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International Monetary Fund and Civil Society Organisations: A Dialogue

Jaya Mohanty*

The International Monetary Fund which remained an exclusive club of central bankers and government officials became an object of increasing public scrutiny in the 1990s in the aftermath of the Asian crisis. The recent economic crisis has reiterated its role in the global economic scenario with an almost threefold increase of its resources. Its policies too seem to be tailored to meet the economic requirements of the countries seeking recourse. The developments in the fourth pillar, wherein the views of the civil societies have been sought on governance issues for the first time, is historic. But the very nature of these entities sets the perimeters of their engagement. Notwithstanding this limitation, an ongoing engagement is essential to facilitate the transition of world economies into a new and higher growth path.

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Introduction

Civil Society Organisations (CSOs) in recent times have become important forces to reckon with, such that they are often dubbed as a third force. With the rapid spread of globalisation of both development and finance, civil societies are seeking to engage in active dialogue with multilateral institutions. The power of civil society has been enhanced by the internet revolution. The Bretton Wood Institutions, International Monetary Fund (IMF) and the World Bank (WB) created in July 1944, engage the imagination of CSOs given the focussed attention paid by these institutions to the maintenance of international economic relations powered by growth and development.

With the IMF dealing exclusively with governments and central banks of its member countries, CSOs and Non-Governmental

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Organisations (NGOs) displayed only sporadic interest in the organisation till the 1990s. The aftermath of the Asian

Crisis, however, raised several questions about the efficacy of the IMF's policy advice. Strident critics like Stiglitz (2002) laid blame on the structural adjustment policies that IMF imposed, as being responsible for the economic hardship of the East Asian population. The following period witnessed activism on the part of NGOs in the activities of the IMF.

The recent economic crisis has witnessed a revamping of the role of the IMF with several countries seeking recourse to its funds for mitigating the economic crisis. It is interesting to note that the IMF too, has structured its loans and accompanying conditionality to the requirements of the countries in a departure from its earlier policies. The resources of the IMF have been increased threefold to help facilitate its lending activities to member countries. But the most remarkable event in the recent times has been the events in the Fourth Pillar. The Managing Director, Strauss Kahn in a historic departure from past tradition, has sought for the first time, the views of the civil societies on governance issues.

Against this background, this paper seeks to examine the issues of engagement between civil societies and the IMF. The paper is divided into four sections with the first section highlighting in brief, the role of the IMF, and the nature of engagment of NGOs/civil societies who are associated with the Fund and its activities. The second section sets out the issues like structural adjustment, dangers of the unmitigated globalisation and issues in governance like accountability and transparency. The third section focuses in detail on the current issues which have gained importance in the aftermath of the crisis including the Fourth Pillar report. Section four while discussing the lessons learned from the engagement seeks to examine the extant limits of the dialogue, if any and includes the concluding observations.

SECTION I

Overview

The IMF promotes international monetary cooperation and provides member countries (187) with policy advice, temporary loans, and technical assistance such that they can establish and maintain financial stability, external viability, while building and maintaining strong economies. The loans provided are in support of policy programs and are designed to solve balance of payments problems in situations where a country cannot obtain sufficient external financing on affordable terms to meet net international payments. While the short-term loans are funded by quota contributions of its members, longer period loans, as well as concessional loans provided to low income members are financed by IMF gold sales and members' contributions. In its work in low-income countries, the IMF's main focus is on how macroeconomic and financial policies can contribute to the central goal of poverty reduction.

A historical review indicates that the Bretton Woods system worked well and facilitated post war recovery. There were no widespread financial crises. A few crises that emerged were country specific. But the increased capital flows in the 1960s and the overvalued dollar led to the eventual collapse of the Bretton Woods system in 1971 and to the emergence of flexible exchange rate regime.

Even though the rationale for the maintenance of fixed exchange rates collapsed, the institution was called upon to mitigate the various crises that emerged in the global economy. The external financial crisis faced by countries was more generalised, with the oil shocks of the 1970s, the global recession and the debt crisis in the 1980s, the Mexican and the Asian crisis in the 1990s. The Fund was actively involved in the transition of the former Soviet Bloc and other economies of Eastern Europe into market economies.

The benign economic and financial conditions that prevailed for most of the noughties seemed to question the effectiveness of the IMF as a lender as well as a guide for the global economic system. Moreover, there was a view that systemically important economies had unmitigated access

to foreign capital via market mechanisms. Several countries especially, the Asian countries had amassed large foreign currency reserves. The IMF credit outstanding which peaked at almost $100 billion at the end of 2005 declined to about $10 billion by the end of September 2008. In such an environment, the subprime crisis emanating in the US suburbs, spread quickly and virulently to the other parts of the globe. The increasing globalisation of the world economy and more significantly finance has ensured that no country has been held intact in the crisis and those with questionable macroeconomic policies had been the hardest hit.

As various countries turned to the IMF for help, the Fund moved swiftly to the task. The IMF Executive Board approved of a new short term lending facility which was further revamped and restructured to meet the requirements of the member countries. The resources for this and other facilities have been drawn from a threefold augmentation of resources by $750 billion.

CSOs and the IMF

Many CSOs in industrial countries have been endowed with a cache of financial resources and technical skills. Many of these work on global financial issues. While some of these NGOs seek to inform the public about the inequities/specificities of particular policies and actions, a few others seek to influence the policy makers at the national and international levels through media. These NGOs include Oxfam, Friends of the Earth, Bretton Woods Project in Europe, The Association of Latin American Advocacy Organisations in Latin America, The Forum of African Voluntary Development Organisations in Africa; faith based groups World Council of Churches and Development Organisations, Labour Organisations, Economic Research Institutions as well as politically associated think tanks.

According to the IMF, CSOs refers to the wide range of citizens' associations that exists in virtually all member countries to provide benefits, services, or political influence to specific groups within society. CSOs include business forums, faith-based associations, labour unions,

local community groups, NGOs, philanthropic foundations, and think tanks. Usually excluded are not only the branches of government (government agencies and legislators) but also individual businesses, political parties and the media.

Historically, the IMF-CSO engagement can be traced back to the 1980s when the Swiss based coalition of development organisations and other like minded ones like the Overseas Development Institute in London and the Overseas Development Council of Washington questioned the impact of the program prescriptions on the poor. These reactions gathered strength in the light of the revolts witnessed in the program countries. The IMF witnessed the growing public discontent in the large street demonstrations that was witnessed during the 1988 Annual General Meetings.

With the criticisms of the IMF's structural adjustment policies gaining ground, the IMF's relationships with the CSOs began to expand. The Asian financial crisis opened up a new chapter in the IMF's relations with the CSOs, as established academicians and thinkers began to question the rationale of the Washington Consensus on which the structural adjustment programs were based. A classification of CSOs on the basis of their reaction to the Fund's programs indicates that these organisations fall into three broad categories.

The first group comprises of Economic Research Institutes and think tanks, who while broadly agreeing with the macro foundations of the Fund's policies like open international policy of trade and exchange, disciplined macroeconomic policies and market based structural policies question the prioritisation and sequencing of the Fund's prescriptions.

The second group of NGOs, while accepting the need for the IMF, would like to see major changes in the IMF's operating procedures. The environmental and religious groups especially would like the IMF to diversify its activities to include social protection, environmental policies and gender issues. Some others would like to see a more focused IMF working in close coordination with other international organisations. These include Bretton Woods Project and Eurodad. The radical voices of the ultra free markets, nationalists, feminists and religious revivalists

seek a reduction in the power and influence of the IMF and those who can be also termed as abolitionists form the third group.

It needs to be borne in mind that the categorisation is not iron clad. The various groups shift their affiliations and positions as warranted by the situation at hand.

Rationale for Engagement

In the early stage, the IMF's engagement with civil societies was at the global level in response to advocacy by groups concerned with economic and social justice issues. Over the years, this engagement has evolved to include engagement in the IMF operations in the low income countries as well. This is a result of the increased focus on promoting poverty reduction through a participatory approach, and the increased emphasis on transparency and good governance, outreach and communication.

The rationale for the IMF's dialogue with CSOs derives firstly from the transparency efforts undertaken by the IMF which entail a dialogue with the CSOs as an important form of communication. Secondly, as CSOs often highlight important issues and supplement official data and provide a perspective which is different from the official views, the dialogues are encouraged as an integral part of the listening and learning efforts at the Fund. Thirdly, constructive dialogue with CSOs provides a platform for the successful implementation of policy reforms by fostering country ownership of the structural and stabilisation policies.

Modes of Engagement

In 2003, a 'Guide for Staff Relations with CSOs' was distributed to the IMF staff and also published on the website to serve as a guide for increased outreach and communications with CSOs. While the issues for dialogue between the Fund and CSOs evolve on the basis of the global economic conditions, certain issues remain central to the dialogue. These include policy advice especially, those relating to low income countries, the social and environmental fall out of the policies, debt relief, program conditionality, trade policy, governance and transparency, and voice and representation of developing countries in the institution.

At the global level the engagement includes:

- Meetings between the IMF management and CSOs in small and larger forums.
- Meetings, seminars and consultations with the staff and Executive Directors in Washington and worldwide fora on specific policy or country issues.
- Invitations extended by the Fund to react and review the papers posted on the external website.
- A Civil Society Policy Forum organised jointly with the World Bank running parallel with the Annual and Spring Meetings covering a wide range of topics including many organised by the CSOs themselves.
- The Independent Evaluation Office (IEO) set up in 2001 maintaining regular contacts with the CSOs which have been active providers of feedback comments and suggestions to its evaluations.

In individual countries, the engagement with CSOs involves:

- Regular Meetings between the Managing Director and the country based CSOs when he visits a member country.
- Staff surveillance missions meeting representatives from labour organisations and think tanks.
- Country missions engaging in a consultative process in the design of poverty reduction strategies in low income countries as well as in the overall program.
- Resident representatives routinely carrying out outreach activities.

The information of relevance, papers and discussions are available on the IMF and Civil Society page on the IMF website.

A mention needs to be made of the initiative of the IMF and the World Bank's External Relations Department to sponsor the CSO representatives and journalists from the developing countries. This

initiative is aimed at addressing the skewness in representation of the CSOs, which by a vast majority come from the developed world of Europe and US. The CSOs have been sponsored for the Annual Meetings in Dubai (2003), Singapore (2006), and Washington (2007 and 2008).

For the first time, the sponsorship program was extended to the spring meetings in April 2010. The participants included NGOs from a number of countries like Bangladesh, Bolivia, Ghana, Haiti, Kenya, Latvia, Malawi, etc. These meetings provided a platform for the participants to exchange views on a number of issues ranging from global crisis to climate change.

SECTION II

The Issues of Engagement

Until the 1980s, the IMF programs in the low income countries were limited in policy content and of short duration. The balance of payment problems were sought to be addressed through correction of fiscal imbalances, curbs on credit growth and currency devaluations. Critics of the Fund questioned the emphasis placed on budget deficits and demand compression. The poor performance of many developing countries added weight to these criticisms. The Latin American crisis and the financial difficulties of the African countries drew attention to the structural imbalances that plagued several countries in the developing world.

Structural Adjustment

The concessional Structural Adjustment Facility (SAF) established in 1986 and the Enhanced Structural Adjustment Facility (ESAF) which replaced the SAF became the primary vehicles of the IMF policy programs in the developing world. These initiatives met with mixed reactions with some lauding the Fund for tackling issues which were perceived to be the stepping stones for sustained growth and employment while the critics upbraided the Fund for diminishing the sovereign states ownership of economic reform. Evaluations of the EASF indicated that country ownership along with civil society engagement was crucial to the success of poverty reduction. This resulted in the conversion of the

EASF into the Poverty Reduction and Growth Facility Program (PRGF) in 1999 to support the member countries poverty reduction strategies.

Several European NGOs, Oxfam, Jubilee 2000 with the support of some prominent religious leaders launched efforts for reduction of the multilateral debt burden of low income countries. While the IMF and the World Bank resisted efforts to reschedule debts, the popular demand led to a comprehensive review of the launch of the High Indebted Poor Countries (HIPC) initiative in 1999. The review allowed for strengthening of debt relief, poverty reduction and social policies. The resources for the effort were from the contributions of the member countries as well as the increased value of the gold holdings. Inputs from the CSOs have been critical to the enhancement of the program. But criticisms have continued with Jubilee 2000 calling for total debt forgiveness.

Dangers of Globalisation

The Asian financial crisis highlighted the consequences of the sudden loss of confidence in economies which could lead to flight of capital resulting in large erosion of international capital. The Asian crisis underscored the need for strong domestic policies in an effort to avoid economic crisis. The crisis also highlighted the dangers flowing from the extreme dependence on volatile capital flows. In an effort to strengthen the international financial architecture, the IMF and the World Bank conduct Financial Sector Assessment Programs (FSAPs) in countries and provide technical support in an effort to correct perceived vulnerabilities. Many NGOs are keen to be involved in these efforts and the Bretton Woods Project and the Oxfam have been at the forefront in organising seminars and workshops to discuss the implications of capital account liberalisation for poverty reduction in low income countries.

Transparency and Accountability

Apart from policy changes, the CSOs are also keenly concerned about the working of the IMF. There has been an increasing demand for a greater transparency and accountability of the Fund and its activities. More democratisation through a reallocation of its voting rights among member countries and improving the governance has also been called for.

SECTION III

Aftermath of the Crisis

The global financial crisis witnessed a revamping of the role of the IMF. The financial crisis, which has embraced all the countries of the world has had the world leaders confabulate on the future of the global financial system under the fora of the G-20 which began in April 2009 in London. The IMF which seemed in the recent past to have been relegated to an irrelevance as it failed to modernise its euro centric representation or its arcane government to government lending (Rogoff 2008) found itself being thrust to the forefront as the only agency capable of providing the required support to the various countries seeking resources and support to ride through the crisis.

Augmentation of IMF Resources

At the April 2009 G-20 meeting, it was decided that the available resources of the IMF should treble from $250 billion to $750 billion mainly through temporary borrowing from the G-20 countries under the New Arrangements to Borrow (NAB). This would as such, leave the quotas unchanged. An increase in the permanent resources available to the Fund can be ensured through a revision in the quotas of the members, a general review of which is scheduled to be held in January 2011.The review has been brought forward as it was originally scheduled for January 2013. Describing this as a "very accelerated time table", Tweedie opined that quota review would augment the Fund's general resources and also provide a rebalancing of quota and voting shares towards dynamic emerging markets and other economies- a key element of governance reforms.

The immediate borrowing arrangements that are being put in place is essentially for combating the crisis. These include bilateral borrowing arrangement with Japan ($100 billion), Canada ($10 billion), Norway ($4.5 billion), EU members ($100 billion) and Switzerland ($10 billion). Additionally the IMF would also issue notes which would be subscribed by member countries. The notes would have an initial maturity of three months extendable up to five years. Since then, China has purchased $50

billion of the notes in 2009, India too has purchased US$ 10 billion IMF notes in 2009. Russia and Brazil have committed to $10 billion each. In addition the IMF also plans to sell 404.3 metric tonnes of gold (200 metric tonnes have been bought by India) and has made the $250 billion general allocation of SDRs. The consequent enhancements in the resources sought by these measures would be channelled into the newly instituted Flexible Credit Line (FCL) facility approved in early March 2009. The FCL replaced the Short Term Liquidity Facility (STLF) set up in November 2008 which had no takers. Three countries, viz; Mexico, Columbia and Poland have taken recourse to this facility. The features of the FCL include a prequalification instead of conditionality. The country should in the IMF assessment be a strong performer. The FCL has no limit on the amount of money a country can access. The duration of the facility is either for a short span of six months or for a year. The repayment is over five years.

The precursors to the program, the STLF and the Contingent Credit line (CCL) had to deal with the problem of stigma the fear that financial markets in signatory countries would witness turmoil leading to currency speculation or a sudden seizing of capital flows. While it is too early to assess the scheme it is interesting to note the mixed reactions in Mexico's financial markets as implied by news reports. Even though the G-20 had made a commitment to the doubling of the concessional lending capacity and access limits of low income countries no concrete measures towards this has been initiated which has left several NGOs dissatisfied enough to call for a cessation of the current low income lending framework because of the perceived damaging economic policy conditionality. As of now the concessional loans are sourced from the PGRF-ESF trust which is currently worth $23 billion.

The Jubilee Act, passed by the US Congress in 2008, notes that the IMF gold sales be used to pay for additional debt relief in addition to meeting administrative expenses. The G-20, however, is of the opinion that $ 6 billion from the gold sales should be towards enhancing the pool of concessional lending raising fears among the NGOs that money would be used to fuel debt and not provide debt relief or used as grants for poor countries.

In early March 2009, the IMF Board considered a staff review of conditionality which was initiated by the Managing Director after the outbreak of the financial crisis. In a rare departure from its stance the paper candidly admitted "In the past, IMF loans often had too many conditions that were insufficiently focused on core objectives".

As a follow up of these revelations, the Board eliminated the whole category of conditionality called structural performance criteria, *i.e.*, the conditions placed by the IMF on the borrowing countries during the course of the loan. The IMF will shift focus to the attainment of a set of pre set qualification criteria *i.e.*, an increase in the use of prior actions conditions. This fine tuning has left NGOs a little sceptical. As Vitalice Meja of Eurodad noted "The *ex-ante* approach is a clear indication that conditionalities have well been entrenched in countries' system after the Fund's decades of intervention. The current approach merely places the burden of compliance with the Fund's economic reform programmes on the poor countries thereby making the IMF look good". Several NGOs opine that changes do nothing to impact the quantitative conditions set by the IMF. The Global Campaign for Education in a report prepared in April 2009 criticised the impact of IMF conditionalities on the teachers' wages in developing countries.

It is interesting to note that the US based think tank, Centre for Economic and Policy Research (CEPR) in a paper released in October 2009 highlights that 31 of the 41 IMF agreements require pro-cyclical macroeconomic policies, a restrictive demand reducing monetary and fiscal policies which would naturally aggravate the conditions in the already recession hit countries. CEPR argues that the purpose of the IMF lending during a world recession should be to provide sufficient reserves that the borrowing countries can pursue expansionary macroeconomic policies that the high income countries are capable of in order to minimise the loss of jobs and output, as well as longer lasting damage that can result from cuts in health and education spending.

Notwithstanding a review of the overall conditionality, the IMF's low-income country facilities like the Poverty Reduction and Growth Facility (PGRF), Policy Support Instrument (PSI) and Exogenous shock

Facility (ESF) are under review. The NGOs are, however, aggrieved since their inputs to these exercises have been minimal. The fact that the IMF has been unable to persuade the US to allow it to perform an assessment under the financial sector assessment programme (FSAP) has been an oft discussed matter. The FSAP as already mentioned was launched in the aftermath of the Asian financial crisis and it enables an identification of the risks and problems in the regulation of banks and other financial institutions. While many countries including the developed, allowed FSAPs to be conducted, the US agreed to it only in 2007. The asymmetry of the IMF's influence thus, is the subject of strident criticism of the CSOs as well as the G-24 group of developing countries.

With increased negotiations the world over for a revamp of the international financial architecture, there has been increased focus on the international monetary system, with academics and NGOs calling attention to issues pertaining to an alternate international reserve currency, capital controls and the levy of a financial transactions tax.

Reserve Currency

In March 2009, the Governor of the Central Bank of China advocated for SDRs to be a global reserve currency thus, replacing the dollar as a currency of choice for central bank reserves and commercial trade. The Bolvarian Alliance for Peoples of the Americas (ALBA) grouping of countries in Latin America have firmed up plans to launch a regional electronic currency called the SUCRE. The currency should be in use in 2010, while the option of regional reserve pooling is also being examined.

In a related move China has extended currency swap arrangements worth billions of dollars to South Korea, Hong Kong, Indonesia, Malaysia and Belarus. For Argentina, the $10.2 billion swap arrangement seems to give credence to the view that this arrangement is an alternative to an arrangement with the Fund. These efforts seem to foreshadow the efforts at the establishment of the Asian Monetary Fund. The ASEAN+3 grouping has finalised the arrangements for their regional reserve pooling arrangements the Chiang Mai Initiative (CMIM). The CMIM would have a pool of $120 billion with 80 per cent of the funds coming from China, Japan and Korea. Asian countries would be able to borrow 2.5 to 5 times the amount they put in which is much higher than the 3 times quota norms

of the IMF. Also the governance structure is based on the one country one vote norm. An independent surveillance mechanism is proposed to be established to monitor and analyse regional economies and support in decision making. The idea is that the accumulated reserves of the Asian economies will enable them to take care of their needs. But NGOs have in several fora called attention to the need for political will to carry this task forward and have also emphasised the need for the initiative to be independent of the IMF.

The Initiative on Policy Dialogue (IPD), a think tank founded by Joseph Stiglitz, hosted a meeting in November 2009 to discuss the moves towards a world reserve currency system. There in, John Williamson of the Peterson Institute argued that the IMF's SDR could replace the dollar as a reserve system. He carries the argument further to emphasise that such a move would be in the US interests as it would help an orderly shift from the dollar based reserve system.

The International Monetary and Finance Committee (IMFC), the IMF's direction setting body, also called on the Fund to study policy options for ensuring global stability and an orderly functioning of the international monetary system. The IMF in a Staff position paper in mid November 2009, while laying blame on the Fund's governance and conditionality as being responsible for the skewed accumulation of huge dollar reserves by a few countries dismissed the idea of a new global currency.

Capital Controls

With Brazil and Taiwan, introducing regulations on the flow of capital into their economies, the attention has been focused on the role of capital controls. In October 2009, Brazil introduced a two per cent tax on foreign capital flowing into the domestic equity and bond markets to decelerate the flow of hot money as well as slow down the appreciation of the REAL. Taiwan's move was to prevent the foreign investors from putting funds into time deposits to prevent currency appreciation. It is interesting to note that academics like Arvind Subramanian and John Williamson of the Peterson Institute while hailing Brazil's move as

symbolic, extort the Fund to adopt an intellectual approach to financial globalisation. They argue that by recognising that in some instances, sensible curbs on inflows might be reasonable and pragmatic. The Fund is in a position to eliminate the market unfriendly stigma that such moves carry. They also point out that the world needs a less doctrinaire approach to foreign capital flows.

The Fund, however, is of the view that capital controls are unorthodox measures and exchange rate should be allowed to appreciate with countries adopting tighter fiscal policies. However, in the recent staff position note of February 2010, it is felt that macroeconomic and prudential measures may warrant capital controls as legitimate component of policy response. Rodrik (2009) of the view that the Fund should not be campaigning for globalised finance but on the contrary support the emerging market economies in designing better prudential controls over capital inflows.

Financial Transaction Tax

A Financial Transaction Tax (FTT) inspired by the proposal for a tax on currencies on the lines of the Tobin tax has also been proposed to slow the process of speculative flows. The proposal involves a small levy on all transactions in financial markets including purchases of equities, bonds, currencies and derivatives. The G-20 had called on the IMF to examine how the financial sector could be made accountable for excesses which required the bailing out of banks by the government. The IMF seemed reluctant to undertake such a study and offered a insurance levy as an alternative. This prompted 60 NGOs from around the world to write to the Managing Director demanding a strong consideration of the FTT as well a formal process of involving the inputs of CSOs and the collaboration with the French led Taskforce on International Financial Transactions for Development. In the face of such requests, the IMF decided to undertake a report delivered in Canada in June 2010.

Fourth Pillar

With a revamping of the IMF, there have been several calls from the CSOs and academics that the resizing should be accompanied by

measures at governance reform for the process to be effective. The opinion is that the lopsided European representation at the IMF does not incorporate the emerging new world economic order. Taking cognisance of such a need, the Board of Governors in 2008, approved a resolution to increase the participation of emerging market economies and low income countries. Additional proposals include reassessment of the roles and responsibilities of the IMF Board of Governors, the International Monetary and Finance Committee well as procedures for selecting a Managing Director. An effort to involve CSOs in the process called the Fourth Pillar was set off with the Managing Director writing to several CSOs and also included a video conference between Strauss Kahn and CSOs across three continents. The other three pillars comprise of the reports already submitted; these include (i) Governance of IMF submitted by the IEO in May 2008 (ii) Report of the Working Group on IMF corporate Governance which is under examination by the IMF Executive Board and (iii) The committee of eminent persons on IMF governance reform in March 2009. The final Report of the Fourth Pillar (Civil Society) consultation on IMF governance reform has since been submitted to the Executive Board.

