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From the Editor's Desk

As we go to the press with the March issue of ANALYTIQUE, the flagship annual document of the Ministry of Finance,' Economic Survey 2014-15', which reviews the developments in the Indian economy over the previous twelve months has already been presented to both houses of Parliament. The Survey forecast says the economy would grow by 8.1 to 8.5 per cent under a new calculation method that makes India the world's top growing big economy.

Also, On Budget Day , the Union Budget draws up a long list of ambitious legislative proposals, on the bankruptcy code, regulatory structures, black money and many more. Budget 2015 also proposes new Micro Units Development and Refinance Agency Bank, with a corpus of Rs 20,000 crore. In addition, public sector bank capitalisation has been announced; a National Investment and Infrastructure Fund is proposed and all those promises continue without providing funds.

Going through Budget papers we do hope India could resume an 8 or 9 per cent or even higher growth rate in the coming years. But it is no surprise that some prominent policy makers have criticised the ambitious 8.1 to 8.5 percent economic growth projected for the next fiscal in the Union Budget as has been more like a "statistical and not a real number."

Let us hope for the Best.

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India's Trade in Invisibles – Its Growth and Transformation During the First Five Decades of Planning

Santanu Ghosh *

Abstract

A country's foreign trade consists of transactions involving merchandise (so called visible and tangible) items and as well as invisible items, often regarded as services. Various services and invisible items often occupy an important position in the country's balance of payments. In post-globalization era, this importance has been rising. The present paper takes a rather detailed look into the long run growth and structural change in India's trade in invisibles. The paper makes a distinction between services and invisibles while discussing conceptual issues associated with this aspect. It finds that in the post-oil crisis period, invisibles have become important in India's external transactions and in her balance of payments. Regular surpluses earned on invisibles have, to some extent, mitigated the deficits on merchandise account. While trade in invisibles has grown at an impressive rate, especially since the mid-1950s, the sector has not, however, experienced significant structural transformation though 'commodity' composition of India's invisibles trade reflects a rather mature trade structure.

Introduction

A country's foreign trade consists of exports and imports of both visible and invisible products, i.e. goods and services. In the theory of international trade and also in the analysis of a country's trade data, emphasis is usually put on the various issues related to commodity trade or the so called merchandise trade. Even, the erstwhile General Agreement on Tariffs and Trade (GATT) was primarily concerned with the various issues pertaining to trade in commodities (manufactured products). The GATT accord, thereby, left out agriculture and services / invisibles out of its purview. However, with the steady growth in global trade volume and wide ranging changes in the fields of technology, the role of services and invisibles has steadily been rising over the years. The development of science and technology, especially the revolution in information technology and communication sector, coupled with increasing specialization in production structure has resulted in proliferation of a variety of service activities. These developments have, accordingly, influenced the nature and extent of invisible trade.

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In this paper, we make a modest attempt to trace the pattern of secular movement of India's external trade in services. In doing so, in the following section, Section-I, we briefly outline the importance of trade in services/ invisibles, especially in the context of globalization. Section-II discusses the conceptual issues associated with definition and classification of invisibles and service items in foreign trade. While Section-III, the core part of the paper, examines the long run movement of India's trade in invisibles and services, Section-IV highlights some of the structural changes that have taken place in India's invisibles trade. The discussion focuses on the developments in India's external trade sector during the first five decades of planning – i.e. the period covering from the early 1950s to the beginning of the new millennium.

Before proceeding further, it is appropriate to make a clarification on the data base of the study. Because of the very nature of invisibles – i.e. non material production – prices of invisible items are not explicitly available. In other words, while one can use appropriate price indices in case of different items pertaining to merchandise trade, the same is not applicable for invisibles. In fact, it is hard to come across data on price indices of invisibles. As a result, unlike in case of merchandise trade, analysis of invisibles' data at constant prices is extremely difficult or laborious. One way of converting current price data into constant price data for invisibles may be to use unit value of export and unit value of import indices as proxies so as to deflate the current price data; we admit, this is not a correct approximation since these indices relate to goods; the very nature and characteristics of services are vastly different from goods and, accordingly, the use of unit value indices of goods to deflate services data is likely to distort the picture. Use of GDP deflator, usually resorted to by the majority of the authors (e.g. Verrma (1997), is also not acceptable because GDP contains a variety of goods and services all of which are not internationally traded and, therefore, the GDP deflator too cannot serve as a true index as far as invisibles are concerned. An alternative way – imperfect, but better than the previous two methods – of tackling the issue is to consider all the data in some hard currency, notably U.S. dollar. India's foreign trade statistics is usually quoted in rupee terms (in crores) as well as in U.S. dollars (in millions) [by both the Department of Commercial Intelligence and Statistics (DGCIES) and the Reserve Bank of India (RBI)]. The rationale of using the series quoted in US dollar is that dollar has relatively been much more stable currency than the Indian rupee. Hence, using the dollar series means elimination of inflation factor from the quoted values to a large extent. In the analysis to follow, this approach is, therefore, going to be adopted all through as a substitute for working with real series data.

