Bank of India's terminology is different from that of National Stock Exchange of India. Similarly, in the equity market, the terminologies of National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) are different. Not only the terms, even the concepts behind the terms are different! Consequently, some of these concepts have to be incorrect. The importance of accurate and consistent measurement of trading activity across securities and markets for assessing liquidity, for a regulatory authority's rules based on measurement of trading activity, and, for researchers in financial economics whose analyses use trading activity of different stock exchanges is self-evident [(84), p. 7]. (For references and their scheme of arrangement, please see at the end of the paper.)

The globalisation of financial markets and trade and capital flows has raised the need for regular and timely exchange of well-defined and authentic financial data at the national and international levels. Thus, the 1998-99 Annual Report of Reserve Bank of India (RBI) read: "...in the aftermath of South-East Asian financial crisis, the traditional issues in financial statistics such as timeliness in dissemination, accuracy, transparency, harmonisation, international comparability, etc. have come into sharper focus. Many unconventional issues relating to classification, valuation and measurement of financial transactions have also attracted attention.... ...Efficient use of financial statistics requires greater harmonisation of financial statistics with other systems of accounts...(IMF,1998; RBI,1998). Harmonisation of financial statistics could be achieved by consistency and standardisation of the data set." (25).

The comments above provide the rationale to investigate the conceptual and terminological aspects of trading activity in Indian financial markets.

#### A. Research Objectives

The objectives of this study are the following:

1. To catalogue the terms and concepts in current use for measuring trading activity in different financial markets and exchanges in India;

2. To identify the corresponding terms and concepts in current usage in global financial markets;
3. To identify the meanings of those terms and concepts as defined in the disciplines of Finance and Accounting and in standard international dictionaries; and,
4. To recommend, in the light of the preceding objectives, a set of mutually exclusive definitions of terms and concepts to measure trading activity in Indian financial markets, which shall meet with the criteria of accuracy and comparability and which shall be in accord with international best practices.

## B. Sources And Method of Study

The principal sources for identifying the current terms in use for measuring and reporting activity were the daily and other periodical reports and publications, in print and the web-sites of several financial markets and their regulators in India.

This was supplemented by corresponding sources in U.S.A., U.K. and Australia, and at international organizations for culling out best practices.

Several dictionaries, both in general as well as technical categories, and select literature, Indian and foreign, in the disciplines of Financial Economics, Finance and Accounting were referred to in search of standard definitions and concepts.

Market reports in daily newspapers and studies on financial markets appearing in periodical publications were extensively referred to for sampling the variety of terminologies in public use.

Finally, discussions were held with experts at the stock exchanges and other institutions in Mumbai for seeking the background and ideas in respect of their practices and on issues arising from our perusal of literature.

Thus, most of this research was done at the study-desk and the desktop.

## II. Indian Financial Markets

The genesis of this research was the difficulty and confusion in understanding the 'trading activity' in Indian financial markets. It began by noticing usage of different terms in reporting same stock market activity on a single day in a single newspaper as well as in different newspapers, and usage of same term in a single news item to convey two different measures of activity. Thus, it was reported in a dramatic stock exchange story (1) that 5 brokers had together contributed Rs. 3,10,000 crore – or more than 10 percent - to the Indian stock market's annual turnover of Rs. 28,00,000 crore in a particular year. (p.54). The market share attributed to these brokers appeared to be rather exaggerated. This led us to search for activity reports by the two premier stock exchanges of the country, that is, NSE and BSE, and the two regulators, that is, RBI and Securities and Exchange Board of India (SEBI). These institutions are also found to be using a variety of terms to report activity in different markets. We cover the reporting by the media and these four institutions in this Section.

### A. Indian Media

The coverage of the media for this study are the four daily business newspapers, viz., *Business Standard*, *Economic Times*, *Financial Express*, and *Business Line*. I perused these sources frequently during the course of this study, except for *Business Standard*, which I could refer to from day-to-day during this period. The purpose being to identify and illustrate the non-standard and non-consistent use of terminology by and large, our approach of a periodic scan of a few different, randomly picked-up newspapers publishing daily pages on financial market movements and/or related news was considered adequate.

1. We begin by illustrating the use of terminology by *Business Standard* (2) to describe trading activity. Its stock market related reports were scanned on 22 days spread over the period December 2001 to December 2002. We distinguish between (a) daily stock pages (daily summary and quotes), and, (b) market news by reporters of the newspaper and others. Without exception, the latter have used the

terms turnover and volume inter-changeably. Sometimes, the distinction between number and monetary value has been made by using terms like ‘turnover in volume terms’ and ‘turnover in value terms’, or ‘turnover (Rs. crore)’ and ‘turnover (number of shares)’. The terms volume of turnover, traded value, and traded volume have also appeared in these news items.

The latest illustration of the use of volume and turnover as substitutes is this newspaper’s report that appeared on its website (3) on December 18, 2002. Headed as ‘Debt volume outstrips equity’, it read:” Trading volumes on the wholesale debt market have peaked at a record of Rs. 1,000,000 crore (till December 16) even before the calendar year has ended. This is about 20 per cent higher than the turnover of Rs. 857,000 crore last year. At Rs. 1,002,000 crore, the wholesale debt volume during the current year is higher than the combined turnover of Rs. 919,000 crore in the equities segment of the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE).” Use of ‘volume’ 3 times, use of ‘turnover’ 2 times: Were the meanings different? This inter-play of the two terms was repeated in the subsequent paragraphs of this report. The above remarks about interchangeability of the terms, volume and turnover, in their writings apply also to scribes of various business newspapers and other publications.

As regards the stock market pages of this newspaper, their format and contents were substantively changed during 2002. The earlier version used to have a main summary headed as ‘All India Turnover’, under which the value and volume (number) of shares traded on a day were given. But the word volume was also being used in the text as a substitute for value and turnover. Volume too had its substitutes in the text: traded volume and number of shares. Thus, five terms were often being used resulting in opacity of the data. The new version gives out number of shares and number of trades under the main summary. Particulars about individual shares include their value and volume of the day. Presentation can now be understood.

2. A comparison of relevant contents of stock market pages of four business newspapers on a single day, October 23, 2002, is made in the statement below.

#### Terms for trading activity

Newspapers	value of shares	number of shares	number of transactions
1. Business St.	value	volume	trades
2. Economic Times	turnover	value	no. of shares trades gross turnover
3. Financial Exp.	turnover,	volume	trades value
4. Business Line	turnover	volume value	trades quantity

Sources: Business Standard (2), The Economic Times (4), Financial Express (5), and, Hindu Business Line (6).

In *The Economic Times*, figures for value and number appear under the head ‘turnover’. Similarly, in the Business Line, figures for turnover, volume and trades appear under the head ‘turnover’.

3. The five notable points are that:

- (a) 'Turnover' and 'value' for monetary value, 'volume' for number, and 'trades' are the most common terms used by the four newspapers.
- (b) There is a degree of consistency in the terminology used on the stock pages of each newspaper.
- (c) But this terminology on stock pages is different among the newspapers.
- (d) Terminology on stock pages of each newspaper is different from that in that newspaper's other stock market news.
- (e) Needless to state, multiple-name concepts would be misleading for their readers, even for those who possess a reasonable level of financial literacy.

A question that arises is: As the news media gather the information on stock pages and related data from the stock exchanges and the regulators, do not they pick up the terminology also from those sources? As different newspapers, as shown, use different terminology, obviously they do not use the source terminology along with the data. Or, is it that even the stock exchanges and the regulators use multiple terminology?

## B. National Stock Exchange

As the National Stock Exchange of India is just eight years old, it was relatively easy to peruse its publications since its inception. Its daily trading statistics are of course available on its website. We shall follow the following sequence to review the NSE terminology. First, the daily reporting of trading activity on its website (7) is noted. Thereafter, five of its publications are gone into for relevant information.

1. The NSE site reports daily trading activity in the wholesale debt market (WDM) as well as the equity market (also called capital market by it). The WDM report gives data for 'traded value' and 'trades' (number of trades) of government securities. The only exception to this practice by NSE is its debt statistics on the website, which uses the term 'trade volume (Rs. crore)' instead of traded value. As regards the capital market segment, NSE uses the terms 'traded value', 'traded quantity' and 'number of trades' uniformly and consistently. There are however two exceptions, where the term 'turnover' in place of 'traded value' occurs. It appears under 'Nifty Stock Watch', and under 'Historical Data for each Equity>Price-Volume Data'.

