CHAPTER III
HARMONIZATION:
PROPONENTS AND MEASUREMENTS

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CHAPTER III
HARMONIZATION:
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INTRODUCTION

Financial reporting by enterprises including governments is essential to judge their performance and financial health. Economic decisions are taken on the basis of figures arrived at through the process of accounting measurement. Therefore, bases and standards for measurement and communication of accounting information evolved by accountancy profession are significant to understand the financial statements. However, there have been significant variations among different countries owing to local laws, regulations and the shape of capital markets. This often acts as impediment in raising resources across national frontier. In the world of emergence of transnational corporation and globalization, convergence of accounting standards is the centerpiece of the efforts to build a global financial reporting infrastructure and it has been duly recognized as the future of global accounting standards.

Within the international business community, there is now an expectation that accounting, as the information provider to business and as a part of the international business infrastructure, should also transcend national boundaries and converge [Purvis et. al.,: 1991]. Accountants refer to this process as harmonization or standardization [Carlson: 1997, *357*]. Benson [1976] explains that the prime impetus behind the organization's establishment was the desire to minimize the differences in financial statements prepared in different countries, and to improve their comparability. Michael Sharpe, Chairman of the International Accounting Standards Committee [IASC] and both a Partner with Coopers & Lybrand and a Director of the ASX, takes the similar view with the observation that the "Main goal… is to bring about complete unification of the world's accounting systems: uniformity between International Accounting Standards and the national standards of all countries [ASX Perspective 1997:*18*]." The Accounting profession, led by the International Federation of Accountants [IFAC] and other capital market participants, sees the globalization of business as increasingly supporting the need for one set of accounting standards used throughout the world to produce comparable financial information [Roberts et. al.,: 2002].

Accountants recognize the importance of harmonization, but there is no unanimity on the approach to be followed to achieve it. In this regard, Evans et. al., [1985] refer two schools of thought. The first school of thought advocates informal consultation among the standard-setters of the major nations of the world. The second school of thought recommends formal action for achieving internationalization of accounting principles and practices. Even though the solution lies in establishing an organization with multi-country membership to formulate standards, it is strongly advocated that the convergence process should be formal in future. In this direction, several efforts are undertaken. These efforts towards convergence include institutional efforts and developing harmonization measurement techniques. A brief outline of these efforts is presented.

INSTITUTIONAL EFFORTS

On the background of the above, this chapter is divided into two parts. The first part of this chapter discusses harmonization process and it includes: (i) Historical Perspectives; (ii) Proponents of Harmonization; (iii) Regional Institutions; (iv) Leading National Institutions; (v) Supporting Role Players; (vi) Framework for Harmonization. The second part focuses on harmonization measurement aspects and it includes: (i) Index Based Techniques; and (ii) Statistical Modeling.;

(i) Historical Perspectives:

The accounting fraternities comprising professionals, academics and others have for long been aware of the importance of having uniform accounting legislations around the world. It is due to increasing level of globalization that leads to demand for greater harmonization of accounting practices on an international basis. In the year 1966 the professional accounting bodies of Canada, U.S. and the U.K established Accountants' International Study Group. Its main objective was to develop a comparative study of accounting and auditing practices of these countries. This initiation led to the creation of number of institutions at global, regional and national level with the establishment of the International Accounting Standards Committee (IASC) was established in London in the year 1973. At the initial period IASs were criticized for their permissiveness. However, the Comparability and Improvement Project (1989-93) aimed at reducing flexibility in IASs [Salter and Roberts: 1996, *24*; Ma et. al.,: 1997,*493*] resulted in a set of revised, tighter IASs. IOSCO refused to endorse all the revised IASs for cross-border securities listings. In 1994, IOSCO identified a set of 'core' IASs, further work on which it wished to see satisfactorily completed. An agreement between IOSCO and the IASC in July 1995 was to allow these core IASs, if endorsed by IOSCO, to be accepted in place of domestic standards for cross-border securities listings [Ma et. al.,: 1997,*495*]. In April 1996, the U.S. SEC stated that it would consider recognizing the core IASs for foreign corporations issuing securities in the U.S., provided certain conditions were met [Levitt: 1997]. The IASC completed substantially the key components of its core standards work program in March 1999 with the publication of an interim standard on financial instruments. And in May 2000, IOSCO finally announced that it would endorse these standards for cross-border securities' offerings.

In April 2001, under the recommendations made by the Volcker trustees, the International Accounting Standards Committee came to be known as International Accounting Standards Board (IASB). The standards issued by it were to be known as the International Accounting Standards (IAS). The European Parliament and the Council adopted the IAS Regulation on the application of international accounting standards on July 19, 2002. This regulation stipulates that all European Union listed companies must follow IASB standards starting no later than 2005 in their consolidated financial statements. In October 2002, the FASB and the IASB reached what has now become known as the 'Norwalk Agreement'. The Norwalk Agreement set out a framework for joint work by the two boards. The agreement had a simple objective: To improve the quality of U.S.Generally Accepted Accounting Principles (US GAAP) and IFRSs, while reducing differences between the two sets of standards. This agreement was significant; because it marked for the first time a strategy that was put into place to eliminate differences between US GAAP and IFRSs.

The IASB has amended some IASs with new International Financial Reporting Standards (IFRSs), and it has adopted or proposed certain new IFRSs on topics for which there were no previous IAS. Through committees, both the IASC and the IASB also have issued Interpretations of Standards. Now, IFRSs refer to the entire body of IASB pronouncements, including standards and interpretations approved by the IASB and IASs and SIC interpretations approved by the predecessor IASC. In 2003 IASB published IFRS 1: First time adoption of International Financial Reporting Standards and revisions to 15 IAS. Table 3.1 shows the significant events in the history of international accounting standards towards harmonization and its achievement.

TABLE 3.1
HISTORICAL PERSPECTIVES OF ACCOUNTING STANDARDS

Year	Events
1959	Jacob Kraayenhof, father of this movement, released his paper in which he though was not advocated rigid uniformity initiated argument for some degree of international uniformity on accounting principles.
1961	The Groupe de'Etudes was founded in order to support the European Union authorities in Accounting questions.
1966	Lord Benson, the President of the Institute of Chartered Accountants of England and Wales [ICAEW] visited the United and Canada – The Accountants' International Study Group was established to study major accounting issues.
1973	The International Accounting Standards Committee [IASC] was established.
1974	First Exposure Draft [ED] published. IAS 1 Disclosure of Accounting Policies was published.
1976	The Organization for Economic Co-operation and Development issued a declaration on investment in MNE's providing guidelines on disclosure of information.
1977	An experts group nominated by the United Nations Economic and social council published a report on international standards of Accounting and Reporting for transitional corporations.
1977	The International Federation of Accountants [IFAC] was formed – IASC remains an autonomous body with a close relationship with IFAC [all IFAC members are also IASC members].
1978	Commission of the European Community issued Fourth Directive as first move toward European accounting harmonization.
1980	The United Nations Intergovernmental Working Group on Accounting and Reporting meets for the first time – IASC presented a position paper on cooperation.
1981	The IASC began consultation with organizations, which are not members of the IASC in order to widen the input to international standard setting.
1983	The Seventh Directive was issued by EU which and addressed the issue of consolidation.
1984	The London Stock Exchange requested that listed companies not incorporated in the U.K. or Ireland have to comply accounts in accordance with international Accounting Standards.
1984	IASC and the United States Securities Exchange Commission [SEC] meet formally for the first time.
1985	Organization for Economic Cooperation and Development [OECD] forum on accounting harmonization. IASC responded to SEC multinational prospectus proposal.
1987	Comparability and Improvements project started.
1987	International Organization of Securities Commissions [IOSCO] joins consultative Group and supports Comparability project to promote the use of common standards in accounting and auditing practice.
1988	IASC published survey report on the use of IASs.
1988	The United States Financial Accounting Standards Board [FASB] joins Consultative Group and joined Board as observer.
1989	Federation des Experts Comptables Europeans [FEE] President argues that Europe's best interests will be served by international harmonization and greater involvement in IASC.
1989	Framework for the Preparation and Presentation of Financial Statements approved.
1989	IFAC Public Sector Guideline required government business enterprises to follow IASs.
1990	European Commission joined Consultative Group and joined the IASC Board as an observer.
1991	First IASC Conference of Standard Setters [organized in conjunction with FEE and FASB] was held.
1991	FASB plan supported International Accounting Standards.
1993	IOSCO agreed on the list of core standards and endorses IAS 7 Cash Flow Statements.
1993	Comparability and Improvements Project completed with approval of 10 revised IASs.