I: Importance of Trade in Invisibles

With the spread of globalization in the recent years and resurgence in the doctrine of 'laissez faire', trade in services has assumed critical importance. Jones and Kierzkowski (1990) have argued "*… it has to be realized that liberalization of services and a subsequent fragmentation of production could result in a finer international division of labour in which developing countries could actively share*". From the 1980s, especially the early 1990s, onwards, trade in invisibles began to assume supremacy in international economic relations. Ascendancy of services in global trade has been made possible by, to a large extent, revolution in information technology. The fulcrum of recent globalization has been the philosophy of not only free movement of goods, but also, and more importantly, of free movement of factors, especially capital.

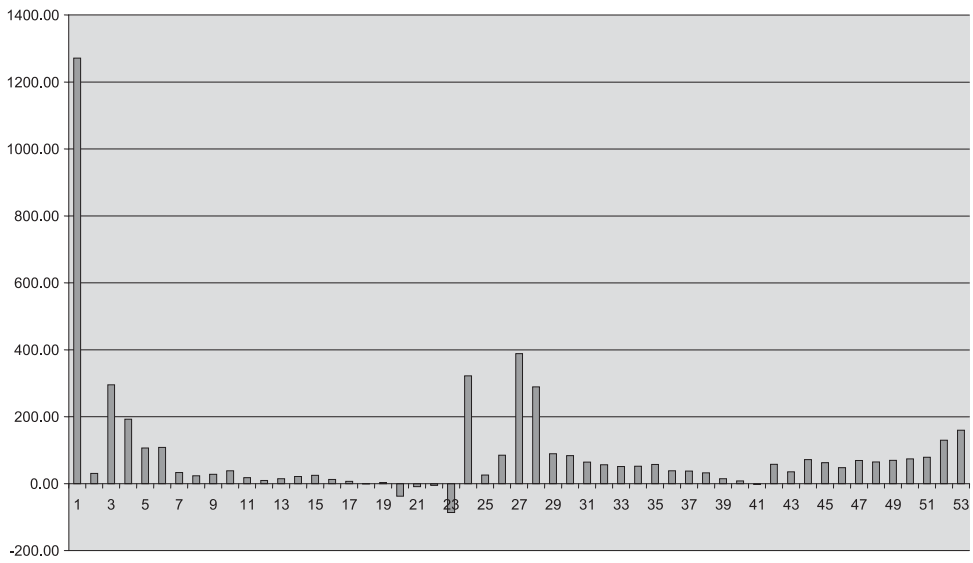
In a study Banga and Goldar (2007) attempted to measure the contribution of services to output and productivity growth in Indian manufacturing during the period 1981 – 1997. With increasing specialization and technological progress, new and larger number of services are being used as key inputs in manufacturing. Banga and Goldar found that contribution of services to output and productivity growth had significantly been higher in the post reform era. Trade reforms – i.e. trade liberalization – led to freer play of market forces in the domestic economy and, thereby, encouraged competition, which, in turn, became conducive to economic growth. In other words, trade reforms promoted economic progress by allowing easy movement or import of key service inputs.

Trade in services – in a liberalized regime – can contribute to economic development in other ways (direct plus indirect) too. Foreign investment in India – in the form of technology, knowhow, capital etc. – has helped in acceleration of domestic economic activity. So, even though external assistance leads to outflow of foreign exchange on account of royalties, interests, dividends, repatriation of profits – all of which are treated as international transactions in invisibles or services – one cannot ignore its beneficial effects on the economy in terms of income generation. The significance of service trade in Indian context may be gauged by noting that an overwhelming portion of India's outflow of foreign exchange on service trade is accounted by the category 'investment income' (a component of factor service). On the other hand, export of services also allows the country to earn precious foreign exchange, which can efficiently be utilized towards capital formation and, hence, in raising economic growth. Export of hospitality services (say, travel trade), to take an example, gives fillip to hotel, restaurant, transport and a host of allied businesses having enormous potential of employment generation. Positive contributions of India's international transactions in services cannot, indeed, be glossed over.

India – in spite of her negligible presence in the global trade volume – is also not free from the phenomenon of invisibles trade or trade in services challenging the supremacy of trade in merchandise items. Even though India is clubbed as a poor country and that the share of foreign trade transactions in her GNP or GDP is quite low – indicating its relatively negligible role in the aggregate economic activity – compared to the developed nations, the role of invisibles in her external trade cannot be overlooked. In the post independence period, India's foreign trade structure has become quite diversified; the country now exports and imports a wide range of goods and services. Over the years, especially since the middle of the 1970s, services have come to stay as a major group in India's foreign trade basket (exports and imports both).