The report was coordinated by the New Rules for Global Finance Coalition a Washington based networking organisation of researchers and policy makers committed to reducing global poverty and inequality. The report was compiled and summarised by Domenico Lombardi a Senior Fellow at Brookings Institution. Recognising that the IMF is a multilateral institution whose success depends on the active engagement of its constituent countries, the Report has emphasised on the governance of the institution. The participants to the discussion have emphasised on the need of the institution to be inclusive as well as accountable. The recommendations, therefore, place emphasis on the set of formal and informal arrangements that underlie the distribution of organisational power including selection of the Managing Director and the Executive Director. The need to rebalance the voting powers to bring more representation of the new economic order has been drawn attention to. A double majority voting to broaden the consensus base has also been highlighted. The report has highlighted the need for merit based

selection of the Managing Director and his Deputies structured on a thorough job description than be one on the need to represent a particular geographical region.

Regarding accountability, the participants felt that periodic evaluation of the Executive Board should be performed by external evaluators. Futher, a self assessment of the Executive board should be facilitated by a committee of the Executive Board. This entails a clarification of the dual role performed by the Managing Director as Chief Executive of the Board as well as Chairman of the Board. The committee was of the opinion that the dual role should ideally be performed by two persons. Alternately, the supervisory role and the functional role should be separated. On transparency, the CSOs have requested for a timely disclosure of policy papers at the draft stage such as to be able to contribute to the decision making process. The participants underscored the need to have operational policies and procedures which are Board approved and disclosed to the public such that it facilitates an assessment of the functions of the Fund and its officials.

SECTION IV

Lessons/Limits of the Engagement

The foregoing discussion highlights that the relation between the civil societies and the Fund has come a long way since the Asian Crisis. The recent financial crisis has highlighted and emphasised the mutual benefits of the dialogue and informed discussions. The report of the Fourth Pillar is an important step in the relationship. However, a certain amount of caution needs to be exercised in any evaluation of the relationship. In their dialogue with the IMF, it is extremely important that the NGOs/CSOs conform and adhere to high standards of governance within themselves, be accountable to the stakeholders they represent and not carry forward the agenda of their largest donors. If, however, the IMF were to establish formal standards for association, there is a real danger that only the largest and the well funded ones would have access leaving a large majority of the disenfranchised out of the circle of influence. At worst, such a situation may give a double voice to certain

powerful interest groups. Further, the IMF, a cooperative institution, dealing mostly with the governments of its member countries, needs to be careful that it is not accused of engaging in governance avoidance; while interacting with a network of NGOs/CSOs in the face of difficulties in working with the established government structure. While the case for doing so in undemocratic states may exist, in certain fragile emerging democracies, such activities would have negative consequences for the process of democratisation itself (Woods 2000).

The global crisis has questioned the very foundations of the Anglo-Saxon economic thinking and it is interesting to note that John Williamson who is often hailed as the father of the Washington Consensus is calling attention to the study of capital controls. In such an environment, the CSOs have a vital role to play. The think tanks conducting vast amounts of research on the new world economic order should play an active role in influencing the Fund's research and policy making. That apart, CSOs involved in grass root level activities have an increasingly important role to play in the design of programmes and their implementation. And those CSOs, with influence in the local governments should be able to muster significant political will for the implementation of the programmes, such as to ensure country ownership and accountability. CSOs/NGOs given their vast sphere of involvement and participation should help facilitate the IMF in its task of establishing a new robust economic order by covering the entire spectrum of programs and policies from conception to the ultimate implementation. The process of IMF- CSO dialogue, however, needs to be a continuous one and should not be confined to a series of discrete associations. Such an engagement, therefore, becomes a necessary and sufficient condition to ensure the smooth transition of the presently struggling economies to a new and higher growth path.

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External Sector Openness and Purchasing Power Parity in India: An Annotation

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The decade of 1990s saw far reaching economic reforms in India. Ever since the switch over to market determined exchange rate that unfolded in 1993, the Indian economy has witnessed massive transformation in terms of greater external sector openness and higher degree of integration with the global economy. Against this backdrop, this paper attempts to test the validity of purchasing power parity (PPP) condition in the case of India during pre and post reform periods, using monthly data spanning over more than three decades. The results from array of unit root tests unravel that real exchange rate (RER) series remain non-stationary in the pre-reforms period and turn out to be stationary during the post reforms period, indicating thereby that PPP condition holds during the post reforms period, *albeit*, over the long run. These results are also corroborated by the cointegration test and vector error correction model applied to the components of RER. This lends credence to the fundamental principle that chances of holding PPP improve in an economy with greater external sector openness and integration. Holding of PPP during post-reforms period also provides support to the market determined exchange rate mechanism put in place in India during the early 1990s.

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Prologue

The purchasing power parity theory is one of the oldest and most luminous topics that continues to enfold the intellectual discourse in the international economics. It constitutes a central building block in the monetary model of exchange rate determination. Salamanca School was the first to articulate the proposition of PPP in the 16th Century,

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while it was Gustav Cassel (1921), a Swedish economist who championed the use of PPP as a model for setting relative gold parities. However, the modern origins could be traced back to the restoration of world financial system after its collapse during World War. I.

PPP is a condition of open economy general equilibrium model. wherein, national price levels tend to be same under a common currency. It states that arbitrage forces will lead to the equalisation of goods prices internationally once the prices are measured in the same currency. The underlying principle embedded in the model is that goods market arbitrage enforces weeding out of differential in the prices of traded commodities. Efficient arbitrage in goods market across the countries emanates increasingly with external opening of economies. PPP theory provided a point of reference for the long-run exchange rate in many of the modern exchange rate theories.

The importance of PPP theorem could be gauged by its wide applications in formulating the policy decisions. It is applied, *inter-alia,* in choosing the right initial exchange rate for a newly independent country; forecasting medium and long-term Real Exchange Rate; and adjusting for price differentials in international comparisons of income. The PPP condition not only helps in understanding the nature of nominal and real shocks in the exchange rate models but also help policy makers and researchers to compute RER misalignment. A proper assessment of the deviation of the real exchange rate from its equilibrium path can go a long way in enabling policy makers to design an exchange rate policy which can achieve the long-term sustainability of the balance of payments (Joshi, 2007). A common method of determining the extent of misalignment of the exchange rate is based on the principle of PPP theory for open economies, which assumes that exchange rates adjust to offset the changes in relative prices.

There is a growing body of empirical literature on PPP and a consensus has emerged on a couple of facts. A number of studies have weighed in favour of real exchange rate tending toward

purchasing power parity in the very long run. However, the speed of convergence to PPP is very slow. While few economists take PPP seriously as a short-term proposition, most instinctively believe in some variant of purchasing power parity as an anchor for long-term real exchange rates (Rogoff K, 1996).

Few empirical studies have been undertaken to testify whether PPP holds or not in Indian case also. In this paper, we have empirically investigated PPP during pre-reforms and post reforms in the case of India's bilateral real exchange rate (RER) with USA. We have taken monthly data from 1970 to 2008 and this was divided in two periods: period I from 1970M01 to 1993M02 and period II from 1993M03 to 2008M08. The division of time period was drawn from the structural break that took place with the introduction of liberalized exchange rate mechanism (LERM) in India in March 1993.

The objective of this paper is to test the validity of PPP theorem in an emerging Giant- India with reference to US. In this endeavor, the paper attempts to test for the existence of any stable long-term equilibrium relationship between the exchange rate and domestic/ US prices (WPI). This relationship is sought to be tested through the procedure of Johansen Co-integration technique with Vector Error Correction Model. This paper distinctly differs from the extant literature by covering a long time horizon - monthly data spawning for more than three decades (since 1970) and endeavors to test the validity of PPP in the fixed and floating rate regimes.

The paper is structured into the following sections. Section II provides a review of the empirical literature on the PPP hypothesis. Literature suggests a mixed result about holding of PPP; however, recent studies have increasingly found results in favour of PPP in the long run. Section III, delineates the process of opening up of external sector and the evolution of exchange rate regime, while Section IV discusses model specifications, data sources, and empirical results. Finally, the paper ends with the concluding remarks.

Section II
A Peep into the PPP Literature

Considering the central place that PPP occupies in the monetary models of exchange rate determination, it is not surprising that considerable amount of research has been devoted to its empirical verification.

Law of One Price: Does it hold…?

It is the Law of One Price (LOP), which forms a central pillar of PPP. LOP asserts that similar goods should be sold at similar prices across countries. In the long-run, arbitrage ensures that the LOP exists- that is identical goods denominated in a common currency must sell for the same price in two separate markets, without transportation costs and differential taxes thereby, causing intra national price convergence.

LOP states that for any good i, if traded without frictions, the following should hold:

$$P_{it} = P^{*}_{it} E_t \qquad (1)$$

In the equation (1), P_{it} and P^{*}_{it} are domestic price and foreign currency price of i commodity at time t, respectively, while E_t is the nominal exchange rate at time t.

However, in practice tariffs, transportation costs and non-tariff barriers, quality standards, taxes, profit margins, monopolistic tendencies, *etc.,* drive a wedge between prices in different countries. Theoretical and empirical literature suggests that the PPP can be violated in the short run. PPP may also not hold on account of factors, *viz.,* (i) if there are transaction costs and trade frictions, (ii) differential baskets of goods are used to construct aggregate price indices, and (iii) government intervenes in foreign exchange markets (Duncan, Roberto, 2003).

Balassa- Samuelson (1964) provided an explanation as to why the price levels differ across countries. They argued that when all

countries price levels are translated to dollars at prevailing nominal exchange rate (NER), rich countries tend to have higher price levels than the poor ones. According to them, the presence of non-traded goods, for which no international arbitrage exists, can lead to systematic movements in real exchange rates inconsistent with PPP. Productivity differentials in the traded and non-traded goods sectors remain the underlying factor for the above hypothesis. Rich countries have higher exchange rate adjusted price levels than poor countries due to differing capital labour ratios (Bhagawati, 1984).

Empirical evidence showed that PPP performs better for those countries that are geographically close to each other and where trade linkages are high. Moreover, PPP holds better for traded goods compared to non-traded goods (Officer, 1986). Reasons for failure of PPP may be attributed to heterogeneity in the baskets of goods considered for construction of price indices in various countries, imperfect competition in goods market, and increase in the volume of global capital flows during the last few decades, which led to sharp deviation from PPP. Short-term exchange rate volatility emanates from changes in portfolio preferences, short-term asset price bubbles and monetary shocks. The failure of short-term PPP could be attributed in part to stickiness in nominal prices (Rogoff, 1996).

Some believe PPP is a short-term proposition, while most believe in some variant of PPP as an anchor for RER. However, the consensus evidence indicates that- speed of convergence to PPP is extremely slow (decay at 15 per cent per year); short-term deviations are large and volatile; and real exchange rates tend toward PPP in the very long run.

Many studies rejected PPP hypothesis on the ground of unit root problem in RER. If the unit root model can characterise real exchange rate behavior, then PPP does not hold because there is no propensity to revert back to any equilibrium level (Cashin *et, al,* 2003). Researchers found it difficult to reject the hypothesis that major countries RER follow a random walk under floating rate regimes and

hence difficult to prove convergence. Early tests include: Richard Roll, 1979; Michael Darby, 1983; Michael Adlerand Bruce Lehmann, 1983 and Edison, 1985. Later papers incorporating standard unit root tests include John Huizinga, 1987; Meese and Rogoff, 1988. The tests using co-integration methods on modern floating rate have failed too to reject random walk hypothesis (Bouncer, 1994).

The evidence is, however, inconclusive due to low power of unit root tests in small samples. In the recent literature, some studies have found evidence in favour of PPP- applying unit root tests (Frankel, 1986; Lothian and Taylor, 1996; Taylor, 2002; *etc.*).

Frankel was able to reject it using Dickey-Fuller tests. His estimation showed a rate of decay for RER deviations of 14 per cent per year (4.6 years) (Dickeyand Fuller, 1979). During 1990s, the long horizon data studies tend to find evidence of mean reversion in real exchange rates (Abuafand Jorion, 1990; Lothianand Taylor, Cheungand Lai, 1994). Several studies found strong rejections of the random walk model (Abuaf and Jorion, 1990; Glen, 1992; Diebold, Husted, Rush, 1991).

A study by using the panel cointegration method for market exchange rates of 17 African countries, supported the weak form of the long-run PPP hypothesis (Nagayasu, 1999). Conversely another study rejected the PPP hypothesis for Sri Lanka during the floating exchange rate regime, thereby indicating the existence of market frictions such as transaction costs prevalent in the international trade (Wikremsinghe, 2001). There is also evidence supporting the alternative hypothesis of acceptance of the PPP theorem for demeaned data provided by Mohua Paul (2002), who tested the validity of PPP for six South East Asian countries, including India, using panel unit root test for multilateral RER based on dynamic export, import and trade weights and concluded that PPP could be used to assess the levels of exchange rate. Taking in to account the data from 1973 to 1997, for a sample of 30 developing countries, Holmes (2001) confirmed the existence of PPP and proved that there was no evidence to prove that PPP is confined merely to high inflation countries as

established by some studies (McNown and Wallace, 1989; Liu, 1992; Mahdavi and Zhou, 1994).

Similarly, Holmes (2002) tested non-linearity in US $/ Latin American RER and found that non-linearity existed for 7 out of 13 countries and concluded that the identification of non-linearity should offer some explanation as to why PPP does not exist in many cases. While another study using non-linear tests of stationarity and cointegration for a sample of 10 Africans countries for the Post-Bretton Woods era found that long run PPP held in 8 out of 10 countries, if an explicit distinction were made between positive and negative shocks (Holmes and Wang, 2004). A more recent study also validated the applicability of PPP hypothesis for East Caribbean Currency Union by finding that many real exchange rates are cointegrated over the period of 1980s and 1990s. There is also a study, which concludes that nominal exchange rate was consistent with PPP hypothesis and underlying behaviour of exchange rate was consistent with fundamentals (Schweigert, 2002).

While the PPP condition constitutes one of the fundamental but testable theoretical benchmarks against a set of other financial market conditions such as interest rate differential that become important in a world of dynamic cross border capital flows in the determination of real exchange rate adjustments, the issue of evaluating the fundamental equilibrium exchange rate requires probe in to the working of fundamental economic factors such as supply, demand and nominal factors, which govern the eventual outcomes of the external sector account of any country. Against this backdrop, a more recent study focused on the task of evaluating the applicability of PPP in the Indian context, while also positing a broader framework, incorporating fundamental economic factors to estimate the equilibrium real exchange rate and to identify factors that could have determined its movements during the post-reform years (Joshi, 2007). The study explored that real exchange rate in India is predominantly determined by permanent real demand shocks followed by nominal and supply shocks.

Another study in the Indian context, by Kohli (2002), using unit root and cointegration tests found mean reverting tendencies in the real exchange rate series constructed using the consumer price index as the deflator as well as for series constructed using wholesale and consumer price indices, suggesting thereby that monetary policy impulses were the main cause of disturbance in real exchange rate. Further, the evidence of non stationarity of the relative differential of tradable and non-tradable goods suggested that real shocks such as permanent changes in productivity or Government spending were important for the determination of real exchange rate movements.

Aggarwal (2000) found that prices, interest rates, and money supply in the home and foreign country are important variables in explaining the behaviour of bilateral exchange rate between India and USA. Other significant variables are found to be balance of payments items like current and capital account balances and foreign exchange reserves. The exchange rate is found to be determined by the domestic price index with a positive coefficient and wholesale price index in the USA. with a negative coefficient. Domestic price is explained by the domestic and foreign rates of interest and the money supply in the home country. Thus, the interest rates and money supply[1] explain the exchange rate indirectly through the domestic price. Interest rate in the home market is explained by the interest rate in the foreign country and the exchange rate between the two countries. That is, the interest rate differential between the two countries also affects the exchange rate between them.

It is also well documented in the literature that, compared to fixed exchange rate, a flexible exchange rate arrangement, under normal circumstances leads to quicker convergence towards the equilibrium because of faster self-stabilising adjustments in the nominal exchange rate in tandem with changes in fundamentals as compared with slower convergence through changes in relative price ratios, which remain sticky because of market rigidities (Joshi, 2007).

Thus, the review of literature shows that the evidence in favour of PPP is inconclusive, nevertheless the comprehensive research on the subject, especially, in the case of developing countries is rather

scarce. The theory of exchange rate determination still lacks models that are both theoretically interesting and empirically defensible (Krugman, 1993). Against this backdrop, purpose of the present study is to address the question whether or not relative prices determine relative exchange rate positions in bi-lateral framework (India and US), without getting into the fundamental factors underlying the exchange rate behaviour.

Recent empirical tests of PPP have mainly focused on the long run given that there are frequent large and persistent short run deviations from PPP. Earlier empirical results on PPP have not been very encouraging , one of the reasons being the test used in many of the earlier studies is known to have low power in small samples (Hakkio (1986), DeJong, Nankervis, Savin and Whiteman (1992)). One way to increase the power of the empirical tests is to use longer span of data. For instance, Diebold, Husted and Rush (1991) and Lothial and Taylor (1996) found support to PPP. In view of the above, this study attempts to cover long span data to test the PPP hypothesis in the Indian context.

Section III
External Sector Openness in India

III. A. Opening up of India's External Sector

The external payment crisis that India witnessed in 1991 called for wide-ranging external sector reforms. These included a market-based exchange rate system, introduction of convertibility of the rupee for external transactions on the current account, and a compositional shift in cross-border capital inflows from debt-creating to non-debt-creating flows. FDI is encouraged through a very liberal but dual route: a progressively expanding automatic route and a case-by-case route. Indian companies were also permitted to access international markets through Global Depository Receipts/American Depository Receipts (GDRs/ADRs) under an automatic route, subject to specified guidelines. Foreign investment in the form of Indian joint ventures abroad was also permitted.

Restrictions on outflows involving Indian corporates, banks and those who earn foreign exchange (like exporters) have also been liberalised over time, subject to certain prudential guidelines. As a result of pursuing the above approach, India has attracted considerable private flows, primarily in the form of FDI, portfolio investment, ECB and NRI deposits. Indian companies have been permitted to raise resources from abroad through the issue of ADRs, GDRs, Foreign Currency Convertible Bonds (FCCBs) and ECBs. Foreign companies are also allowed to tap the domestic stock markets. FIIs have been permitted to invest in all types of securities including government securities. The Indian stock exchanges have been allowed to set up trading terminals abroad. The trading platforms of Indian exchanges are now accessed through the internet from anywhere in the world. The Reserve Bank of India (RBI) permitted two-way fungibility for ADRs/GDRs, which meant that investors (foreign institutional or domestic) who hold ADRs/GDRs can cancel them with the depository and sell the underlying shares in the market.

With the introduction of LERM and other liberalisation measures both in the case of current and capital account, Indian economy has witnessed increasing openness during the post reforms period. This fact is amply reflected by measures of external openness such as exports plus imports and capital inflows plus capital outflows as a percentage of GDP, respectively. The current account, as measured by the sum of current receipts and current payments, as a percentage of GDP improved significantly from 19 per cent in 1990-91 to about 53 per cent of GDP in 2007-08. Likewise, the sum of gross capital inflows and outflows increased from 12 per cent of GDP in 1990-91 to around 64 per cent in 2007-08.

III. B. Evolution of Exchange Rate Regime

The period after Independence in 1947 was followed by a fixed exchange rate regime where the Indian rupee was pegged to the pound sterling on account of historic links with Britain and this was in line with the Bretton Woods System prevailing at that time. With the breakdown of Bretton Woods system in the early 1970s and the

consequent switch towards a system of managed exchange rates, and with the declining share of the UK in India's trade, the Indian rupee, effective September 1975, was delinked from the pound sterling in order to overcome the weaknesses of pegging to a single currency. During the period of 1975 to 1992, the exchange rate of rupee was officially determined by the Reserve Bank within a nominal band of +/- 5 per cent of the weighted basket of currencies of India's major trading partners. The exchange rate regime of this period can be best characterised as an adjustable nominal peg with a band, with the nominal exchange rate being the operating variable to achieve the intermediate target of a medium-term equilibrium path of the real effective exchange rate (REER).

At the beginning of the 1990s, the significant rise in oil prices and suspension of remittances from the Gulf region in the wake of the Gulf crisis led to severe problems in the balance of payments in India. A two-step downward adjustment of 18-19 per cent in the exchange rate of the Indian rupee was made on July 1 and 3, 1991 with a view to placing it at an appropriate level in line with the inflation differential with major trading partners so as to maintain the competitiveness of exports. This provided the necessary impetus for a move towards greater exchange rate flexibility. Consequently, following the recommendations of the High Level Committee on Balance of payments (Chairman: C. Rangarajan), the Liberalised Exchange Rate Management System (LERMS) involving dual exchange rate system was instituted in March 1992 in conjunction with other measures of liberalisation in the areas of trade, industry and foreign investment. Under the LERMS, 40 per cent of exchange earnings had to be surrendered at an official rate determined by the Reserve Bank, which in turn was obliged to sell foreign exchange only for import of certain essential commodities such as oil, fertiliser and life saving drugs besides the Government's debt servicing. The balance 60 per cent of exchange earnings was to be converted at rates determined by the market. The LERMS was essentially a transitional mechanism and a downward adjustment in the official exchange rate took place in early December 1992 and ultimate convergence of the dual rates was made effective from March

1, 1993. The unification of the exchange rate of the Indian rupee was an important step towards current account convertibility, which was finally achieved in August 1994. The experience with the market determined exchange rate system in India has remained satisfactory.

India's exchange rate policy of focusing on managing volatility with no fixed rate target while allowing the underlying demand and supply conditions to determine the exchange rate movements over a period in an orderly way has stood the test of time. The foreign exchange market has been characterised by orderly conditions for most of the period, excepting a few episodes of volatility. The Reserve Bank continues to follow the same approach of watchfulness, caution and flexibility in regard to foreign exchange market. It co-ordinates its market operations carefully, particularly in regard to the foreign exchange market with appropriate monetary, regulatory and other measures as considered necessary from time to time. The conduct of exchange rate policy in India is guided by three major objectives. First, to maintain orderly conditions in the foreign exchange market by providing foreign exchange as considered necessary from time to time, and to prevent the emergence of destabilising and self-fulfilling speculative activities. Second, to help in maintaining an adequate level of foreign exchange reserves. Third, to help eliminate market constraints with a view to facilitating the development of a healthy foreign exchange market. International research on viable exchange rate strategies in emerging markets has also lent considerable support to the exchange rate policy followed by India (RBI, 2002-03).

Section IV
Model Specification, Methodology and Empirical Observations

IV. A. Model Specification

PPP model articulated first by the scholars of the Salamanca school in the sixteenth century provides that once converted in common currency, national price levels should be equal. Nominal exchange rate responds to relative changes in the price levels of different countries so that the underlying principle of one price will hold. However, this adjustment in three variables takes time and the principle of one price

holds only in long run. Alternatively, real exchange rate attains equilibrium in the long-run, suggesting thereby that PPP condition does not hold in the short run. The fundamental PPP specification is delineated below.

$$E_t P_t^* = P_t \tag{2}$$

$$Q_t = \frac{E_t P_t^*}{P_t} \tag{3}$$

Where E_t and Q_t are nominal and real exchange rate, respectively, between domestic and the foreign currency, and P_t and P^*_t are the price levels of domestic and foreign goods in local currency, and If law of one price (LOP) prevails, *i.e.,* PPP holds, Q_t will either assume value equal to 1 (absolute PPP) or some constant number (relative PPP). Assuming that relative PPP holds and hence Q_t will remain constant, the above relationship could be derived as under:

$$Q_t = E_t + P_t^* - P_t \tag{4}$$

$$\log Q_t = logE_t + logP_t^* - logP_t \tag{5}$$

$$Q_t - Q_{t-1} = (E_t - E_{t-1}) + (P_t^* - P_{t-1}^*) - (P_t - P_{t-1}) \tag{6}$$

If $Q_t - Q_{t-1} = 0$, the above equation could be rewritten:

$$(E_t - E_{t-1}) = (P_t^* - P_{t-1}^*) - (P_t - P_{t-1}) \tag{7}$$

$$\Delta E_t = \pi_t^* - \pi_t \tag{8}$$

The above specification can be estimated using simple OLS process if the variables are stationary, otherwise, regression would be spurious. In case these variables contain non-stationary process, then cointegration framework put forward by Engle and Granger (EG) in 1987 and the other by Johansen in 1988 could be used for estimation.

IV. B. Methodology

According to the co-integration theory, there may be co-integrating relationship between the variables involved if they are of the order of I(1) *i.e.*, they are stationary at the Ist difference level and their lineal

combination is I(0). A battery of unit root tests is available to find out whether the series is stationary or not. In this paper, Augmented Dickey-Fuller (ADF), Dickey-Fuller GLS, Phillips-Perron, and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) tests were applied to test the unit root in time series.