Contd.,

1994	SEC accepted three IAS treatments plus IAS 7.
1994	IASC Board met standard setters to discuss ED48 *Financial Instruments*.
1994	FASB agreed to work with IASC on Earnings per share.
1995	IASC agreed with IOSCO to complete core standards by 1999 – on successful completion, IOSCO will consider endorsing IASs for cross-border offerings.
1995	European Commission supported IASC/IOSCO agreement and use of IASs by EU multinationals.
1996	With minor exceptions, the EU Contact Committee found that IASs compatible with EU directives.
1996	United States Congress called for 'a high-quality comprehensive set of generally accepted International Accounting Standards'.
1996	Australian Stock Exchange supported program to harmonize Australian standards with IASs.
1996	Ministers at World Trade Organization [WTO] encourage successful completion of International Accounting Standards.
1997	Standing Interpretations Committee formed.
1997	IASC and FASB issue similar standards on Earnings per Share.
1997	People's Republic of China became a member of IASC and IFAC, and joined IASC Board as an observer.
1997	FEE called on Europe to use IASC's Framework.
1998	IOSCO published the report on "International Disclosure Standards for Cross-Border offerings and Initial listings by Foreign Issuers."
1998	New laws in Belgium, France, Germany and Italy allowed large companies to use IASs domestically
1998	First official translation of IASs [German] was published.
1998	IFAC Public Sector Committee [PSC] published the draft Guideline for Governmental Financial Reporting as a platform for a set of International Public Sector Accounting Standards [IPSASs], to be based on IASs.
1998	Core standards completed with approval of IAS 39 in December.

Contd.,

1999	G7 Finance Ministers and IMF urged support for IAS to 'strengthen the international financial architecture'.
1999	New IFAC International Forum on Accountancy Development [IFAD] commits to 'support the use of IASs as the minimum benchmark' worldwide.
1999	European Community [EC] single market plan for financial services included use of IAS.
1999	FEE urges allowing European companies to use IASs without EC Directives and phased out United States GAAP [generally-accepted accounting principles].
1999	Eurasian Federation of Accountants and Auditors planned adoption of IAS in CIS countries.
2000	The SEC unanimously approved and issued a concept release seeking feedback on the acceptability of IASs in the United States.
2000	IOSCO recommended that its members allow multinational issuers to use 30 IASC standards in cross-border offerings and listings.
2000	European commission announced plans to require IASC standards for all EU listed companies from no later than 2005.
2000	IFAC Public Sector Committee [PSC] approved first eight International Public Sector Accounting Standards [IPSASs] and issues seven more Eds.
2000	IASC board approved constitutional amendments to replace board with 19 trustees.
2001	The European Commission proposed a regulation that would require a EU Companies listed on a regulated market to prepare consolidated accounts in accordance with IAS 2005.
2001	International Accounting Standards Board [IASB] succeeded the IASC and assumed its responsibilities on April, 1. IASB standards are designated International Financial Reporting Standards [IFRS], and include IAS issued by the IASC.
2001	New IASC Structure effective from 1 January.
2002	European Parliament endorsed the Commission proposal that virtually all EU listed companies must follow IASB standards starting no later than 2005 in their consolidated financial statements. Member states may extend the requirement to non-listed companies and to individual company statements. The European council later adopted enabling regulation.
2002	The IASB and FASB signed the "Norwalk Agreement" committing them to the convergence

	of international and U.S. accounting standards.
2003	European Council approves amended EU fourth and Seventh Directives removing inconsistencies between the old directives and IFRS.
2003	IASB published IFRS 1: First time adoption of International Financial Reporting standards and revisions to 15 IAS.
2004	IFRS 2: Share based payment, IFRS-3: Business combination, IFRS-4: Insurance Contract, IFRS-5: Non-Current Assets held for sale and discontinued operations and IFRS-6: Exploration for and Evaluation of Mineral Resources were issued by IASB.
2005	The Australian equivalents of IFRS have been fully implemented as AASB 101-141.
2005	All publicly traded EU companies are to prepare their consolidated accounts using IFRS from 2005. Prior to 2005 there were around 350 publicly listed companies that used IFRS—in 2005 the figure will be around 7,000.
2006	Turkish Accounting Standards Board translated IFRS into Turkish in 2006. As of 31 December 2006 Turkish companies listed in Istanbul Stock Exchange are required to prepare IFRS reports.

Source: Uddin Md. Salim [2005: *17-23*]

(ii) Proponents of Harmonization:

Many national and international organizations, such as the Accounting Standards Committee of each country, the International Accounting Standards Board (IASB), the European Community (EC), and also governments are currently engaged in the process of national and international harmonization of financial reporting. They issue guidelines, standards and laws aiming, among other things, at the harmonization for financial reporting practice [Van der Tas: 1988, *157*] and contend that a mandatory setting of standards across countries is a reasonable approach for improving comparability among international financial statements [Zarzeski: 1996, *18*].

Carlson [1997:*360*] classifies the proponents of harmonization into two orders: a first order comprising those bodies which directly or indirectly develop a harmonization product in the form of standards or regulations and includes the IASC and the EU. And, a second order comprising of those who are not directly involved in producing harmonizing documents but who have a strong interests in the process because they perceive a benefit either to themselves or to a constituency in which they have an interest. These are IOSCO, MNCs, international accounting firms, the OECD, and the UN. Table 3.2 indicates the powers and method adopted by the proponents along with a comparison of the perceived level of effectiveness under the methods currently adopted by each of the proponents.

Table 3.2
Proponents of Harmonization

Proponents	Organization Status	Method Summary	Enforcement Power	Perceived Level of Effectiveness

IASC/IASB	First order	Voluntary Standards	None-Persuasive	Limited
EU	First order	Compulsory Directives	Judicial support	Medium to Strong
IOSCO	Second order	Participating lobbyist	None-Persuasive	Limited to medium
MNEs	Second order	Lobbyist	None	Limited
Accounting Firms	Second order	Lobbyist	None	Limited
OECD	Second order	Observer	None	Limited
UN	Second order	Observer	None	Limited

Source: Carlson [1997:*361*]

Carlson [1997] notes the members of the second order, being non-productive proponents seek to influence the output of the first. The methods available to the second order participants in the debate relegate their role to that of lobbyist or observer and may be an indication of the political nature of the process. Jeffrey et. al., [1985] has grouped these proponents as: International political bodies [the UN, OECD, EC and the African Accounting Council (AAC)] and private nonpolitical organizations, includes, accounting standard setting organizations whose representation is from national professional accounting bodies, to set international financial reporting standards (i.e. IASB) and the international professional accounting organizations that deal with professional issues such as auditing standards, education requirements, and ethical standards for the profession (i.e. IFAC). It is important to note that Carlson's classification covers the international institutions and many other institutions have been left out. On the whole, several institutions participate in the harmonization process disregarding Carlson's coverage. Hence a brief presentation is made below for the following institutions: (a) International Accounting Standards Board (IASB); (b) International Federation of Accountants (IFAC); (c) Intergovernmental Working Group of Experts on Standards of Accounting and Reporting (ISAR); (d) Organization for Economic Co-operation and Development (OECD); (e) International Organization of Securities' Organization (IOSCO); and (f) International Forum on Accountancy Development (IFAD).

(a) International Accounting Standards Board (IASB):

Proponents of harmonized international standards claim that if all firms follow the same set of accounting standards, firms' external financial reports would provide more uniform disclosures and more useful accounting information to investors [Purvis et. al.,: 1991]. The IASB receives widespread support for its efforts to harmonize international accounting. It is now regarded as the leading force in the international accounting harmonization effort with the support of the IOSCO, the largest international public accounting firms, various businesses and trade organizations, many international development organizations, and most national public accountancy bodies. Recently, the European Union (EU) decided to support the IASB, especially in its plan to permit large multinational corporations to use IAS when preparing their consolidated financial statements [Flower 1997].