While commodity trade has always resulted in import surplus, invisibles trade situation is quite opposite. Barring a few aberrations, the period since the early 1950s experienced, in general, export surplus on invisible items. Till 1973, the surplus on invisibles account was small; however, beyond that point the surplus rose to new height. The invisibles helped to negate partially the adverse position on commodity trade account. And, on a few occasions, surplus on invisibles outweighed import surplus on goods, thereby resulting in a current account surplus (though small). In order to have an idea that to what extent invisibles trade surplus had cushioned trade deficit, it may be worthwhile to take a look at 'coverage ratio': this ratio measures the proportion of

Figure - 1: Trend in Coverage Ratio (in %)



invisible surplus in relation to trade deficit (where the modulus value of deficit may be taken). The movement of coverage ratio, shown Figure – 1, bears the testimony that invisible trade in India has acted, to some extent, as a shock absorber in the context of overall foreign trade. Given the importance of the invisibles items in India's foreign trade, it is imperative to explore different aspects of India's invisibles trade vis-à-vis the merchandise trade.

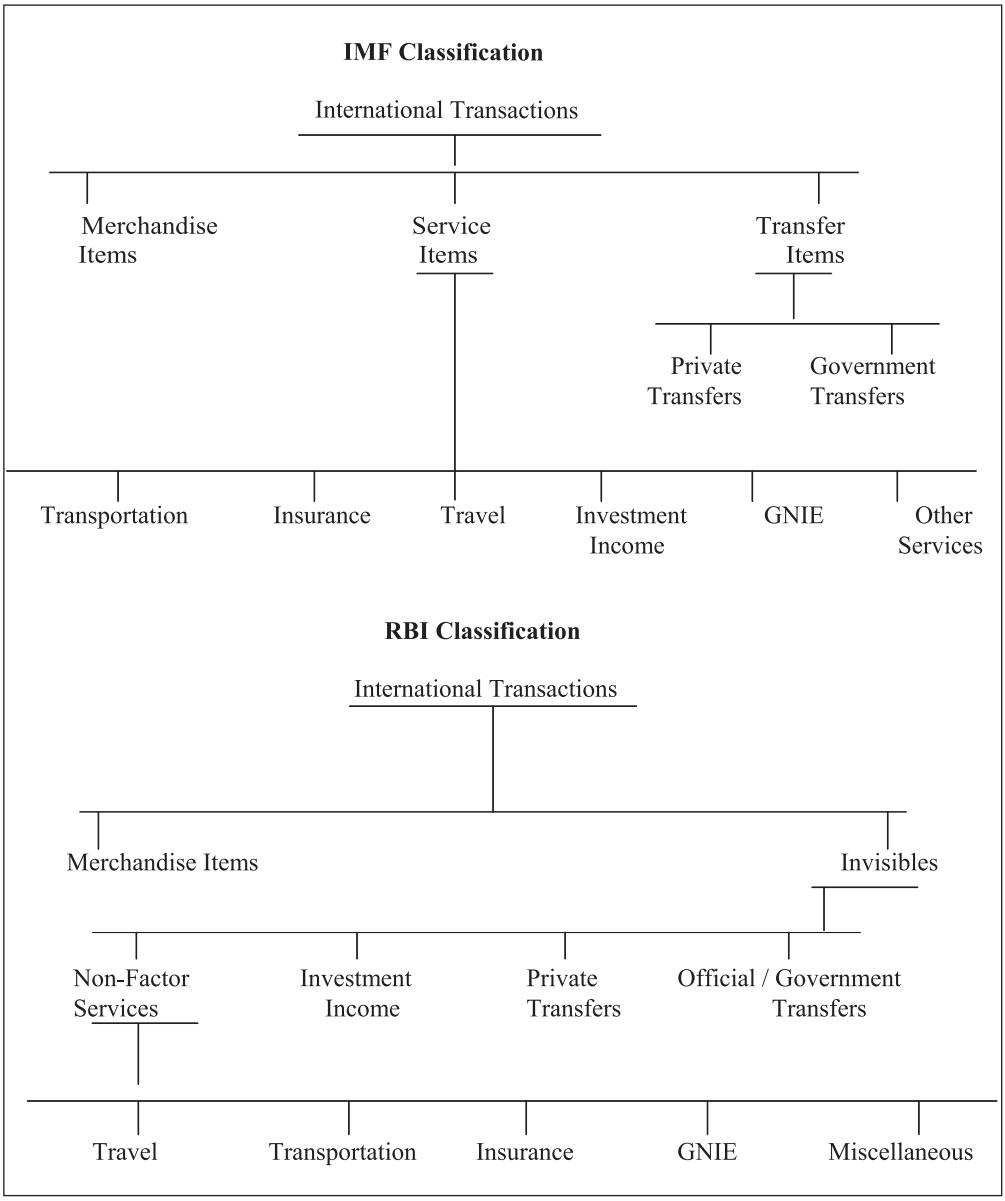
While different aspects of merchandise trade have been widely explored and researched, the invisibles trade (including trade in services) has, unfortunately, not received due attention from the researchers and academicians. The problem of quantification, and, therefore, paucity of reliable data may be primary reasons for this state of affairs. The General Agreement on Tariffs and Trade (GATT), in a sense, also failed to conceive the significance of invisibles trade at the global level; the invisibles were virtually ignored in international negotiations for quite a long period during the GATT regime. In fact, many countries, especially the developing countries, found it convenient to resort to protectionist practices in case of invisibles since it was not always easy to adopt such policies in case of merchandise trade – an area falling under the control and purview of the GATT. In Tokyo round of negotiations during the mid 1960s, some unsuccessful efforts were made to address the issue of trade in invisibles. It was only from the 1980s, and especially since the early 1990s, issues related to trade in services and invisibles began to occupy important role at international negotiations on trade and commerce. The pivotal importance of trade in invisibles and services has now fully been appreciated and the WTO agreements and subsequent international deals have incorporated services in its ambit and as well as have laid down rules of the game relating to international trade and commerce. From the early 1990s, and, especially, in the post WTO regime, a vast literature on trade in invisibles items, with special reference to services, has come up [e.g. Chanda (a.2002, b.2003), Ray (1991), Mukherjee (1992), Jagannathan (1997), Alam (2002), Ahuja (1993), Wickramasinghe (2000) etc]. But, one would not come across too many meaningful works and articles on the subject prior to the WTO regime, with a handful of exceptions – notably by Griffiths (1975), Sapir-Lutz (a.1980, b.1981), Feketekuty (1988), Chisti (1989), Saigal (1986) and Kumar (1985).