The importance of cointegration tests in the modeling of nonstationary economic series becomes clear in the so-called Granger representation theorem, first formulated in Granger and Weiss (1983). Nonetheless, the necessary techniques for testing for cointegration were developed jointly by Engle and Granger (1987)[1]. In this paper, we have used Johansen Maximum Likelihood Method for estimation.

The components of the specification, *i.e.,* nominal exchange rate, Indian price level and USA price level were tested for stationarity and these variables were found to be having unit root. However, the linear combination of the components of real exchange rate was found stationary, indicating thereby that these components are cointegrated. Therefore, PPP model was specified in terms of Vector Error Correction Model (VECM). Under VECM model, when there is disequilibrium, some of the variables must respond to restore equilibrium. The error correction representation of a cointegrated system regarding PPP is set out below:

$$\Delta exr_t = \lambda_{exr}(exr_{t-1} - a_0 - a_1 pin_{t-1} - a_2 pus_{t-1}) + \varepsilon_{exrt} \quad (9)$$

$$\Delta pin_t = \lambda_{pin}(exr_{t-1} - a_0 - a_1 pin_{t-1} - a_2 pus_{t-1}) + \varepsilon_{pint} \quad (10)$$

$$\Delta pus_t = \lambda_{pus}(exr_{t-1} - a_0 - a_1 pin_{t-1} - a_2 pus_{t-1}) + \varepsilon_{pust} \quad (11)$$

In the above specifications, *exr* is nominal exchange rate between Indian rupee and US dollar, and *pin* and *pus* are domestic and US prices, respectively. The elements of ε in the equations are white noise errors and λs are speed of adjustment parameters. At least, one of the λs must be statistically significant.

Note that the dependent variables are stationary. Hence, the equations are meaningful only if right hand side variables are

stationary. If there is cointegration, the term within the parenthesis (e_{t-1}) is stationary. Nothing gets altered, if we specify ECM in more general form:

$$\Delta exr_t = \lambda_{exr}(exr_{t-1} - a_0 - a_1 pin_{t-1} - a_2 pus_{t-1}) + \sum \emptyset_{11}(i)\Delta exr_{t-1} - \sum \emptyset_{12}(i)\Delta pin_{t-1} + \sum \emptyset_{13}(i)\Delta pus_{t-1} + \varepsilon_{exrt} \quad (12)$$

$$\Delta pin_t = \lambda_{pin}(exr_{t-1} - a_0 - a_1 pin_{t-1} - a_2 pus_{t-1}) + \sum \emptyset_{21}(i)\Delta exr_{t-1} + \sum \emptyset_{22}(i)\Delta pin_{t-1} + \sum \emptyset_{23}(i)\Delta pus_{t-1} + \varepsilon_{pint} \quad (13)$$

$$\Delta pus_t = \lambda_{pus}(exr_{t-1} - a_0 - a_1 pin_{t-1} - a_2 pus_{t-1}) + \sum \emptyset_{31}(i)\Delta exr_{t-1} + \sum \emptyset_{32}(i)\Delta pin_{t-1} + \sum \emptyset_{33}(i)\Delta pus_{t-1} + \varepsilon_{exrt} \quad (12)$$

If $\lambda_{exr} = 0$; $\lambda_{pin} = 0$; and $\lambda_{pus} < 0$ *and* statistically significant, only *pus* (prices of USA) responds to restore equilibrium and *exr* and *pin* are weakly exogenous in the system.

IV. C. Data

In this paper, we have used data from 1970M01 to 2009M03 on nominal exchange rate of Indian rupee *vis-à-vis* the US Dollar, wholesale price index (WPI) of India and producers price index (PPI) of the USA. PPI index mainly consists of trading commodities of USA. In order to ensure consistency, data on all these variables was taken from International Financial Statistics (IFS) of International Monetary Fund (IMF). For applying econometric tests all these variables *viz.,* RER, exchange rate, WPI of India and PPI of USA have been used in log form. In the remainder of this chapter *lexr* is used for log of nominal exchange rate, *lindwp* for log of prices of India, and *luswp* for prices of USA.

IV. D. Empirical Observations

Firstly, a battery of unit root tests are applied to test for stationarity in RER during both periods I and period II. Table 1 shows that Augmented Dickey-Fuller, DF-GLS, and Phillips Perron tests accepted the null hypothesis of unit root in RER and KPSS rejected

the null hypothesis of RER being stationary during period I (pre-reform period). While, during period II (post-reforms period), Augmented Dickey-Fuller, and Phillips Perron rejected the null hypothesis of unit root and KPSS accepted the null hypothesis of RER being stationary (Table 1). The unit root tests applied on RER showed that the PPP holds during period II (post-reforms period) and not in period I (pre-reforms period).

Furthermore, the components of RER (nominal exchange rate, prices in India and USA) were tested for unit root. These variables were found to be non-stationary series. Hence, they were tested for unit root in first difference. As shown in Annex 1-3, Augmented Dickey-Fuller, DF-GLS, and Phillips Perron tests rejected the null hypothesis of unit root at 1 per cent level, while KPSS accepted the null of stationarity at 1 per cent level during both period I and period II. All these variables are found to be integrated of order I(1) process. In the case of combination of these variables (components of RER), *i.e.,* error term, Augmented Dickey-Fuller, DF-GLS, and Phillips Perron tests rejected the null hypothesis of unit root at 1 per cent level and KPSS accept the null of stationary at 1 per cent level only during period II (Annex 4-5) indicating that the components of RER

Table 1: Unit Root Tests for Real Exchange Rate of India Rupee and US Dollar (LRER)

Unit Root/ Stationary Test	t-Statistics	1%	5%	10%
Period I (Pre-reforms)				
ADF	-2.365	-3.992	-3.426	-3.136
DF-GLS	-1.684	-3.468	-2.915	-2.613
PP	-0.211	-3.454	-2.872	-2.572
KPSS	0.241	0.216	0.146	0.119
Period II (Post-Reforms)				
ADF	-3.206*	-4.006	-3.433	-3.140
DF-GLS	-2.076	-3.468	-2.937	-2.647
PP	-3.257**	-3.464	-2.876	-2.575
KPSS	0.267^^^	0.739	0.463	-0.347

Period I contains observations from 1970M01 to 1993M02 and Period II from 1993M03 to 2009M03. LRER is the log of the bilateral (US$) RER.
*, **, *** rejects null hypothesis of unit root at 10%, 5%, and 1% level of significance, respectively. ^, ^^, ^^^ accepts null of stationary at 10%, 5%, and 1% level of significance.

Table 2: Trace Statistics and Maximum Eigenvalue Statistics for Rank of Cointegration

Null	Alternate	Trace Test			Eigenvalue Test		
		Trace Statistics	0.05 Critical Value	Prob.**	Max-Eigen Statistics	0.05 Critical Value	Prob.**
R=0	R ≥1	40.73280	29.79707	0.0019	26.67643	21.13162	0.0075
R≤1	R ≥2	14.05637	15.49471	0.0814	12.25915	14.26460	0.1013
R≤2	R ≥3	1.797218	3.841466	0.1800	3.841466	3.841466	0.1800

Both trace and max-eigenvalue tests indicate 1 cointegrating eqn(s) at the 0.05 level of significance.

are cointegrated only during period II and not in period I. It may be mentioned that 6 lags have been selected for VECM based on sequential modified LR test statistics.

Going forward, we have examined the order of integration of the variables using Johansen's Trace statistics and Eigen value statistics. Both these statistics furnished in Table 2 indicate the existence of 1 cointegrating equation at 0.05 level of significance. In the light of rank of cointegration being one, we have normalised the cointegrating vector with respect to *lexr* and the estimated cointegrating relation.

The results of the long-run cointegration model are given in Table 3. It may be noted that normalised cointegrating parameters bear theoretically predicted sign and are found to be significant. The coefficients of both prices in India and USA show that there is more than proportionate relationship with nominal exchange rate.

PPP theory, however, states that the coefficients of both domestic and foreign prices should be proportionate, *i.e.,* these coefficients take the value 1. The significance of the difference between estimated coefficients of LPIN and LPUS was statistically tested and t-statistics accepted the null hypothesis (Table 4). It shows that PPP theory holds

Table 3: Estimation of Long Term Cointegration Model

	LEXR(-1)	LPIN(-1)	LPUS(-1)	C
CointEq1	1.000000	1.116445	-1.298991	4.629428
		(0.12885)	(0.24583)	
		(8.66469]	[-5.86929]	

Table 4: Coefficient Restrictions Test of Long Term Cointegration Model

	LEXR over LPIN) Null hypothesis, $\beta 1 \neq 1$	LEXR over LPUS Null hypothesis, $\beta 2 \neq 1$
t Statistics	0.903725	1.350944

in this case as coefficients of both domestic and foreign prices are not statistically different from 1.

Further, these three variables were investigated for direction of causality using pair-wise Granger Causality. The time series pertaining to LEXR, LPIN, and LPUS are characterised with I(1) process. Since Granger causality test requires the series to be stationary, this test has been run with their first difference. Table 5 presents the results of Granger causality tests. It has been found that unidirectional causality runs from PUS (the prices in PUS) to EXR at 10 per cent level of significance. The Granger Causality running from PIN to EXR has been found to be weak and statistically insignificant. At the same time, unidirectional causality has been found running from PUS to PIN at significance level of 1 per cent.

Going forward, short-term dynamics, *i.e.,* ECM has been found to be working in the cointegration model. The speed of adjustment parameters (coefficients) of nominal exchange rate and US prices have been found greater than zero with negative sign and significant as manifested by t test[2]. This confirms the *Granger representation theorem* that error correction model for I(1) variables necessarily implies cointegration. The significant coefficients in Table 6 further

Table 5: Results of Granger Causality Test

Null Hypothesis:	Obs.	F-Statistic	Probability	Result
DPIN does not Granger Cause DEXR	187	1.35135	0.23699	Accept H0
DEXR does not Granger Cause DPIN		1.92893	0.07863	Reject H0
DPUS does not Granger Cause DEXR	187	1.33304	0.24484	Accept H0
DEXR does not Granger Cause DPUS		4.72014	0.00018	Reject H0
DPUS does not Granger Cause DPIN	187	5.94883	0.000015	Reject H0
DPIN does not Granger Cause DPUS		2.10506	0.05496	Reject H0

Table 6: Error Correction Estimates of Components of Real Exchange Rate

Error Correction:	D(LEXR)	D(LINDWP)	D(LUSWP)
CointEq1	-0.082889	-0.012722	-0.041028
	(0.03299)	(0.01123)	(0.01712)
	[-2.51248]	[-1.133061]	[-2.39611]

manifest that the disequilibrium among the variables from their long-run trend is corrected through the dynamic adjustment of exchange rate and US prices but not by Indian prices in the short-run.

When there is positive deviation in the exchange rate from its long run equilibrium level, both nominal exchange rate and US prices respond negatively (represented by a negative adjustment coefficients). On the other hand, prices in India also respond negatively to deviations in nominal exchange rate (represented by negative adjustment coefficient) but the coefficient is not statistically significant. This implies that disequilibrium in the real exchange rate is being corrected by deviations in nominal exchange rate and US prices in the short run.

Section V
Concluding Remarks

Exchange rate models in the literature assume that PPP holds in the open market economies. The PPP condition not only helps in understanding the nature of nominal and real shocks in the exchange rate models but also help policy makers and researchers to compute RER misalignment. Theoretical and empirical literature suggests that the PPP can be violated in the short run. PPP may also not hold on account of factors, *viz.,* (i) if there are transaction costs and trade frictions, (ii) differential baskets of goods are used to construct aggregate price indices, and (iii) government intervenes in foreign exchange rate markets.

The main objective of this paper is to examine the validity of PPP condition in the case of India during pre and post reform periods using monthly data from 1970 to 2009. The results of battery of tests reveal that RER is non-stationary during the pre-reform period and stationary in the post-reforms era, which underscores the fact that RER condition holds during the post reforms period. This is validated by the result of unit root tests wherein the components of RER (exchange rate, prices of India and USA) have been found cointegrated as the linear combination of RER components turned out to be stationary during the post-reforms period and not during the pre-reforms period.

Further, PPP condition has been estimated using VECM. The results imply that long-run relationship between exchange rate and prices of India and USA is more than proportionate but difference is statistically insignificant. However, ECM is found to be working with all the coefficients having negative sign but statistically significant only in the case of LEXR and LPUS. The ECM coefficients are very small, suggesting that these variables take quite a long time in correcting the deviations in the long run equilibrium exchange rate.

In sum, RER holds in the post-reforms period and not in the Pre-reforms period, which is validated by the cointegration tests and vector error correction model employed in this case. Thus, PPP condition holds in the long run during the post-reforms period, implying that any deviations in the equilibrium exchange rate remain transitory and revert back to the underlying trend eventually. These findings underscore and support the fundamental principle that chances of PPP improve in an economy with its increased external sector openness. Holding of PPP during post-reforms period is also consistent with liberalised exchange rate mechanism (LERM) introduced since March 1993, where exchange rate is determined by demand and supply.

NOTES:

1 Engle and Granger framework is a two-step procedure wherein null hypothesis of no cointegration is tested between a set of I(1) variables applying unit root tests to the residuals. EG two-step procedure first applies Ordinary Least Squares (OLS) estimation method to the variables, and then tests the stationarity of the residual obtained from the regression equation. If the residual is stationary, then there is a cointegrating relationship between the variables. Another seminal work in the evolution of cointegration techniques is by Johansen (1988, 1991). Johansen Maximum Likelihood Method based on Vector Auto Regression (VAR) known as Vector Error Correction Mechanism (VECM) deals with more than two variables.

2 In case of one cointegration relationship the significance of speed of adjustment parameters can be determined by t statistics.

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Annex 1: Unit-Root Test for Bilateral Real Exchange Rate of Indian Rupee with US$ (LRER)

Unit Root Test	Period I I(0)	Period II I(0)
Augmented Dickey-Fuller		
t-Statistics	-2.364692	-3.206252*
Critical Values % level	-3.991656	-4.006311
5% level	-3.426191	-3.433278
10% level	-3.136301	-3.140478
DF-GLS		
t-Statistics	-1.684368	-2.076163
Critical Values 1% level	-3.467600	-3.468400
5% level	-2.914800	-2.937000
10% level	-2.613400	-2.647000
Phillips-Perron (Newey-West Using Bartlett Kernel)		
Adj. t-Statistics	-0.210197	-3.257362***
Critical Values 1% level	-3.453823	-3.464280
5% level	-2.871768	-2.876356
10% level	-2.572293	-2.574746
KPSS		
LM -Statistics	0.241196	0.266712^^^
Critical Values 1% level	0.216000	0.739000
5% level	0.146000	0.463000
10% level	0.119000	0.347000

Period I contains observations from 1970M01 to 1993M02 and Period II from 1993M03 to 2009M03. LRER is the log of the bilateral (US$) RER.

*, **, *** rejects null hypothesis of unit root at 10%, 5%, and 1% level of significance, respectively. ^, ^^, ^^^ accepts null of stationary at 10%, 5%, and 1% level of significance.

Annex 2: Unit-Root Test for Nominal Bilateral Nominal Exchange Rate of Indian Rupee with US$ (LEXR)

Unit Root Test	Period I		Period II	
	I(0)	I(1)	I(0)	I(1)
Augmented Dickey-Fuller				
t-Statistics	1.857250	-12.31178***	-2.514754	-11.42035***
Critical Values 1% level	-3.453910	-3.453910	-3.464280	-3.464280
5% level	-2.871806	-2.871806	-2.876356	-2.876356
10% level	-2.572313	-2.572313	-2.574746	-2.574746
DF-GLS				
t-Statistics	1.114642	-11.59819***	0.860337	-11.37020***
Critical Values 1% level	-2.573367	-2.573367	-2.576999	-2.576999
5% level	-1.941978	-1.941978	-1.942482	-1.942482
10% level	-1.615931	-1.615931	-1.615606	-1.615606
Phillips-Perron (Newey-West Using Bartlett Kernel)				
Adj. t-Statistics	1.997638	-12.54128***	-2.511417	-11.42212***
Critical Values 1% level	-3.453910	-3.453910	-3.464280	-3.464280
5% level	-2.871806	-2.871806	-2.876356	-2.876356
10% level	-2.572313	-2.572313	-2.574746	-2.574746
KPSS				
LM -Statistics	1.665699	0.605880^^^	1.184326	0.276564^^^
Critical Values 1% level	0.739000	0.739000	0.739000	0.739000
5% level	0.463000	0.463000	0.463000	0.463000
10% level	0.347000	0.347000	0.347000	0.347000

Period I contains observations from 1970M01 to 1993M02 and Period II from 1993M03 to 2009M03. LEXR is the log of the bilateral (US$) nominal exchange rate.

*, **, *** rejects null hypothesis of unit root at 10%, 5%, and 1% level of significance, respectively. ^, ^^, ^^^ accepts null of stationary at 10%, 5%, and 1% level of significance.

Annex 3: Unit-Root Test for Indian Price Level (LPIN)

Unit Root Test	Period I		Period II	
	I(0)	I(1)	I(0)	I(1)
Augmented Dickey-Fuller				
t-Statistics	-0.617532	-10.15714***	-1.776588	-9.781614***
Critical Values 1% level	-3.453910	-3.453910	-3.464280	-3.464280
5% level	-2.871806	-2.871806	-2.876356	-2.876356
10% level	-2.572313	-2.572313	-2.574746	-2.574746
DF-GLS				
t-Statistics	1.114642	-6.535593***	0.873862	-7.652702***
Critical Values 1% level	-2.573398	-2.573398	-2.576999	-2.576999
5% level	-1.941982	-1.941982	-1.942482	-1.942482
10% level	-1.615929	-1.615929	-1.615929	-1.615929
Phillips-Perron (Newey-West Using Bartlett Kernel)				
Adj. t-Statistics	-0.548653	-10.25036***	-1.898202	-9.781614***
Critical Values 1% level	-3.453910	-3.453910	-3.464280	-3.464280
5% level	-2.871806	-2.871806	-2.876356	-2.876356
10% level	-2.572313	-2.572313	-2.574746	-2.574746
KPSS				
LM -Statistics	1.924996	0.061479^^^	1.699344	0.225834^^^
Critical Values 1% level	0.739000	0.739000	0.739000	0.739000
5% level	0.463000	0.463000	0.463000	0.463000
10% level	0.347000	0.347000	0.347000	0.347000

Period I contains observations from 1970M01 to 1993M02 and Period II from 1993M03 to 2009M03. LPIN is the log of the Indian WPI.

*, **, *** rejects null hypothesis of unit root at 10%,5%, and 1% level of significance, respectively. ^, ^^, ^^^ accepts null of stationary at 10%,5%, and 1% level of significance.

Annex 4: Unit-Root Test for US Price Level (LPUS)

Unit Root Test	Period I		Period II	
	I(0)	I(1)	I(0)	I(1)
Augmented Dickey-Fuller				
t-Statistics	-2.702267	-6.038196***	-0.716393	-9.282352***
Critical Values 1% level	-3.454085	-3.454085	-3.464280	-3.464280
5% level	-2.871883	-2.871883	-2.876356	-2.876356
10% level	-2.572354	-2.572354	-2.574746	-2.574746
DF-GLS				
t-Statistics	0.982306	-6.018803***	0.392034	-9.257905***
Critical Values 1% level	-2.573429	-2.573429	-2.576999	-2.576999
5% level	-1.941986	-1.941986	-1.942482	-1.942482
10% level	-1.615926	-1.615926	-1.615929	-1.615929
Phillips-Perron (Newey-West Using Bartlett Kernel)				
Adj. t-Statistics	-2.490799	-14.00265***	-0.652394	-9.383623***
Critical Values 1% level	-3.453910	-3.453910	-3.464280	-3.464280
5% level	-2.871806	-2.871806	-2.876356	-2.876356
10% level	-2.572313	-2.572313	-2.574746	-2.574746
KPSS				
LM -Statistics	1.782120	0.783827 ^^^	1.462365	0.078552 ^^^
Critical Values 1% level	0.739000	0.739000	0.739000	0.739000
5% level	0.463000	0.463000	0.463000	0.463000
10% level	0.347000	0.347000	0.347000	0.347000

Period I contains observations from 1970M01 to 1993M02 and Period II from 1993M03 to 2009M03. LPUS is the log of the US prices.

*, **, *** rejects null hypothesis of unit root at 10%,5%, and 1% level of significance, respectively. ^, ^^, ^^^ accepts null of stationary at 10%,5%, and 1% level of significance.

Annex 5: Unit-Root Test for Linear Combination (Error Term) of Nominal Bilateral Exchange Rate (LEXR), Price Level in India (LPIN) and Price Level in USA (LPUS)

Unit Root Test	**Period I**	**Period II**
	I(0)	**I(0)**
Augmented Dickey-Fuller		
t-Statistics	-1.419091	-2.933059**
Critical Values 1% level	-3.453910	-3.464280
5% level	-2.871806	-2.876356
10% level	-2.572313	-2.574746
DF-GLS		
t-Statistics	-0.621099	-1.035102
Critical Values 1% level	-2.573367	-2.576999
5% level	-1.941978	-1.942482
10% level	-1.615931	-1.615929
Phillips-Perron (Newey-West Using Bartlett Kernel)		
Adj. t-Statistics	-1.475948	-2.576981**
Critical Values 1% level	-3.453823	-3.464280
5% level	-2.871768	-2.876356
10% level	-2.572293	-2.574746
KPSS		
LM -Statistics	0.534756^^^	0.562622^^^
Critical Values 1% level	0.739000	0.739000
5% level	0.463000	0.463000
10% level	0.347000	0.347000

Period I contains observations from 1970M01 to 1993M02 and Period II from 1993M03 to 2009M03.

*, **, *** rejects null hypothesis of unit root at 10%, 5%, and 1% level of significance, respectively. ^, ^^, ^^^ accepts null of stationary at 10%, 5%, and 1% level of significance.

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Foreign Portfolio Flows and their Impact on Financial Markets in India

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We analyse the effect of portfolio flows on various segments of the Indian financial markets over the decade preceding the global financial crisis. The correlation analysis and the causality test results suggest that portfolio flows cause changes in equity prices and exchange rates. In the short run, the VAR and impulses response functions indicate that a positive shock to net FII flow generally result in increase in equity prices, exchange rate (INRUSD) appreciation and a decline in interest rates. The magnitude of these responses dampens over time and converges towards equilibrium path. In the long run, the parameters of Autoregressive Distributed Lag (ARDL) Model indicate the existence of an equilibrating relation. The magnitude and direction of long term coefficients generally support the short run findings. The negative and significant error correction term, on the other hand, indicates movements towards long run equilibrium and the resilience of Indian financial markets.

JEL Classification : G11, G14

Keywords : Portfolio flow, Financial Markets

I. Introduction

The decade immediately preceding the global financial crisis (1998-2008) had witnessed an exponential increase in international capital movements, especially in the emerging markets. India was no exception to this phenomenon, where with the ushering of economic liberalisation and globalisation there was a large increase in the portfolio inflows. The favourable demographic characteristics (Mohan, 2004), growth potential, scope of diversification and economic policies also influenced India's share in capital flows among Emerging Market Economies (EMEs). Consequently, the

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Indian financial markets started getting increasingly integrated with the global financial market (Sinha and Pradhan, 2008). Anecdotal evidence suggest that global factors started influencing domestic markets through the portfolio channel over the last decade.

It is well established in the literature that financial markets suffer from contagion – both foreign and domestic [Lagoarde and Lucey (2007)]. While the former refers to a shock to a country's financial markets caused by changes in markets of another country, the latter refers to turbulence in one market spilling over to other market segments of the same country. These movements across financial markets are often synchronous in nature, particularly in EMEs. These two effects often reinforce each other and amplify the problem.

The East Asian crisis clearly indicated the vulnerability of an open economy to sudden changes in portfolio flows. With gradual progress towards external sector liberalisation and increasing capital inflows, the issues relating to the resilience of Indian financial system in the face of strong and volatile capital flows attained increasing importance. The present study is an attempt to address these issues. It aims to analyse the effects of portfolio flows across different financial markets. Specifically, this study has two objectives: it attempts to model the short run and long run relationship between the portfolio flows and different segments of the financial market. Second, it intends to assess the impact of sudden changes in such flows on various segments of the financial markets. This paper is organised as follows: Section II presents a brief survey of literature, Section III describes the data, Section IV analyses the empirical findings and Section V draws conclusions.

Section II
Literature Survey

One of the major arguments in favour of the financial liberalisation and globalisation is that it facilitates greater economic growth. Many economists also believe that free capital flows will lead to a more efficient allocation of resources (*e.g.* Kim and Singal, 2000). Considering the beneficial role played by capital flows, early

research interest was focused on the determinants of such flows. For instance, studies by Taylor and Sarno (1997), Brennan and Cao (1997), Mody and Murshid (2005) and Lagoarde and Lucey (2007) concentrated on the determinants of the portfolio investment and their impact on the receiving economies. Their empirical findings, though not unanimous, generally point towards productivity growth and allocative efficiency of the capital flows.