(b) International Federation of Accountants (IFAC):

The international professional activities of the accountancy bodies were organized under the International Federation of Accountants (IFAC) in 1977. It is a global organization for the accountancy profession. It works with its 163 member organizations in 120 countries to protect the public interest by encouraging high quality practices by the world's accountants. The IFAC members represent 2.5 million accountants employed in public practice, industry, and commerce, government, and academe. Its main focus is on the globalization of the accounting profession and is involved in such topics as international auditing practices, accounting education, professional ethics, management accounting and the public sector. The International Auditing Practices Committee is formed by IFAC. The aim of this Committee is to improve the degree of uniformity of auditing and related services throughout the world by issuing exposure drafts and auditing guidelines. In 1981, IASC and IFAC agreed that IASC would have full and complete autonomy in setting international accounting standards and in publishing discussion documents on international accounting issues. At the same time, all members of IFAC became members of IASC. This membership link was discontinued in May 2000 when IASC's constitution was changed as part of the reorganization of IASC. The IFAC issues International Public Sector Accounting Standards (IPSAS) applicable to governments across the world. The IFAC has so far issued 20 IPSAS on accrual basis of accounting and one on cash basis of accounting.

(c) Intergovernmental Working Group of Experts on Standards of Accounting and Reporting (ISAR):

The United Nations has established an Intergovernmental Working Group of Experts on Standards of Accounting and Reporting (ISAR). This is the only international body in which the developing countries and the formerly centrally planned economies meet with representatives from the developed countries in order to discuss questions of harmonization and financial reporting. The ISAR has developed a number of conclusions on accounting and financial reporting. It also publishes a yearly *Review on International Accounting and Reporting Issues,* as a result of its annual sessions. The ISAR is not a standard-setting body.

(d) Organization for Economic Co-operation and Development (OECD):

The Organization for Economic Co-operation and Development [OECD] and the United Nations (UN) are two quasi government organizations that have also shown some interest in international financial reporting [Wallace: 1990] The OECD is an international group of industrialized, market-economy countries. It was established in 1960 to promote world trade and global economic growth. It is involved in international accounting, especially when it comes to the financial reporting requirements of Multi-National Enterprises (MNEs) in developed countries instead of in developing countries. The council of the OECD has established a Committee on International Investment and MNEs. This Committee established a working group on accounting with the objective of publishing guidelines on disclosure of information by MNEs. The working group undertakes research studies to assist international harmonization of accounting standards and practices [Lawrence: 1996]. In 1985, the OECD also held a forum on the harmonization of international accounting standards. Representatives from the EC, IASC, UN, African Accounting Council, and various user and preparer groups attended and extended their continued support for harmonization [Evans et. al.,: 1994,*102*].

(e) International Organization of Securities' Organization (IOSCO):

An alternative route to extending the influence of International Accounting Standards arises from the prospect that the International Organization of Securities' organizations will give wholehearted backing. In this regard, Wyatt and Yospe [1993: *84*.] observe: "IOSCO's acceptance of the IAS's, if ultimately permitted by the individual securities commissions, would enable international companies that conform to [or reconcile to] the IASC's rules to engage in multinational securities offerings without complying fully with domestic accounting rules and regulations. Multinational companies would realize significant cost savings if they do not have to restate their financial statements to conform to each country's rules when registering a securities offering". The IOSCO's membership is comprised of representatives of securities regulators in numerous countries. Whilst IOSCO itself may have little power, a number of member regulators have been granted their power through legislative enactments. As such, some of the regulators have substantial enforcement powers over corporations who list on their market. However, IOSCO does not produce harmonizing standards, which require compliance. Instead, IOSCO seeks to influence the activities of the IASC, the EU, and governments. By accepting an invitation to attend IASC meetings, IOSCO can be considered to be a well-placed lobbyist. Ultimately, however, the ability of a lobbyist to influence the process is dependent upon factors outside of its control. The MNCs and the large international accounting firms are also restricted to the position of lobbyists in the process. They may not directly address the IASC but may seek to influence the process via national professional bodies [Carlson: 1997, *360*]. A central aim of IOSCO is the growth of international financial markets by reducing the diversity of securities regulations [Chandler: 1992].

(f) International Forum on Accountancy Development (IFAD):

In early 1999, the seven largest accounting firms formed a vision to develop and implement a response to market place needs and regulatory concerns, elevating worldwide reporting and auditing practices to international benchmark levels. As a result the International Forum on Accountancy Development (IFAD) was created as a working group between the Basel Committee, the International Federation of Accountants, IOSCO, the large Accounting Firms, OECD, UNCTAD, and the World Bank and regional development banks, which flowed from the East Asian crisis.

The objectives of IFAD are: (1) To promote understanding by national governments of the value of transparent financial reporting, in accordance with sound corporate governance; (2) To assist in defining expectations as to how the accountancy profession (in both the public and private sectors) should carry out its responsibilities to support the public interest; (3) To encourage governments to focus more directly on the needs of developing countries and economies in transition (hereinafter referred to jointly as 'developing countries'); (4) To help harness funds and expertise to build accounting and auditing capacity in developing countries; (5) To contribute to a common strategy and framework of reference for accountancy development; and (6) To promote co-operation between governments, the accountancy and other professions, the international financial institutions, regulators, standard setters, capital providers and issuers.

In January 2001, as part of their commitment to implementing the IFAD Vision, the large accounting firms published a study, GAAP 2000: A Survey of National Accounting Rules in 53 Countries. The study demonstrates the continuing problems of cross border interpretation of company financial data. It provides an overview of some of the differences between national accounting rules and 60 key accounting measures (including a few areas of disclosure) under International Accounting Standards. The study highlights instances where a country's rules at December 2000 would not allow or would not require the IAS accounting treatment.

The 53 countries taking part in the survey were chosen for their economic importance and represent some 95 percent of the world's gross national product. The objective of GAAP 2000 is to alert as many players as possible in each country to the need for progress towards the convergence of accounting standards on a worldwide basis (governmental agencies, standard-setters, regulators, preparers, analysts and users of financial information). This takes on even greater importance with the European Commission's February 13th response regarding the proposed regulation to impose IAS on all European listed companies by 2005.

In December 2001, the IFAD updated and expanded its GAAP 2000 survey of national accounting rules. The GAAP 2001 study highlights instances where a country's rules either do not allow or do not require the IAS accounting treatment. The 2001 report includes 62 countries, compared to 53 in the 2000 report. Also, the revised report covers approximately 80 accounting and disclosure requirements, compared to 60 in the 2000 report.

A study titled GAAP Convergence 2002 released in February 2003 by IFAD shows a marked leap forward in worldwide movement towards convergence with IFRS from previous years. In 58 percent of the 59 countries surveyed, national accounting standards will be replaced with IFRS for all listed companies, except where national issues remained not covered by the new standards. Another 22 percent said they were adopting IFRS on a standard-by-standard basis, and a further 20 percent said they were eliminating differences between national standards and IFRS as and when practical

Fifty-seven percent of those planning to adopt IFRS are driven by a government or regulatory requirement and 13 percent by standard setters. Fifty-one percent of the 59 countries indicated that the complex nature of some of the international standards - in particular, those relating to financial instruments, and others incorporating fair value accounting - is a barrier to convergence in their country. In addition, 49 percent of the countries surveyed also cited the tax-driven nature of their national accounting regime as a hurdle. Consequently, many countries are at present limiting implementation of IFRS to listed companies, rather than extending it to all companies.

It is also observed that survey respondents also stress the importance of getting better and timely access to national language translations of the new standards and interpretations. While translations of IAS are available in 70 percent of the countries covered, in many cases the translations are not sanctioned by the IASB, and in nearly one-third of the countries where IFRS are available in the national language, the translations are not considered to be available quickly enough. Another area of challenge identified is the availability of IFRS training, for which demand is expected to build up significantly as the world moves towards new standards.
[http://www.iasplus.com/resource/ifad.htm dated 2-12-2006].