II: Invisibles vs. Services – Conceptual Issues

It is important to clarify, in the context of foreign trade, the coverage of the two terms, viz. invisibles and services, and, accordingly, the distinction between the two, even though these terms are often used interchangeably. The term 'invisibles' covers a wider variety of transactions, including 'services'. In other words, services form a subset – though it may be the dominant category – of invisibles. The ways the International Monetary Fund (IMF) and the Reserve Bank of India (RBI) classify international transactions are worth mentioning. We furnish below a schematic presentation, as per the definition followed by the two

agencies, for a clear understanding of the distinction between services and invisibles.

It may be noted that from 1988 onwards, the IMF Balance of Payments Statistics documents consider services as comprising of (a) freight shipment, (b) other transportation, (c) insurance, (d) travel, (e) Government Not Included Elsewhere (GNIE) and (f) other services, which all appear to be, as per the RBI way of classification, non-factor income; on the other hand, under the category 'incomes', the IMF includes (a) re-investment income, (b) other direct investment income, (c) labour income and, finally, (d) property income; alternatively, we may categorize it as (a) income from capital, (b) income from labour and

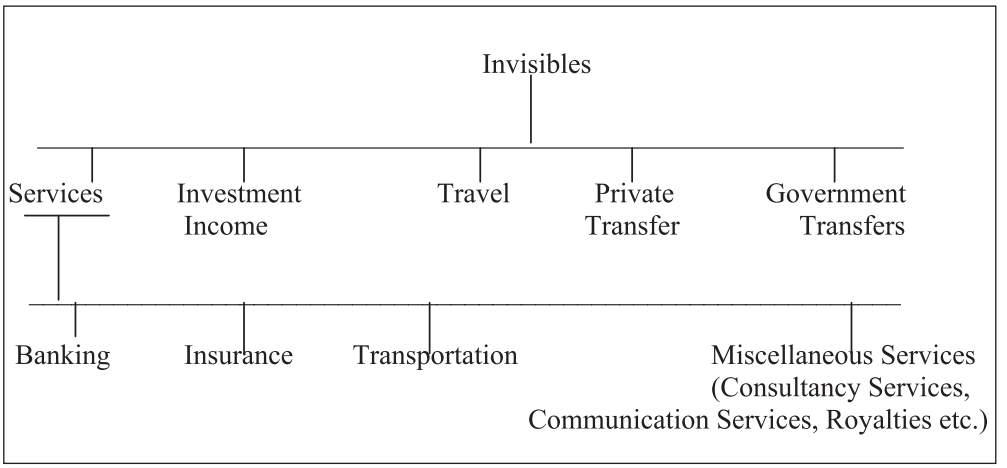


(c) income from property or land. Obviously, all these incomes can be clubbed under the nomenclature "factor incomes". Looking at the IMF and the RBI ways of decomposition of international transactions, we find that there is no region of overlap; only there is a minor difference in the degree of making sub-divisions in transaction types. For instance, the IMF does not explicitly use the nomenclature invisibles; instead it shows two sub-divisions (apart from the merchandise), notably services and transfers, which are then further sub-divided. On the other hand, the RBI method explicitly indicates invisibles as a category (the other being the merchandise / visible account) and then goes on to give further sub-divisions. It should also be pointed out in this context that what is shown as "other services" in the IMF publications, in the RBI publications that, perhaps, comes under the head "miscellaneous". It also needs to be mentioned that of late the RBI has explicitly been reporting data on another item of factor income and this clubbed under the category 'compensation to employees'.