Towards the end-1990s, especially after the outbreak of economic crisis in South East Asian countries, issues such as volatility of the 'hot' capital flows and their impact on the recipient country, problems relating to contagion *etc*. have increasingly occupied the centre-stage of academic research. Subsequently, many policy makers and economists became skeptical not only about the benefits of free flows, but also viewed uncontrolled capital flows as risky and destabilising. Krugman (1998) underlined the problem of moral hazard in financial intermediaries and noted that it can lead to over-investment at the aggregate level, overpricing of assets and vulnerability of such economies to financial crises. Subsequent studies (*e.g.* Dabos and Juan-Ramon (2000)) concentrated on the intricate relationship between capital flows and financial markets. The recent literature has acknowledged the risks associated with the capital flows and indicated that the most effective way to deal with capital inflows would be to deepen the financial markets, strengthen financial system supervision and regulation, improve capacity and implement sound macroeconomic / financial sector policies. These actions will help in increasing the absorptive capacity and resilience of the economies and financial systems to the risks associated with large and volatile inflows. To quote Mohan (2009), 'It is a combination of sound macroeconomic polices, prudent debt management, exchange rate flexibility, the effective management of the capital account, the accumulation of appropriate levels of reserves as self-insurance and the development of resilient domestic financial markets that provides the optimal response to the large and volatile capital flows to the EMEs. How these elements are best combined will depend on the country and on the period: there is no 'one size fits all''.

Since the beginning of 2000s, empirical studies have concentrated on capital flows in India and its impact on domestic macro variables. In this context a study by Dua and Sen (2005) found that the real effective exchange rate is cointegrated with the level of capital flows, volatility of the flows, high-powered money, current account surplus and government expenditure. The results reported by Trivedi and Nair (2000) indicate that the returns and volatility in the Indian markets emerge as the principal determinants of FII investments. D'souza (2008) noted that the difference between the capital flows to India as compared with other EMEs are that (a) they are associated with a deteriorating current account position rather than improving one and (b) the extent of financial outflows have only partially offset the capital inflows. The author also notes that capital flows in India have been associated with a buoyant stock market and a rise in investment and interest rates in the economy.

While most of the previous empirical studies considered impact of capital flows on the macroeconomic variables or on a particular market (*e.g.* stock market / exchange rate market *etc*.) our study attempts to integrate the major financial markets and evaluate the market reaction to a shock in capital flows. In other words, the emphasis is on market dynamics and resilience to uncertain and volatile flows rather than analysing the determinants or the effect of capital flows on domestic variables. It assumes significance as India moves towards greater capital account liberalisation (A brief write-up on India's approach to capital flows is reported in the Annex I), and faces the challenges of coping with large, volatile and uncertain capital flows.

Section III
Data

The major data-source for this study is Handbook of Statistics on the Indian Economy (HBS). Our study uses the monthly time series data on financial variables over the decade just before the outbreak of global financial crisis(April 1998 to March 2008). The period 2008-09, which was mainly characterised by exterme events

and freezing of financial markets, was not included in the empirical analysis as it may distort the general trends observed in the financial markets. However, results obtained were compared with reference to this period, which serves as a robustness test.

We used rupee dollar (INRUSD) exchange rate to represent the movements in forex market and yields of benchmark 10-year Government of India securities (GSEC) as a representation of gilt movements. While for the equity market, monthly average data for BSE Sensex (Sensex) has been used, the monthly average call / notice rate (CALL) is used for representing the interbank money market. The monthly data on net investments in debt and equity by foreign institutional investors (NETFII) were gathered from the Securities and Exchange Board of India web-site. Table-1 reports the descriptive statistics for these variables.

It may be noted that the FII flows in Indian markets consist of investments in equities as well as in debt instruments. Even though the FII investments in equities have consistently remained much higher than the same in debt instruments, the FII investments in debt have almost doubled during 2007-08 as compared with 2006-07. Unlike some of the earlier studies, in view of the growing investment of FIIs in debt instruments, we have used both of these flows in the present paper.

Table 1: Descriptive Statistics

	Net FII	Sensex	INRUSD	Call	GSEC
1	2	3	4	5	6
Mean	1983.94	5907.94	45.10	6.78	8.52
Median	1088.87	4647.34	45.25	6.66	7.68
Maximum	19515.29	15253.42	49.00	14.07	12.33
Minimum	-8930.32	2866.55	39.66	4.29	5.11
Std. Dev.	3280.08	3427.70	2.18	1.96	2.33
Skewness	1.46	1.36	-0.13	0.99	0.33
Kurtosis	9.87	3.62	2.40	4.22	1.72

Section IV
Methodology and Empirical Findings

IV.1 Basic Results

The objective of this paper is to study the interrelationship of portfolio flows in India with other financial variables. Following the standard time series methodology, we first check for stationarity of these variables. This involves determining the order of integration of each of the variables under consideration by employing one of the unit root tests. In this paper we employ the widely accepted Phillips-Perron (1988) t-test. The results are reported in Table 2 below.

The Phillips-Perron adjusted t-stat and their p-values indicate that CALL and NETFII are both stationary at levels. The SENSEX, GSEC and INRUSD rate are *first difference* stationary. The correlation coefficients of the above variables are reported in Table 3. For computing the correlation coefficients the non-stationary series are included in the differenced form (to avoid spurious results), while the stationary variables are in the levels.

Table 3 indicates that NETFII has a high positive coefficient with changes in SENSEX and negative correlation coefficient with other financial rate variables (CALL, GSEC and INRUSD). So, an increase in NETFII could lead to an increase in SENSEX, reduction in interest rates and put an appreciating pressure on INR.

IV.2 Causality Analysis

In the previous section we found some evidence of contemporaneous relation between the financial variables with net

Table 2: Phillips-Perron Adjusted t-Statistics

Null Hypothesis	Phillips-Perron test statistic			
	Level		differenced	
	Adj.t-Stat	Prob.	Adj. t-Stat	Prob.
1	2	3	4	5
CALL has a unit root	-4.02	0.00		
INRUSD has a unit root	-2.13	0.23	-7.50	0.00
NETFII has a unit root	-10.71	0.00		
SENSEX has a unit root	-0.23	0.93	-7.36	0.00
GSEC has a unit root	-1.54	0.51	-9.30	0.00

Table 3: Correlation Coefficient

	NETFII	CALL	DSENSEX	DGSEC	DINRUSD
1	2	3	4	5	6
NETFII	1.00	-0.27	0.56	-0.11	-0.48
CALL	-0.27	1.00	-0.21	-0.02	0.12
DSENSEX	0.56	-0.21	1.00	-0.23	-0.38
DGSEC	-0.11	-0.02	-0.23	1.00	0.09
DINRUSD	-0.48	0.12	-0.38	0.09	1.00

capital inflow in India. This section examines the possibility of lead-lag relationship among these financial variables. For evaluating the same we considered Granger causality test[1]. Table 4 reports the null hypothesis, Granger F-Statistics and the probability values associated with the F-statistics.

Table 4: Pair-wise Granger Causality Test

Null Hypothesis:	F-Statistic	Probability
1	2	3
DSENSEX does not Granger Cause NETFII	0.01	0.99
NETFII does not Granger Cause DSENSEX	**2.57**	**0.08**
DGSEC does not Granger Cause NETFII	0.20	0.82
NETFII does not Granger Cause DGSEC	0.91	0.40
CALL does not Granger Cause NETFII	1.60	0.21
NETFII does not Granger Cause CALL	0.57	0.57
DINRUSD does not Granger Cause NETFII	1.38	0.24
NETFII does not Granger Cause DINRUSD	**2.66**	**0.11**
DGSEC does not Granger Cause DSENSEX	0.80	0.45
DSENSEX does not Granger Cause DGSEC	1.07	0.35
CALL does not Granger Cause DSENSEX	**3.90**	**0.02**
DSENSEX does not Granger Cause CALL	0.32	0.72
DINRUSD does not Granger Cause DSENSEX	0.93	0.40
DSENSEX does not Granger Cause DINRUSD	0.10	0.91
CALL does not Granger Cause DGSEC	2.25	0.11
DGSEC does not Granger Cause CALL	0.13	0.88
DINRUSD does not Granger Cause DGSEC	0.42	0.66
DGSEC does not Granger Cause DINRUSD	0.15	0.86
DINRUSD does not Granger Cause CALL	**4.61**	**0.01**
CALL does not Granger Cause DINRUSD	**6.64**	**0.00**

Table 4 indicates that NETFII causes changes in SENSEX and INRUSD. There are also empirical evidences of CALL causing changes in SENSEX and Yield. The F-Statistics and the associated P-values indicate bi-directional causality between CALL and INRUSD.

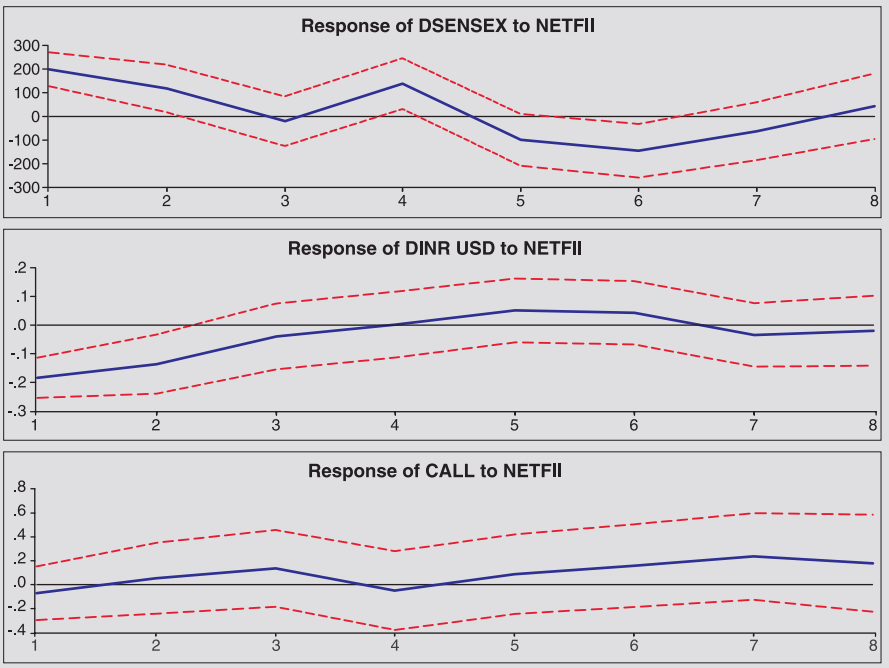
IV.3 Short Run Adjustments: Impulse Responses

In order to examine the directional impact and the time path of a change in NETFII flows on other financial variables, we used a basic five variable VAR model comprising of net FII flows (NETFII), exchange rate (INRUSD), Stock indices (SENSEX), Call rate (CALL) and benchmark yield (GSEC). The impulse responses trace out the responsiveness of these variables to a shock to NETFII. The level stationary variables were used in levels for the VAR, whereas the difference stationary variables were used in difference form. The order of the VAR was selected using the SBC criteria. A unit shock was applied to the errors of NETFII equation, and the effects upon the VAR system over time were noted. For generating the impulse responses, we used orthogonalised (Choleski) impulse responses to a unit standard deviation shock; Chart 5 reports these impulse responses along with analytical standard error bands (represented by the dotted lines).

A look at the impulse responses, over an eight-month period, reveals two stylised facts. First, a shock in NETFII has a negative impact on most financial variables. For instance, differenced exchange rate initially declined, indicating appreciation of INR, due to the increase in NETFII flows. The call rate also declined initially, indicating surplus liquidity in the money market. The NETFII flows, on the other hand, had a positive impact on the stock market, indicating the important link between capital flows and the stock prices in India. These results are consistent with the available literature / anecdotal evidence on capital flows and markets in EMEs. The impact of such impulses either dampened over time or hovered around the initial values indicating the resilience of the financial markets in India in the short run.

Chart 5: Impulse Responses

Response to Cholesky One S.D. Innovations ± 2 S.E.



A simple VAR system and impulse responses are often criticized because ordering of the equations in the VAR system plays a role in the magnitude and direction of impulse responses. To ascertain the robustness of the results, we cross-checked the impulse responses through the *Generalised impulses*, as introduced by Pesaran and Shin (1998), which in contrast to Choleski decomposition does not depend on the VAR ordering. The impulse responses that are reported in Annex Chart A2 confirm the above findings.

IV.4 Long Term Relation (Cointegration)

In this section we test for the existence of a long-run relationship between NETFII and financial variables within a multivariate framework. The general process for testing the same for a set of non-stationary variables (of same order or integration) is by testing the existence of cointegrating vector(s) using Johansen (1988) method. However, the PP test (Table - 4) indicates that all variables under consideration here do not have the same statistical properties (rather a

combination of I(0) and I(1) variables). Therefore, in order to test for the existence of any long-run relation among the variables, we used Autoregressive Distributive Lag (ARDL) method and the *bounds* testing approach to cointegration. The main advantage of ARDL testing lies in the fact that it can be applied irrespective of whether the variables are I(0) or I(1) [Pesaran *et al.(1996)*]. The test gives asymptotically efficient long run estimates irrespective of whether the underlying regressors are I(0) or I(1) process. The specification of the ARDL model is as follows:

$$\Phi(L,p)Y_t = \sum\beta_i (L,q)X_{it} + \delta W_t + \varepsilon \quad (1)$$

where L is the lag operator and W_t is the vector of deterministic variables and X_{it} is the set of explanatory variables.

In order to test for cointegration we need to estimate an unrestricted error correction model which is as follows:

$$\Delta Y = \alpha W_t + \sum\beta\Delta Y_{t-i} + \gamma Y_{t-1} + \varepsilon \quad (2)$$

where β_s are short run dynamic coefficients; γ_s are long run multiplier; and ε is white noise error. Rejecting the null hypothesis $\gamma = 0$ indicates that there exists long-run relationship among Y_t irrespective of the variables' stationary properties. The F-statistic is generally used for testing the joint null hypothesis that the coefficients of these level variables are zero (*i.e.* there does not exist any long-run relationship between them). However, the asymptotic distribution of the F-Stat is not-standard, as the regressors are a combination of I(0) or I(1). We have therefore used the critical bounds[2] computed by Pesaran, Shin and Smith (1996) for testing the null hypothesis. We denote $F(X_i)$, as the F-value associated with the unrestricted error correction model, when X_i is used as dependent (LHS) variable in the model. The F-values, so derived are reported in the Table-5 below:

Table 5: ARDL F-Statistics Indicating Long Term Relationship

F(INRUSD)	F(SENSEX)	F(NETFII)	F(GSEC)	F(CALL)
1.94	2.24	1.18	2.20	3.59

Given the number of variables (k=4) the relevant critical value bounds for the present application at the 90 per cent level are given by 2.2425 to 3.574. Since F(CALL) = 3.59 exceeds the upper bound of the critical value band, we can reject the Null of no long-run relationship among the variables under consideration.

The estimation of the long-run coefficients and the associated error-correction model can now be accomplished using the ARDL methodology. The order of the ARDL model was selected using both the Schwarz Bayesian (SBC) and the Akaike Information (AIC) criteria and the selected model (using SBC as well as AIC criteria) was of ARDL(1,0,0,0,0) specifications. While the ARDL coefficients are reported in the Annex Table A3 the estimates of the long-run coefficients based on this model are summarised in Table 6 (column 2 and 3) below.

Column 4 and 5 of the Table 6 report the long term coefficients derived from the augmented ARDL model. The augmented model incorporates five additional dummy variables. The LAF Cap dummy captures months (2007M3 – 2007M7) when the reverse repo

Table 6: Long Run ARDL Coefficients

Regressor	Coefficient	T-Ratio[Prob]	Coefficient	T-Ratio[Prob]
1	2	3	4	5
INRUSD	0.2907	1.9082[.060]	0.2898	1.9058[.060]
SENSEX	0.0002	2.9505[.004]	0.0002	3.0451[.003]
GSEC	0.8060	8.4125[.000]	0.8107	8.7525[.000]
NETFII	-0.0001	-1.8885[.062]	-0.0001	-1.9032[.060]
C	-14.0444	-2.4970[.014]	-14.1583	-2.6093[.010]
T (LAF Cap)			-0.5756	-.62697[.532]
S3 (Mar)			1.4144	2.3649[.020]
S6 (June)			-0.6085	-.98366[.328]
S9 (Sep)			0.0276	.046944[.963]
R-Squ	0.67		0.69	
D-W Stat	1.99		2.04	

(absorption) window of Liquidity Adjustment facility[3] was capped at Rs.3,000 crore and the money market rate plunged considerably due to excess liquidity in the interbank market. The four end-quarter-dummies were incorporated to capture the seasonal patterns in the Indian money market. The rate and volatility in the money market generally increase during the end-quarter mainly due to advance quarterly tax outflow from the system. The quarterly dummies were incorporated in the augmented model to capture the seasonal pattern in the money market. The dummy coefficient for March was significantly different from zero at five percent level. It may be noted from the above table that the point estimates in both the cases are similar in magnitude and signs. They indicate that increasing GSEC yield (rising cost of capital) and Sensex (booming capital market) put upward pressure on money market rates. The capital flows, on the other hand, have an easing impact on the money market rates. This could be due to the fact that during the period of large capital inflows, the central bank's forex operations[4] (purchase of dollar), at times, increase liquidity in the domestic money market and therefore have an easing impact on rates. The sign of INRUSD was found to be positive. This could be because of the fact that the periods characterised by INR depreciation are generally marked by large capital outflows, forex operations (sell of dollars) and therefore relatively tight liquidity conditions (higher money market rates). All these coefficients were statistically significant at 10 per cent levels.

The error correction coefficient, (Table 7) estimated using the same ARDL model was at 0.661(0.00), statistically highly significant and had the correct (negative) sign, which suggested reasonable speed of convergence to equilibrium[5]. The ECM coefficient for the augmented model was also consistent with the former and indicated the robustness of these models.

The above error correction model can also be used in forecasting the changes in money market rates due to changes in capital flows and changes in other financial market variables. To test the robustness

Table 7: ARDL Error Correction Model

Regressor	Coefficient	T-ratio[prob]	Coefficient	T-ratio[prob]
1	2	3	4	5
DINRUSD	0.1921	2.5676[.012]	0.1961	2.6318[.010]
DSENSEX	0.0001	2.8494[.005]	0.0001	2.9907[.003]
DGSEC	0.5327	5.7160[.000]	0.5487	5.8797[.000]
DNETFII	0.0001	-1.9624[.052]	0.0001	-1.9575[.053]
dC	-9.2809	-2.3923[.018]	-9.5820	-2.4866[.014]
dT			-0.3895	-.64023[.523]
dS3			0.9572	2.4026[.018]
dS6			-0.4118	-.98356[.328]
dS9			0.0187	.046938[.963]
ecm(-1)	-0.66082	-7.8173[.000]	-0.67677	-7.8603[.000]
R-Square	0.37		0.42	
D-W Stat	1.99		2.04	

of the model, *forecast* for 2008M4 to 2008M7 was done using both the models (simple as well as Augmented ARDL models) which are referred in Table 8 below:

The root mean squares of forecast errors of the estimated period compared favourably with that in the sample period. The RMSE of the Augmented ARDL model was lower, but in line with the former, which supports finding of the earlier models. The actual and estimated values of call rates are plotted in the Annex Chart A-3.

Table 8: Forecast Errors

	Model I		Model II	
	1998M4-2008M3	2008M4-2008M7	1998M4-2008M3	2008M4-2008M7
1	2	3	4	5
Mean	0.000	-0.442	0.000	-0.254
Mean Absolute	0.678	0.784	0.677	0.694
Mean Sum Squares	1.350	0.661	1.252	0.636
Root Mean Sum Squares	1.162	0.813	1.119	0.797

Section V
Conclusion

The literature so far is not unanimous about the movements in the financial markets as a result of capital flows. The present paper evaluates this ongoing debate in the Indian context. The results indicate that net FII flows cause changes in equity (SENSEX) and exchange rate (INRUSD). In the short run, a shock to *net FII flow* has a positive impact on equity market and negative impact on money market (CALL) rate, benchmark yield and exchange rate (indicating Rupee appreciation). The impulse responses dampen over time.

The capital inflows and returns on equities generally have a positive correlation for emerging markets. The empirical findings of this study confirms the same for India over the last decade. One of the major reasons for surplus liquidity in Indian money market during 2004:04 to 2008:03 was large capital inflows and consequent upward pressure on the Indian Rupee. The Central Bank's forex operations in the face of large capital inflows had a positive impact on the domestic money supply and interbank liquidity. This in turn put a downward pressure on the rates in the money market. In an attempt to reduce surplus liquidity from the money market, the central bank sterilised excess liquidity (through Open Market Operations or Market Stabilisation Scheme), which influenced the rates in the G-sec market. These calibrated policies have been captured in the short run analysis of the present paper.

Over the long run, the result of the ARDL model generally supports the short run dynamics. The bound test (of ARDL model) indicates that there exists a long run relation between capital flows and financial variables. The error correction term has a negative coefficient and was found to be statistically highly significant, indicating reasonable speed of convergence to the equilibrium. The long run coefficients of the ARDL model for yield, exchange rate (increase indicate rupee depreciation) and equity had a positive effect on call rate, while the net FII inflow has a negative effect on the same. The long term coefficients of the ARDL model and the negative and significant error correction term, indicates the resiliance of Indian financial markets.

Finally, this study mainly concentrated on the pre-global crisis period to evaluate the long term interaction between financial variables during normal times. Though the impact of the recent global crisis was rather muted for the Indian economy, some capital outflows were witnessed during September-October 2008, with concomitant pressure on the financial markets. However, because of the pre-emptive policy measures and the resilience of the financial system, the markets were back to normal by December 2008. While the quick adjustment and resilience demonstrated by the markets reinforce the empirical findings of our study, it also opens up several areas for further research (*e.g.* contingency measures and the reaction of various financial markets in response to such measures). With the availability of longer time series data, these issues can trigger off more focussed research on financial markets and capital flows, which would serve as a useful guide both in refining operating procedures and furthering financial markets reforms in India.

Annex I: The Indian Approach to Capital Flows: An Overview

Until the 1980s, India's development strategy was focussed on self-reliance and import-substitution. There was a general disinclination towards foreign investment or private commercial flows. Since the initiation of the reform process in the early 1990s, however, India's policy stance has changed substantially. India has encouraged all major forms of capital flows, though with caution, in view of concerns for macroeconomic stability. The broad approach to reform in the external sector after the Gulf crisis was delineated in the Report of the High Level Committee on Balance of Payments (Chairman: C. Rangarajan). The Report, *inter alia,* recommended a compositional shift in capital flows away from debt to non-debt creating flows; strict regulation of external commercial borrowings, especially short-term debt; discouraging volatile elements of flows from non-resident Indians; gradual liberalisation of outflows; and disintermediation of Government in the flow of external assistance. In the 1990s, foreign investment has accounted for a major part of capital inflows to the country. The broad approach towards foreign direct investment has been through a dual route, *i.e.*, automatic and discretionary, with the ambit of the automatic route progressively enlarged to many sectors, coupled with higher sectoral caps stipulated for such investments. Portfolio investments are restricted to select players, *viz*., Foreign Institutional Investors (FIIs). In respect of NRI deposits, some control over inflows is exercised through specification of interest rate ceilings. In the past, variable reserve requirements were stipulated to modulate such flows. At present, however, reserve requirements are uniform across all types of deposit liabilities (see, for instance, RBI, 2004b).

In connection with external assistance, both bilateral and multilateral flows are administered by the Government of India and the significance of official flows has declined over the years. Thus, in managing the external account, adequate care is taken to ensure a sustainable level of current account deficit, limited reliance on external debt, especially short-term external debt. Non-debt creating capital inflows in the form of FDI and portfolio investment through FIIs, on the other hand, are encouraged. A key aspect of the external sector management has, therefore, been careful control over external debt since 1990s (Reddy, 1998). India has adopted a cautious policy stance with regard to short-term flows, especially in respect of the debt-creating flows.

In respect of capital outflows, the approach has been to facilitate direct overseas investment through joint ventures and wholly owned subsidiaries. Exporters and exchange earners have also been given permission to maintain foreign currency accounts and use them for permitted purposes to facilitate their overseas business promotion and growth. Thus, over time, both inflows and outflows under capital account have been gradually liberalised.