2. We may now review the terminology in NSE publications.

- (a) The unpaginated brochure '*National Stock Exchange of India Limited*' (8) uses the terms traded value, values, and traded volume interchangeably.
- (b) The unpaginated brochure '*Clearing and Settlement System – Capital Market*' (9) uses the term volume synonymously with traded value.
- (c) In the reviews of trading activity, the bimonthly *NSE News* (10) does not make a distinction among volume, value and turnover. Under the heading 'Debenture Volume', particulars are given for trades, quantity and turnover. Turnover is described in terms of both value and quantity. WDM Trades give turnover distribution, and Turnover Parameters on CM Segment give trades, number of shares traded, and turnover. Its annexures use similar terminology.
- (d) *Fact Book 2001* (11) uses the term 'turnover' frequently (pp. 29, 57, 81). The tables use the same terminology, which the annexures in *NSE News* do. Monthly turnover of members of the NSE is mentioned but not defined (p. 31).
- (e) Finally, the *Indian Securities Market: A Review* for the year 2001 (12):
  - i. The use of the term turnover, which has different definitions for different organizations, can be a source of misunderstanding in this publication. We draw attention to the figures for turnover in government securities (SGL) [pp. 16 (Table 1.14), 18, 192 (Table 6.6), 193 (Table 6.7)]. The Review gives the SGL turnover as Rs. 6,98,121 crore whereas RBI (the source of this figure) terms it as volume, and gives out the turnover as Rs. 16,48,195 crore. According to the RBI definition (See Section E. on RBI below), turnover of gilts is twice the volume of outright transactions and four

times the repo transactions. This dual definition causes various comparisons and resultant analysis in the Review to be misleading.

(ii) Next, the use of multiple terms as substitutes. We quote from the beginning of p.17: ‘Trading volumes on exchanges have been witnessing phenomenal growth. The average daily turnover grew ..... The turnover increased by 184% ... . One-sided turnover on all stock exchanges exceeded ... . The turnover ratio which reflects the volume of trading....’The next paragraph reads: ‘NSE is the market leader with over 53% of total turnover (volumes on all segments)....’ Note to Table 1.15:’Turnover means total value of transactions....’ One may note that the words turnover and volume have appeared above interchangeably, which may be misleading to most readers.

### C. Bombay Stock Exchange

Several sources were available to tap into the trading activity-related terminology of The Stock Exchange, Mumbai, (known by its popular name of Bombay Stock Exchange):

1. Two regular daily reports (13-14) and a daily press release (15),
2. Its web-site (16), and,
3. Four of its publications (17-20).

The terminology-related contents of these sources are discussed below:

1. All the three ‘daily’ sources use same three terms, viz., ‘turnover (Rs. crore)’ ‘volume (number of shares)’ and ‘trades’ or ‘deals’ to report trading activity. In the press release, though, under the head ‘Turnover details for the top 15 scrips’, the term ‘value’ is used for turnover.

2. The website uses the terms (a) turnover, value traded, value, turnover value, volume of turnover for the equity market, and trade value (Rs. crore) for the WDM, (b) volume, shares traded, volume traded and traded volume, and, (c) trades and transactions. Although, thus, several terms are used both for turnover and volume, the difference between turnover to represent value of securities, and volume to represent number of securities remains distinct. The website has a glossary also which defines ‘volume of trading’ but not turnover. It reads: ‘The total number of shares which change hands in a particular company’s securities. It is the sum of either purchases or sales, which necessarily equal.’

3. It is in the publications that the terms have been used somewhat loosely. Some examples follow:

- (a) *Key Statistics* (17) uses the term ‘volume of turnover’ to represent value (p. 2), while *Annual Capital Market Review* (ACMR) 2001-02 (20) uses it to represent number of shares (p. 135). On the same page, this same ACMR uses the term ‘value of turnover’ to represent value.
- (b) *Review of Markets* (18) uses turnover and volume as substitutes (p. 36).
- (c) *ACMR 2000-01* (19) gives key data of BSE, under which value is represented by ‘average daily volume’ (p. 25), while elsewhere (pp. 10-11) it is termed as ‘average daily turnover’.
- (d) *ACMR 2000-01* (p. 26) has three tables. Each table uses a different term to express value of shares. These 3 terms are ‘average daily volume’, ‘traded value’ and ‘turnover’.
- (e) *ACMR 2000-01*, finally, uses ‘volume’ to denote both trades (contracts) and value (p. 53).

4. One significant fact that may be mentioned here is an oft-ignored distinction between brokers’ turnover and the (aggregate) market turnover. Brokers in the financial markets report their total business done in a specified period as ‘turnover’. Total business is the aggregate of purchases and sales made by them. Thus the total turnover of all the brokers of BSE over a specific period would be twice the amount of market turnover reported by the stock exchange for that period. One suspects that when *India Today* published a story on the stock exchanges (1), one of its sensational ‘facts’ was a comparison of the brokers’ turnover with the market turnover, as a result of which it was made out to be a high share of the market. Possibly, it was overstated by 100 percent!

## D. Securities And Exchange Board Of India

SEBI, as the regulator of stock exchanges in India, oversees their trading activity. It also imposes a turnover tax on the brokers operating in the exchanges. A quick perusal of parts of the annual report of SEBI for the year 1999-2000 (21) provides a view on the use of the term 'turnover' by the regulator.

1. The term 'turnover' means share values at several places in this report (p. 81, Table 2.18, pp. 84, 91). But, later (p. 93, Table 2.27), it means both value as well as number of shares. Table 2.33 gives 'net traded value' and 'average daily value' in the WDM for each month, but the text also calls it as the 'average daily turnover'. Regulation 20 in Chapter III of the Report refers to trading turnover as number of shares traded. It would seem that the nomenclature of 'turnover' in this report was what each source of particular information termed it.

2. There was, however, one source that became its own. This was the Report of the Expert Committee appointed by SEBI for interpretation of Turnover in 1992 (22). This committee, popularly known as the R S Bhatt Committee, was appointed in the context of a disputed definition of turnover, based on which fees were to be payable by brokers under the SEBI Regulations. The Committee referred to the definition of turnover (relevant to the matter before the Committee) given in The Webster's New Twentieth Century Dictionary (p. 1973): 'the amount of business done during the given period of time in terms of money used in buying and selling.' The Committee also quoted from the SEBI Regulations, 1992: "the aggregate of the sale and purchase prices of securities received and receivable by the stock broker either on his own account as well as on account of his clients in respect of sale and purchase or dealing in securities during any financial year."

Thus, as indicated in the previous Section, brokers' turnover is the aggregate of purchases and sales made by them. In other words, it is twice the market turnover that is equal to aggregate purchases = aggregate sales in the market during a given period of time.

## E. Reserve Bank Of India

RBI, as the regulator of the country's money, debt and currency markets, regularly publishes information on trading activity in these markets. This information is available on RBI's website, periodicals and annual publications. Its website (23) publishes eight statements containing data on the trading activity in the money, government securities, corporate debt and currency markets. Most of these statements are also published in the monthly journal *Reserve Bank of India Bulletin* and its *Weekly Statistical Supplement (WSS)*, which has virtually become an independent data-sheet (24). On the introduction of the *Negotiated Dealing System*, the *website* is now providing virtually online details of transactions taking place in the money and gilts markets. Several of RBI's annual publications like *Trend and Progress of Banking in India*, *Report on Currency and Finance*, and *Handbook of Statistics on Indian Economy* carry some data on the country's financial markets. But practically all of that information and more is available in the *Annual Reports* of RBI. The chapter on financial markets in the *Annual Report* provides a detailed analysis of operations in the financial markets during each year. In our analysis below, we shall draw upon *Annual Report 2001-02* or, AR01-02 [(28), pp. 71-98], which, besides being the latest, is also a fair representation of the annual reports of the last few years. The major sources of information for our analysis thus are the RBI website, *WSS* and the AR01-02.

### 1. Market Terminology

We attempt now to catalogue and interpret the terms used by RBI in its daily and weekly reporting of trading activity in various markets on its website and in the *WSS*, with comparative references, wherever appropriate, from the AR01-02.

(a) Call/Notice Money Market

Out of two statements on RBI's site, one statement under the head 'Volumes' gives a day's borrowing and lending by banks, primary dealers and non-bank institutions. The data is reported to represent 75-80 percent of the market. The amounts of borrowing and lending are unequal and are not added up. The second statement gives 'average daily turnover' for a week under the same break-up as in the first statement. This statement also appears in the *WSS*. Thus, while the daily borrowing and lending are termed as volumes, the daily average of the week's volumes is termed turnover. The statement in the *WSS* adds that the 'data are the average of daily call money turnover for the week'. It seems thus that the two terms, volume and turnover, are synonyms, different titles of the two statements notwithstanding. Furthermore, while averages of total borrowing and lending are not aggregated on the website and the *WSS*, the Annual Reports [eg, (28), Table 5.1] derive the average of aggregate of borrowing and lending, and define the resultant figure as average daily turnover. That the use of the term turnover is not an aberration but part of the RBI lexicon of financial markets is evident from the fact that the RBI Governor's statement on credit policy of April 30, 2002 also used the terms turnover and average daily turnover in a reference to the call money market.

(b) Term Money Market

The statement on daily borrowing and lending in the term money market on the website is headed as Volume (Turnover), confirming our interpretation above that RBI does not make a distinction between the two terms.

(c) Government Securities Market

The first statement on this market on the website lists 'daily SGL transactions in government dated securities and T-bills'. All the transactions of the day are listed individually, for Government of India (GOI) securities, state government securities, and T-bills. Repo transactions are also listed. The price of each transaction is listed, and the aggregate amount of all transactions at face value is also given.

Another statement headed as 'Secondary Market Transactions in Government Securities (Face Value)' appears both on the website and the *WSS*, giving the aggregate amounts in each security dealt in during a week.