(iii) Regional Organizations:

Regional Accountancy Organizations (RAOs) are independent bodies, which in many cases, share IFAC's membership and have objectives similar to those of IFAC. RAOs play a valuable role by supporting the development of the international accountancy profession in their region, facilitating convergence to international standards, and providing leadership in addressing regional accounting issues. There are a number of regional associations dealing with the auditing standards/profession and still others dealing with general accounting standards. These groups, by definition and practice, are oriented towards harmonization on a regional rather than international basis and these mainly include: (a) ASEAN Federation of Accountants (AFA); (b) European Union (EU): (c) The Federation des Experts Comptables Europeens (FEE); (d) South Asian Federation of Accountants (SAFA): (e) The Confederation of Asian and Pacific Accountants (CAPA): (f) Eastern Central and Southern African Federation of Accountants (ECSAFA).

(a) ASEAN Federation of Accountants (AFA):

The ASEAN Federation of Accountants (AFA) was organized in March 1977. It was established to serve as the umbrella organization for the national associations of accounting professionals of the member countries of the Association of South East Asian Nations (ASEAN). The AFA was created with the following objectives. (1) To be the organization of ASEAN accountants for their further professional advancement and that of the accountancy profession in the region – with the end in view of establishing an ASEAN philosophy for the accounting profession; (2) To establish a medium for closer relations, regional cooperation and mutual assistance among the ASEAN accountants; (3) To enhance the continuous development of the accounting profession in the region through the joint endeavors of ASEAN accountants; (4) To provide ASEAN accountants with a forum for the exchange of technical and other significant information on the accounting profession and its related practices. The federation originally intended to provide technical services to its member-bodies in the formulation and adoption of accounting and auditing standards and practices. However, with the on-going globalization of services; the AFA Council decided against "reinventing the wheel" and instead encouraged its members to go for harmonization of standards and practices based on issuances of the IASCs and the IFACs.

(b) European Union (EU):

The European Union (EU) was created in the 1950's by a series of treaties and the accounting harmonization in Europe started when the founders of the EU wanted to achieve a closer union among the people of Europe in the single market context [Mueller: 1997] The fundamental objective of the EU is the creation of a common economic market which allows free mobility of capital, labor, and enterprises across the national borders of its member countries. There are several main institutions that run the EU such as the Commission, the EU Council, the European Parliament, and the Court of Justice. The Commission, which is the civil service of the EU and the executive branch of EU, initiates EU policy and enforce EU treaties. The two main instruments employed by the EU to achieve the objectives of harmonization are Directives and Regulations. A directive is a legal instrument addressed from the Commission to the member states. Member states are required to incorporate the directives into their laws. The harmonization process within EU starts from the harmonization of the legal systems of the twelve member states. These include measures affecting company law and other business-related matters, including accounting and financial reporting.

(c) The Federation des Experts Comptables Europeens (FEE):

The FEE is the representative organization for the accountancy profession in Europe. It consists of 44 professional institutes of accountants from 32 countries, including 25 Member States of the European Union having representatives of 5,00,000 accountants in Europe. The main objectives of FEE are: (1) To promote and advance the interests of the European accountancy profession in the broadest sense recognizing the public interest in the work of the profession; (2) To work towards the enhancement, harmonization and liberalization of the practice and regulation of accountancy, statutory audit and financial reporting in Europe in both the public and private sector, taking account of developments at a worldwide level and, where necessary, promoting and defending specific European interests; (3) To promote co-operation among the professional accountancy bodies in Europe in relation to issues of common interest in both the public and private sector; (4) To identify developments that may have an impact on the practice of accountancy, statutory audit and financial reporting at an early stage, to advise member bodies of such developments and, in conjunction with member bodies, to seek to influence the outcome; (5) To be the sole representative and consultative organization of the European accountancy profession in relation to the EU institutions; (6) To represent the European accountancy profession at the international level [http://www.fee.be].

(d) South Asian Federation of Accountants (SAFA):

As a major step towards the development of coordinated accountancy profession in the South Asian Region, a sub-regional body namely the South Asian Federation of Accountants (SAFA) was formed in August 1984 at a meeting of the heads of professional accountancy bodies in Bangladesh, India, Pakistan and Sri Lanka, held at New Delhi with the objective of developing a coordinated accountancy profession in the region. Its membership is open to accountancy bodies in the South Asian region. At present, the Institutes of Chartered Accountants and/or the Institutes of Cost and Management Accountants in Bangladesh, India, Pakistan and Sri Lanka are the members of SAFA. It is a SAARC recognized body since 1997 and its Mission is: 'SAFA as a forum of professional accountancy bodies is committed to positioning, maintaining and developing the profession in its member countries, and ensuring its continued eminence in the world of accounting.' The Federation has following objectives: (1) To coordinate and guide efforts to evolve technical, ethical and educational guidelines within the region; (2) To work towards international recognition of qualifications of accountancy bodies of the region; (3) To provide opportunities for consultations such as the holding of conferences of accountants within the region to enable members of the accountancy profession to discuss and interchange ideas and to inform themselves of developments in accounting and related matters; (4) To encourage and assist the development of national accountancy organization within the region; and (5) To arrange exchange programs for students and teachers so as to expand training opportunities.

Today, SAFA runs its own website and publishes its own newsletter. SAARC conferred it as the status of 'Recognized Body' and it also enjoys the status of a Regional grouping of the International Federation of Accountants (IFAC), a conglomerate of 163 member bodies in 119 countries [http://www.esafa.-org/ALLhtm].

(e) The Confederation of Asian and Pacific Accountants (CAPA):

The CAPA represents national accountancy organization in the Asia-Pacific region having membership of 31 accountancy organizations in 22 jurisdictions. It is the largest regional accountancy organization and its geographical area spans half the globe. It was formally established in 1976 even though the idea was conceived during 1957. The mission of CAPA is to provide leadership in the development, enhancement and coordination of the accounting profession in the Asia-Pacific region and to enable the profession to provide services of consistently high quality in the public interest. The CAPA also aims to enhance the accountancy standards and development of the profession by promoting harmonization through the adoption of IFAC and IASC standards [http://www.capa.com.my].

(f) Eastern Central and Southern African Federation of Accountants (ECSAFA):

The ECSAFA is a regional body whose objects, inter-alia, are to co-ordinate development of the accountancy profession and the promotion of internationally recognized standards of professional competence and conduct within the region. The mission of the organization is to build and promote the accountancy profession in the Eastern, Central and Southern regions of Africa in order that it is, and is perceived by accountants, businesses, financiers and governments, to be an important factor in the economic development of the region [http://www.ecsafa.org].

(iv) Leading National Institutions:

All countries have their own national standards setting institutions. In some countries, it may be government owned institution and in other countries a professional institution backed by government to look after the task. Almost all countries in the world have their own national standard setting bodies. In view of (a) FASB; (b) SEC; and (c) Public Company Accounting Oversight Board (PCAOB) are highlighted below in view of their dominant role played by these institutions of the United States.

(a) Financial Accounting Standards Board (FASB):

The FASB is an independent, private, not-for-profit organization formed in 1973 and is the main and most influential organization for establishing standards of financial accounting in the United States. Their standards are also referred to as US GAAP. Since 1973, the FASB has had the responsibility of establishing standards governing accounting and financial reporting in the United States with the vision of "to serve the public through transparent information resulting from high quality financial reporting standards developed in an independent, private sector, open due process" and with the mission "to establish and improve standards of financial accounting and reporting for the guidance and education of the public, including issuers, auditors and users of financial information." However, the FASB has no authority to enforce its standards.

In a joint meeting between FASB and IASB in September 2002 (Norwalk Agreement), both have acknowledged their commitment to the development of high quality, compatible accounting standard that could be use for both domestic and cross-border financial reporting. Both the FASB and IASB pledge to use their best efforts to: (a) to make their existing financial reporting standards fully compatible as soon as is practicable and (b) to co-ordinate their future work programs to ensure that once achieved, compatibility is maintained. At their meetings in April and October 2005, the FASB and the IASB reaffirmed their commitment to the convergence of US GAAP and IFRSs. A common set of high quality global standards remains the long-term strategic priority of both the FASB and the IASB.