Mukherjee (1985) used the nomenclature 'invisibles', instead of 'services', and classified it in the following manner:

Grubel and Walker (1989), on the other hand, distinguished between three forms of trade in services: (a) trade in factor services – the most dominant of the three and the one that leads to earnings from assets held abroad; (b) trade originating from temporary movement of people and goods (e.g. tourists, consultants etc.) and (c) trade in embodied services (e.g. dispatch of a software programme via CD, E – Mail etc.).

The General Agreement on Trade in Services (GATS) adopts a different approach. In GATS terminology, there are four modes in which trade in services takes place. Mode 1 refers to cross-border trade. In this mode, service is embodied in a transportable form – e.g. CDs, paper documents (say, an architectural drawing or design) etc. Mode 2 of service trade refers to consumption abroad – situations where consumers move to other countries that offer services – e.g. tourism for leisure / recreation, health tourism, visit abroad



for education etc. Mode 3 accounts for those situations where service trade entails the provider of the service to operate its offices on foreign soil – e.g. setting up a foreign branch by a bank or an insurance company. Mode 4 of service trade refers to movement of natural persons – e.g. doctors, consultants, academicians and all other types of workers for working abroad. Following Riddle (1986), we may present these four modes – depending on the way services are delivered with respect to factors of production and to consumers – in a way that may help the countries during negotiations on trade strategies and policies:

Finally, it is worth mentioning that Sapir and Lutz (1981) have distinguished between international service transactions and international service activities. As per their classification, international service transactions include exports and imports of services. They further argue that a part of these transactions are actually not traded, rather it is sold 'within the domestic economy to foreign individuals or firms residing abroad'. Tourism and port services are examples of such items. Sapir and Lutz, accordingly, in their analysis of international service transactions cover the items: (a) transport, (b) communication, (c) financial services and (d) professional and technical services.

On the other hand, the term 'international service activities' is used to mean 'foreign sales and purchases by affiliates or branches established abroad and therefore implies international investment' (i. bid.). On the basis of our discussion in the preceding paragraphs, we observe that international service activities, therefore, comprise a sizeable portion of factor services.

It should, however, be emphasized that by relegating tourism and port services from the purview of international service transactions, Sapir and Lutz have taken a rather narrow view on the issue. It is also not fair to treat tourism and port services as non-traded items. The very fact that countries earn and / or spend foreign exchange with respect to (international) tourism and port services means these are, indeed, international transactions. The very concept of non-traded transaction is misleading. The important point to note is that tourism and port services exported by a country are actually consumed by the foreigners within the country exporting it, unlike some other services. Also, in today's world of communication and technology revolution, many other services may share the features of these two items. Moreover, tourism services form a major component of foreign exchange earning in some countries, apart from being a dominant economic activity and GNP generator. Clearly, under such circumstances, it may not be possible to do a meaningful exercise by ignoring tourism and port services from our coverage.

In this paper, we shall resort to the RBI classification and, therefore, emphasize services as a sub-set of a broader category, viz. invisible transactions.

III: India's Invisible Trade: Secular Movement and Growth Performance

Having discussed the nature and importance of international trade in invisibles and services and different components of invisibles and services in a country's balance of payments accounts, we now turn our attention to the central focus of the present exercise – analysis of the secular movement of invisible items and its growth performance; later, we

intend to appreciate the underlying process of transformation that had taken place in India's trade in invisibles during the first five decades of planned development.

Growth Performance of Invisibles vis-à-vis Merchandise

In Table – 1 data on India's merchandise trade and service trade are given. For the sake of convenience and in order to have a snapshot view of the long-term trend, data on five-year intervals, starting from 1950-51, have been considered. The volume of exports and that of imports have been summed in order to obtain aggregate volume of transactions. It is noticed that the aggregate volume of invisibles as proportion of aggregate volume of merchandise trade increased from 18.24% to 56.51% over a four-decade period.

In Table – 2 the annual compound growth rates (CARG) of transactions in merchandise and invisibles have been reported. In order to have a robust idea, the growth figures have been estimated on sub-period basis. We have fitted the standard semi-log equation of the following form so as to estimate the compound

annual rate of growth of a variable:

$$LnY_t = a+b \ldots(1)$$

Table – 1: India's International Transactions at Different Points of Time

Year	Merchandise (in mn. $)			Invisibles (in mn. $)			Invisibles as % of Merch-andise	Ratio of Col. 5 to Col. 2
	Exports	Imports	Total	Exports	Imports	Total		
1950-51	1359	1366	2725	293	204	497	18.24	0.22
1955-56	1345	1624	2969	538	245	783	26.37	0.40
1960-61	1325	2323	3648	534	296	830	22.75	0.40
1965-66	1648	2874	4522	724	572	1296	28.66	0.44
1970-71	1890	2435	4325	661	711	1372	31.72	0.35
1975-76	4830	6197	11027	2097	936	3033	27.51	0.44
1980-81	8445	16314	24759	7183	2118	9301	37.57	0.85
1985-86	9461	17294	26755	6435	3469	9904	37.02	0.68
1990-91	18477	27915	46392	7464	7706	15170	32.70	0.40
1995-96	32311	46370	75981	17665	12216	29881	39.33	0.55
2002-03	53774	64464	118238	41925	24890	66815	56.51	0.78