Annex II

Chart A-1: Variables at Levels

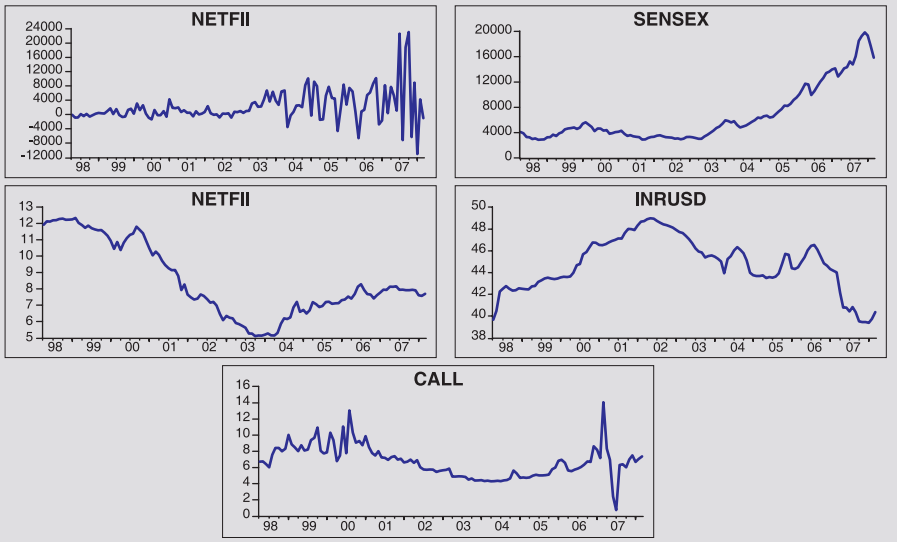
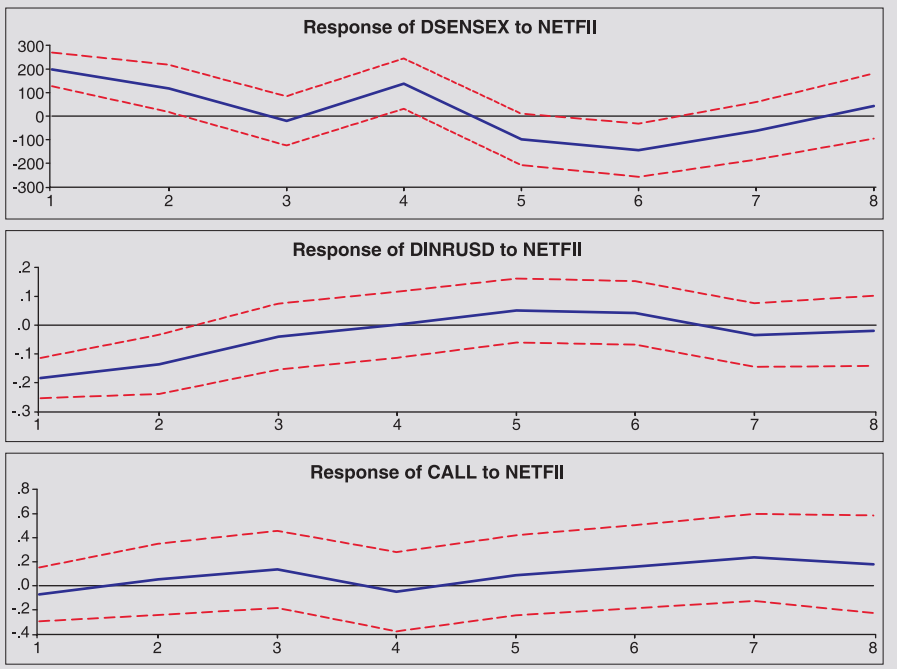


Chart A-2: Generalised Impulse Response Functions

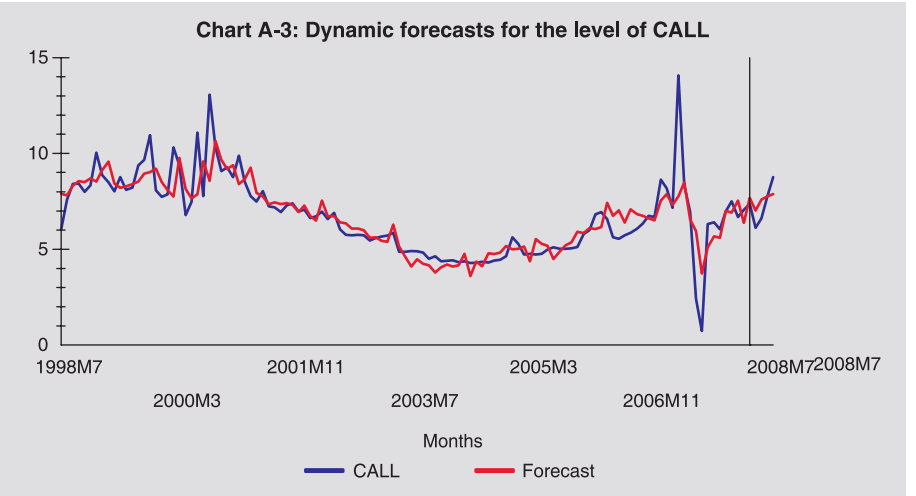
Response to Generalized One S.D. Innovations ± 2 S.E.



Annex II *(Concld.)*

Table A3:ARDL Estimate Results

Regressor	Coefficient	T-Ratio[Prob]	Coefficient	T-Ratio[Prob]
CALL(-1)	0.3392	4.0123[.000]	0.3232	3.7541[.000]
INRUSD	0.1921	2.5676[.012]	0.1961	2.6318[.010]
SENSEX	0.0001	2.8494[.005]	0.0001	2.9907[.003]
GSEC	0.5327	5.7160[.000]	0.5487	5.8797[.000]
NETFII	0.0001	-1.9624[.052]	0.0001	-1.9575[.053]
C	-9.2809	-2.3923[.018]	-9.582	-2.4866[.014]
T			-0.3895	-.64023[.523]
S3			0.9572	2.4026[.018]
S6			-0.4118	-.98356[.328]
S9			0.0187	.046938[.963]



Notes:

[1] If the variable y_1 causes y_2, lag of y_1 would be jointly significant in the equation of y_2. The joint significance of the lags were evaluated with the help of Granger F-test and the lag lengths have been selected using the minimum value of *Schwarz – Bayesian Information Criteria* (SBC).

[2] Two sets of critical value are given. One set assuming that all variables in the ARDL model are I(1), and other computed assuming all the variables are I(0).

[3] A tool used in monetary policy that allows banks to borrow money through repurchase agreements. Repo (Reverse Repo) indicates injection (absorption) of liquidity by central bank in (from) the banking system.

[4] The exchange rate policy in recent years in India has been guided by the broad principles of careful monitoring and management of exchange rates with flexibility, without a fixed target or a pre-announced target or a band, coupled with the ability to intervene, if and when necessary. The overall approach to the management of India's foreign exchange reserves takes into account the changing composition of the balance of payments and endeavours to reflect the 'liquidity risks' associated with different types of flows and other requirements (First Quarter Review of Annual Monetary Policy for the Year 2008-09).

[5] The larger the error correction coefficient the faster is the economy's return to its equilibrium, once shocked.

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Trade Pattern in SAARC Countries: Emerging Trends and Issues

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Focusing on the analysis of South Asia Association for Regional Co-operation (SAARC) trade, the paper attempts to analyse the merchandise trade performance of SAARC region and also the trend in intra-SAARC trade. A brief analysis of trade baskets of SAARC countries shows that export baskets of major SAARC countries are significantly similar reflecting that they may be competing with one another in same industries in the international market. However, export baskets are relatively more diversified for India and Pakistan. Grubel-Lloyd index provides an empirical evidence of growing intra-industry trade in SAARC countries which perhaps is an off-shoot of trade and industry reforms that have taken place in recent years. An attempt is also made to examine SAARC region's relative competitiveness by calculating revealed comparative advantage index [as suggested by Balassa (1965)] and compare the structure of specialisation using relative trade comparative advantage (RTA) index [as suggested by Scott and Vollrath (1992)]. It is found that India has relative trade comparative advantage in a larger number of industry groups than other SAARC countries and all major SAARC countries have RTA in textile sector. Certain issues pertaining to SAARC trade are also briefly discussed. The study concludes that despite significant business cycle convergence in major SAARC countries (India, Pakistan, Bangladesh and Sri Lanka), trade integration is growing only at a slow pace.

JEL Classification : F1, O24

Keywords **:** Trade, Trade Policy

Introduction

One of the major objectives of formation of SAARC forum was to accelerate the process of economic and social development in member States. Subsequently, trade promotion was also actively

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pursued as an area of economic co-operation. The possibility of Intra-SAARC trade expansion has been investigated using macroeconomic and regional trade link models. It is generally found that inter-country differences in production and consumption patterns, investment behaviour, tax and non-tax structures leave considerable scope for further regional trade expansion. At present, intra-SAARC trade is quite low as compared with that of regional forums such as European Union (EU) and Association of South East Asian Nations (ASEAN).

In order to examine what has happened to the overall SAARC trade, intra-SAARC trade and product group wise comparative advantage in trade of individual member countries, this paper attempts an inter-temporal analysis particularly for the post-SAARC formation period. Before discussing these aspects, a brief account of macroeconomic performance of all SAARC countries is given in Section I. In Section II, an inter-temporal analysis is made in terms of trade openness, overall trade performance, direction of SAARC trade, intra-SAARC trade and its comparison with other regional forums. Trade policy of SAARC countries is discussed briefly in Section III. Section IV touches upon the issues of diversification, similarity of trade basket and trend in intra-industry trade in SAARC countries. Section V analyses the aspect of product group-wise relative comparative trade advantage of SAARC countries. Section VI discusses certain trade related issues and concluding observations are made in Section VII.

Section I
Macroeconomic Overview of SAARC Economies

The South Asian region (as defined by SAARC)[1] constitutes about 23 per cent of the world's population and has 15 per cent of the world's arable land, but only 6.0 per cent of Purchasing Power Parity (PPP) based global gross domestic product (GDP) and account for around 2.0 per cent of world goods trade, and around 3.0 per cent of world foreign direct investment. The South Asian region is extraordinarily diverse in terms of country size, economic and social development, geography, political systems, languages, and cultures. Three of the eight countries under South Asian region, *viz*., Afghanistan, Nepal, and Bhutan, are landlocked and mountainous; while Sri Lanka is an island and the Maldives is an archipelago of low-lying coral islands in the central Indian Ocean.

The region translated itself from a position of slowest growing region during the 1960s and the 1970s to one of the fastest growing regions in the world since the 1980s. In terms of GDP growth, the South Asia has performed robust growth over the years among the low income countries. As per the World Bank database, during the 1960s, GDP growth in the region was placed at 4.2 per cent as compared to 5.4 per cent at the global level. Except during the 1960s and 1970s, the GDP growth in South Asia was higher than those of the world output growth till 2008. The growth in South Asia had been sustained at an average of 5.4 per cent during 1980-1999 followed by higher average growth of 6.8 per cent during 2000-08.

Reflecting growing savings, the gross capital formation of South Asian economies almost doubled from 15.1 per cent during the 1960s to 29.1 per cent during 2008 as against a decline from 23.1 per cent to 21.5 per cent during the same period at the world level. However, some economies of the region, *viz*., Afghanistan, Nepal, Bhutan and Bangladesh still depend on foreign savings/aid for financing their resource gaps.

As regards fiscal position of the South Asian region, at present, all countries have fiscal deficit. Some of the economies of the region are highly sensitive to external and natural shocks. For instance, the deteriorating fiscal balance on account of reconstruction projects undertaken in the aftermath of *tsunami* in recent years was a major concern in Maldives. The fiscal deficit for Maldives was at 15.7 per cent of GDP in 2008. Similarly, it has been noted that fiscal position of Bhutan is quite sensitive to project-specific revenues and expenditure of the government. The budget deficit was at 3.2 per cent of GDP in 2008. In Pakistan, despite overall improved revenue position, a sharp increase in current expenditures led by interest payments and continued expansion in development spending kept the fiscal deficit at 7.4 per cent of GDP in 2008. Continued modernisation of revenue administration broadened the tax base in Sri Lanka, which along with lower than expected expenditure, contributed to some reduction of the fiscal deficit to 6.8 per cent of GDP in 2008 as compared with the previous year. In Bangladesh, revenue collection slipped and

total spending was contained by a reduction in outlays for the annual development program, which kept the fiscal deficit at 4.7 per cent of GDP in 2008. The budget deficit remained steady at 2.0 per cent of GDP in Nepal during 2008 despite increase in expenditures during the year. The fiscal position in India, both at Centre and States, was undergoing consolidation (till the outbreak of the recent financial crisis) in terms of targeted reduction in fiscal deficit indicators under the Fiscal Responsibility and Budget Management (FRBM) Act. As per the revised estimates, the gross fiscal deficit (GFD) and revenue deficit (RD) of Central Government for 2008-09 were placed higher at 6.0 per cent and 4.5 per cent of GDP, respectively, mainly on account of the recent fiscal stimulus and the 6th Central Pay Commission awards.

All South Asian countries, except Nepal, Bangladesh have largely incurred current account deficit (CAD). CAD as a ratio to GDP is highest in Maldives despite a net surplus in services trade, most of which comes from tourism that had financed the trade deficit until 2004. Even though tourism earnings recovered to exceed the pre-*tsunami* level in 2007, larger services payments and the expansion in imports meant that net services covered only about 40 per cent of the trade deficit. The CAD in Maldives, therefore, widened further to 51.4 per cent of GDP in 2008. In Afghanistan, the current account deficit was at 1.6 per cent of GDP in 2008. The current account surplus in Bangladesh increased to 1.9 per cent of GDP in 2008 resulting from narrowing trade deficit and higher remittance inflows. In Nepal, the current account turned into surplus at 2.7 per cent of GDP in 2008 on account of narrowing trade deficit and higher remittance inflows. In Pakistan, the current account deficit is under pressure because of higher oil import bill and deteriorating income and services accounts, despite moderate growth in exports and continued strong receipts of workers' remittances. During 2008, CAD as a rates to GDP stood at 8.4 per cent in Pakistan. The trend of strong remittance growth in Sri Lanka since 2004 reversed in 2008 on account of global financial crisis. In 2008, the CAD as a ratio to GDP widened to 9.4 per cent of GDP in Sri Lanka. In India, although the trade deficit widened during 2008-09, it was offset by a steady inflow of remittances and a

higher surplus from exports of services such as software and business services, though their expansion in earnings was reduced from the rapid rates seen in previous years. During 2008-09, the widening of the trade deficit mainly led by imports resulted in a higher level of CAD which stood at US$ 28.7 billion or 2.4 per cent of GDP (US$ 17.0 billion or 1.5 per cent of GDP in 2007-08) (Table 1).

Despite a number of substantial reforms undertaken in South Asian economies in recent period, the region remained one of the poorest in terms of per capita income. Furthermore, the region has significantly lagged behind in the field of infrastructure, social provisions and working of the institutional set-up. Only the Sri Lankan economy is exceptional. Sri Lanka is exceptional not only in South Asia, but in the developing world. It has achieved high literacy and low infant and adult mortality rates and continues to provide universal health and education coverage and in its commitment to gender equality and social development. Its current levels of human development indicators are comparable to those of high-income countries (Srinivasan, 2004).

Table 1: Macroeconomic Indicators of SAARC Economies: 2008

Items	AFG	BD	BT	IND#	MALD	NEP	PAK	SRL
1	2	3	4	5	6	7	8	9
Real GDP Growth, %	3.4	6.0	5.0	6.7	6.3	5.3	2.0	6.0
GDP Per Capita (Current Prices US$)	419	522	1789	1020	3653	455	1022	1972
GDP (PPP) % of World Total	0.03	0.3	0.005	4.7	0.002	0.05	0.6	0.1
CPI Inflation, Average, %	26.7	7.7	8.3	8.4$	12.3	7.7	12.0	22.6
Fiscal Balance, % of GDP, FY Basis	-4.1	-4.7	-3.2	-6.0	-15.7	-2.0	-7.4	-6.8
Merchandise Export, % Growth	18.9	17.4	4.4	13.7	45.2	9.3	18.2	6.5
Merchandise Import, % Growth	12.1	25.6	27.4	19.4	26.6	24.1	31.2	24.0
Current Account Balance (US$ Billion)	-0.2	1.9	-0.03	-28.7	-0.6	0.3	-13.9	-3.7
Current Account Balance, % of GDP	-1.6	1.9	-2.2	-2.4	-51.4	2.7	-8.4	-9.4
Debt Service Ratio, % of Exports	1.2	3.2	18.5	4.4	5.1	10.1	12.2	14.3
Reserves (Excluding Gold), US$ Billion, End-Period	3.5	6.1	0.6	242	0.2	2.5	8.6	1.8

#: For 2008-09. $: WPI (Average).

AFG: Afghanistan. BD: Bangladesh.BT: Bhutan.IND: India.MALD: Maldives.

NEP: Nepal. PAK: Pakistan. SRL: Sri Lanka.

Source: World Economic Outlook, International Financial Statistics, IMF and Asian Development Outlook, ADB.

Section II
Recent Trade Performance of SAARC Region

The importance of trade as growth facilitator has been recognised in SAARC countries as well. It is evident from the growing trade openness of SAARC economies over the years. However, there are wide disparities within the SAARC region. For instance, Maldives is highly dependent on external sector with 161 per cent trade openness ratio (Trade-GDP ratio) while Pakistan is least open country in the SAARC region (Table 2). Saxena (2005) elaborates that India has a huge domestic market, hence trade forms a substantially smaller percentage of GDP, especially when compared with East Asian economies, that are small and essentially require trade for growth. The rest of the countries are fairly open to trade.

Despite growing trade-GDP ratio, the South Asian economies continued to remain least open relative to other groups of emerging and developing economies. The proportion of trade in GDP of SAARC region increased markedly from 15.1 per cent during the 1970s to 51.8 per cent in 2008. For East Asia and Pacific, however, it soared from 20.9 per cent during the 1970s to as much as 88.6 per cent in 2007 but declined to 64 per cent in 2008 on account of the recent global financial crisis leading to deceleration in trade.

Table 2 : Trade Openness (Export and Import as per cent of GDP) in SAARC Countries

(Per cent)

Country	1960	1970	1980	1990	2000	2008
1	2	3	4	5	6	7
Afghanistan	11.2	21.7	…	…	…	87.0#
Bangladesh	19.3	20.8	23.4	19.7	33.2	47.0
Bhutan	…	…	50.4	56.7	76.2	146.0
India	11.8	7.8	15.6	15.7	27.4	54.0
Maldives	…	…	…	…	161.1	…
Nepal	…	13.2	30.3	32.2	55.7	45.0
Pakistan	…	22.4	36.6	38.9	28.1	34.0
Sri Lanka	62.4	54.1	87.0	68.2	88.6	63.0

#: For 2006. …: Not available.
Source: World Development Indicators, World Bank.

Table 3: Share of SAARC Region in World Exports

(Per cent)

Country	1950	1960	1970	1980	1990	2000	2008
1	2	3	4	5	6	7	8
Afghanistan	0.09	0.04	0.03	0.03	0.01	0.002	0.004
Bangladesh	…	…	…	0.04	0.05	0.10	0.10
Bhutan	…	…	…	0.001	0.002	0.002	0.003
India	1.85	1.02	0.64	0.42	0.52	0.66	1.10
Maldives	0.003	0.002	0.001	0.000	0.002	0.002	0.002
Nepal	0.002	0.01	0.01	0.004	0.01	0.01	0.01
Pakistan	1.23	0.55	0.29	0.13	0.16	0.14	0.13
Sri Lanka	0.53	0.30	0.11	0.05	0.05	0.08	0.05
SAARC	**3.71**	**1.92**	**1.08**	**0.68**	**0.80**	**1.00**	**1.39**

… : Not available.
Note: Data for Pakistan during 1950, 1960 and 1970 includes erstwhile East Pakistan.
Source: UNCTAD.

As regards the trend in the share of SAARC region in total world trade, it witnessed a persistent decline during the 1960s, 1970s and 1980s. However, there has been a gradual pickup in share in total world exports since 1990s but still lower than the level of share in 1950. During 2008, share of SAARC region in total world exports stood at 1.4 per cent (3.7 per cent in 1950) (Table 3 and Chart 1). Similarly, the share of SAARC region in total world imports declined but picked up in recent years (Table 4 and Chart 1).

Chart 1: Trend in Merchandise Export and Import Share of SAARC in World Total

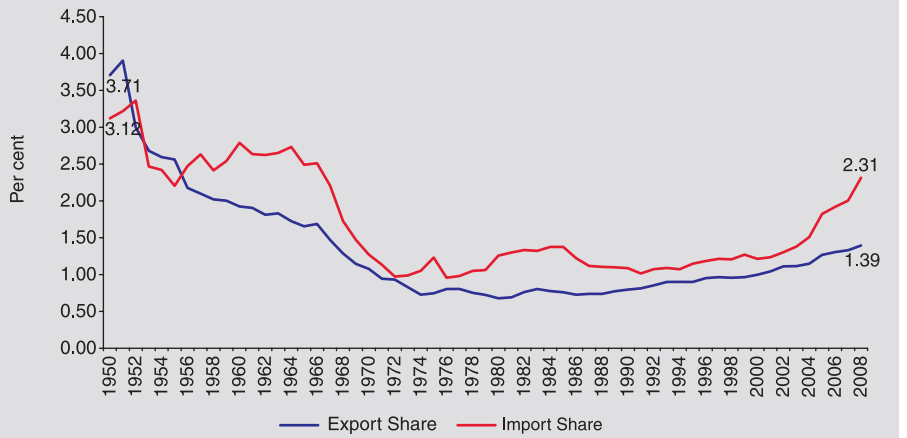


Table 4: Share of SAARC Region in World Imports

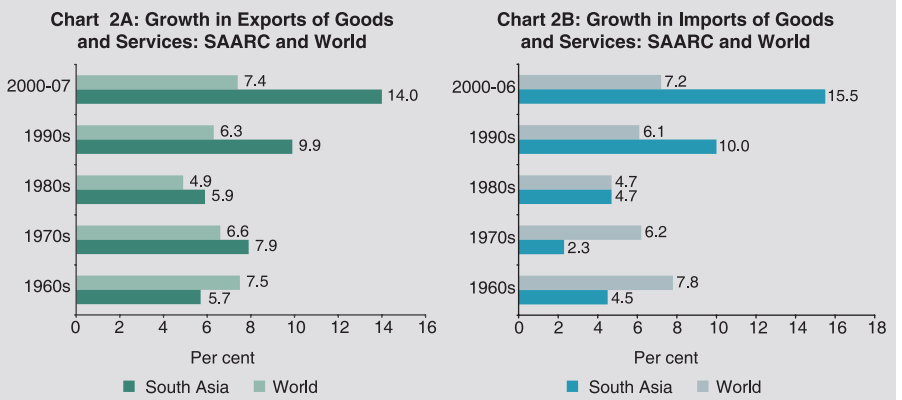
(Per cent)

Country	1950	1960	1970	1980	1990	2000	2008
1	2	3	4	5	6	7	8
Afghanistan	0.09	0.06	0.03	0.04	0.03	0.02	0.02
Bangladesh	…	…	…	0.13	0.10	0.13	0.15
Bhutan	…	…	…	0.002	0.002	0.003	0.003
India	1.70	1.68	0.64	0.72	0.66	0.77	1.79
Maldives	0.01	0.003	0.001	0.001	0.004	0.01	0.01
Nepal	0.03	0.03	0.02	0.02	0.02	0.02	0.01
Pakistan	0.91	0.72	0.45	0.26	0.21	0.16	0.26
Sri Lanka	0.38	0.30	0.12	0.10	0.07	0.09	0.08
SAARC	**3.12**	**2.79**	**1.27**	**1.26**	**1.09**	**1.21**	**2.31**

… : Not available.
Note: Data for Pakistan during 1950, 1960 and 1970 includes erstwhile East Pakistan.
Source: UNCTAD.