(b) Securities and Exchange Commission (SEC):

The most influential organizations have been the SEC and the AICPA. These two bodies are the oldest accounting regulatory and standards setting bodies. The SEC is an independent government agency with jurisdiction over companies listed on the US stock exchange. Under the Securities and Exchange Act of 1934, the SEC has statutory authority to establish financial accounting and reporting standards for publicly held companies. The primary mission of the SEC is to protect investors and make sure that the securities markets are reliable. The SEC oversees stock exchanges, broker-dealers, investment advisors, mutual funds and public utility holding companies. Their primary concern is to promote disclosure of important information, enforce the securities laws, and protect investors who interact with these various organizations and individuals. The SEC has an enforcement authority that makes it possible for them to take action against individuals and companies that break the securities laws. The AICPA, as the institution representing the organized accounting profession in the United States has exerted pressure on the international accounting harmonization process, but it has generally acted in a way that exerts normative pressure on the international accounting harmonization process.

(c) Public Company Accounting Oversight Board (PCAOB):

The Sarbanes-Oxley Act of 2002 was passed as a result of major corporate financial accounting scandals. The Act established the PCAOB in 2002 to oversee the audit of public companies that are subject to the securities laws in the preparation of informative, fair and independent audit reports. The Board's authority includes: Registering public accounting firms that prepare audit reports for issuers; conducting inspections of registered public accounting firms; conducting investigations and disciplinary proceedings and impose appropriate sanctions; enforcing compliance by registered public accounting firms relating to the preparation and issuance of audit reports and the obligations and liabilities of accountants; and establishing auditing, quality control, ethics, independence, and other standards relating to the preparation of audit reports for issuers.

(v) Supporting Role Players:

Although the professional accounting bodies were the first to raise the issue of converging worldwide accounting practices and have been the major source of developments, there is now number of parties with an interest or involvement in the process [Chandler: 1992]. Some take essentially a lobbyist role, such as the international Chamber of Commerce, the National Foreign Trade Council, and the FASB. Others provide forums of interaction for accounting practitioners, researchers, and educators, such as the International Congress of Accountants, the International Accounting Education Conference, the American Accounting Association, the Canadian Association of Academic Accountants, the European Accounting Association, the Japanese Accounting Association, the Association of University Instructors in Accounting (United Kingdom, Australia, New Zealand), and on a broader, interdisciplinary basis, the Academy of International Business and the

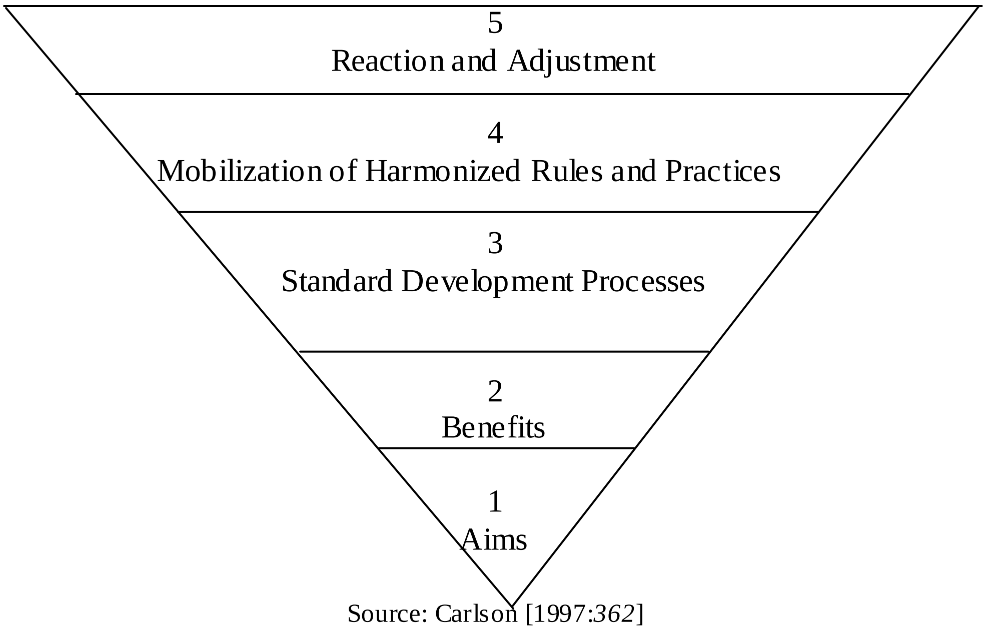
European International Business Association. Several major universities have also played supporting roles in harmonization by establishing centers and institutes of international accounting education and research. Various associations and federations of financial analysts and financial executives also conduct research, seminars and operate task forces dealing with international accounting issues. Other groups interested in the development of harmonization reporting practices are the business participants in the international marketplace, predominantly the multinational corporations (MNCs), and the large international accounting firms that service these MNCs. These international accounting firms, often referred to as the "Big Six", are able to exert considerable pressure upon national professional accounting organizations. For both MNCs and the Big Six, there are benefits in having uniformity accepted accounting practices across borders.

The institutions or organizations mentioned above are not exhaustive. Still many organizations have been contributing their efforts toward common goal of harmonization of accounting practices. Presently, almost all countries of the world are in favor of global uniform accounting standards. But the real battle in the world of accounting is between US GAAP and International Accounting Standards. Many big companies would like to tap US financial markets or benchmark their financial statements with US GAAP. However, one essential factor that goes against US GAAP is that they are the standards of one particular country, and have been developed to meet the needs of the business and investor communities of that country. The US standard setters have no mandate to broaden their consideration to the international scene. While progress has been made in reducing the differences between US GAAP and IFRSs, both the FASB and the IASB are aware that companies are coping with a number of changes related to financial reporting during the past three years. Companies in the United States [and some European companies] are now complying with the reforms introduced by the Sarbanes-Oxley Act. In Europe and elsewhere, the IFRS requirement has meant that companies have needed to overhaul their accounting practices. The 'roadmap' on the removal of the US GAAP reconciliation that both the European Commission and the SEC staff support provides the IASB with clear direction for convergence. This is supported by changed perspective of the SEC staff regarding the reconciliation requirement. The SEC staff has stated on several occasions, following the publication of the roadmap, which they will be willing to recommend mutual recognition of IFRSs and US GAAP, provided a robust convergence process is in place and will continue following the removal of reconciliation requirement. With all these developments and efforts put in by the various organizations, one can expect one set of accounting standards in the near future.

(vi) Framework for Harmonization

Carlson [1997:*361*] assumed that the process of harmonization is a succession of progressive steps. Due to environmental changes, harmonization process needs reassessment and adjustment. Keeping this in mind, Carlson divided the harmonization of accounting practices into 5 levels. Level 1 stands for aims of harmonization. It includes (i) to facilitate transparent and meaningful reporting of

FIGURE 3.1
STEPS TO HARMONIZATION OF ACCOUNTING STANDARDS



Source: Carlson [1997:*362*]

financial information to reduce accounting alternatives to reasonable and practical level; (ii) To enhance comparability of financial statements in time and space; and (iii) To encourage consistency in accounting practices. Level 2 is concerned with benefits of harmonization. Various possible benefits identified were: facilitating international transactions and minimizing exchange costs; improving financial market information [Weber: 1992, Turner: 1983]; removing unfamiliar or misleading practices [Dan and Sandra: 1992]; consolidation of foreign accounts of MNCs [Turner: 1983]; improved social control over global corporations [Kenneth: 1994]; reducing administrative and system costs; smoothing business communication processes and lessening ambiguity in the interpretations of financial data; and facilitating better information for centralized agencies [Joshi: 1988, *46*].

Level 3 is concerned with the production and substantive content of international standards. The process of preparing accounting standards starts with the creation of a steering committee whose members are appointed by the board. The Board appoints the committee members. This committee studies the problems that could arise in connection with a particular issue and prepares a summary of the points that need to be considered. The Board will comment on this report. After this, the steering committee prepares a draft statement of principles. The aim of this document is to set out the principles that will be used as the basis of the future draft standard and to describe the possible solutions and the reasons for their adoption or rejection. The Board and any other interested organizations will comment on this draft. The steering committee then produces a final version and then submits it to the Board for approval as a Statement of Principles [Walton et. al.,: 1998]. The steering committee prepares an exposure draft after obtaining the approval from the Board. To approve this, a two-thirds majority of the Board members is required. The process of obtaining the approval will take usually six months after the period of consultation starts. At the end of this period, the steering committee prepares a final draft standard that is submitted to the Board. The final standard is adopted if it is approved by a three-quarters majority of the members of the Board. The role of IASB is very important for the harmonization process.