The third statement on the website is headed as 'Turnover in Government Securities Market (Face Value)', which gives weekly turnover of outright transactions in GOI and state government securities and T-bills. Comparison of this statement with weekly amounts in the second statement referred to above leads us to conclude that the amount of turnover is twice the amount in the second statement.

(d) Corporate Debt

The weekly traded volume in corporate debt at NSE gives what the statement heading reads: the weekly 'traded volumes' for the latest 6 weeks.

(e) Foreign Exchange Market

This statement appearing both on the website of RBI and in the *WSS* is headed as 'Turnover in Foreign Exchange Market', but the contents do not give the figure of turnover. As against this, the Annual Report 2001-02 [(28), Appendix Table V.4, p. 296] is headed 'Inter-bank and merchant transactions in the foreign exchange market', but its contents provide figures for inter-bank and merchant turnover; it is another matter that the details given do not add up to these figures.

## 2. Multiple Markets, Multiple Terms

A summary of the multiple terms (indicated by asterisks) as used in different markets described in sub-section 1 above is presented in the statement below (p. 13). The following points emerge:

- (1) The most common terms in the markets covered in the statement are turnover and volume, in that order.
- (2) In four markets, both these terms have been used. In the other six, only one of these has been used; what these terms mean even in those markets becomes difficult to make out.
- (3) In two markets in which volume and turnover both appear, the term volume of turnover has also been used.
- (4) Volume and traded volume are substitutes except in the corporate debt market where they appear together.
- (5) For the foreign exchange market, the terms traded volume and net sales are exclusive; the term transaction appears only in gilts market; the term trades appeared only in derivatives market until its appearance under the negotiated dealing system recently (See below).

The newly introduced *Negotiated Dealing System* uses two terms, viz. trade and traded volume (in rupees). The words 'trade' and 'deal' are substitutes of the word 'transaction' but do not confuse the reader even when used inter-changeably. It is the meanings of the most common terms, volume and turnover, and their inter-changeable use that seem to be the cause of most disharmony. If these two terms were synonyms, there would not be any issue. But they are not, even by RBI's own conceptualizations, as described in the next sub-section.

### RBI TERMINOLOGY FOR DIFFERENT FINANCIAL MARKETS

S.No	MARKETS	TERMS						
		T	V	TV	NS	TRAN	VT	TR
1.	Call Money	*	*					
2.	Term Money	*	*				*	
3.	Gilts	*	*			*	*	
4.	Forex	*		*	*			
5.	WDM	*	*					
6.	Corporate Debt		*	*				
7.	Equity	*						
8.	All Markets- Charts	*						
9.	Equity – Derivatives	*						*
10.	FRA/IRS		*			*		

Abbreviations: T = Turnover; V = Volume; TV = Traded or Trading Volume; NS = Net Sale  
TRAN = Transaction; VT = Volume of Transactions; TR = Trades.

## 3. TURNOVER AND VOLUME

Perhaps the most valuable sentence that we chanced upon appears in the chapter on 'Financial Markets' in AR01-02 (28) (in the section on government securities market). It reads: "The total turnover in the secondary market (calculated as twice the volume of outright transactions and four times the volume of repo transactions) during 2001-02..."(p. 83). This single sentence that appeared (in different words) for the first time in [(26), p.94] and again in [(27), p. 96], mentions all the three terms that define trading activity. It also defines turnover in relation to volume. Thus, in transactions of purchase and sale or borrowing and lending, turnover is twice the volume. In other words, with respect to transactions of purchase and sale:

Market Volume = purchases = sales, and,

Market Turnover = purchases + sales.

Obviously, this is also true of transactions of borrowing and lending, as in a call money market.



If turnover is defined as double of volume, why is the 'term money market statement' put out daily by RBI headed as 'Volume (Turnover)'? In a transaction of security-based borrowing and lending (called a repo transaction), turnover is to be computed at four times the volume, the supposed rationale being that there are two transactions involved, one of sale and purchase of securities, and another of repurchase and resale of those securities. Following this legal interpretation, a *de facto* transaction of borrowing and lending becomes two *de jure* transactions of purchase and sale and reverse sale and purchase, causing market volume to double and market turnover to quadruple. The rationale behind this interpretation is questionable.

#### 4. Market Turnover And Dealer Turnover

RBI extends its concept of 'market turnover' to 'dealer turnover' also. Thus, it requires primary dealers [(23) Home page>Notifications>Guidelines for Primary Dealers in the Government Securities Market, January 1, 2002] to report periodically their (outright) turnover (aggregate of their purchases and sales in the secondary market), and repo turnover (aggregate of their purchase (sale) and resale (repurchase) of a security).

Under Primary Dealers' Role and Obligations, the Guidelines also read that the turnover will be calculated as: 'Total purchases and sales during the year\* divided by Average of month-end stock during the year (\*Purchases to be inclusive of primary market purchases and sales to be inclusive of redemption on maturities).' This conveys the idea that turnover is also a ratio.

Further, an applicant for primary dealership, in its application to RBI, has to provide details of its 'volume' of business during the previous three years, volume meaning the break-up of purchases and sales. It has the same meaning as turnover as earlier defined by RBI.

As a primary dealer is a trader and not a broker, extension of RBI's concept of market turnover to dealer turnover is again open to question.

#### 5. Controversial Concepts And Terminology

Our findings and analysis in sub-sections 2 to 4 above may now be summed up:

- (a) The meanings of various measures of trading activity used in the RBI sources have often to be derived by comparing data in the text and different 'statements' in those sources and by attempting their reconciliation. No definitions are provided, unless one chances upon a sole sentence in its annual reports of last 3 years, which defines turnover vis-à-vis volume. Inevitably, meanings adduced to different terms could differ from person to person.
- (b) Even though the concepts of turnover, outright volume and repo volume have recently been defined, their rationale has not been explained. It seems to us that the definitions need to be revised.
- (c) Despite the definitions, the two principal terms, turnover and volume are being used interchangeably in RBI's publications. Obviously, they are a source of misunderstanding.
- (d) There is no uniform terminology in reporting activity in different markets.
- (e) Extension of RBI's concept of market turnover to dealer turnover needs also to be re-considered.

#### F. Summing Up

The survey in this Section of the terms and concepts of trading activity in the Indian financial markets leads us to one main conclusion: **No serious thought has been bestowed to rigorously define the concepts and standardise the terminology of trading activity in India.**

In order to initiate this task of defining the concepts and terminology of trading activity in the Indian financial markets, in accordance with the objectives of our study, it is proposed to:

- Investigate the terminology of trading activity in advanced foreign financial markets,

- Identify relevant definitions in leading dictionaries, and,
  - Seek guidance from the disciplines of Accounting, Finance and Financial Economics.
- These tasks are taken up in the following three sections.

### III Foreign Financial Markets

The terminology of trading activity as used by financial markets, central banks, the media and others in U.S.A., U.K., Australia and other countries are brought out in this Section. We have looked at the websites of New York Stock Exchange (NYSE), NASDAQ, London Stock Exchange (LSE), Federal Reserve System including Federal Reserve Bank of New York (FRBNY), Bank of England (BOE), Debt Management Office (DMO) of the Government of the U.K., and Australian Stock Exchange (ASX) in some detail. Terminology from a couple of extremely relevant publications is also cited. The business newspapers that have been included are generally rated high. Equity markets and debt markets have been looked at separately.

#### A. Equity Markets

##### 1. UNITED STATES OF AMERICA

###### (a) New York Stock Exchange

The only source looked up for NYSE is its web-site (29), which not only provides the daily market information but also makes available its publications.

###### (1) Contents

The Home Page shows the indices and the share volume of the day. Under ‘About the NYSE’, there are several sub-heads like:

- NYSE Viewpoints (includes speeches)
- Annual Report 2001
- Fact Book
- Market Information, under which one finds:
  - Daily Market Summary
  - Quick Facts
  - Research Papers
  - Data Library, which gives:
    - Share Volume Records
    - Statistics Archive
    - Monthly Volume Release.

Besides, there are the pressroom, providing daily statistics, and the glossary.

###### (2) Principal features of the trading activity data:

- Three statistics that appear most frequently are:-
  - Share volume
  - Dollar volume, and,
  - Trades.

Of which ‘share volume’ (number of shares traded), possibly considered the most relevant, dominates. Another name for share volume, used sparingly, is ‘volume’. Other names appearing for dollar volume at some spots are value, dollar value and value of trading.

- One more term that appears is ‘turnover rate’, which is share volume-based.

- As the same terms are used on the site as well as in the publications, there is no conflict in the terminology anywhere.

(b) NASDAQ environment

The terminology of trading activity used at NASDAQ can be gauged from its website (30). The figure of 'volume' (number of shares) traded on the particular day appears above the indices on its front page. Elsewhere, volume is referred to as 'share volume' also. The terms dollar value/dollar volume and trades too appear at some places.

(c) The Media

The media sample comprises The Wall Street Journal, New York (WSJ) and its Hong Kong edition, The Asian Wall Street Journal (AWSJ).