The trade analysis of the countries in South Asian region shows that they witnessed a wide fluctuation in terms of export and import growth over time (Chart 2A and 2B). During the 1960s, the average annual growth of exports of goods and services for Pakistan was at 8.3 per cent followed by India at 5.4 per cent, Bangladesh at 2.6 per cent and Sri Lanka at 1.3 per cent. During the same period, import growth was maximum in Bangladesh among the South Asian countries followed by Pakistan. The export growth was further accelerated to 10.5 per cent for India in the 1970s followed by Bangladesh at 7.9 per cent. There was

Chart 2:



Source: World Development Indicator Database, World Bank.

also maximum import growth for India in the South Asian region in the 1970s followed by Pakistan. In the 1980s, Pakistan recorded export growth as high as 10.7 per cent followed by Sri Lanka at 6.3 per cent, Bangladesh at 6.1 per cent and India at 4.8 per cent. India witnessed maximum import growth at 7.6 per cent during the 1980s within South Asian economies followed by Bangladesh at 7.0 per cent. India and Bangladesh recorded a robust export growth, respectively, at 12.0 per cent and 12.6 per cent in the 1990s. In terms of import growth, India and Maldives had maximum import growth in the 1990s among the South Asian countries. During 2000-06, the average export growth was as high as 17.1 per cent for Bhutan followed by India at 13.5 per cent. Similar trend was followed in import growth during 2000-06.

As far as direction of trade is concerned, share of exports from South Asia increased significantly to developing Asia (particularly China), Africa, Western Hemisphere and Middle-East while that to EU and UK declined over the years. In 2007, exports from South Asia have been to the extent of 27.4 per cent to developing Asia (7.2 per cent to China), followed by EU (23.9 per cent), USA (16.3 per cent), middle-east (14.7 per cent) (Chart 3A). The direction of import in the region is mainly from developing Asia to the extent of 32.3 per cent (including China with 11.6 per cent), EU (16.6 per cent) and Middle East (9.8 per cent). However, import dependence on US, UK and EU seems to have declined over the recent years (Chart 3B).

Chart 3:

Chart 3A: Change in Merchandise Export Destination in SAARC Region

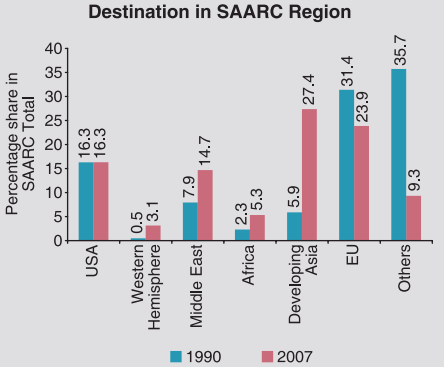
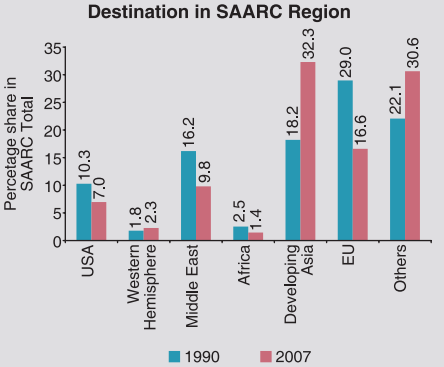


Chart 3B : Change in Merchandise Imoprts Destination in SAARC Region



Source: Direction of Trade Statistics, IMF.

Intra-regional Trade in South Asia

Intra-regional trade in South Asia is relatively low compared with other regions, such as ASEAN in Asia. The South Asian countries exchange goods principally with countries outside the region. SAARC had a slow start, but gained momentum with the launch of (SAPTA) SAARC Preferential Trading Agreement in the mid-1990s. Since the implementation of South Asian Free Trade Area (SAFTA) at the beginning of the new millennium, it has begun to perform robustly (Mohanty and Chaturvedi, 2006). Intra-regional trade as a ratio of South Asia's total foreign trade was only 4.8 per cent in 2008, compared with 25.8 per cent for ASEAN member countries (Table 5). For individual countries, the intra-regional trade ratio varies from a low of 2.7 per cent for India and 6.6 per cent for Pakistan to a high of 60.5 per cent for Nepal and 43.1 per cent for Afghanistan (Table 6). India's trade with SAARC region has expanded significantly in recent years. During 2000-01 and 2006-07, the overall exports from India to other SAARC countries increased by an annual average of 25 per cent underpinned by an average of 53 per cent with Pakistan followed by Nepal with an average of 34 per cent. During this period, export expansion with Bangladesh was lowest. Similarly, imports from SAARC countries to India increased by an annual average of 22 per cent. A significant increase was observed in imports from Pakistan and Sri Lanka during this period.

Table 5: Trend in Intra - Regional Group Trade

(Per cent)

Regional Group	1950	1960	1970	1980	1990	1995	2000	2008
1	2	3	4	5	6	7	8	9
MERCOSUR	6.1	7.6	9.4	9.7	11.0	19.2	19.9	15.5
NAFTA	35.5	30.4	36.0	33.2	37.2	42.0	46.8	40.0
ASEAN	2.8	12.7	22.4	15.9	17.0	21.0	22.7	25.8
ASEAN +3	16.1	21.9	25.8	29.0	26.8	34.9	33.7	34.0#
GCC	…	…	4.6	3.9	8.1	7.5	6.2	5.5
SAARC	**11.6**	**5.0**	**3.2**	**3.5**	**2.7**	**4.3**	**4.5**	**4.8**
EU 25	47.9	51.8	61.0	61.8	67.4	66.4	67.2	66.7#
Euro Zone	36.1	41.2	53.7	48.1	54.5	53.2	50.3	49.3
APEC	44.2	47.0	57.9	57.5	67.7	71.7	72.5	65.5
CIS	…	…	…	…	…	33.4	28.4	22.7

: For 2006. ... : Not available.
Source: UNCTAD .

Table 6: Intra-regional Trade Share of South Asia's Total Trade

(Per cent)

Country	1985	1990	1995	2000	2004	2007
1	2	3	4	5	6	7
Afghanistan	11.4	14.5	11.1	29.7	35.3	43.1
Bangladesh	4.7	6.0	12.8	7.9	10.5	9.4
Bhutan	…	…	…	…	…	…
India	1.7	1.6	2.7	2.5	3.0	2.7
Maldives	12.5	12.7	14.3	22.2	19.8	12.2
Nepal	34.3	11.9	14.8	22.3	47.2	60.5
Pakistan	3.1	2.7	2.3	3.6	5.0	6.6
Sri Lanka	5.5	5.6	7.8	7.4	15.1	18.9

... : Not available.
Source: Regional Co-operation Strategy and Programme, South Asia (2006-2008), ADB.

Despite growing trade with SAARC region, the intra-SAARC trade continues to remain lowest among all the major regional groups (except Gulf Co-operation Council) formed so far. In 2008, intra-SAARC trade was merely 4.8 per cent while APEC countries had 65.5 per cent of total trade within the region (Table 5). Despite the formation of regional grouping, trade flows within the SAARC region are not much significant. This is perhaps on account of the disparities in the market size of SAARC economies unlike other regional groupings. For instance, Bhutan or Nepal cannot be the major export destinations for India and Pakistan. Thus, one cannot expect beyond a modest potential in the intra-SAARC trade, particularly of big SAARC countries with small SAARC economies. In stark contrast, the small economies of Bhutan and Nepal have maintained strong trade links with India. For instance, Nepal and Sri Lanka import around 46 and 16 per cent of their imports from India but these cover a negligible portion of Indian exports.

Section III
Trade Policy in SAARC Countries

The importance of international trade as an important engine for growth has been widely debated among the economists. However, the trade as one of the essential ingredients in economic growth is overwhelmingly supported in the literature. Even the multilateral

institutions such as the World Bank, International Monetary Fund (IMF), and the Organisation of Economic Co-operation and Development (OECD) propagate policy advice based on the presumption that openness generates predictable and positive consequences for growth. It has been found that more open and outward-oriented economies consistently outperform countries with restrictive trade and foreign investment policies. Thus, policies toward foreign trade are among the more important factors promoting economic growth and convergence in developing countries.

As far as the trade policy of SAARC countries is concerned, there is a lot of change in the approach. South Asia has made good progress in liberalising trade regimes and slashing tariffs since the early 1990s when most of the countries started with reforms. The countries have also undertaken considerable industrial deregulation and other structural reforms. The governments and the private sector recognise that strong exports are critical for overall economic growth and poverty reduction, and export-led growth has become a key thrust in each country. Each country has been integrating with the global economy, as evidenced by the significant increases in the merchandise trade [(exports plus imports)/GDP] ratios. The following discussion in this section provides an overview of trade policy measures initiated in SAARC countries.

Trade is considered as a component of overall development policy of Bangladesh. Bangladesh has pursued prudent structural reforms in priority areas and trade liberalisation with positive results on growth and foreign direct investment inflows. In recent years, Bangladesh has adopted an outward-oriented growth strategy which aims at reducing the anti-export bias prevalent in the economy and improving competitiveness while keeping in view medium-term imperatives and long-term development agenda. Bangladesh's trade policy objectives as per Import Policy Order 2003-2006 have been to keep pace with globalisation and the gradual development of a free market economy under the World Trade Organisation (WTO) rules; facilitate imports of technology to expand use of modern technology; ease imports for export industries, in order to place them on a sound basis and, to this

end, co-ordinate the import policy with the industrial policy, export policy and other development programmes; and make industrial raw materials more easily available to increase competition and efficiency. Calibrating trade policy reform to support small and medium-sized enterprises development is another priority (WTO, 2006). The objectives stated in the Export Policy 2003-2006, which stresses the need for product-based and sector-based development, include product diversification/expansion, capacity building of export-related institutions, and identification and appraisal of advantages for Least Developed Countries (LDCs) provided under WTO rules. Measures taken to promote exports in Bangladesh include income tax rebates, project loans at concessional interest, cash support, export credit on easy terms, and reduced interest rates, reduced costs for air cargo, and duty drawbacks. Annual sector-specific export targets (envisaging more than 10 per cent annual increase) are set for, *inter alia,* highest priority and special development sectors which include ready made garments (RMGs), knitwear, frozen food, leather, jute products, raw jute, chemicals, tea, agri-products, handicrafts, electronic goods, engineering products, petroleum products, computer software, specialised fabrics, textile fabrics, ceramic tableware, bicycles, and shoes.

Sri Lanka began economic liberalisation in 1997 with a move away from socialism. Sri Lanka's export-oriented policies have seen a shift from a reliance on agricultural exports to an increasing emphasis on the services and manufacturing sectors. The service sector accounts for over 55 per cent of GDP. Manufacturing, the fastest growing sector, is dominated by the garment industry. The agriculture sector, though decreasing in importance to the economy, nevertheless accounts for around 18 per cent of national output and employs more than one third of the workforce. The public sector remains large, with the state continuing to dominate in the financial, utilities, health and education sectors.

In Pakistan, during the past four years, various initiatives have been announced as a part of the Trade Policy. These measures aimed at reducing cost of doing business and included long-term financing of export oriented projects, relocation of industries, freight subsidy,

sales tax facilitation for export sectors, incentives for priority export sectors, research and development (R&D), marketing and business facilitation, special export zones, garment skill development board, creation of Trade Development Authority of Pakistan (TDAP), revamping of the trade bodies law and framing of rules, tariff rationalisation initiative, Trade Competitiveness Institute of Pakistan, *etc.* A Rapid Export Growth Strategy (REGS) was also announced in 2005. The strategy aimed at (i) trade diplomacy to increase market access; (ii) diversification of export markets; (iii) strengthening of trade promotion infrastructure; (iv) skill development; and (v) early provision of modern infrastructure.

In India, the external sector has exhibited a marked transformation since the balance of payments crisis in 1991. The crisis was overcome by a series of stringent measures with an overriding objective to honour all external obligations without resorting to rescheduling of any external payment obligation. While successfully dealing with the crisis through an adjustment programme, it was decided to launch simultaneously a comprehensive programme of structural reforms in which the external sector was accorded a special emphasis. The policy measures undertaken aimed at making domestic industry cost-efficient by enhancing efficiency in resource use under international competition, which was expected to derive a better export performance in the long-run. The major trade policy changes in the post-1991 period included simplification of procedures, removal of quantitative restrictions, and substantial reduction in the tariff rates. Furthermore, the reach of the export incentives was broadened, extending the benefits of various export-promotion schemes to a large number of non-traditional and non-manufactured exports. Following the announcements in the Export-Import (EXIM) policies, various changes were effected such as the removal of quantitative restrictions, strengthening the export production base, removal of procedural bottlenecks, technological upgradation and improvement of product quality. Various steps were also taken to promote exports through multilateral and bilateral initiatives, including identification of thrust areas and focus regions. The policy stance also marked a

move away from the provision of direct export subsidy to indirect promotional measures. India also took several policy initiatives at the multilateral levels for tariffication of the non-tariff barriers.

As per India's commitment to the WTO, India agreed to the phased removal of all balance-of-payments (BoP) related quantitative restrictions by end-March 2001 (RBI, 2002). The tariff rates have undergone considerable rationalisation during the 1990s. Prior to the 1990s, the maximum import duty rates on certain items were over 300 per cent. The peak rate of import duty on non-agricultural imports was gradually reduced from as high as 150 per cent in 1991-92 to the present level of 10 per cent (subject to certain exceptions). In 2004, India's first ever integrated Foreign Trade Policy for 2004-09 was announced by the Ministry of Commerce and Industry. The policy aimed at double the India's percentage share in global merchandise trade within 5 years and to use trade expansion as an effective instrument of economic growth and employment generation. The present trade policy of India envisages achieving a share of 5 per cent in world trade in both goods and services by the year 2020. Policy announced in April 2008 provides that with a view to achieve the desired share in global trade and expanding employment opportunities, especially in semi-urban and rural areas, certain special focus initiatives have been identified for agriculture, handlooms, handicraft, gems & jewellery, leather, marine, electronics and information technology (IT) hardware manufacturing industries and sports goods and toys sectors. As per the policy, the Government of India shall make concerted efforts to promote exports in these sectors by specific sectoral strategies that shall be notified from time to time (Government of India, 2008).

In Maldives, the export and import law of 1979 was changed in 2000. It formally adopted the Harmonised System (HS). At the same time, tariff rates were changed up or down. Trade and economic liberalisation is considered to be means of promoting private-sector investment and development in Maldives. However, trade liberalisation, such as tariff reductions, is not specifically included in the current development plan. Relatively high tariffs are maintained, mainly for revenue reasons. These account for about two-thirds of

tax receipts in Maldives. Nevertheless, the Government is committed to further outward orientation of the economy to improve trade and economic performance, and to diversify the economy away from fishing and tourism. The Maldives provides at least Most Favoured Nation (MFN) treatment to all WTO Members and is eligible for "special and differential treatment" under WTO Agreements. The export regime in Maldives is relatively open; export controls (on timber), taxes (on ambergris), and regulations are minimal, although some foreign investment royalties apply only to exports.

The basic objective of Nepalese trade policy 1992 was (i) to enhance the contributions of trade sector to national economy by promoting internal and international trade with the increased participation of private sector through the creation of an open and liberal atmosphere, (ii) to diversify trade by identifying, developing and producing new exportable products through the promotion of backward linkages for making export trade competitive and sustainable, (iii) to expand trade on a sustained basis through gradual reduction in trade imbalances and (iv) to co-ordinate trade with other sectors by expanding employment-oriented trade. Compared to other SAARC countries, Nepal was relatively late to join the WTO in April 2004. The most notable ingredients of Nepal's accession package are: (i) agreement to bind other duties and charges at zero and phase them out within 10 years; (ii) agreement to bind average tariff at 42 per cent for the agricultural products and 24 per cent for all other products, and; (iii) agreement to allow up to 80 per cent foreign equity participation in 70 services sub-sectors spanning distribution, retail and wholesale services and audio-visual. Second, the rescinding of Multi-Fiber Agreement quotas at the end of 2004 has dramatically changed prospects for Nepal's garment industry that accounted for a significant portion of total exports.

In Afghanistan, improving trade policy and customs administration has consistently been a high priority for policy agenda. In late 2001, Afghanistan inherited a highly differentiated import tariff regime (including 25 tariff bands with a maximum rate of 150 per cent and a simple average rate of 43 per cent. However, there has been a major rationalisation of the tariff structure, introducing use of

the market exchange rate in calculating import duties and reducing the number of different tariff rates to six (Maximum 16 per cent) with a relatively low level of dispersion. The simple average tariff rate correspondingly declined to 5.3 per cent, making for one of the lowest and least differentiated tariff structures in the region. Afghanistan has embarked on a major program to strengthen and reform the customs administration, with support from the World Bank and other external partners. The country has been pursuing trade and transit agreements at bilateral level with regional countries, and at the multi-lateral level it has recently initiated the WTO accession process (World Bank, 2004). Afghanistan maintains import bans on only a few products (largely for religious reasons) and imposes no seasonal restrictions, quotas, or other non-tariff barriers. Das (2008) views that trade reforms have helped to erode the most egregious forms of anti-export bias from which these economies suffered in the past.

Overall, import barriers have shrunk dramatically throughout the region. Although tariffs are now the principal means by which the South Asian countries protect their domestic industries. Sri Lanka embarked on trade liberalisation and reduced tariffs substantially in the late 1970s, and presently has the lowest average tariffs in the region. During the 1990s, the other four major South Asian countries have also steadily reduced their tariffs levels. Apart from reducing the tariff levels, reforms in South Asia have also reduced the complexity of customs duties by reducing the number of "tariff slabs" *i.e.,* the number of generally applied customs duties rates. Overall, the South Asian countries have made considerable progress in simplifying their trade regimes and making them more transparent, especially through the elimination of most quantitative restrictions and the reduction and simplification of customs schedules. The average tariff profile of SAARC countries as per the WTO's Report on Tariff Profile 2008 is shown in Table 7. Available data show that Sri Lanka and Afghanistan has the lowest average MFN tariff rates in the region. MFN tariff rates are normal non-discriminatory tariff charged on imports (excludes preferential tariffs under free trade agreements and other schemes or tariffs charged inside quotas).

Table 7: Tariffs Rates: Non-Agriculture Products

Country	Av. MFN Applied	Av. Final Bound	Trade Weighted Av.	No. of MFN Applied Tariff Lines
1	2	3	4	5
Afghanistan	5.7	…	…	5376
Bangladesh	14.6	169.2	…	6652
Bhutan	19.2	…	…	5238
India	14.5	50.2	8.0	11689
Maldives	20.2	36.9	21.5	8995
Nepal	12.6	26.0	…	5162
Pakistan	14.1	59.9	12.8	6803
Sri Lanka	11.0	30.3	8.0	6400

… : Not available.

Note : Applied duties that are actually charged on imports. These can be below the bound rates. Bound rates are commitment not to increase a rate of duty beyond an agreed level without compensating affected party. Tariff Line is a product, as defined by a system of code numbers for tariffs.

Source : Compiled from WTO 2006 Tariff Profiles, 2008.

A World Bank study (2004) highlighted that one broad area that has facilitated trade policy reforms in the SAARC region is the move towards more market-based exchange-rate regimes. India, Pakistan, and Sri Lanka now maintain floating exchange rates; Bangladesh, which had a moderately flexible exchange rate system after 1991, floated its currency as of May 2003. However, Maldives's currency is pegged to the US dollar, and periodically devalued while Nepal's and Bhutan's currencies are pegged to the Indian rupee. The study further revealed that flexibly managed exchange rates have been important supports for the trade liberalisation in the South Asian region, by offsetting or partially off-setting the effects of removal of quantitative restrictions and tariff reductions on import competition for domestic industries. Because of their fixed exchange rates with the Indian Rupee, for Nepal and Bhutan, these effects have been partial and indirect and have not affected their trade with India. More generally, unlike the other South Asian countries, they are not able to use the exchange rate as a means of adjusting to terms-of-trade and more general macro-economic changes.

Section IV
Trade Basket of SAARC Countries

In comparison to other regions, South Asia's exports include an unusually large share of labor-intensive manufactures. India enjoys the best position in the region in terms of a relatively diversified export structure with its top 20 commodity groups accounting for only 43 per cent of exports. However, the composition of exports in different SAARC member countries has undergone significant changes in the recent past. An encouraging feature is that their manufacturing output has been steadily increasing. Using United Nation's COMTRADE (Commodity Trade) data[2] for the year 2004 for Bangladesh, India, Maldives, Pakistan and Sri Lanka, the calculated Hirschman-Herfindahl Index (HHI)[3] shows that among the SAARC countries, export basket is highly diversified for India followed by Pakistan (Table 8). This also reflects their relatively more diversified industrial structure. Looking at the top 20 export items (6 digit level) of each country, it can be observed that top 20 commodities (from 16 different 2-digit industry groups) account for 43.1 per cent of total value of export from India, while concentration is highest in Bangladesh where top 20 items (from 5 different 2-digit industry groups) account for about 67 per cent of total exports. Likewise, top 20 items (from 11 different 2-digit industry groups) in the import basket of India account for 58 per cent of total value of Indian imports followed by Pakistan (Table 9).

An analysis of exports based on six digit commodity data aggregated to 99 broad industry groups shows that all SAARC

Table 8: HHI of Exports of Major SAARC Countries

Country	2-Digit Commodity Group*		6-Digit level Commodity	
	1995		2004	
1	2	3	4	5
Bangladesh	0.25	0.29	0.04	0.05
India	0.05	0.06	0.03	0.03
Maldives	0.30	0.25	0.17	0.24
Pakistan	…	0.12	…	0.02
Sri Lanka	…	0.16	…	0.02

… : Not available.

*: HHI index has been calculated for HS 1992 COMTRADE Data for 99 commodity groups.
Note: HHI varies between 0 and 1. A value closer to one indicates least diversification.

Table 9: Share of top 20 Export Items (6 digit level) in Major SAARC Countries

Country	Export (%)	No. of 2 digit groups*	Import (%)	No. of 2 digit groups*
1	2	3	4	5
Bangladesh	66.6	5	28.2	12
India	43.1	16	58.3	11
Maldives	97.6	15	32.4	14
Pakistan	50.4	14	46.3	16
Sri Lanka	45.0	7	35.7	12

* : No. of 2 digit Industry groups that top 20 export/import items belong to.

countries have quite a similar export basket. This perhaps also partly explains the low intra-SAARC trade as the member countries tend to specialise in broadly similar items for exports. For instance, the rank correlation between India and Pakistan is highest at 0.60. Correlation matrix shows that all the correlation coefficients are statistically significant at 5 per cent (Table 10). Export and import composition of SAARC countries also shows that India and Pakistan's exports

Table 10: Rank Correlation Matrix of Export Baskets of Major SAARC Countries

Country	(99 Commodity HS 1992 Groups)				
	BD	IND	MALD	PAK	SRL
1	2	3	4	5	6
BD	1	0.49	0.32	0.53	0.55
IND		1	0.36	0.60	0.57
MALD			1	0.34	0.45
PAK				1	0.49
SRL					1
t-Statistics of Correlation					
Country	**BD**	**IND**	**MALD**	**PAK**	**SRL**
1	2	3	4	5	6
BD		5.58	3.83	6.17	6.44
IND			3.84	7.44	6.92
MALD				3.6	5.02
PAK					5.57
SRL					

Note: Critical t value at 5% level of significance is 1.67 (N=99, d.f. = 97).

are notably complementary to the imports of some South Asian economies, particularly those of Bangladesh and Sri Lanka. Other economies, however, demonstrate efficiency in only a small number of export areas, most of which are not complementary to India's imports (or those of any other country).

The similarity in the export pattern can also be gauged from the 'Export Similarity Index' (EXS) which provides useful information on distinctive export patterns from country to country (Finger and Kreinin, 1979). Unlike the Rank correlation method which is based on the relative position of a particular commodity/commodity group in the overall export basket of countries, EXS is defined as the sum of smaller values of the two countries' shares of all products in their total exports to the third market.[4] To compute this index, an export share of each product to total exports of each country is required. This was an intention to remove the scale effect when measuring the similarity index between a large country and a small country. It is defined as:

$$EXS_{j,k} = \sum[\min (X_{ij}, X_{ik}) * 100]$$

Where X_{ij} and X_{ik} are industry i's export shares in country j's and country k's exports, which usually include a group of countries or competitors. The index varies between zero and 100, with zero indicating complete dissimilarity and 100 representing identical export composition. The EXS could be used as a basis for forming a common stance by the countries during trade talks and the public can be informed to prepare for the opportunities and threats. It also implies that if two countries produce and export similar products, then the level of competition will be intensified by opening up trade between the two. In short, it can reflect the degree of potential trade diversion in case the trade liberalisation is further allowed in particular country.

The results based on data available for five SAARC countries show EXS of Bangladesh and Sri Lanka is highest while that between India and Maldives is lowest in the SAARC countries (Table 11).