Level 4 of the framework is concerned with the mobilization of the harmonized rules and practices. Carlson defined the mobilization as ‘the process or mechanism by which accounting practices actually converge so that diversity of practice and reporting is reduced or minimized’. The IASC is the appropriate international organization to set and interpret international accounting standards for use throughout the world. Although the accounting standards developed by this private organization were not legally binding, several large and multinational companies around the globe were using them at that time. Indeed, they have influenced the standard setting process in several countries. Unlike US GAAP, which reflects a particular national environment, IASs on specifically designed from an international outlook [Roberts: 2002]. Additionally, IASs appear to be more flexible and are principles-based, as opposed to the US GAAP, which are often rules-based. An essential element of how the IASC is moving to meet its ultimate goal of accounting harmonization between countries is its agreement with the International Organization of Securities Commissions (IOSCO). In 1995, IOSCO agreed to endorse IAS for use in cross-border listings in all major countries when the IASC successfully complete a core set of high quality accounting standards (Commission of the European Communities: 1995). As a result, there has been a reduction in the amount of options for accounting treatments in IAS.

Level 5 of the framework is concerned with the reaction of accounting environments to the adoption or adaptation of international standards such as the IASs. At this level, the main focal point is upon maintaining harmonized financial reporting. The influence of the IASB can be gauged both at an institutional level and at an individual level. At the institutional level (i.e. that of national accounting regulatory bodies), the IASB’s influence is very different depending upon the country. At the individual level, the IASB, through their standards, influences a company’s accounting standards differently depending on the company [Walton et. al., 1988].

TECHNIQUES OF HARMONIZATION MEASUREMENT

Harmonization, in the accounting context, may be defined as the process aimed at enhancing the comparability of financial statements produced in different countries' accounting regulations. The harmonization measurement studies purport to explore the similarity or lack thereof of accounting practices and requirements. Measurement issues concern the way in which transactions and events are reflected in the financial report and comprise the choice between alternative methods of recognition, valuation, income determination, consolidation, estimation and presentation. Examples are the choice between alternative methods of accounting for pension liabilities, lease-contracts, long-term construction contracts, alternative depreciation methods and alternative presentations of an item in the balance sheet. A plethora of measurement methods are developed to measure the harmony level to reach the goal. Van der Tas [1988:*157*], being a pioneer of developing harmonization measurement methods, observe organizations engaged in the process of harmonization of financial reporting might use the developed measurement methods to set goals in respect of the degree of harmony of a particular item in financial reporting. It can be used to identify problem areas requiring harmonization and with the aid of this method whether we can determine when and to what extent harmonization has taken place. He also states that the method can be used to measure what impact the organizations involved in the process have on the harmonization of financial reporting practice by attributing changes in the degree of harmony regarding the introduction or amendment of mandatory provisions; the introduction or amendment of non mandatory provisions and spontaneous harmonization due to consequence of development or evolution of practice.

Van der Tas [1988] suggests that the harmonization of both accounting practices and accounting regulations can focus either on measurement issues such as methods of recognition, valuation, and estimation or on disclosure issues such as the level of transparency provided by entities via their financial reporting. These issues concern the extent and detail of data provided in the financial report. For example, whether or not to disclose segmental net turnover figures by geographical market and whether or not to disclose directors' remunerations. Van der Tas [1992:*212*] argue that the distinction between measurement harmony and disclosure harmony is very important when seeking to measure harmonization. Measurement harmonization is concerned with the choice between alternative measurement methods. Disclosure harmonization is concerned with the amount and detail of information supplied in the financial report. He also claimed that it is not possible to develop one method for measuring both *de jure* harmony and *de facto* harmony. Differing methods must be developed for measurement and disclosure issues respectively. Tay and Parker [1990:*84*] argue that measurement studies should focus on actual reporting practices rather than regulation, that is, on *de facto rather* than *de jure* harmonization. These are, however, two different phenomena, each pursuing different goals. Nair and Frank [1980] have shown the importance of distinguishing between measurement and disclosure when classifying national financial reporting systems. Van der Tas [1992a] provides scheme for classifying levels of disclosure and measurement harmony.

Research studies attempting to determine the extent of harmonization frequently combine accounting measurement and disclosure issues without distinguishing between them [e.g. Nair and Frank: 1981; Choi and Bavishi: 1982; Evans and Taylor: 1982; McKinnon and Janell: 1984; and Purvis, et.al.,: 1991]. While the results are often shown according to accounting practice or standard, the extent of harmonization is determined based on measurement and disclosure practices combined. The importance of distinguishing between the two is evident in a study by Hussein [1992]. Comparing only two countries, the Netherlands and the US, Hussein found that measurement practices were harmonized but disclosure practices were not. The similarities of the markets and stock exchanges between the two countries were cited as the likely reason for measurement harmonization, and differences in culture were given as the likely reason for lack of disclosure harmonization. Thus, by clearly distinguishing measurement and disclosure issues, a greater understanding of the factors that have been the most conducive or obstructive to harmonization of accounting practices can be obtained.

In the background of these conceptual clarifications, we may identify two major approaches to measuring harmony (a state) and harmonization (a process) amongst financial reporting practices in the extant literature and these (i) Index-based techniques and (ii) Statistical modeling, which are highlighted in the studies of McLeay et. al., [2003]; Canibano and Mora [2000]. These techniques are briefly explained below as a prelude to the present empirical study.

(I) Index Based Techniques:

The literature on the measurement of international accounting harmonization has focused almost exclusively on the use of index measures. These are H, C, I and T Index. These are explained below:

(a) Herfindahl index [H-Index]:

The Herfindahl index is named after Orris C. Herfindahl, the economist first credited with using it to analyze industry concentration. However, upon further review, another economist, Albert O. Hirschman, was found to have used this index earlier. As such, it is often termed the Herfindahl-Hirschman Index.[http/www.amosweb.com/cgi-in/awb_nav.pl?s=wpd&c=dsp&k=Herfindl] The H-index is one of the very first attempts to produce a statistical index to measure harmonization by Theil [1973:*42-43*] to investigate whether the level of harmonization had changed. Van der Tas [1988] refined this index to modern accounting harmonization. He develops the H, C and I indices. To measure the national harmony and to study industrial concentration, he used H or Herfindahl index. It is calculated by weighting the relative frequencies of the alternative opinions against each other. This means that high relative frequencies have a higher weighting than low relative frequencies. As a result, the Herfindahl index [H-index] rises when the methods of the parties involved concentrate more on one or only a limited number of alternative methods. In this context, the frequency of a method means the number of parties choosing this particular method. The relative frequency is the number of parties choosing this particular method divided by total number of parties [Van der Tas: 1988, *159*].

The H-index measures the sum of accounting methods “p” and their squared frequencies of use “i” within a single country.

$$H = \sum_{i=1}^{k} p_i^2$$

Where,

H = the Herfindahl index

k = number of alternative accounting methods

p_i = the relative frequency of accounting method i.

The H-index fluctuates between 0 (no harmony with an infinite number of alternative methods all with the same frequency) and 1 (all companies using the same method). The movements of this index indicate the degree of [dis-] harmonization. Higher the H-index, higher is the level of harmonization and vice versa. Kirkpatrick [1985] suggests that a reduction in the number of alternative accounting practices contributes to harmonization. The method is commonly used in various kinds of studies on accounting harmonization [Van der Tas: 1988; Tay and Parker: 1990; Murphy: 2000]. Even though the method is quite simple, it gives more information than if only frequencies and numbers are measured [Van der Tas: 1988]. The weakness of the method is that it does not give any explanation as to what the numbers between 0 and 1 indicate [Tay and Parker: 1990].