WSJ (31) accords the same significance to 'volume' (number of shares) as do the NYSE and NASDAQ web sites; it shows the share volume of NYSE and NASDAQ on its front page preceding the index figures of the day. The market pages focus on movements in market indices and sub-indices and volumes including volumes of most active shares. The stock pages provide volumes traded in each share. These market and share details are from three stock exchanges, viz., NYSE, NASDAQ and American Stock Exchange (AMEX). Details about bond trading and futures trading also include their volumes. WSJ does not use the term dollar volume if it needs to mention it; it prefers the term 'value'. The AWSJ (32) lists most active issues in various stock exchanges in USA in terms of their share volumes besides giving the movements of their indices.

(d) Notable Points

Two points to note about American terminology are (1) its uniformity and consistency across the stock exchanges and the media, and, (2) the uniform use of share volume as the most significant measure of trading activity (and liquidity).

The other two terms of trading activity in use include dollar volume and trades. Dollar volume has alternate terms like dollar value and value, which are used much less. The term turnover as the measure of monetary value of volumes does not appear to be used anywhere.

Turnover rate is share volume-based. (Exchanges in other countries term it 'turnover ratio' and base it on monetary value of share volume.)

## 2. UNITED KINGDOM

(a) London Stock Exchange

The trading activity terminology used at the LSE can be read from its various publications available online at its website (33). The publications accessed were Monthly Market Report (November 2002), Market Report for the year (updated to September 2002), Annual Report for 2001, and Trading Summary (November 2002). The information given most often in these reports is for:

- Turnover (or, turnover value, value traded, equity trading value)
- Bargains (or, trades), and,
- Shares traded.

One can notice from the reports that information represented by the first two terms appears more frequently. The term 'bargain' is typical to LSE.

Turnover is also an omnibus heading under which all the above three data are shown. Volume is a term used in some reports to represent bargains.

(b) The Media

The Financial Times, London (FT) publishes data on trading activity for LSE, besides NYSE, NASDAQ, and several Asian and European markets. The data is either for price movements, or, both for price movements and volume (number of shares). The terms turnover and value do not appear at all (34). FT at its website (35) shows volume and \$ traded for LSE and several other global exchanges, including for most active shares from these exchanges.

We may also refer to two articles noticed in *The Economist*. In an article on online trading platforms (36), it repeatedly refers to volumes, except in one sentence. That sentence reads: "Electronic trading of foreign exchange accounts for perhaps 1% of overall foreign-exchange 'volume' of over \$1 trillion a day – although the figures are largely guesswork in a world of jealously guarded real 'turnover'." The second article on Chicago's exchanges (37) uses the term volume only.

(c) Notable Points

Turnover and bargains are the two most important variables, which denote trading activity on the LSE. Number of shares traded (share volume on the American exchanges) is not even at number three, as market capitalization appears more often in LSE's reports.

It is worth noting too that although the LSE site uses the term 'turnover' to mean different variables of trading activity, it does not confuse anywhere. FT scores over LSE in that it is consistent in using the single term 'volume' on its pages; it follows the American practice.

### 3. AUSTRALIA

(a) Australian Stock Exchange

The Annual Report 1991 (38) of the ASX expressed trading activity of all market segments - equity, fixed interest, options – in terms of turnover. And turnover was expressed in terms of value (\$billion) and volume (number of shares, securities or contracts). Turnover of 'most actively traded stocks' was listed by value as well as volume.

The annual report of ASX for the year 2001-02 [read on its web-site (39)] gives the operational highlight of the year in terms of growth of trades (p.5). Besides, the report focuses on turnover value (p. 15). Turnover value is also called turnover (p. 16), value of trading (p. 17) and value (p. 18).

The ASX site, currently (December 19, 2002) publishes the daily trading activity in terms of volume, value and trades. Daily trading volumes are published for each of the three classes of securities, viz., equity, interest rate, and option contracts. There is no mention of the word turnover on this site.

(b) The Media

The Age (40), a daily newspaper, in its market summary highlights the day's turnover at the ASX by volume and by value (\$). It also publishes the turnover by volume and by value of most actively traded shares. Its daily stocks page giving quotations of individual stocks includes a column for turnover; at the head of that page, turnover is specifically defined as volume of shares.

The Weekend Australian Financial Review (41) generally has the same content and terminology as The Age. It also gives a weekly statement of quotes and turnover (volume) of the wholesale market in Commonwealth Government securities. A note to the statement provides a crucial clarification: "Transactions represent one side of all trades registered at Reserve Bank Registries... (Source: Reserve Bank of Australia)".

(c) Notable Points

(i) The terminology as well as the focus of ASX website is volume, value and trades, without mention of the term turnover. The Australian media sampled by us focuses on the same parameters but clubs volume and value under 'turnover'. This was the scheme followed by the ASX annual report of 1991 too. But its 2001-02 report follows the LSE in highlighting trades (bargains at LSE) and adoption of terminology of turnover (value). Quite a diversity, but no confusion!

(ii) Broadly, volume (of turnover) rather than value (of turnover) is the dominant feature of the reported trading activity in Australia, particularly by the media. Moreover, terminology is clearly defined and is consistently followed.

#### 4. MULTI-COUNTRY SOURCES

Three sources each of which covers multiple-country multi-exchange terminologies are briefly described below.

(a) Asian Wall Street Journal

Besides publishing the NYSE and NASDAQ market data, as stated under 1 above, AWSJ (32) gives select market data of 14 Asian-Pacific stock markets. These include Bombay (Sensex), Tokyo, Hong Kong, Singapore, Bangkok, China, Jakarta, Kuala Lumpur, Manila and Seoul. Values of indices are published for all the markets. Share volumes traded on the day are published for 11 markets. For Hong Kong and Tokyo markets, turnover (value of shares traded) figures are also given; other than this, there is no mention of the terms of turnover and trades anywhere.

(b) Compaq Handbook of World Markets

This handbook (42) is a comprehensive factsheet of the world's stock, derivative and commodity markets. We have picked up 55 stock exchanges from 53 countries across 6 continents. It includes 2 exchanges (NSE and BSE) from India, 3 exchanges (including AMEX) from U.S.A., NASDAQ of Europe, and EURONEXT covering France, Netherlands and Belgium.

We have classified below the exchanges according to the terminology, which, as per the handbook, describes the statements summarising the trading activity of these exchanges:

- **TURNOVER.** 20 of the 55 exchanges term it as 'turnover' (in value terms); 4 of them also include volume data (number of shares). 3 exchanges also show number of 'trades'.
- **TRADING VALUE.** 13 exchanges' statements are headed by 'trading value'.
- **TRADING VOLUME AND VALUE.** 17 exchanges term their trading activity as 'trading volume and value'. 1 exchange also shows number of 'trades'.
- **TRADING VOLUME.** 5 exchanges name it as 'trading volume'; actually, two out of them mean 'value' by it, and one shows both volume as well as value of the trades.

Thus:

- 31 exchanges denote 'value' as the sole measure of trading activity (either termed turnover or value).
- 2 exchanges show 'volume' as the sole measure of trading activity.
- 22 exchanges show 'value' and 'volume' both as measures of their trading activity.
- In all, 53 exchanges treat 'value' as a measure of trading activity, while 24 of them denote 'volume' as a measure of trading activity.
- 4 out of the 55 exchanges also show 'trades' as one of the measures of trading activity.

In undertaking the above classification, we could distinguish between (monetary) value and (share) volume from the data, and there was no room for ambiguity.

The definitions provided in the handbook (p.879) also need to be noted:

**TURNOVER:** The total money value of securities traded, as calculated by multiplying price by the number of securities traded.

VOLUME: Amount of trading activity, expressed in shares or dollars, experienced by a single security or the entire market within a specified period, usually daily, monthly, or annually. The definition of volume, thus, provides for value as well as numbers to be covered under it, which becomes a source of confusion.

In some cases, the terminology used in the handbook for an exchange is found to differ from the actual terms used by that exchange. To give an example, while the NYSE site uses two terms, share volume and dollar volume, the handbook has published this as trading volume and value; so also for NASDAQ. It may be that the terms used in the handbook are not necessarily the actual terms used in some exchanges, but have been standardised or adjusted to the scheme of classification of the handbook.

#### (c) World Federation of Exchanges

The World Federation of Exchanges (WFE), an association of 59 stock exchanges from around the world, makes available on its website (43) the monthly and annual turnover statistics of all those exchanges. It defines 'value of equity turnover' as 'the total value of shares traded...'. It also terms it as value of share trading or turnover value. 'Value of bond turnover' is similarly defined.

WFE makes it clear that 'the sale and purchase of a share are counted as one transaction'.

Our remarks about the Compaq Handbook above about selection of terminology to denominate trading activity of an exchange apply in this case also. The Federation chooses to term it as turnover, even though a particular exchange might be using a different name.

## B. DEBT MARKETS

This part picks up the terminology of trading activity of the money, debt and currency markets of the U.K. It is supplemented by terms available from the websites of FRBNY and a few other central banks.

### 1. BANK OF ENGLAND

The four references picked up below are all from the Bank of England Quarterly Bulletin (the Bulletin hereinafter), which is also available on the Bank's website (44). And the term common to all the markets in these references is 'turnover' (value):

(a) The Bulletin, Summer 2002 (45) refers to turnover in sterling futures contracts (p.141). Table H (p.144) is headed as 'Turnover of Money Market Instruments'.