Source: Computed from Balance of Payments Statistics (RBI)

While between 1950-51 and 2002-03, India's transactions in merchandise trade increased at an annual compound rate of 9.51 %, the figure for invisibles turns out to 10.69 %, i.e. higher than the former. The two successive oil shocks in the 1970s had a profound impact on the Indian economy. Services – especially the factor services – began to perform much more creditably from that time; remittances by the Indians working abroad, for instance, became quite important after the mid-1970s.

Table – 2: Estimates of Growth Equation for India's International Transactions

Period: 1950-51 – 2002-03 (Entire Period)

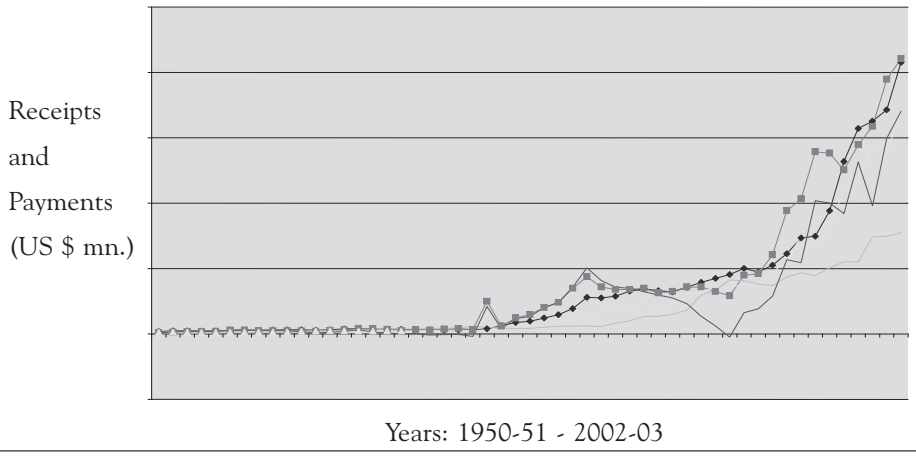
Item	CARG	R^2	t	DW
Invisibles Trade (Total)	10.69	0.82	15.4966	2.3912
Merchandise Trade (Total)	9.51	0.70	10.9672	1.1805

Period: 1973-74 – 2002-03 (Post First Oil Crisis Period)

Item	CARG	R^2	t	DW
Invisibles Trade (Total)	11.37	0.89	15.2295	2.0144
Merchandise Trade (Total)	8.31	0.90	16.3396	1.3323

Major Features in the Growth of Invisible Trade

Figure – 2: India's Service Trade: Receipts and Payments from Factor Services (FS) and Non Factor Services (NFS)



A close examination of figures relating to India's international transactions in invisibles points to a structural shift – coupled with a significant quantitative change – in India's invisibles trade in the post-1973 oil crisis period (Annexure 1-5).

A few observations may be made, which are as follows:

1) From early 1950s till 1973-74, net income from invisibles was very small and virtually stagnant. After the first oil shock, net income from invisibles suddenly jumped to a higher plateau, and this jump did not reverse thereafter. The two oil crises within a short span of time (in 1973 and in 1979) had a deep impact on the global economy and, accordingly, on India's international trade scenario too. This phenomenon, in a sense, indicates some short of structural shift as far as invisibles are concerned. In the 1980s, net income levels steadily declined and since the early 1990s, we again notice an upswing in net income trend.

2) Invisibles, it may be recalled, comprise of two components: non-factor services (NFS) and factor services (FS). Till around 1973, contribution of non-factor services was dominant in net income of invisibles; the situation reversed thereafter because of, to a large part, spectacular rise in private transfer in the form of remittances by the Non Resident Indians (NRIs) and Indians working abroad. This shift in composition of net income may also be construed as a structural change in India's invisible trade.

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4) While net inflow from the category 'investment income' has almost systematically been one of deficit, private transfers, unlike investment income, have always yielded surplus to the nation and it became particularly important source in the post oil crises era.

Testing Shift in Long Run Growth Rate

We may now attempt to verify statistically whether in the mid-1970s any significant departure in the trend growth rate in India's invisible trade sector had taken place or not. For this, the following equation may be tested:

$$LnY_t = a + bt + cD_t + dD_t t + u_t \ldots\ldots (2)$$

Where Y_t is the dependent variable whose rate of growth is sought to be estimated; and 'c' and 'd' are the slope and intercept dummies, respectively.