Table 11: Export Similarity Index (EXS) for SAARC Countries

Country	Finger and Kreinin's EXS Index				
	BD	IND	MALD	PAK	SRL
1	2	3	4	5	6
BD	100.0	20.4	35.8	32.7	57.8
IND		100.0	19.9	33.9	31.5
MALD			100.0	22.3	26.5
PAK				100.0	32.7
SRL					100.0

South Asian export markets compete in a narrow range of products, particularly in textiles, apparel, and other light manufactured goods. While in the case of Bangladesh, 18 out of the top 20 export items (6 digit level commodities) belong to textile/jute textile sector, in the case of India, all the top 20 export items belong to different sectors. As per the COMTRADE data (2004), the top five exported items from India were 'diamonds', 'Oils petroleum, bituminous, distillates, except crude', 'jewellery', 'iron ore', 'rice'. Like Bangladesh, most of the top 20 exporting items from Pakistan were from the textile sector. Table 11 shows that major SAARC countries are competing with each other in 15 out of top 20 export items. It can be observed that India, Bangladesh, Pakistan and Sri Lanka compete in almost all textile items with other SAARC countries, the sector in which they have strong comparative advantage (discussed in the section V). Similarly, India competes with Pakistan, Bangladesh and Sri Lanka in rice in semi-wholly-milled form. Similarly, in the category of diamonds, India and Sri Lanka compete with each other. These facts confirm the high rank correlation found for the export baskets of SAARC countries (Table 12 and Annex I).

Analysis based on 6-digit commodity level import data aggregated to 2-digit industry group shows that import basket of SAARC countries are also quite similar in terms of composition as bilateral rank correlations are positive and statistically significant (Table 13). However, India's import basket is comparatively less diversified than other SAARC countries (Table 14).

Table 12: Common Exporting Items of SAARC Countries

S. No.	6 digit	Items	Top 20	Other than Top 20
	1	2	3	4
1	030613	Shrimps and prawns, frozen	BD, IND	PAK, SL
2	100630	Rice, semi-milled or wholly milled	IND, PAK	BD, SL
3	271000	Oils petroleum, bituminous, distillates, except crude	IND, MD, PAK	BD, SL
4	610510	Men's, boys shirts, of cotton, knit	BD, PAK, SL	IND
5	610910	T-shirts, singlets and other vests, of cotton, knit	BD, IND, SL	IND, PAK
6	610990	T-shirts, singlets etc, of material nes, knit	BD, SL	IND, PAK
7	611020	Pullovers, cardigans etc of cotton, knit	BD, SL	IND, PAK
8	620342	Men's, boys trousers & shorts, of cotton, not knit	BD, MD, PAK, SL	IND
9	620343	Men's, boys trousers shorts, synthetic fibre, not knit	BD, SL	IND, PAK
10	620462	Women's, girls trousers & shorts, of cotton, not knit	BD, MD, SL	IND, PAK
11	620520	Men's, boys shirts, of cotton, not knit	BD, IND, SL	PAK
12	620630	Women's, girls blouses & shirts, of cotton, not knit	BD, IND, SL	PAK
13	620690	Women's, girls blouses & shirts, material nes, not knit	BD, SRL	IND, PAK
14	710239	Diamonds (jewellery) worked but not mounted or set	IND, SR	…
15	880330	Aircraft parts nes.	MD, SR	IND, PAK, BD

Note : Col. 4 shows that these country export these items but do not figure among their respective top 20 commodity items.
Source : Compiled from UN Database.

Intra-Industry Trade in SAARC countries

Another notable aspect that one expects after a substantial industrial and trade liberalisation is the increase in intra-industry trade (IIT). For instance, the potential for the occurrence of IIT was limited under the import substitution policy regime in India. Given the size limits for companies imposed by the Monopolies and Restrictive Trade Practices (MRTP) Act 1969, firms tended to diversify rather than specialise in a particular business. There was no

Table 13: Rank Correlation Matrix of Import Baskets of Major SAARC Countries

Country	(99 Commodity HS 1992 Groups)				
	BD	IND	MALD	PAK	SRL
1	2	3	4	5	6
BD	1	0.63	0.59	0.67	0.76
IND		1	0.41	0.78	0.56
MALD			1	0.49	0.66
PAK				1	0.60
SRL					1
t-Statistics of Correlation					
Country	**BD**	**IND**	**MALD**	**PAK**	**SRL**
1	2	3	4	5	6
BD		8.03	7.13	8.98	12.9
IND			4.46	11.42	6.70
MALD				5.59	8.60
PAK					7.39
SRL					

Note: Critical t value at 5% level of significance is 1.67 (N=99, d.f. = 97).

compulsion for firms to rationalise their product lines. According to Veeramani (2003), greater liberalisation brings about rationalisation in the choice of product lines by individual plants. Rationalisation of product lines and efficient allocation of resources can take place through inter-industry shifting, inter-firm shifting within an industry and intra-firm resource shift. In order to examine the intensity of IIT,

Table 14: Herfindhal Index of Imports of Major SAARC Countries

Country	2-Digit Commodity Group*	6-digit level Commodity
1	2	3
Bangladesh	0.06	0.02
India	0.13	0.07
Maldives	0.06	0.02
Pakistan	0.09	0.06
Sri Lanka	0.05	0.01

*: HHI index has been calculated for 99 HS 1992 COMTRADE Data.

Note: HHI varies between 0 and 1.

Grubel and Lloyd (1975) provided an Index known as G-L Index, which is calculated as:

$$GLi = \frac{(Xi + Mi) - |Xi - Mi|}{(Xi + Mi)} \times 100$$

where GLi is the index of IIT in industry i, and Xi and Mi are respectively the values of exports and imports in industry i. The value of GLi ranges from 0 to 100. If there is no IIT (*i.e.*, one of Xi or Mi is zero) GLi takes the value 0. If all trade is IIT (*i.e.*, Xi = Mi), GLi takes the value of 100. Grubel and Lloyd (1975) also suggested the following formula, which is a weighted average.

$$GL = \frac{\sum(Xi + Mi) - |Xi - Mi|}{\sum(Xi + Mi)} \times 100$$

Table 15 shows that weighted IIT is highest for India, followed by Pakistan and Sri Lanka. IIT index for Maldives is lowest. This reflects that trade liberalisation biases trade expansion towards IIT in India. There are simultaneous expansion of exports and imports from the majority of industry groups. Industry-wise G-L index shows that out of 99 (2-digit) industry groups, IIT index for the year 2004 was more than 50 in 40 industry groups in India, 30 in Sri Lanka and 22 in Pakistan. Greater IIT Index also perhaps reflects industrial restructuring efforts made in recent years by SAARC countries which enabled firms to focus on their core competence rather than unnecessarily diversifying their business into non-core areas. This made it possible that in a particular industry group, domestic firm tend to specialise and in other segments of the same industry with no core competence, final and intermediate demand is met through imports. This phenomenon seems to have led to greater IIT in SAARC countries over the years (Table 15).

Table 15: Intra-Industry Trade in SAARC Countries

Year	Items	BD	IND	MALD	PAK	SRL
1	2	3	4	5	6	7
1995	No. of Industry Groups > G-L Index 50	8	35	1	…	…
	Weighted G-L IIT	11.0	38.2	3.9	…	…
2004	No. of Industry Groups > G-L Index 50	17	40	4	22	30
	Weighted G-L IIT	47.6	62.7	20.5	52.5	52.0

...: Not available.

Section V
Trade Comparative Advantage of SAARC Countries

The large scale trade liberalisation and domestic reform in most of the SAARC countries in recent years have led to an increasingly competitive international environment. Thus, it is timely to examine the extent to which SAARC countries have become more specialised in various sectors. Specifically, through analysing trade data for six SAARC countries, *viz*., Bangladesh, India, Maldives, Pakistan, Nepal and Sri Lanka and the rest of the world by commodity type, it is possible to reveal in which sectors and products their comparative advantage lies. Several indicators can be used to analyse competitive and comparative advantage.

In the present paper, Revealed Comparative Advantage (RCA) index and the Relative Trade Advantage (RTA) Index have been used to describe the tendency for countries to specialise and export those goods and services that they produce at a lower relative cost compared with other countries. However, before analysing the results, it is pertinent to briefly discuss the methodology to calculate these indices.

(a) Revealed Comparative Advantage (RCA)

The Revealed Comparative Advantage Index (RCA) is the most frequently employed measurement of trade specialisation. This index was first proposed by Balassa (1965) and defined as:

$$RCAi = (X_{i,j}/\sum X_j) / (Xi,_{World}/\sum X_{World})$$

Where:

RCAi = revealed comparative advantage for good i.

$X_{i,j}$ = exports of good i by country j

$\sum X_j$ = total exports by country j

$X_{i,World}$ = world exports of good i

$\sum X_{World}$ = total world exports

If RCAi > 1, then country j has a comparative advantage in good i. If RCAi < 1, then country j has a comparative disadvantage in good i.

RCA is based on observed trade patterns. The RCA measures a country's exports of a commodity relative to its total exports and to the corresponding export performance of a set of countries. This index takes values between 0 and +1. A value of index greater than 1 denotes product in which country is relatively more specialised. On the contrary, a value less than 1 characterises that country j is accepted not specialised in product i.

(b) The Relative Trade Advantage Index (RTA)

The Relative Trade Advantage Index (RTA), which was first used by Scott and Vollrath (1992), shows the net trade advantage/ disadvantage. This index is computed as the difference between the Relative Export Advantage (RXA) and the Relative Import Penetration Index (RMP). Considering both exports and imports, the RTA is a more comprehensive measure of competitiveness, and expressed as:

RTAij = RXAij – RMPij

The competitive advantage revealed by this indicator is implicitly weighted by the importance of the relative export and the relative import advantages. It can be greater or less than zero. A positive value expresses a situation of net competitive advantage, and a negative one shows a competitive disadvantage.

An inter-temporal analysis of Standard International Trade Classification (SITC) data for 1995 and 2006 based on the Balassa index of RCA shows that in 1995, SAARC countries, as a whole, had comparative advantage only in a few SITC broad industry groups. In 1995, India had comparative advantage in five trade sectors. However, India has developed comparative advantage in 10 sectors over the years. In contrast, Pakistan and Bangladesh have lost their comparative advantage in some sectors over the same period.

Pakistan had RCA index of more than one in agricultural raw material in 1995 but it witnessed a decline in RCA to 0.8 in 2006. Similarly, Bangladesh has lost its comparative advantage in food items and agricultural raw material as respective RCA indices turned from above one to below one. Nepal has developed comparative advantage in a number of sectors such as food items, ores and metals, non-ferrous metals, chemical products and iron and steel as the respective RCA indices turned more than one in 2006 (Tables 16 and 17) .

None of the countries has comparative advantage in capital intensive and high value added products. For instance, no SAARC country has RCA greater than one in machinery and transport equipment. In contrast, all SAARC countries, except Maldives, have strong comparative advantage in the industry group of textile fibres, yarn, fabrics and clothing. In the overall manufactured goods sector, Bangladesh and Pakistan have comparative advantage with RCA index of 1.29 and 1.14, respectively, followed by Nepal and Sri Lanka with RCA index of 1.01 each. Out of 12 broad SITC Groups as classified by UNCTAD (though not mutually exclusive), India has

Table 16: Revealed Comparative Advantage of Major SAARC Countries : 1995

Broad SITC Groups /Countries	BD	IND	MALD	NEP	PAK	SRL
1	2	3	4	5	6	7
Primary commodities, including fuels (SITC 0+1+2+3+4+68)	0.63	1.16	3.45	0.42	0.77	1.11
All food items (SITC 0+1+22+4)	1.16	2.08	8.22	0.87	1.31	2.08
Agricultural raw materials (SITC 2 - 22 - 27 - 28)	1.00	0.49	0.28	0.42	1.46	1.62
Ores and metal (SITC 27 + 28 + 68)	0.00	1.10	0.06	0.04	0.05	0.22
Non-ferrous metals (SITC 68)	0.00	0.25	0.00	0.00	0.00	0.01
Fuels (SITC 3)	0.06	0.24	…	0.00	0.14	0.06
Manufactured goods (SITC 5 to 8 less 68)	1.13	0.97	0.34	1.11	1.10	1.00
Chemical products (SITC 5)	0.32	0.86	0.00	0.13	0.07	0.10
Machinery and transport equipment (SITC 7)	0.04	0.19	0.00	0.00	0.01	0.09
Other manufactured goods (SITC 6 + 8 less 68)	3.00	2.14	0.94	3.06	3.04	2.63
Iron and steel (SITC 67)	0.00	0.96	0.00	0.96	0.00	0.03
Textile fibres, yarn, fabrics and clothing (SITC 26 + 65 + 84)	10.39	3.85	3.61	11.08	10.69	7.61

Table 17: Revealed Comparative Advantage of Major SAARC Countries : 2006

Broad SITC Groups /Countries	BD	IND	MALD	NEP	PAK	SRL
1	2	3	4	5	6	7
Primary commodities, including fuels (SITC 0+1+2+3+4+68)	0.29	1.34	3.94	1.09	0.74	1.07
All food items (SITC 0+1+22+4)	0.84	1.36	15.69	3.20	1.88	3.42
Agricultural raw materials (SITC 2 - 22 - 27 - 28)	0.86	1.30	0.00	0.76	0.80	1.38
Ores and metal (SITC 27 + 28 + 68)	0.06	1.97	0.23	1.46	0.13	0.80
Non-ferrous metals (SITC 68)	0.02	1.31	0.00	1.07	0.03	1.08
Fuels (SITC 3)	0.03	1.13	2.08	0.00	0.38	0.01
Manufactured goods (SITC 5 to 8 less 68)	1.29	0.91	0.01	1.01	1.14	1.01
Chemical products (SITC 5)	0.12	1.09	0.00	1.44	0.24	0.12
Machinery and transport equipment (SITC 7)	0.03	0.29	0.01	0.05	0.05	0.14
Other manufactured goods (SITC 6 + 8 less 68)	4.20	1.98	0.00	2.57	3.58	3.05
Iron and steel (SITC 67)	0.08	1.78	0.00	2.10	0.09	0.02
Textile fibres, yarn, fabrics and clothing (SITC 26 + 65 + 84)	17.84	3.25	0.00	7.52	13.96	10.60

comparative advantage in highest number of sectors while Pakistan, Sri Lanka and Bangladesh have only 4, 3 and 7 sectors, respectively. However, India does not seem to have comparative advantage in manufacturing goods sector. India has improved its comparative advantage substantially in 'iron and steel', 'chemical products', 'non-ferrous metals', 'ores and metal' and 'agriculture raw material'.

The analysis of competitiveness indicators, based on the index of relative trade advantages (RTA) which represents the difference between the index of relative export advantages (RXA) and the index of relative import advantages (RMP) shows that out of 12 broad industry groups, India enjoys relative trade advantage in 9 industry groups while Bangladesh enjoys only in textile items and manufactured goods (which are not entirely mutually exclusive). Pakistan has relative trade advantage in textile, food items, manufactured goods and other manufactured goods (Tables 18, 19 and 20). One thing comes out clearly that SAARC countries seem to compete with each other in textile sector as most of them have relative trade advantage in this sector.

Table18 : Relative Trade Advantage Index of Major SAARC Countries : 1995

Broad SITC Groups /Countries	BD	IND	MALD	NEP	PAK	SRL
1	2	3	4	5	6	7
Primary commodities, including fuels (SITC 0+1+2+3+4+68)	-0.70	-0.52	1.75	-0.63	-1.03	0.24
All food items (SITC 0+1+22+4)	-0.75	1.62	5.56	-0.22	-0.64	0.44
Agricultural raw materials (SITC 2 - 22 - 27 - 28)	-0.14	-0.86	-0.43	-0.37	-0.39	1.06
Ores and metal (SITC 27 + 28 + 68)	-0.62	-0.76	-0.44	-0.68	-0.66	-0.18
Non-ferrous metals (SITC 68)	-0.67	-1.30	-0.13	-1.00	-0.63	-0.38
Fuels (SITC 3)	-0.96	-2.96	…	-1.27	-2.02	-0.24
Manufactured goods (SITC 5 to 8 less 68)	0.19	0.26	-0.48	0.61	0.33	-0.04
Chemical products (SITC 5)	-0.71	-0.69	-0.59	-0.74	-1.64	-0.83
Machinery and transport equipment (SITC 7)	-0.35	-0.35	-0.71	-0.40	-0.77	-0.58
Other manufactured goods (SITC 6 + 8 less 68)	1.33	1.51	-0.13	2.56	2.63	1.02
Iron and steel (SITC 67)	-1.34	-0.27	-1.04	0.58	-1.19	-0.82
Textile fibres, yarn, fabrics and clothing (SITC 26 + 65 + 84)	5.79	3.54	2.57	9.86	9.96	4.23

Note: Industry groups are not entirely mutually exclusive.

As far as the global competitiveness index compiled by the World Economic Forum is concerned, all SAARC countries, except India and Sri Lanka, are placed among the bottom 50 countries.

Table 19 : Relative Trade Advantage Index of Major SAARC Countries : 2006

Broad SITC Groups /Countries	BD	IND	MALD	NEP	PAK	SRL
1	2	3	4	5	6	7
Primary commodities, including fuels (SITC 0+1+2+3+4+68)	-0.99	-0.32	2.41	-0.69	-0.85	-0.07
All food items (SITC 0+1+22+4)	-1.53	0.86	13.13	0.77	0.24	1.45
Agricultural raw materials (SITC 2 - 22 - 27 - 28)	-1.74	0.24	-2.13	-0.45	-1.47	0.65
Ores and metal (SITC 27 + 28 + 68)	-0.57	0.53	-0.28	1.05	-0.56	0.06
Non-ferrous metals (SITC 68)	-0.57	0.69	-0.13	0.77	-0.52	0.42
Fuels (SITC 3)	-0.84	-1.17	0.74	-1.99	-1.38	-0.94
Manufactured goods (SITC 5 to 8 less 68)	0.37	0.25	-0.84	0.29	0.34	0.03
Chemical products (SITC 5)	-0.83	0.25	-0.51	0.33	-1.02	-0.78
Machinery and transport equipment (SITC 7)	-0.6	-0.32	-0.75	-0.42	-0.76	-0.42
Other manufactured goods (SITC 6 + 8 less 68)	2.82	1.37	-1.15	1.61	3.01	1.33
Iron and steel (SITC 67)	-0.93	0.69	-1.02	1.24	-1.29	-1.07
Textile fibres, yarn, fabrics and clothing (SITC 26 + 65 + 84)	13.11	3.03	-0.56	6.05	13.24	6.01

Note: Groups are not entirely mutually exclusive. RTA gretaer than zero indicates net competitive advantage (*i.e.,* after taking into account import intensity of country in the group).

Table 20 : Net Revealed Comparative Advantage of Major SAARC Countries : 2006

Broad SITC Groups /Countries	BD	IND	MALD	NEP	PAK	SRL
1	2	3	4	5	6	7
Primary commodities, including fuels (SITC 0+1+2+3+4+68)						
All food items (SITC 0+1+22+4)		✓	✓	✓	✓	✓
Agricultural raw materials (SITC 2 - 22 - 27 - 28)		✓	✓			✓
Ores and metal (SITC 27 + 28 + 68)		✓		✓		✓
Non-ferrous metals (SITC 68)		✓		✓		✓
Fuels (SITC 3)			✓			
Manufactured goods (SITC 5 to 8 less 68)	✓	✓		✓	✓	✓
Chemical products (SITC 5)		✓		✓		
Machinery and transport equipment (SITC 7)						
Other manufactured goods (SITC 6 + 8 less 68)	✓	✓		✓	✓	✓
Iron and steel (SITC 67)		✓		✓		
Textile fibres, yarn, fabrics and clothing (SITC 26 + 65 + 84)	✓	✓		✓	✓	✓

Note: Groups are not entirely mutually exclusive.

As the indicators show that main reasons seem to be lack of quality infrastructure, technological readiness, strong institutional mechanism, *etc.* While India is relatively better than other SAARC countries in respect of all competitiveness indicators, but a lot needs to be done in respect of labour market efficiency and technological advancements. However, the SAARC region is placed better in terms of potential market size. India is placed third, followed by Sri Lanka with 28th place and Pakistan with 36th place (Table 21).

Interestingly, the World Bank Report on Doing Business 2008 highlights that South Asia picked up the pace of regulatory reform over the past year to become the second-fastest reforming region in the world, on par with the speed of reform in the countries of the OECD. The pickup in reform was led by India, which rose 12 places on the ease of doing business and made the reform of business regulation as a policy objective. India was the top reformer world-wide in trading across borders. Bhutan and Sri Lanka were the other top reformers in South Asia. Bhutan introduced the country's first fundamental labour protections. Sri Lanka made it easier to start a

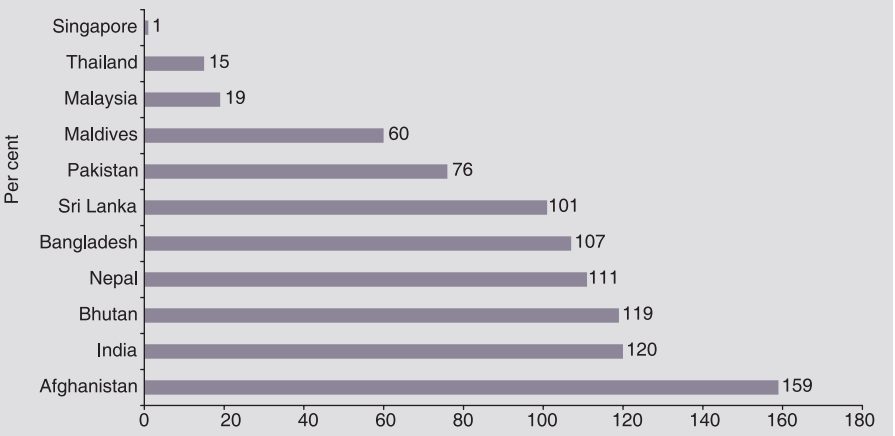
Table 21: Rank of SAARC Countries based on Indicators of Competitiveness (2007-08)

Country/Competiveness Indicators	IND	SRL	PAK	BD	NEP	Total No. of Countries
1	2	3	4	5	6	7
Global Competitiveness Index	48	70	92	107	114	131
Institutions	48	70	92	107	114	131
Infrastructure	67	72	73	120	128	131
Macrostability	85	87	101	108	125	131
Goods Market Efficiency	36	53	82	93	102	131
Labour Market Efficiency	96	113	118	76	122	131
Financial Market Sophistication	37	63	65	75	107	131
Market Size	3	28	36	58	85	131
Technological Readiness	62	88	89	125	115	131
Business Competitiveness Index	31	52	79	118	120	131
Sophist. of comp. opera. and strat.	27	44	88	117	118	131
Quality of the business environment	33	54	76	118	119	131

Source: World Economic Forum.

business and to trade across borders. Notwithstanding the ongoing positive developments on reform fronts as highlighted in the Doing Business Report, SAARC economies including India are still far below the advanced and emerging economies in terms of ranking in ease of doing business (Chart 4).

Chart 4: Rank in Ease of Doing Business in SAARC/Non-SAARC Asian Countries



Section VI
Some Trade Related Issues

It is generally perceived that trade integration plays an important role in transmitting disturbances and influencing business cycle co-movements. However, in the case of SAARC region, it is found that despite a negligible share of intra-SAARC trade in total SAARC trade, the major economies of the region are significantly synchronised with each other. Using real GDP data of SAARC countries for the period 1960-2006, it is found that cyclical real GDP behavior in India, Pakistan, Bangladesh and Sri Lanka exhibits significant convergence. Since the bilateral trade intensity between these countries is still low, the real GDP cyclical convergence could be perhaps on account of common external shocks and largely similar output structure. Furthermore, amplitude of cyclical behavior of India, Pakistan and Sri Lanka is also found to be largely the same (Table 22).

The key criteria in the optimal currency area literature are that countries should join a currency union if they have closer international trade links and more symmetric business cycles. As found above, the SAARC region meets the second criteria but not the first one. Therefore, in order to envisage the introduction of a common currency in South Asia which at best is likely only in the long run, it is necessary that trade links in the SAARC area are strengthened. Providing an

Table 22: Bilateral Correlations of Cyclical Behaviour of Real GDP in SAARC Countries (1960-2006)

Country	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
1	2	3	4	5	6	7	8
Bangladesh	1.00	0.09	0.57*	0.29	-0.01	0.57*	0.47*
Bhutan		1.00	-0.25	-0.15	-0.62	0.02	-0.46
India			1.00	0.26	-0.17	0.87*	0.74
Maldives				1.00	-0.10	0.00	0.45*
Nepal					1.00	-0.27	-0.07
Pakistan						1.00	0.58*
Sri Lanka							1.00
Amplitude of Cycles	0.01	0.02	0.02	0.04	0.01	0.02	0.02

* : Indicates statistical significant of positive bilateral correlations at 1 per cent.

Note: Calculations for Bhutan and Maldives were based on data available from 1980 and 1995 respectively.

optimistic view, Rahman, Shadat and Das (2006) argue that potential high economic growth of south Asian counties (particularly for India, Bangladesh and Sri Lanka) may boost their trade flows.