(b) The Bulletin, Winter 2001 [(46), p.415] has Chart A headed as 'Turnover in gilt securities' which shows the average daily trading volume (of turnover or business done) in billions of pounds.

(c) In an article titled 'The foreign exchange and over-the-counter derivatives markets in the United Kingdom', the Bulletin, Winter 2001 (pp.417-425) reports findings of the triennial survey of turnover in the titled markets. This survey was part of the worldwide survey coordinated by the Bank for International Settlements (BIS). What needs to be highlighted from this article is not just the all-pervading appearance of the term turnover, as this is the subject itself, but the repeated reference to the fact that local and cross-border double-counting mars reporting of turnover in the foreign exchange market. The global figure of foreign exchange turnover may be a grossly over-stated figure not only because it includes, *inter alia*, both purchases and sales, but also because the figures of a global dealer might have been reported to more than one central bank. This is despite the fact that netting of double-counting is attempted by the authorities concerned.

(d) The Bulletin of Spring 2001 (47) on the sterling wholesale markets repeatedly mentions the turnover in different sterling financial markets including gilts market, gilt repo market, and overnight interbank market. (pp. 25-26).

## 2. DEBT MANAGEMENT OFFICE

The DMO, which now manages the debt (and cash) position of the U.K. Exchequer, publishes data on gilts turnover in its quarterly reviews posted on its web-site (48). The details of market turnover include market value of trades and number of bargains. As turnover means the market value of the trades (or, bargains), it is obvious that turnover means the value of total sales (or, purchases).

## 3. OTHER CENTRAL BANKS

(a) Federal Reserve Bulletin (49), the monthly journal of the Federal Reserve Board publishes every month figures of transactions of U.S. government securities dealers, which represent their purchases and sales in the market [(49) p. A26, Table 1.42]. FRBNY also publishes this data on its site (50). Similarly, Federal Reserve Bulletin also publishes tables on foreign transactions in securities, which give purchases and sales separately [(51), p. A60, Table 3.24]. It does not add up purchases and sales, either of government securities dealers or of foreign transactions in securities nor does it term them as turnover.

(b) The monthly report of Deutsche Bundesbank (52) publishes data on bonds and equity markets. Nowhere does it use the terms volume or turnover. Thus, a statement on 'Sales and Purchases of Bonds' (p.12) gives details of their sales and purchases including total sales/purchases (not sales plus purchases!).

(c) The monthly journal of Reserve Bank of Australia, in the Statistics Section of a recent issue (53), gives average daily turnover of equities in the Australian share market, sourced from ASX (p. S52). It also publishes the foreign exchange turnover of the foreign exchange dealers (p. S54).

## C. SUMMING UP

We may now attempt a sum-up of main features of the above description:

(1) The exchanges in U.S.A., U.K. and Australia adopt different terminologies to report trading activity. NYSE focuses on share volume, LSE on bargains and ASX on turnover (volume) and turnover (value).

(2) BOE and DMO report the activity in the debt markets as turnover. Reserve Bank of Australia also terms the trading activity in the foreign exchange market as turnover, but this may be a common feature the world around.

(3) BOE and DMO make it clear that the data reports one side of the trades only. BOE makes it clear in reporting foreign exchange dealers' business that double counting is eliminated to the extent possible. The Federal Reserve and Deutsche Bundesbank also report purchases and sales in the government securities markets, and none adds up purchases and sales to report trading activity.

(4) Wherever these exchanges use multiple terms for a single parameter of activity, even though sparingly, those terms convey the meanings clearly.

(5) The three principal exchanges in U.S.A. follow identical terminology and meanings, unlike India's two principal exchanges.



(6) Institutions and organisations reporting trading activity of world's exchanges sometimes re-name some terms used by exchanges to bring about some order in reporting, without altering their meanings. The result still is multiple terminologies, bringing out the diversity across exchanges and countries. The most common term in use is turnover (for value).

(7) **The most notable point is that there are exchanges like NYSE, central banks like BOE, and institutions like DMO that define and implement the concepts and terms of trading activity rigorously. The media in U.S.A. like WSJ, in U.K. like FT, and in Australia like The Age too follow that terminology to disseminate reports of market activity.**

#### IV MEANINGS FROM DICTIONARIES

How do dictionaries define the two terms, turnover and volume? Sixteen dictionaries are referred to herein, 7 'general' dictionaries and 9 'subject' dictionaries (code-named D-1 to D-16 herein. Titles are given in the references). These definitions or meanings (only those relevant to our subject) are reproduced below.

##### A. TURNOVER

###### 1. MEANINGS

**D-1:** 1. the total amount of business done in a given time.

2. the amount of goods produced and disposed of by a manufacturer.

3. the 'turning-over' of the capital involved in a business. (54)

**D-2:** 1. do business to the amount of ....

2. (a part of) something, which is turned over.

3. the amount of goods produced and disposed of by a manufacturer. (55)

**D-3:** the act or an instance of turning over. (56)

**D-4:** a complete transaction of purchase, sale and replacement of stock in a store: the amount of such business done in a given period. (57)

**D-5:** defines 'turnover tax' as a tax on sales, thus indirectly defining turnover to mean sales. (58)

**D-6:** 1. the amount of business, usually expressed in terms of gross revenue, transacted during a specified period.

2. the rate at which stock in trade is sold or replenished.

3. in Banking: the amount of capital funds loaned on call during a specified period. (59)

**D-7:** 1. the total amount of business done in a given time.

2. the paying out and getting back of the money involved in a business transaction.

3. some capital is turned over ten times in a year.

4. to do business to the amount of .... (60)

**D-8:** 1. in portfolio management, the amount of trading relative to the value of the portfolio.

2. in market terms, the volume of business in a security or the whole of the market, or the number of securities or contracts that have been dealt in on any given day or period.

3. sometimes computed as the number of items transacted times their value.

4. also known as traded volume.

5. in the U.K., the total sales by a business during the reporting period. Also known as sales.

(61)

**D-10:** 1. act of turning over.  
 2. total sales figure of an organization for a stated period.  
 3. rate at which a particular asset is sold or replaced, e.g., the turnover of stock is obtained by dividing the total sales figure by the value of the particular asset. (63)

**D-11:** 1. the total amount of business done in a given time  
 2. the rate at which items are sold and re-stocked.  
 3. the number of times during a year the inventory of a firm is sold. (64)

**D-12:** the number of times and rapidity with which invested capital, total assets, or accounts are turned over or moved in a given period. Loosely, the amount or rapidity of sales, as compared with another factor. It is therefore a ratio.... (65)

**D-13:** the total sales revenue of a business. (66)

**D-14:** sales turnover: the total amount sold within a specified time period, usually a year. Sales turnover is often expressed in monetary terms but also can be expressed in terms of the total amount of stock or products sold. (67)

**D-15:** 1. the number of times that various assets, such as raw material or other items of inventory, personnel and the like, are replaced during a stated period, usually a year; the rate of such replacement. (asset turnover).

2. the ratio of sales to net worth (equity turnover), it being understood that the comparison is actually between the asset equivalent to net worth and sales.

3. = sales. (A British usage). (68)

**D-16:** 1. in accounting, the number of times an asset is replaced during a financial period. Often used in terms of inventory or accounts receivable turnover.

2. in the context of securities, for either a portfolio or exchange, the number of shares traded for a period as a percentage of the total shares. (69)

## 2. CLASSIFICATION OF MEANINGS

15 out of 16 dictionaries have defined *turnover*; they have given 35 definitions, which are related to 3 categories of business:

- (1) Trading and manufacturing business 29 definitions
- (2) Securities business 5
- (3) Banking business 1

(1) Turnover in Trading and Manufacturing Business

The 29 definitions can be classified into **4 meanings**:

Meaning	Frequency
1. Turning-over or the act of turning over of an asset (inventory, e.g.) in terms of sales, commonly expressed as a ratio or number of times	13
2. Sales (The eminent authority Eric Kohler (D-15) called this meaning as a British usage.)	10
3. Total business done in a given period Total business done may have either of two meanings: it may mean sales and may thus belong to the second category only. Or, in the case of the business of intermediaries (securities brokers, e.g.) may mean the sum of buying and selling done by them whether for themselves or for their clients	5

4. The paying out and getting back of the money involved in a business transaction	1

(2) Turnover in the Securities Business

The 5 definitions convey **4 meanings**:

Out of the five definitions relating to the securities business, 2 are the equivalent of turnover ratio above, meaning the amount of trading relative to the value of the portfolio or the number of shares traded for a period as a percentage of total shares. Another definition means by it traded volume. Still another defines it as the number of securities that have been dealt in on any given day or period. The fifth one defines it as the number of items transacted times their value.

(3) Turnover in the Banking Business

It has **1 meaning**:

The amount of capital funds loaned on call during a specified period'.