The H-index is one of many measures developed by industrial economists to quantify industrial concentration. Its use in the context of financial reporting harmonization implies an analogy between accounting harmonization and industrial concentration. Industrial concentration deals with measuring actual market structures in relation to the two extremes of monopoly and perfect competition. The former is a situation in which one firm generates all the sales in a particular market. The accounting counterpart of this would be a situation in which one strictly defined accounting method is used by all companies, that is, there is *uniformity* in accounting practice. Perfect competition could be regarded as a situation in which every company was free to use a different accounting method. This may be difficult to envisage for accounting for a particular item within a set of financial statements, but it is something which is possible for the financial statements as a whole - very few companies use identical combinations of accounting methods in producing their financial statements. The 'real world' of accounting lies somewhere between these two extremes, that is, there is some degree of uniformity in some areas. Harmony is thus the counterpart of imperfect competition [Tay & Parker: 1990, *82*]. This analogy has intuitive appeal, but may be difficult to operationalize. Tay & Parker [1990:*82*] observes in measuring industrial concentration, the variables measured are the number of firms, and their market share, share of labor or capital employed, or share of value-added. In this respect industrial economists argue that it is difficult to ascertain how many firms are there in a particular industry. In accounting harmonization, the relevant variables would be the number of accounting methods, and the number of companies using each method. He further argues that the following questions will have to be answered before its application: How many accounting methods are there for any particular topic? Should we consider only the ones, which are allowed by law or professional standards, or should we include all methods, which are used? Do we know what all the methods actually in use are? How do we identify the companies, which are affected by accounting for this particular topic?

The H-index is not free from any limitations. Van der Tas [1992a: *73*] identifies the limitations of H-index method, which are: (i) the difficulties in calculating the significance of changes in the degree of harmony, measured by the H-index; (ii) its inability to cope with multiple reporting or additional data in the notes about the outcomes of alternative measurement methods. Each company [or financial report] must be assigned to one and only one alternative measurement method. He considers these limitations in his future work on development of 'C- index'.

With all these limitations, H-index is the most widely used technique to measure harmonization and hence this index is adopted to measure the harmonization level in the present empirical study.

(b) International Harmony Index (I- Index):

For international comparisons, Van der Tas [1988:*165*] introduced the I- index as an analogue of the H-index. The degree of international material harmony indicates the degree to which the companies in one country apply the same or only a limited number of alternative accounting methods, compared to the companies in another country. If the companies in two countries apply the same method to a large extent, this means that the relative frequencies with which this method is applied in the two countries reinforce each other. So we can measure the degree of international material harmony by multiplying the relative application frequency of a method in country A by the relative application frequency of the same method in country B and subsequently by adding the results of all alternative methods. The sum of this is called the I-index [Van der Tas: 1988, *165*]. The I-Index, where two countries are compared, is calculated as given below:

$$I^x = \sum_{i=1}^{n} [f_{i1} \text{ x } f_{i2}]$$

Where,

I^x = the I-Index value

f_{i1} = the relative application frequency of method 'i' in country 1

f_{i2} = the relative application frequency of method 'i' in country 2

n = the number of alternative accounting methods

The negative aspect of this formula is that the I-Index moves towards zero as more countries are compared. This shows that the index is dependent on the absolute and not on the relative number of companies studied. To overcome this problem a correction factor was introduced. The I-Index with correction factor is: $I^x = I^{1/[m-1]}$ where 'm' = the number of examined countries. Therefore the formula for I-Index after correction factor is given below:

$$I^x = \sum_{i=1}^{n} [f_{i1}, f_{i2} \ldots . f_{im}]^{1/[m-1]}$$

Where

fi_1 = relative application frequency of method 'i' in country 'm'.

m = number of countries.

n = the number of alternative accounting methods

Archer and McLeay [1995] have criticized Van der Tas's formulation of the I-Index. They argue that the correction factor $^{1/[m-1]}$ is not consistent with the I-index being an analogue of the H-index because $^{1/[m-1]}$ does not equal '2' – the exponent in the H-index – and is applied to the sum of cross products and not to individual cross products for each accounting method. Hence Archer and McLeay [1995:*4*] suggest that the I-index be calculated as given below:

$$I = \sum_{i=1}^{k} [f_{i1}, f_{i2} \ldots . f_{im}]^{2/m}$$

where,

m = the number of countries

k = the number of accounting methods as before.

Archer and McLeay's I-index is the sum across accounting methods of the squared geometric mean of the relative frequencies of accounting method 'i' in each of 'm' countries. In the two-country case, the exponent equals 1 and the corrected and uncorrected I-indices are equivalent. Because of these limitations, Hermann and Thomas [1995: *256*] modified the I-index in their studies as in cases where all the companies in a particular country chose one of the two alternative methods, the proportions are recorded as 0.99 for the unanimous method and 0.01 for the non-practiced method (instead of 1 and 0, respectively).

(c) Comparability Index (C-index):

Van der Tas [1988] also launched the Comparability Index (C-index) as an alternative for the H & I-indices for companies using multiple accounting policies for the same issue. The C-index measures the degree of comparability for each item in the financial reports, based upon the number of financial reports, which are comparable in respect of this item. According to Van der Tas [1988:*158*], two financial reports are comparable in respect of one specific event if under the same circumstances this event is accounted for in the same way in both reports or if multiple reporting takes place. Multiple reporting means that a company gives additional information based on an accounting method other than its primary accounting method [van der Tas 1988:*158*]. As a rule, it raises the degree of comparability of financial accounting information [Van der Tas: 1988. *158*; 1992a: *72*; 1992c: *112*]. Krisement [1997] observes that multiple reporting is another approach to increase comparability of financial accounting information A firm that diversifies its operations may report multiple accounting methods as these capture appropriately the different nature of its various activities [McLeay, et. al.,: 1999]. Canibano & Mora [2000, *356*] opine that the C-index is able to take into account multiple reporting and reconciliation data in the notes to financial statements.

The main problem with concentration indices is that no significance tests have been devised to indicate how trivial or significant (statistically) variations in index values are. The C-index is not a concentration index. It is a ratio, calculated as the number of comparable pairs of financial reports divided by the total number of pairs of financial reports. However, Van der Tas [1992] rationalizes that there is no problem in applying the usual statistical significance tests. He claims that we are even able to apply regression analysis. Therefore, the C-index introduced by Van der Tas satisfies three criteria: (i) Its quantification of the degree of harmony is directly related to comparability; (ii) It is able to take account of multiple reporting and reconciliation data in the notes on the accounts; and (iii) It makes it possible to calculate the significance of movements in the degree of harmony by a very powerful significance test, i.e. regression analysis. Algebraically, Van der Tas's C-index takes this form:

$$C = \frac{\sum_{j=1}^{k}[x_j\,[x_{j-1}]]}{x\,[s-1]}$$

Where,

x_j = the number of companies using accounting method 'j',

k = the number of accounting methods, and

n = the total number of companies.

When used to measure international harmony, Van der Tas's C-index does not distinguish between national and international effects. To correct this deficiency, Archer et. al., [1995] decompose Van der Tas's C-index into a 'between-country C-index' and a 'within country C index' (Intra-national and the International indices).

As per Archer et. al., [1995], the formula for the Between-Country C-index is as given below:

$$_{BC}C = \frac{\sum_i \sum_j x_{ij} [x_{+j} - x_{Ij}]}{\sum_I x_{j+} [x_{++} - x_{j+}]}$$

Where,

x_{ij} = the number of companies in country 'i' using accounting method 'j',

x_{+j} = the total number of companies in all countries using method 'j',

x_{++} = the grand total of companies across countries, and

x_{j+} = the number of companies in country 'i'.

The within country C-index is calculated as the number of company pairs using the same accounting method, provided that both companies come from the same country. This is then divided by the sum across countries of the number of pair companies in each separate country, if all companies used the same accounting method [Morris and Parker: 1998, *74*]. The formula for the Within-Country C-Index [Archer et. al.,: 1995] is as given below:

$$_{WC}C = \frac{\sum_i \sum_j x_{ij} [x_{Ij} - 1]}{\sum_I x_{I+} [x_{j+} - 1]}$$

Where.

$X\ i_j$ = number of companies in country 'i' using accounting method 'j',

X_{+j} = total number of companies in all countries using accounting method 'j',

X_{++} = grand total of companies across countries, and

X_{j+} = number of companies in country 'i'.