The best way to co-operate and collectively benefit is to establish tradability of some key resources that our region is richly endowed with, and to complement each other in economic development. Only then would South Asian economic co-operation lead to significant trade creating and growth generating impact. For instance, Bhutan has huge hydro power potential, which could find optimum utilisation by facilitating technological assistance by big neighbouring economies. Major SAARC economies such as India, Pakistan, Bangladesh and Sri Lanka can provide a large and virtually inexhaustible market for many of these resources. There are other tradable items which can be traded between SAARC countries with least transport costs, *etc.* Moreover, two major SAARC countries, *viz.*, India and Pakistan have been co-operating each other over the last few years to overcoming their shortages of agricultural products. For instance, Pakistan supplied chickpeas, pulses, grains and sugar when these were short in supply in India. India supplied onions, potatoes, pulses and other food items to Pakistan. Now Pakistan has started to export cement to India taking advantage of the duty reduction announced by the Indian Government. Despite all these developments, extra-ordinary issues still cloud over the potential of economic co-operation in the SAARC region. In the absence of redressal of trade issues, informal trade is also reportedly taking place in region, particularly between India and Pakistan, which is estimated to the extent of US$ 2 billion. Much of this informal trade takes place via third countries such as Dubai, CIS countries and Afghanistan (Taneja, 2006). Pohit and Taneja (2000) and Taneja, *et al*. (2002) argue that informal trading is taking place due to policy distortions. As and when such distortions are corrected informal trade would shift to the formal channel.

As seen above, share of SAARC trade in world trade is abysmally low in comparison to other regional groups. Even Intra-SAARC is growing at very modest pace and remains substantially lower than that of other regional groups. The main reason for this could be the

vast disparity of size of economies. World Bank highlights that the reasons for this low level of trade include protectionist trade regimes, which discriminated against trade among larger neighbours; continued conflict between India and Pakistan; and transport and trade facilitation constraints. Chaturvedi (2007) also argues that the intra-regional trade has remained far below potential as not enough trade facilitation measures are being taken. Baysan, Panagariya and Pitigala (2006) argue that despite some bilateral Free Trade Agreement (FTAs) existing even before SAFTA outright excluded many of major sectors in which countries have comparative advantage and imposed tariff quotas on many other sectors. Apart from these, strict 'rules of origin' further handicapped the potential expansion of intra-regional trade on preferential basis in products that had large potential of trade. It is important to note that the follow-up agreements on concessions, dispute settlement, negotiation of a Rules of Origin Agreement would be important factors in determining the SAFTA being either a trade creating or a trade diverting RTA. Secretary General SAARC puts the cost of opportunity lost due to non-cooperation among the South Asian nations at US$ 8 billion a year.

Economic co-operation was always high on the SAARC agenda and formal attempt has been through SAFTA becoming effective in 2004. SAFTA came into effect with aim of reducing tariffs for intra-regional trade among seven SAARC members. Pakistan and India have to complete implementation by 2012, followed by Sri Lanka in 2013 and Bhutan, Bangladesh, Maldives and Nepal by 2015. The SAFTA agreements suggest provisions regarding paperless trading, electronic means of reporting and identification of low risk, high risk goods, harmonisation in standards, technical assistance and customs co-operation at the SAARC level. However, there are certain issues that still remain to be addressed by the country authorities. For instance, Chaturvedi (2007) argues that although SAFTA has some provisions for ensuring trade facilitation in the region but at the same time misses out on several important provisions. He highlights the additional measures other than in SAFTA which need to be initiated. These issues relate to containerisation of regional trade and movement

of transit goods, security related concerns, infrastructure at the land customs stations and border agency co-ordination. In addition to these problems, the issue that Baysan *et al* (2006) emphasise is that *prima facie* the economic case for SAFTA becomes weak because of high level of protection among the SAARC countries. If the country participating in a regional arrangement were itself open, it would not suffer from trade diversion even if it were tiny as its union partners have to compete with outside trade partners on equal footing.

It is important to note that India has recently become more proactive in updating arrangements with five least developed countries (LDCs) of SAARC (Bangladesh, Bhutan, Nepal, Maldives and Afghanistan). There is a form of non-reciprocity for LDCs. India has accorded special and favourable treatment for LDCs. These preferences are non-reciprocal and unconditional to make the tariff concessions deeper and wider in coverage. As Table 23 shows, effective preferential agreement coverage rate on products for all SAARC economies has increased from 0.89 per cent in 1992 to 15.29 per cent, which is even higher for LDCs.

Analysing the empirical literature on the possible gains from SAFTA and given the present circumstances, Das (2008) reveals that South Asia, on the whole, stands to gain more from unilateral non-discriminatory liberalisation and multilateral liberalisation than from

Table 23: India's Preferential Tariff to SAARC/SAFTA Countries and LDCs

Items	Year	No. of Duty Free Lines	Effective Preferential Agreement Coverage Rate %
1	2	3	4
SAARC Preferential Tariff	1992	0	0.89
SAARC Preferential Tariff (LDC)		12	1.35
SAARC Preferential Tariff	1997	0	0.87
SAARC Preferential Tariff (LDC)		13	1.37
SAARC Preferential Tariff	1999	12	2.17
SAARC Preferential Tariff (LDC)		13	1.34
SAARC Preferential Tariff	2005	0	15.29
SAARC Preferential Tariff (LDC)		291	39.63

Source: UNCTAD-JETRO Report, 2008.

the formation of SAFTA. None of the empirical studies predicted robust welfare gains from the formation of a free trade agreement in South Asia. Such apprehensions point towards the economic as well as political issues that need to be persuasively addressed to make SAFTA more fruitful to the region. It is quite possible that as SAARC economies grow and economic complementarities begin to develop, the countries of South Asia, particularly the larger ones, may find that SAFTA can offer a potentially significant contribution to their progress.

A recent World Bank Study by Wilson and Otsuki (2006) finds that if the countries of South Asia raise their capacity halfway to East Asia's average, the intra-SAARC trade would rise by an estimated US$ 2.6 billion. This is approximately 60 per cent of the total intra-regional trade in South Asia. The category of trade facilitation that will produce the greatest gains is service-sector infrastructure, followed by efficiency in air and maritime ports. South Asia also has a stake in the success of efforts to promote capacity building outside its borders. If South Asia and the rest of the world raised their levels of trade facilitation halfway to the East Asian average, the gains to the region would be an estimated US$ 36 billion. Out of these gains, about 87 per cent of the total gains to South Asia would be generated from South Asia's own efforts (leaving the rest of the world unchanged).

In addition to implement capacity building in trade facilitation, the successful economic co-operation requires reducing barriers to foreign direct investment (FDI), further lowering tariff rates of protection, and eliminating other non-tariff barriers that slow productivity and hamper private sector growth. Macroeconomic policy stability of the region is also important factor for region's trade with the rest of world. In fact, the SAARC countries should strengthen co-ordinated mechanism under SAFTA so that it could be used as stepping stone towards greater integration into the world economy and the WTO as well as a laboratory for understanding the WTOs complexities. At present, certain disputes concerning SAARC countries are pending at the WTO (Table 24). SAFTA could be used as an appropriate forum not only to address intra-regional trade disputes but also for taking collective stand on WTO related issues.

Table 24: Disputes Pending at the WTO

Country	As Complainant	As Respondent	As Third Party
1	2	3	4
Bangladesh	1 (1)	0 (0)	1 (1)
India	18 (0)	19 (1)	51 (1)
Maldives	…	…	…
Nepal	…	…	…
Pakistan	3 (0)	2 (0)	9 (4)
Sri Lanka	1 (0)	0(0)	3 (2)

... : Not available.

Note : Figures in brackets indicate the number of disputes in which other SAARC Country is involved.

Source : WTO.

At present, the cost of trading across borders in South Asia is one of the highest in the world as the economies of the region have maintained a higher level of protection within the region than with the rest of the world. In fact, a study by Baysan, Panagariya and Pitigala (2006) warned that the region should avoid substituting intra-regional trade liberalisation for extra-regional liberalisation. They suggested that if countries in the region bring down the customs duties to 5 per cent, the impact of trade diversion will be considerably reduced. Procedural formalities in the region are still relatively cumbersome. It takes on average more than 33 days to export from South Asia compared to 12 days from OECD countries and more than 46 days to import into South Asia compared to 14 days for OECD. However, there are vast opportunities in the region to grow intra-SAARC trade if appropriate regional agreements on roads, rail, air, and shipping are put in place enabling seamless movement. Furthermore, since the countries of South Asian region are net energy importers, to meet the growing energy requirements, energy trade between these countries is essential. However, South Asia's current cross-border energy trade is limited to Bhutan, India and Nepal. Dhungel (2008) suggests that more energy trade projects between India, Pakistan and Bangladesh can help in contributing to integrate regional economies. There should be an effective mechanism that allows exporters in one country to obtain unique, less costly, or better quality inputs from suppliers in neighbouring countries and enhance global competitiveness.

Section VII
Summing Up

To sum up, the growth of intra-regional trade has remained subdued due to considerations other than economic issues. In ensuring stability and growth in intra-regional trade, the Indo-Pak bilateral relationship plays a very crucial role. Apart from this, SAARC countries need to put in place adequate physical infrastructure in place which hampers their global competitiveness even in those sectors where they have revealed comparative advantages. Although major SAARC countries are better synchronised in terms of their GDP cycles, trade integration continues to be low due to high level of protectionism existing among the SAARC countries than the rest of world. In this context, successful outcome of SAFTA could play an important role in strengthening trade ties within the region. It is, however, to be expected that with further dismantling of tariff barriers under the SAFTA, a large part of the informal trade may come under purview of formal trade. This along with favorable Rules of Origin could raise intra-regional trade in the SARRC region. SAARC countries will need to take concrete steps for harmonisation of customs and other procedures, mutual recognition of certificates and standards and trade facilitation measures. Trade policy of SAARC countries, therefore, needs to ensure that SAFTA ensures trade creation rather than trade diversion from the region as many researchers apprehend.

Notes:

[1] SAARC includes Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.

[2] Commodity-wise 6-digit comparable data were available for majority of the SAARC countries only till 2004. It is quite possible that commodity ranking may have undergone some change in post 2004 period for SAARC countries.

[3] The Herfindahl index equals the sum of squared share of each commodity in total export of respective country and hence, has a maximum of 1 when the country is completely focused on one sector, and lower values of the index indicate more diversification.

[4] For the present exercise, instead of item-wise export to third market, we have used item-wise total exports due to paucity of country-wise and item-wise export data for SAARC. Furthermore, since the trade between SAARC countries is significantly low, this may not have affected the results significantly.

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Annex I : Top 20 Export Items of SAARC Countries (6-digit HS 1992 Classification)

Sr No.	6 Digit Code	Country
		Bangladesh
1	610910	T-shirts, singlets and other vests, of cotton, knit
2	620342	Men's, boys trousers & shorts, of cotton, not knit
3	611090	Pullovers, cardigans etc of material nes knit
4	620520	Men's, boys shirts, of cotton, not knit
5	30613	Shrimps and prawns, frozen
6	620590	Men's, boys shirts, of material nes, not knit
7	620462	Women's, girls trousers & shorts, of cotton, not knit
8	611020	Pullovers, cardigans etc of cotton, knit
9	610510	Men's, boys shirts, of cotton, knit
10	620349	Men's, boys trousers & shorts, material nes, not knit
11	410439	Bovine and equine leather, nes
12	530710	Yarn of jute or textile bast fibres nes, single
13	620690	Women's, girls blouses & shirts, material nes, not kni
14	611030	Pullovers, cardigans etc of manmade fibres, knit
15	620333	Men's, boys jackets, blazers, synthetic fibre, not kni
16	620343	Men's, boys trousers shorts, synthetic fibre, not knit
17	620630	Women's, girls blouses & shirts, of cotton, not knit
18	620469	Women's, girls trousers, shorts, material nes, not kni
19	530310	Jute and other textile bast fibres, raw or retted
20	610990	T-shirts, singlets etc, of material nes., knit
		India
1	710239	Diamonds (jewellery) worked but not mounted or set
2	271000	Oils petroleum, bituminous, distillates, except crude
3	711319	Jewellery and parts of precious metal except silver
4	260111	Iron ore, concentrate, not iron pyrites, unagglomerate
5	100630	Rice, semi-milled or wholly milled
6	294200	Organic compounds, nes
7	721049	Flat rolled iron or non-alloy steel, coated with zinc, width >600mm, ne
8	300490	Medicaments nes, in dosage
9	999999	Commodities not specified according to kind
10	610910	T-shirts, singlets and other vests, of cotton, knit
11	620630	Women's, girls blouses & shirts, of cotton, not knit
12	30613	Shrimps and prawns, frozen

Annex I : Top 20 Export Items of SAARC Countries (6-digit HS 1992 Classification) *(Contd.)*

Sr No.	6 Digit Code	Country
13	620520	Men's, boys shirts, of cotton, not knit
14	711719	Imitation jewellery nes of base metal including plate
15	630492	Furnishing articles nes, of cotton, not knit, crochet
16	230400	Soya-bean oil-cake and other solid residues
17	80130	Cashew nuts, fresh or dried
18	630790	Made up articles (textile) nes, textile dress pattern
19	870899	Motor vehicle parts nes
20	390210	Polypropylene in primary forms
		Maldives
1	271000	Oils petroleum, bituminous, distillates, except crude
2	610821	Women's, girls briefs or panties, of cotton, knit
3	160414	Tuna, skipjack, bonito, prepared/preserved, not mince
4	490700	Documents of title (bonds etc), unused stamps etc
5	620462	Women's, girls trousers & shorts, of cotton, not knit
6	610829	Women's, girls briefs or panties, material nes, knit
7	880330	Aircraft parts nes
8	230120	Flour or meal, pellet, fish, etc, for animal feed
9	620342	Men's, boys trousers & shorts, of cotton, not knit
10	220890	Alcoholic liqueurs nes
11	840710	Aircraft engines, spark-ignition
12	845229	Sewing machines, other than book-sewing machines, nes
13	720429	Waste or scrap, of alloy steel, other than stainless
14	220830	Whiskies
15	847420	Machines to crush or grind stone, ores and minerals
16	490110	Brochures, leaflets and similar, in single sheets
17	740400	Copper/copper alloy waste or scrap
18	560490	Textile yarn/strip, rubber, plastic impregnated/coate
19	240220	Cigarettes containing tobacco
20	901590	Parts and accessories for surveying etc instruments
		Pakistan
1	630231	Bed linen, of cotton, nes
2	100630	Rice, semi-milled or wholly milled
3	520512	Cotton yarn >85% single uncombed 714-232 dtex,not ret
4	630260	Toilet or kitchen linen, of cotton terry towelling
5	610510	Men's, boys shirts, of cotton, knit
6	520819	Woven cotton nes, >85% <200g/m2, unbleached
7	620342	Men's, boys trousers & shorts, of cotton, not knit

Annex I : Top 20 Export Items of SAARC Countries (6-digit HS 1992 Classification) *(Concld.)*

Sr No.	6 Digit Code	Country
8	271000	Oils petroleum, bituminous, distillates, except crude
9	420310	Articles of apparel of leather or composition leather
10	521051	Plain weave cotton, <85% +manmade fibre, <200g print
11	570110	Carpets of wool or fine animal hair, knotted
12	890510	Dredgers
13	521213	Woven cotton fabric, > 200g/m2, dyed, nes
14	520522	Cotton yarn >85% single combed 714-232 dtex,not retai
15	950662	Inflatable balls
16	630210	Bed linen, of textile knit or crochet materials
17	940490	Articles of bedding nes
18	611490	Garments nes, of materials nes, knit
19	610590	Men's, boys shirts, of materials nes, knit
20	901890	Instruments, appliances for medical, etc science, nes.
		Sri Lanka
1	90240	Tea, black (fermented or partly) in packages > 3 kg
2	90230	Tea, black (fermented or partly) in packages < 3 kg
3	621210	Brassieres and parts thereof
4	620342	Men's, boys trousers & shorts, of cotton, not knit
5	610910	T-shirts, singlets and other vests, of cotton, knit
6	620462	Women's, girls trousers & shorts, of cotton, not knit
7	620469	Women's, girls trousers, shorts, material nes, not kni
8	880330	Aircraft parts nes
9	620520	Men's, boys shirts, of cotton, not knit
10	401290	Solid or cushioned tyres, interchangeable treads
11	710391	Rubies, sapphires and emeralds worked but not set
12	740319	Refined copper products, unwrought, nes
13	611020	Pullovers, cardigans etc of cotton, knit
14	610510	Men's, boys shirts, of cotton, knit
15	710239	Diamonds (jewellery) worked but not mounted or set
16	620630	Women's, girls blouses & shirts, of cotton, not knit
17	611610	Gloves impregnated or coated with plastic,rubber, kni
18	620343	Men's, boys trousers shorts, synthetic fibre, not knit
19	610990	T-shirts, singlets etc, of material nes, knit
20	620690	Women's, girls blouses & shirts, material nes, not kni

Source: Compiled from the UNCTAD COMTRADE Database.

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Health Care System in India: Towards Measuring Efficiency in Delivery of Services, Brijesh C. Purohit (Gayatri Publications: Delhi), 2010; pp XI+187, Rs. 600.

All over the world, concern is growing about efficiency of the health care system. The concern is severe in case of developing countries with different socio-economic backgrounds wherein citizens face distressingly different prospects of living a healthy life. There is widespread disparity in various measures of health between the privileged and the deprived despite the long-term tendency towards convergence of a healthier society. In industrial countries, there is a shift in the health care system from the principle of universal access to a more market-oriented system that is causing growing disparities. The rise in income inequality is another potential problem creator. Policy makers worldwide talk about efficient delivery of essential health care, but disagree on what counts as essential and on the optimal mix of private and government components of service. In Indian context, the current book has the answer to this short of pertinent questions.

It is properly mentioned in the book that the health care system performance could be monitored with either in terms of efficiency, effectiveness, or economy. Efficiency indicator is rightly defined as "the extent to which a health agency or health system maximizes the output produced from a given set of inputs or minimizes the input cost of producing a given set of outputs". This has been accurately estimated by deploying 'frontier efficiency measurement techniques'. Some of the techniques discussed are capable of making sensible analysis on health care system at national and sub-national level. The secondary sources of statistics provided in the book relating to health care system ranges from the First Plan period to the current decades is amazingly great. The study under the aegis of the National Commission on Macroeconomics and Health of the Government of India compared 14 major states as its focus as well as all-India and a sub-State level analysis of five States (Punjab, Maharashtra, Karnataka, Madhya Pradesh and West Bengal). The whole gamut of questions are addressed with appropriate statistical techniques and having contemporary relevance.

In recent years, with growing public attention to the problem of health inequalities, a huge literature has accumulated regarding the link between socio-economic factors and health. Effectiveness is the extent to which programs and services (outputs) of a system achieve the desired outcomes. "Economy refers to buying appropriate quality resources or inputs in the most economic manner (or at least cost)". Among various lines of recent research, the influence of income inequality on health is perhaps the most popular area. Over the last decade, a series of studies have provided evidence that the extent of income inequality in society is negatively associated with the health status of citizens, based on cross-sectional comparisons between and within countries and at sub-national level.

Statistical Measurements

Three broad approaches to economic performance measurement are generally used. These are (i) index number technique; (ii) statistical programming approach; and (iii) mathematical programming. These empirical testing led to a controversy over the pathway through which income inequality affects individual health status. Some of the researchers have largely focus on the negative effects of psycho-social stress resulting from the perceptions of relative deprivation and the disruption in social cohesion that are more prevalent in unequal societies. This hypothesis is substantiated by the finding that more egalitarian societies exhibit more cohesion, less violence, lower homicide rates, more trust, lower hostility scores, and more involvement in community life.

The 'stochastic frontier analysis' and 'data envelope analysis' hypothesize the fact that: "States differ in their technical efficiency pertaining to health system due to the factors which requires emphasis in health facility planning". It is also hypothesized that these factors differ from State to State according to their level of development. A number of studies have raised concerns about the validity of the empirical relationship between income inequality and health. It is the level of a country's income, rather than the degree of inequality, that is crucial. An interesting exception to these usual patterns of health care disparities is New Zealand, where the poor were found to receive either appropriate or slightly excessive use of services given their estimated health needs.

This may be explained by the effects of a continued restructuring of the New Zealand public health system that focuses on providing decent minimum care.

As the review of the literature on healthcare reveals in this book, economists and epidemiologists are primarily focused on empirical issues: establishing the facts on differences in health care by socio-economic status, and measuring the impact of inequality on health outcomes. Discussions of such normative issues as how much of national resources ought to be devoted to health care or how these resources ought to be distributed within the population are left largely to legislatures and to various socio-economic organizations and think-tanks. International institutions, such as, the World Health Organization (WHO) and International Labour Organization (ILO) have called on all countries to guarantee delivery of "high-quality essential care to all persons, defined mostly by criteria of effectiveness, cost and social acceptability".

Major Findings

As incomes rose, the public demand for health services increased much more rapidly than income (because of the high income elasticity of the demand for health care), making the cost of operating such systems unsustainable. In Indian case, as the book reveals, there is widespread disparity prevalent across rural and urban areas, poor and rich states and a notable neglect of some of the emerging needs of the society. Public sector investment has rather come up as a less efficient system thus providing a major impetus to the private sector for an investment which is more inequitable and less regulated. It has been rightly pointed out that inefficiency in public sector health care services has been a propelling factor for the private sector services (NRIs, Industrialists and Pharmaceutical companies played pivotal role) to expand more to compensate for inadequacy in care.

There is no clear agreement currently on the optimal mix of private and government components of health care services. There is not much of a literature on this question, nor is there a consensus on the criteria that should be invoked to resolve the issue. Moreover, conditions vary so much from country to country that the optimal mix cannot be the same for all countries.

Since deaths due to infectious diseases are now a small proportion of total deaths, it might seem that environmental improvements that were so important in reducing health risks have been exhausted. Such a conclusion is premature. A series of recent studies has reported a connection between exposure to stress (biological and social) in early life, with the onset of chronic diseases at middle and late ages, and more so with reduced life expectancy. The strongest evidence for such links that has emerged thus far is with respect to hypertension, coronary heart disease, and type II diabetes.

The urgent needs include the distribution of drugs to combat tuberculosis, malaria, and acute gastrointestinal and respiratory infections; vaccines to prevent measles, tetanus and diphtheria; and improved nutrition in order to revitalize immune systems, reduce pre-natal and neo-natal deaths, lower death rates from a wide range of infectious diseases, and improve the functioning of the central nervous system.

It is likely that past public health reforms, improvements in nutrition and other living standards, and the democratization of education have done much more to increase longevity than has clinical medicine. The main thing that physicians do is to make life more bearable: to relieve pain, to reduce the severity of chronic conditions, to postpone disabilities or even overcome some of them, to mend broken limbs, to prescribe drugs, and to reduce anxiety, overcome depression, and instruct individuals on how to take care of themselves.

Missing Priorities

Although the access to health care matters, insurance does not guarantee adequate access. An important but poorly addressed issue in this book is how different attitudes toward risk influence the insured and the uninsured in deciding when and where to seek health care. This issue is important when considering solutions to those who are under-served in health care, since under-service of the poor also exists in countries with universal health insurance. If the poor and the young are willing to accept higher health risks than are the rich and the elderly, merely extending entitlements may not be adequate. An aggressive outreach

program, targeted at those who fail to take advantage of entitlements, may be required.

The most effective way to improve the health system for the poor is by identifying their most urgent needs and designing an effective way of administering to those specific needs. This goal will not be met merely by equalizing the annual number of visits to doctors (since the rich often waste medical services) or the annual expenditures on drugs (since the rich often overmedicate). Focusing on the specific needs of the poor may not save money but it will insure that whatever is spent is properly targeted.

A second priority that is missing is improved health education and mentoring to enable poorly educated people, both young and old, to identify their health problems: (i) to be able to follow instructions for health care, (ii) to properly use medication, and (iii) to involve them in social networks conducive to good health. It is not enough to wait for such individuals to seek out available services. Outreach programs can be developed to identify the needy individuals and this can be done in the most cost-effective way by organizations already experienced in outreach, so that they can include health screening and counseling among their services. Systems for monitoring the effectiveness of such community organizations also need to be established.

Another point that needs prioritized attention in the study is the reintroduction of health care education into public schools, particularly those in poor neighbourhoods, from nursery school through the twelfth standard of periodic health screening programs using physicians and nurses on a contract basis. Personnel could be employed to ensure that parents understand the nature of their children's problems and who can direct the parents to public health facilities that can provide appropriate health care services.

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