B. VOLUME

1. MEANINGS

- D-1** 1. A particular bulk, mass, or quantity as an attribute of a thing.  
2. The amount or quantity of a thing. (54)
- D-3** An amount or quantity (like large volume of business). (56)
- D-8** 1. the number of transactions on a particular market or a security or a commodity during specific time period, usually a trading session.  
2. total volume: the amount of securities traded in a given period. (61)
- D-9** the volume of trade is usually measured as the number of shares or units of a security that change hands in a given period of time. (62)
- D-10** Measure of the amount of trade that has taken place, usually in a specified period. On the London Stock Exchange, eg, the number of shares traded in a day is called the volume and the value of these shares called the turnover. (63)
- D-14** volume of retail sales: the amount of trade in goods carried out in the retail sector of economy in a particular period. (67)
- D-16** the number of shares or contracts traded in a security or an entire market during a given period. (69)

2. CLASSIFICATION OF MEANINGS

Only 7 dictionaries define *volume* and they offer 9 definitions in all. In explaining the meaning of volume, these definitions use the word 'quantity' (3 times), 'number' (3 times) and 'amount' (5 times). The word 'amount' itself may mean either quantity or value.

Of the 9 definitions, 5 cite examples from financial markets. According to 3 of them, 'volume' means number of securities, one means amount of securities, and one other means number of transactions of a security.

C. SUMMING UP

To sum up from the dictionary meanings given to 'turnover' and 'volume', two statements can be made:

1. Turnover has been given 3 principal meanings: turnover ratio, sales, and, total business done. Quantity sold, sales value, and traded volume, these are 3 other names given to it. These are also the dictionary meanings of volume. As dictionaries have provided multiple meanings, they are a substantive contributor to the terminological malaise.

2. Similarly, dictionaries give multiple definitions of volume, which are of a generic nature. Relating it to the financial markets, it can mean an amount (value) of securities, a quantity of securities or a number of transactions of securities. That is why use of this term without a prefix or a suffix has often been misleading. Like turnover, it has also contributed its share to the terminological malaise.

## V. ACCOUNTING AND FINANCE GUIDANCE FROM LITERATURE

What guidance do the disciplines of Accounting and Finance provide us, for, after all the subject of our study belongs to their realm? For the purpose, we divide our discussion between select basic texts and applied studies on financial markets.

### A. THE CONCEPT TEXTS

1. 'Volume' is not a significant term in Accounting and Finance texts. When it does appear, as in cost-volume-profit analysis, for example, it means a quantity.

2. Turnover is a measure of the efficiency with which a business entity's funds invested in assets are utilised or deployed or turned over. Thus, inventory turnover means the number of times in relation to sales that inventory has been *turned over*. (Helfert (70), Myer (71), Pandey (72), Prasanna Chandra (73), Anthony (74), Welsch & Anthony (75), Anthony & Welsch (76). We also find a similar reference to 'turnover' in Managerial Economics. [(Haynes (77)]. Referring to the possible role of high/low turnover in pricing, it reads: '...turnover is measured from the point of view of the seller while frequency of purchase concerns the buyer. Nails may be a high turnover item for the hardware store but a low frequency purchase for the ordinary amateur carpenter. ... Turnover is itself a function of price.' (p. 339). It may be measured as a rate or a ratio. Commonly measured in financial terms, it may also be measured in quantitative terms.

The term turnover also means 'sales' in British Accounting [(61), (68)]. It seems that this concept is followed in many Commonwealth and other countries. When used both as a measure of sales and a measure of asset-use efficiency, it would be a cause of confusion. Hence, the asset utilisation measure may be converted into a rate or a ratio. Then, it becomes a turnover rate or ratio; and the two, turnover and turnover rate/ratio, become distinguishable.

### 3. SUMMARY

The **notable point** is that there is no inexactness in the use of these terms in the relevant academic disciplines, nor are the two terms volume and turnover, given their different meanings, substitutes.

### B. APPLIED FINANCE (FINANCIAL MARKET STUDIES)

We may now turn to use of these terms in financial market studies.

1. Gupta (78), in his book on stock market trading in India, uses the term 'trading volume' of a company's share as a proportion of its market capitalisation to measure that share's trading velocity. (pp.4-12). Obviously, volume in this usage means value, and trading velocity is another term for turnover ratio. But this measure was part of an exercise to estimate the 'volume of speculation', where the word 'volume' could be read to mean the amount or degree of speculation. Further on (p.55), Gupta states that 'The Bombay Stock Exchange often points to its high daily trading volume, both in terms of the number of transactions and their value, as indicating the market's high liquidity.' Still further on (p.95), Gupta uses the terms 'trading volume', 'volume of activity' and 'volume of business' in writing about 'jobbing volume'. It can be concluded that 'volume' has been used both as a technical term (as in relating trading volume to market capitalisation) and as a 'generic word' (as in volume of speculation or volume of business or volume of activity). Even as a technical term, the term 'trading volume' has been used to mean both traded value as well as number of transactions.

2. Writing on the working of debt markets in India, Bhole (79) uses the term 'volume' repeatedly. He refers to volume of call loans (pp.286-294), volume of treasury bills (pp.297-98, 309), volume of bill finance (pp. 318, 320), and volume of issues of government securities market (pp.375-6). At one place (p.298), he states: "Thus, in terms of sheer volume of bills and their 'turnover', there has been a marked growth ...." By turnover, possibly, the author means 'turnover ratio'. Writing on the industrial securities market, Bhole says: "Another way to gauge the growth of stock market activity is to know the 'volume of turnover' on stock exchanges. Table 20.2 presents the annual turnover on all stock exchanges and on Bombay Stock Exchange. It shows that the turnover has tripled during the decade 1979-88; that the volume of turnover is subject to...." (p.398). Thus, the author uses all the three terms, volume, turnover, and volume of turnover interchangeably to mean amounts of business done. The author seems to reflect the generic terminology of the annual reports of RBI.

3. Shah and Thomas (80) use terms like 'trading volume' and 'delivery volume' several times (pp. 221, 231, 234) in a conference paper on the Indian capital market. It is not clear but, most probably, the authors mean by 'volume' the quantity of securities.

4. In another paper in the same conference, Nayak (81) quotes the amounts of turnover at the NSE and BSE, and then states: "Thus the higher trading volumes...", appearing to use the two terms 'turnover' and 'volume' as synonyms (p. 285). A little ahead (p. 287), he states 'In 1992, over 50% of the total traded volume on the NYSE...'. What does 'traded volume' mean here? Because, volume at NYSE, as referred to *supra*, is qualified with a prefix to convey whether it is an amount or a quantity.

5. In a third paper, Claessens and Glaessner (82), quoting a World Bank study, have two columns of a statement, one headed as 'stock market trading value as a percentage of market capitalisation' and the second headed as 'bond trading volume as a percentage of market capitalisation' (p. 403, Table 12.8). Thus, 'value' and 'volume' both have the same meaning!

6. Teweles, Richard J. *et al*, (83) writing on the stock market in USA use the term 'volume' to denote number of shares throughout the book (eg, pp.67, 68, 71, 74, 109, 207) and dollar volume (p. 68) to denote value of shares dealt in. Thus, the terms 'volume' and 'dollar volume' are used uniformly as financial terms which have specific meanings.

7. Helfert (70), in writing about stock quotations as a source of financial information, gives 'NYSE volume' in terms of number of shares traded (pp.245-255).

8. Dyl and Anderson (84), in a research paper on the relationship between (stock) market structure and trading volume, define 'volume' as a quantity (of shares).

9. Chordia *et al* (85) in their paper on market liquidity in bond and stock markets, similarly study the common determinants of daily bid-ask spreads and 'trading volume'.

10. In a paper on the impact of trading activity, *inter alia*, on NASDAQ trading halts, Christie *et al* (86) consider the elements of trading activity as 'share volume', number of trades and average trade size (pp. 1453, 1463). 'Share volume' is defined as number of shares (pp. 1463-64) and number of trades and average trade sizes are considered as the sources of the volume change (p. 1463).

11. Standard & Poor's, in its year 2001 survey of emerging stock markets (87), ranks top 25 markets of the world by 'turnover', when actually many of these markets do not use the term turnover to denote their trading activity.

12. In reporting the roles of electronic communication networks (online trading systems) in market activity of different exchanges, Market Trends (88), compares their share in 'trading volumes' of NASDAQ with their share in 'turnover' in Europe.

13. In an OECD book on bond market development in Asia (89), the terms denoting trading activity read:

- Volumes and turnover (p.116)
- turnover (p. 131)
- turnover (p. 154)
- volume (p. 181)
- turnover - financial terms (p. 376)
- turnover - no. of shares (p. 390)
- volume - no. of contracts (p. 395)
- turnover (no. of contracts) (p. 395)
- turnover volume - no. of shares (p. 407)
- turnover value - financial terms (p. 407)
- trading value (or turnover) (p. 419).

14. The World Bank produced a series of papers on the emerging Asian bond market in 1995. A sample of terminology used in 4 of those country papers are reproduced below:

- Philippines (90). Volume in money market (Table 12, p.14) and turnover in stock market (Table 14, p. 16), both in monetary terms. Turnover value and value turnover are also used for turnover.
- Singapore (91). Volume of debt securities (p. 1), turnover in stock market, both in units and S\$ (Table 2, p. 5), and average daily volume of turnover in government securities (Table 7, p. 13).
- China (92). Trading value (Table 3.2) and volume (both on p. 17), transaction volume (Table A3.4, p. 47), volume of turnover (p. 18) and turnover (p. 45) are used inter-changeably.
- Malaysia (93). Trading volume of different types of bonds as a percentage of market turnover is shown (Table 13, p. 21, and Table 26, p. 40).