In our exercise, $D_t = 0$ for the period 1950-51 – 1974-75 (i.e. for $t \leq 25$ and $D_t = 1$ for the period 1975-76 – 2002-03 (i.e. for $t \geq 25$); in other words, we have taken the year immediately following the first oil shock as the year of break. The parameter estimates of our regression exercise have been furnished in Table – 6 (for those variables where this from of equation holds statistically). On the basis of estimated coefficients of 'c' and / or 'd' we infer the following points:

1) aggregate receipts and payments in invisibles moved on to a higher growth path in the post oil shock years;

2) as far as item wise receipts are concerned, some degree of shift in trend growth rate can be discerned in travel and transportation transactions;

3) income from insurance trade has remained free from this abrupt jump; for this category of service, the usual semi log growth equation fits better;

4) in case of insurance transactions, payments side – unlike its receipts counterpart – exhibits a structural shift in long term growth rate. The same hold true for payments on account of trade involving transportation and miscellaneous services. On the other hand, no such structural shift in trend growth could be statistically established for travel and investment income categories

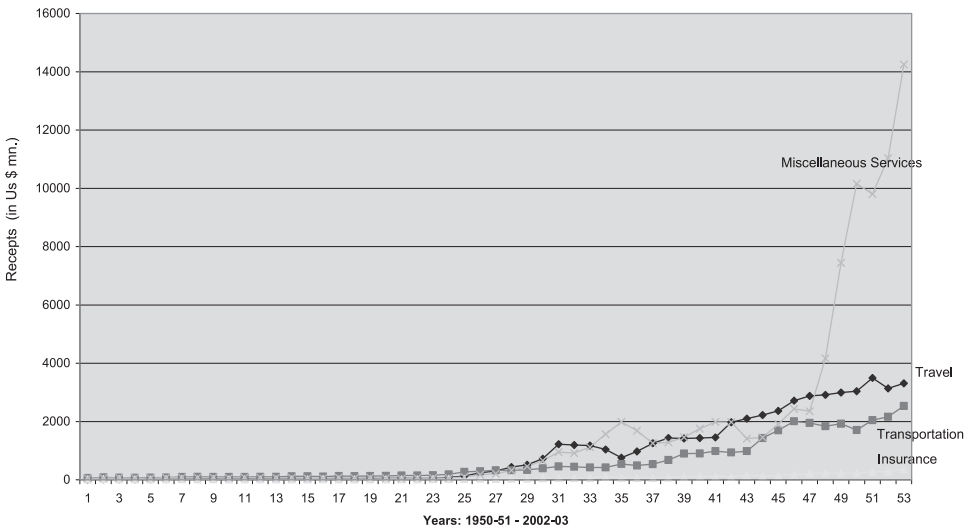
(that is why the corresponding equations have not been reported);

5) payments in connection with trade in miscellaneous services have seen the most spectacular jump – the growth rate almost doubled in the post-1973 phase. In fact, with increasing tertiarization and specialization in the world economy, proliferation of a variety of services is quite a logical outcome. This phenomenon would obviously create an impact on volume of transactions under the head 'miscellaneous services" of which payments are just one side of the coin.

Let us now take a quick look at the compound annual rate of growth (CARG) estimates of different items over the period 1975-76 – 2002-03 (Annexure 7&8). It is found that on the receipts side, travel trade recorded the lowest rate of growth followed by the insurance; remaining items achieved more than 9% growth rate. On the other hand, on the payments side, travel trade category achieved the highest rate while the lowest rate is exhibited by insurance trade. The rest of the categories crossed 11% mark. Receipts and payments under the head "miscellaneous services' have shown the fastest rates of expansion, the compound annual rates of growth exceeding 12% mark for both. This, in a sense, indicates growing importance of miscellaneous services in India's invisible trade. On the whole (i.e. between 1950-51 and 2002-03), transactions on invisibles have recorded growth rates of 10.59 % and 11.42 % for receipts and payments, respectively. These figures – in spite

of being based on current prices (quoted in US dollars) – are, indeed, quite impressive; the corresponding estimates for trade in merchandise items are 10.27% (exports) and 8.94% (imports). It means: (a) both exports and imports of services have grown faster than

Figure – 3: India's Invisibles Trade: Receipts from Major Items of Non-Factor Services



Merchandise items and (b) importance of services or invisibles in India's over all foreign trade basket has risen over time.

Instead of considering the time span 1950-51 – 2002-03, if we concentrate on the period following the first oil shock, then contribution of service trade in terms of growth performance turns out to be even more impressive vis-à-vis merchandise trade. However, when we try to evaluate the performance in terms of consistency (or, its reverse variability), merchandise trade sector is found to exhibit less coefficient of variation (CV) in both receipts and payments series compared to service trade series (Annexure 9).