Archer et. al., [1995] argue that between country C-index is a more robust measure of international harmony than the I-index. The I-index tends to zero if one or more accounting methods have low frequencies in one country. In particular, the contribution of an accounting method to the I-index is zero if that method is not used in one country, even if it is widely used in all other countries. The between country C-index avoids these problems [Mories & Parker: 1998, *75*]. The C-index was for a long time considered to be the most reliable way of measuring the extent of international accounting harmonization. But it is not free from criticisms. Krisement [1997] observes that the number of observations affect the C-index. In addition, she criticizes the decomposed index of Archer and McLeay [1995] because the sum of the intra-national and the international indices do not equal the global C-index. Krisment [1997] proposes a methodology that links the C-index and entropy so that the advantages of index measures complement one another, while any disadvantages are eliminated [Canibano and Mora: 2000]. Similarly Canibano and Mora [2000] proposes bootstrapping test of the C-index as a way of measuring the significance of the change in its value.

(d) T- index (Unified Harmony Index):

Taplin [2004] proposed a new index, called the T-index, which provides a unified approach to the variations of indices proposed previously. This allows choosing an index with the desired properties based on several criteria without sacrificing one desirable property in order to achieve another desirable property. The main criteria used to arrive at a particular index within this unified framework are: (1) the weighting given to companies/countries; (2) international focus (within country, between country, or overall); (3) the treatment of multiple accounting policies; and (4) the treatment of non-disclosure. He has also developed Harmonizer software to compute indices of harmony. Taplin proposes the following equation to measure harmony.

The formula for T is:

$$\boldsymbol{T} = \sum_{i=1}^{N} \sum_{j=1}^{N} \sum_{k=1}^{N} \sum_{l=1}^{N} \alpha_{kl}\, \beta_{ij} p_{ki} p_{lj}$$

Where,

α_{kl} = the coefficient of comparability between accounting methods '*k'* and '*l'*.

β_{ij} = the weighting for the comparison between companies in countries '*I'* and '*j'*.

p_{ki} = the proportion of companies in country '*i'* that use accounting method '*k'*.

p_{lj} = the proportion of companies in companies in country '*j'* that use accounting method '*l'*.

There are a number of problems with the character of the indices, which can be divided into reliability and validity problems. Aisbitt [2001] is the following problems: (i) Reliability problems: These are concerned with the technical constructions of the indices and their application – disclosure [and Non-disclosure] and there interpretation. The analysis is dependent on the disclosures provided in the annual reports, which mean that disclosure is a prerequisite to the measurement. Non-disclosure of an item is problematic, since it is not always clear whether the item is applicable. (ii) Validity problems: The validity problems relate to the ability or inability of the indices to capture increases or decreases in harmony. Hence taking the indices at face value without examining the underlying data is not a good idea, since it fails to give an accurate picture.

Krisment [1997] opine that there are certain requirements that must be fulfilled by a measure of comparability, or an index. She identifies the following requirements: (i) The measure of comparability has to increase or decrease progressively with increasing comparability of accounting information. In other words, the measure should not show any signs of unsteadiness. (ii) The index should depend on the relative and not on the absolute frequencies of application of the accounting alternatives. (iii) Comparability of accounting information is at its maximum, if all companies studied apply the same accounting method. The minimum degree of comparability is reached if each of the two accounting alternatives is applied by exactly half of the companies studied. (iv) The index for the companies operating in a larger geographical area must be decomposable into the figures of the companies operating in segments, such as countries or groups of countries.

(II) Statistical Modeling:

Tay and Parker [1990] propose the possibility of using a statistical modeling approach. They suggest that the level of harmony in the accounting practices adopted by companies in different countries may be assessed for a particular financial statement item by comparing "…the observed distribution of companies between different methods with either a random distribution or some expected distribution" and a suitable representation of a random distribution could be "…a distribution in which equal numbers of companies would be expected to use each of the available alternatives." Given this approach, Tay and Parker propose that "…the evidence of harmony would then be the existence of a significant difference between the observed and expected distributions, as measured by some appropriate significant test, for example chi-square." The chi-square test suggested by Tay and Parker [1990] was also used by Emenyonu and Gray [1992 and 1996] and Hermann and Thomas [1995]. These statistic tests evidenced patterns of use against the null hypothesis of no significant difference across countries in the distributions of companies using accounting alternatives A, B, C, etc. International harmony is indicated when chi-square is not significantly different from zero. Although the chi-square is easily calculated, it has several limitations because it does not consider the sample size and its value is not significant when the number of observations is low or zero. To measure the extent of harmonization in Sweden, Cook [1989] used Cramer's V-test and the coefficient of contingency [C] as a supplement to the chi-square test. Krisement [1997] also applied Cramer's V-test to measure the extent of harmonization of accounting methods for foreign currency in nine European countries. Another statistical test used to measure the extent of harmonization of accounting practices involves the generation of linear regression models such as those developed by Archer et. al., [1996] and McLeay et. al., [1999]. This method allows a distinction to be made between the influence of normalization and the effects of harmonization.

Canibano and Mora [2000] use bootstrapping test to analyze whether the change between the two periods statistically significant. The bootstrapping procedure is a method for estimating the distribution of an estimator or test statistic by re-sampling one's data. This technique was developed by Efron in 1979 [quoted in Greene: 1997] and its usage evidenced in increasing frequency in applied econometrics literature. Archer et. al., [1996] developed statistical models, which allowed them to measure the level of harmony between countries in a period and the variations in the level of harmony between two periods.

Different methods of calculating concentration are described and compared in a comprehensive survey by Curry and George [1983]. They discuss in detail the five most widely used methods, viz., the concentration ratio [CR]; the Herfindahl index [Van der Tas's H-index]; entropy/relative

TABLE 3.3
INDICES OR STATISTICAL METHODS USED IN MEASURING HARMONIZATION LEVEL

Authors	Indices / Statistical Methods Used
Van der Tas (1988)	H, C and I Index
Tay and Parker (1990, 1992)	Chi-square & Concentration Index
Van der Tas (1992a)	C Index and Chi-square
Emenyonu and Gray (1992)	I Index and Chi-square
Archer, Delvaille and McLeay (1996)	C Index (modified) and Linear Regression
Hermann and Thomas (1995)	I Index (modified) and Chi-square
Adhikari and Emenyonu (1997)	I Index and Chi-square
Krisement (1997)	V index (entropy)
Moris and Parker (1999)	C and I Index
McLeay et al. (1999)	Linear regression
Canibano and Mora (2000)	C Index, Chi-square and Bootstrapping test
Aisbitt (2001)	C Index (modified) and Wilcoxon's test
Parker and Morris (2001)	H, C and Chi-square
Taplin, R.H. (2004)	T Index (Unified Harmony Index)

Source: Review of Literature

entropy; the variance of logarithms; and the Hannah-Kay index, (which is a generalized version of the Herfindahl index). Curry and George also provide a useful worked example, showing how different measurement methods give different results for industries with different structures [p. *212*]. Although they conclude that the literature, which considers the mathematical properties of concentration measures, has not resolved the question of which is the best measure to use . . . [and] the complexity of business life is such that in practice it is unlikely that there is one concentration measure which will clearly be superior in all circumstances [p. *215*] this does not detract from the approach suggested by Van der Tas. The use of a concentration index seems to be a useful way to evaluate the level of harmony, and track movements in harmonization over time. Table 3.3 provides an overview of various measuring tools consisting of indices and statistical tools used by the researchers to measure the harmonization level.

CONCLUSION

To conclude, accounting harmonization process is not an end itself but it is a means to an end. It has its own historical antecedents and the process has been still continuing patiently in the present diversified environmental conditions of different nations. Organizations and professional institutions in national, regional and international level have been striving hard to reach the goal. However, it cannot be achieved overnight due to a plethora of hurdles that have to be encountered by the authorities in the harmonization process. Now the buzzword is convergence. But the road to convergence has many hurdles. In spite of these hurdles, assessing the significance of the existing degree of harmony is an important part of measuring harmonization. This needs an attempt to identify ways of quantifying the degree of harmony in financial reporting practice. This will facilitate the organizations engaged in the process of harmonization of financial reporting to set goals in respect of the degree of harmony of a particular item in financial reporting. At present, there is almost complete unanimity in adopting the Herfindahl index in measuring the harmonization level in financial reporting across countries in the world and across sectors in a country.