15. Proceedings, including the papers, of a conference of central bankers from 5 advanced countries on determinants of market liquidity held by BIS in 1998-99 (94), make several references to trading activity in securities markets. In the process, three features germane to our subject stand out:

(a) Use of the term 'turnover' in papers by Bank of Japan, Bank of Canada, Bank of England and Bank of Italy, and use of the term 'volume' instead in the paper by Federal Reserve Bank of New York.

(b) Generic use of the word 'volume', *ad nauseam*, in several papers except the one by FRBNY, like transaction volume, volume of trades, volume per trade, trading volume, actual trading volume.

(c) Use of volume figures on one-way or two-way basis in some papers and in the summary of proceedings. A note (Summary of Questionnaire Results, p. 3) explains: 'Trading volume is calculated on a two-way basis, i.e., when dealer A sells a US\$ 100 security to dealer B, a US\$ 200 transaction is recorded, as opposed to US\$ 100.' Furthermore, the two-way amount is taken to compute turnover ratio (Summary of Proceedings, pp. 23-24).

16. Volume appears everywhere either as a general word or as a particular term in the proceedings of another BIS conference on market liquidity (95). 'Trading volume' is also used frequently. The term 'turnover' appears seldom, for the first time in the text perhaps with reference to foreign exchange market (pp. 151, 154), then with reference to the German bond market (p. 160). Turnover and volume seem to be used interchangeably (pp. 160, 201, 217, 225). The use of 'volume' to mean an amount comes out plainly in two instances, for example, when the text refers to turnover and the accompanying graph/table representing its amount terms it as volume (p. 201, Graph 1, and p. 203, Table 14).

17. In a BIS paper on the changing shape of fixed income markets (96), trading activity in the derivatives, gilts and treasury markets is referred to in terms of 'turnover', while its amount in the tabular or graphical representations is termed as 'trading volumes'. (Pp. 1, 24-28, 30-31).

## 18. SUMMARY

The 17 publications listed above consist of:

- 8 from world organisations from which about 20 papers have been perused. 4 of these publications are single papers and the other 4 contain multiple papers written by different authors;
- 5 from U.S.A.; and,
- 4 from India, including 2 books.

The four single papers of world organisations use different terms but exhibit a certain consistency in terminology-usage. One paper by S & P (87) gives stock exchange 'turnover' of 25 countries, although many of those countries' exchanges do not use that term. An OECD paper (88) gives the 'volume' of NASDAQ and 'turnover' of European markets. A paper by two World Bank officials (82) uses the terms 'trading value' for stock markets and 'trading volume' for bond markets, while a BIS paper (96) states the 'turnover' of markets which is represented by their 'volumes' in graphical formats.

The second category of 4 publications from world organisations exhibit a certain inconsistency or lack of uniformity or both in their sets of papers resulting in lack of clarity and comparability of their arguments. Particularly galling is the use of one-way and two-way volume figures without explaining their application or relevance.

The 5 papers from U.S.A. are uniform in their usage of terminology. It is 'trading volume' or 'share volume' representing number of shares which seems to be the principal measure of trading activity in that country.

Out of the 4 publications from India, two papers use the language of their sources; one paper's terms seem to follow American terminology. The fourth publication uses the term 'trading volume' to convey value as well as numbers, and 'trading velocity' to convey turnover ratio of shares. 'Volume' is used both as a financial term and as a generic word.

## C. SUMMING UP

The detailed survey of literature leads us to conclude as follows:

1. The two terms 'volume' and 'turnover' have specific meanings in Accounting and Finance but the same have not been transferred to the realm of applied studies. Instead, a medley of meanings is assigned to them.
2. Although not exactly conforming to the textbook definitions, the exchanges, the academic community, whether dwelling on the principles or undertaking applied studies and the media in U.S.A. consistently follow a uniform terminology.
3. The concept texts' turnover becomes applied studies' turnover ratio, as turnover in the markets carves out a different meaning (or, meanings?) for itself.
4. The use of one-sided (single) or two-sided (double) figures in some studies remains unexplained. Some of the central banks though expressly avoid using doubled figures.

## VI MAIN FINDINGS AND RECOMMENDATIONS

### A. MAIN FINDINGS

#### THEORY AND PRACTICE OF TURNOVER AND VOLUME



We may now pull together the chief points from the summaries at the end of Sections II to V.

## THE DISCIPLINES

1. In seeking guidance from the disciplines of Accounting and Finance, we distinguished between concept texts and applied studies. Turnover and volume are used as conceptual terms and therefore have specific meanings in Accounting and Finance. But this basic tenet does not seem to have percolated to most applied studies of financial markets.

2. One-way (one-sided) and two-way (two-sided) figures for turnover in some studies have been used without distinguishing their rationale and need. Studies of several regulatory financial institutions that we came across though have either avoided or explained the avoidance of two-way figures.

## DICTIONARIES

3. Dictionaries are not a good guide to financial market terminology. They mix the use of turnover and volume as general words and as particular terms. Definitions of volume are mostly of a generic nature. Hence, dictionaries may be a major source of terminological variety and imprecise concepts of trading activity in financial markets around the world.

## FOREIGN FINANCIAL MARKETS

4. Of the three measures of trading activity, viz., turnover (monetary value), share volume, and number of trades, significance accorded to each varies from market to market. Turnover (monetary value) is perhaps the most common term in use around the world.

5. Uniformity and consistency mark financial market terminology in U.S.A. across the regulators, stock exchanges, media and academia. There are also central banks like Bank of England, and institutions like Debt Management Office of the Government of the U.K. that define and implement concepts and terms of trading activity rigorously. The media in U.K. like *Financial Times*, and in Australia like *The Age* also disseminate trading activity through a consistent, standardised terminology.

## INDIAN FINANCIAL MARKETS

6. There is lack of clarity of concepts and terms used to describe trading activity in different financial markets.

7. Total trading activity of a stock exchange (equivalent to total sales or purchases) and total business done by market intermediaries at that exchange (equivalent to their total purchases and sales) both are termed turnover. Obviously, this can be a cause of wrongful interpretation of financial market statistics.

8. RBI's definition of market turnover seems to be an adoption of market intermediaries' definition of turnover. To extend that definition to primary dealers who are securities traders (not brokers), does not seem to be correct. Distinction of turnover from volume by RBI by deeming the former to be double of the latter does not have a basis in financial literature, dictionaries or foreign markets.

9. Terminology in the media differs between newspapers, and in stocks-related news from that on the stock pages in the same newspaper. As terminology currently used has multiple meanings but is generally undefined by the media, it may be misleading for their readers, even for those who possess reasonable level of financial literacy.

10. The conclusive finding: Diversity in use of the terms 'turnover' and 'volume' is widespread in the financial markets around the world, and India is no exception. But in India, this diversity extends to a certain degree of terminological confusion and conceptual confusion that leads to incorrect use of

these two terms. It seems that no serious thought has been given to rigorously define the concepts and standardise the terminology of trading activity in India.

## B. RECOMMENDATIONS

The findings of this piece of research lead us to a few specific recommendations that are laid out in a nutshell below.

1. The need for a universal language for measurement of trading activity of financial markets is manifest. An international body like the World Federation of Exchanges should be able to take up this task. The Indian authorities concerned may take the initiative in this respect.
2. It is felt that collective discussions would be the most appropriate method to arrive at a conceptually correct and unanimously acceptable terminology of the main measures of 'trading activity' in Indian financial markets.
3. The supervisors and regulators of the financial system in India in consultation with the major financial markets/exchanges, should take early steps to conceptualise the main measures of trading activity and bring out a well-defined standard set of terms for adoption by the money, debt, currency and equity markets of the country.
4. There are several models available for consideration. A few of them are as follows.
 

a.	New York Stock Exchange	(1) Share volume (2) Dollar volume (3) Trades
b.	Australian Stock Exchange/ <i>The Age</i>	(1) Turnover – Value (2) Turnover - Volume (3) Trades
c.	National Stock Exchange	(1) Traded value (2) Traded quantity (3) Trades
d.	Bombay Stock Exchange	(1) Turnover (2) Volume (3) Trades
e.	Fifth Model	(1) Value (2) Volume (3) Trades
5. One-sided and two-sided concepts of turnover should be defined to clarify their relevance and applicability. The distinction among market turnover, dealer turnover and broker turnover, and their relevance and applicability, should become clear in the process.
6. The concept of 'turnover ratio' (or of turnover rate) as adopted in financial economics should be considered for adoption.
7. Use of 'volume', as a general word should be avoided in the financial markets. It may not be used as a financial term without an appropriate prefix or suffix, so that its meaning would be clear to all users.
8. The concepts and terms as defined and agreed upon should be carried on the websites and relevant publications of the exchanges, markets and regulators.

9. If the regulators and the stock exchanges begin to use common concepts and standardised terms, the same would percolate to the media. The media could also be advised to follow the standard terminology on its stock pages and market reports.

### **XXX REFERENCES**

#### INDIAN MEDIA

- 1: India Today, New Delhi, February 25, 2002.
- 2: Business Standard, New Delhi, Mumbai.
- 3: [www.business-standard.com](http://www.business-standard.com)
- 4: Economic Times, New Delhi, Mumbai.
- 5: Financial Express, New Delhi, Mumbai.
- 6: Hindu Business Line, New Delhi.

#### NATIONAL STOCK EXCHANGE

- 7: [www.nse-india.com](http://www.nse-india.com)
- 8: National Stock Exchange of India Limited, June 1995.
- 9: Clearing and Settlement System – Capital Market, June 1995.
- 10: NSE News, the bimonthly journal.
- 11: Fact Book 2001.
- 12: India Securities Market: A Review, Vol. IV, 2001.

#### BOMBAY STOCK EXCHANGE

- 13: Daily Trading Highlights.
- 14: Bolts Statistics Report (A daily report).
- 15: Press Release (daily).
- 16: [www.bse.com](http://www.bse.com)
- 17: Key Statistics, Mumbai, February 2002.
- 18: Review of Markets, January 2002.
- 19: Annual Capital Market Review, 2000-01.
- 20: Annual Capital Market Review, 2001-02.

#### SECURITIES AND EXCHANGE BOARD OF INDIA

- 21: Annual Report, 1999-2000.
- 22: Report of the Expert Committee appointed for Interpretation of Turnover, December 1992.

#### RESERVE BANK OF INDIA

- 23: [www.rbi.org.in](http://www.rbi.org.in)
- 24: Weekly Statistical Supplement.
- 25: Annual Report, 1998-99.
- 26: Annual Report, 1999-2000.
- 27: Annual Report, 2000-01.
- 28: Annual Report, 2001-02.

#### FOREIGN FINANCIAL MARKETS

- 29: [www.nyse.com](http://www.nyse.com), the NYSE web-site.
- 30: [www.nasdaq.com](http://www.nasdaq.com), the NASDAQ web-site.
- 31: Wall Street Journal, New York, December 6, 2002.
- 32: Asian Wall Street Journal, Hong Kong, December 5, 2002.
- 33: [www.londonstockexchange.com](http://www.londonstockexchange.com), the web-site of LSE.
- 34: Financial Times, London, February 8, 2002.
- 35: [www.ft.com](http://www.ft.com), the Financial Times web-site.
- 36: Economist, London, April 13, 2002.
- 37: *Op. cit.*, November 11, 2002.
- 38: Australian Stock Exchange, Annual Report, 1991, Sydney.
- 39: [www.asx.com.au](http://www.asx.com.au), the ASX site.

- 40: The Age, Melbourne, December 7, 2002.  
 41: Australian Financial Review, Sydney, March 28, 2002.  
 42: The Compaq Handbook of World Stock, Derivative Commodity Exchanges, Mondo Visione, U.K., 2001.  
 43: [www.world-exchanges.org](http://www.world-exchanges.org), the site of World Federation of Exchanges.  
 44: [www.bankofengland.co.uk](http://www.bankofengland.co.uk), the Bank of England site.  
 45: Bank of England Quarterly Bulletin, the quarterly journal of the Bank of England, Summer 2002.  
 46: *Op.cit.*, Winter 2001.  
 47: *Op.cit.*, Spring 2001.  
 48: [www.dmo.gov.uk](http://www.dmo.gov.uk), the Debt Management Office site.  
 49: Federal Reserve Bulletin, Journal of the Federal Reserve Board, Washington, August 2002.  
 50: [www.newyorkfed.org/pihome/statistics](http://www.newyorkfed.org/pihome/statistics).  
 51: Federal Reserve Bulletin, *op.cit.*  
 52: Deutsche Bundesbank, Monthly Report, September 2002.  
 53: Reserve Bank of Australia Bulletin, February 2002.

#### DICTIONARIES

- 54: The Compact Edition of the Oxford English Dictionary Vol. II, 1971, reprinted 1972.  
 55: The New Shorter Oxford English Dictionary, 1993.  
 56: Concise Oxford Dictionary, OUP, Delhi, 1998.  
 57: Webster's Unified Dictionary and Encyclopedia, Vol. 6, New York, 1970.  
 58: Enclopaedia Britannica, Vol. X, 15<sup>th</sup> edition, 1974, U.S.A.  
 59: Collins English Dictionary, 1984.  
 60: The World Book Dictionary, Vol. Two, 1995.  
 61: The Handbook of International Financial Terms, Peter Moles & Nicholas Terry, OUP, 1997.  
 62: the New Palgrave Dictionary of Money and Finance, Peter Newman, et al, (ed), Macmillan, 1992.  
 63: The Oxford Dictionary for International Business, OUP, 1998.  
 64: Enclopaedic Dictionary for Management, Vol. 9, P K Ghosh, Sharma & Raj (ed), Anmol Publications, New Delhi, 1988.  
 65: Enclopaedia of Banking and Finance, tenth edition, Charles J Woelfel, S. Chand & Co., New Delhi, 1994.  
 66: Dictionary of Economics, Asian ed., 2001, The Economist Books.  
 67: Bloomsburg Dictionary @ the Economist.com.  
 68: A Dictionary for Accountants, Eric L. Kohler, Prentice-Hall, New Delhi, 4<sup>th</sup> edition, 1972.  
 69: Dictionary @ Investopedia.com.

#### ACCOUNTING AND FINANCE

- 70: Helfert, Erich L., Techniques of Financial Analysis, Richard D. Irwin, Homewood, Illinois, 1972.  
 71: Myer, John N., Financial Statement Analysis, Prentice-Hall of India, New Delhi, 1974.  
 72: Pandey, I.M., Financial Management, Vikas Publishing, New Delhi, 1993.  
 73: Prasanna Chandra, Financial Management, Tata McGraw-Hill, New Delhi, 1997.  
 74: Anthony, Robert N., Management Accounting: Text and Cases, Richard D. Irwin, 1970.  
 75: Welsch, Glenn A. & Anthony, Robert N., Fundamentals of Financial Accounting, Richard D. Irwin, 1977.  
 76: Anthony, Robert N. & Welsch, Glenn A., Fundamentals of Management Accounting, Richard D. Irwin, 1977.  
 77: Haynes, W.W., Managerial Economics: Analysis and Cases, Business Publications, Austin, Texas, 1969.  
 78: Gupta, L.C., Stock Exchange Trading in India: Agenda for Reform, Society for Capital Market Research and Development, Delhi, 1992.  
 79: Bhole, L. M., Financial Institutions and Markets, Tata McGraw-Hill, New Delhi, 1996.  
 80: Shah, Ajay & Thomas, Susan, Developing the Indian Capital Market, in Hanson & Kathuria (eds.), India: A Financial Sector for the 21<sup>st</sup> Century, Oxford University Press, New Delhi, 1999.  
 81: Nayak, P. Jayendra, Regulation and Market Structure, in Hanson & Kathuria, *op.cit.*  
 82: Claessens, Stija & Glaessner, Tom, Internationalisation of Financial Services in Asia, in Hanson & Kathuria, *op.cit.*

- 83: Teweles, Richard J., Bradley, Edward S., Teweles, Ted M., The Stock Market, John Wiley, New York, 1992.
- 84: Dyl, Edward A. & Anderson Anne M., Market Structure and Trading Volume, [www.nyse.com/home](http://www.nyse.com/home) > market information > research papers > paper # 2002-02.
- 85: Chordia, T., Sarkar, A. & Subrahmanyam A., Common Determinants of Bond and Stock market Liquidity, Staff Papers, [www.newyorkfed.org/rmaghome/staff\\_rp/](http://www.newyorkfed.org/rmaghome/staff_rp/)
- 86: Christie, William G., Corwin, Shane A. & Harris, Jeffrey H., Nasdaq Trading Halts: The Impact of Market Mechanisms on Prices, Trading Activity, and Execution Costs, The Journal of Finance, June 2002.
- 87: S & P Emerging Stock Markets Factbook 2002 quoted in ET World Stock Markets Survey, The Economic Times, November 29, 2002, p. 9.
- 88: Organisation for Economic Cooperation and Development, Future Prospects for National Financial Markets and Trading Centres, Market Trends, No. 78, March 2001.
- 89: OECD, Bond Market Development in Asia, 2001.
- 90: World Bank (East Asia & Pacific Region), The Emerging Asian Bond Market, Background papers, Philippines, Washington, 1995.
- 91: Ibid, Singapore.
- 92: Ibid, China.
- 93: Ibid, Malaysia.
- 94: Bank for International Settlements, Market Liquidity: Report on the determinants of market liquidity..., Basel, March 2000.
- 95: BIS, Monetary and Economic Department, Market Liquidity: proceedings of a workshop, BIS Papers, No. 2, Basel, April 2001.
- 96: BIS, Monetary and Economic Department (Study group on fixed income markets), The changing shape of fixed income markets, BIS Working Papers, No. 104, Basel, September 2001.