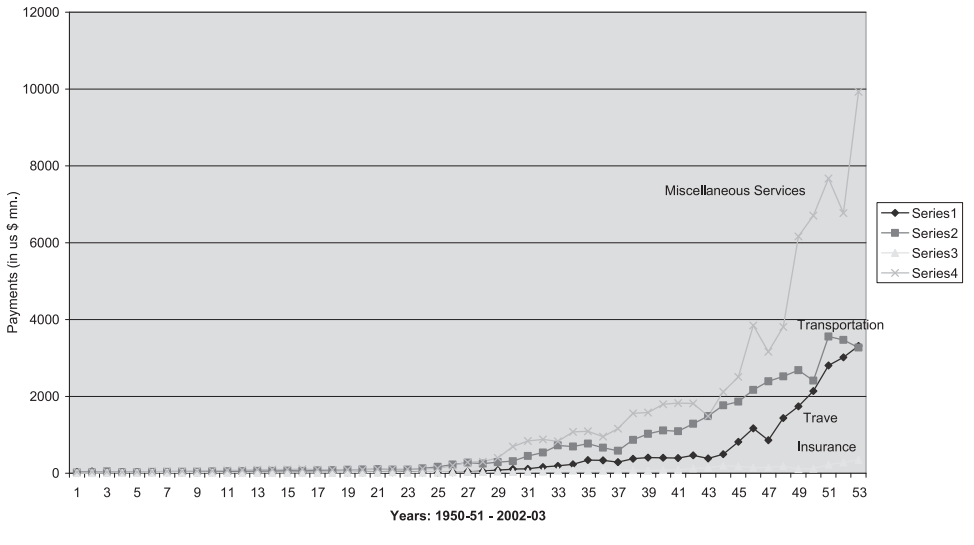
Thus, it should now be clear that the two successive oil crises – first in 1973 and then, again, in 1979 – and, in particular the first crisis – can serve as a great watershed in India's foreign trade sector. Invisible trade scenario dramatically and permanently changed in the post oil crises period. Sluggishness in India's international transactions in invisibles suddenly disappeared and it became quite vibrant and important in India's foreign trade basket (associated figures corroborate this too).

IV. Qualitative Change in India's Invisible Trade

Composition of Invisible Trade and its Transformation

So far we have concentrated on the growth part of trade in invisibles and have examined, among others, whether growth rate of invisibles moved on to a higher trajectory over the long run. Having done so, let us now investigate the other side of the coin, viz. transformation or qualitative changes, if any, in invisibles trade. One way of exploring this is to form some idea about the extent of diversification in invisibles trade basket – with respect to both payments and receipts. In

Figure – 4: India's Invisibles Trade: International Payments on Major Non-Factor Services



other words, one has to look into the commodity (service) composition of invisibles. For this, we have computed the Hirschman type concentration index (denoted by RC).

We may investigate how the value of ratio concentration (RC) for invisibles (as a group) has changed over the years. A falling RC would indicate a more mature trade structure (it may be verified that when the number of items is taken to be eight, the lowest value that RC can take is 0.36). In Table – 3, the value of RC over time has been traced. Looking at the trend of computed values of RC, one may be tempted to conclude, from the point of view of receipts, that there has not been any significant qualitative change or structural transformation in India's invisible trade during all these years, viz. 1950-51–1990-91. In fact, in the post reform era, this value has tended to rise, thereby implying a greater imbalance in the structure of receipts. An examination of receipts side indicates that over the years receipts from travel, miscellaneous services and private transfers have become quite important sources with private transfers being the most dominant especially after 1979.

We now take a look at the other side of the coin – i.e. at the payments in invisible transactions. In time series data of India's invisible payments – component wise – have already been provided. It has turned out that the index of concentration is much higher in case of payments than in case of receipts, until around the mid – 1990s.

On the payments side, outflow under the category investment income accounts for the major share and this is far greater than the other items – notably transportation, miscellaneous services and, to some extent, travel. Large outflow of foreign exchange under 'investment income' head is quite understandable: the country has attracted all through the years a large of volume of foreign capital so as to facilitate her industrial development programmes and, quite naturally, given India's development programmes, she has to make substantial payment on dividends, repatriation of profits and so on.

Table – 3: Index of Concentration and Intra Industry Trade Index in Invisibles

Year	Index of Concentration forNon Factor Services		IIT Index for Major Components of Non Factor Services
	Receipts	Payments	
1951	0.44	0.45	0.68
1952	0.43	0.43	0.70
1953	0.41	0.43	0.87
1954	0.40	0.42	0.79
1955	0.40	0.42	0.81
1956	0.40	0.41	0.87
1957	0.39	0.40	0.85
1958	0.40	0.42	0.89
1959	0.40	0.43	0.86
1960	0.40	0.45	0.86
1961	0.39	0.46	0.89
1962	0.40	0.48	0.87
1963	0.42	0.51	0.81
1964	0.42	0.52	0.77
1965	0.48	0.53	0.73
1966	0.44	0.55	0.72
1967	0.42	0.57	0.83
1968	0.41	0.57	0.79
1969	0.42	0.59	0.87
1970	0.41	0.59	0.81
1971	0.42	0.61	0.75
1972	0.44	0.58	0.77

Year	Index of Concentration forNon Factor Services		IIT Index for Major Components of Non Factor Services
	Receipts	Payments	
1973	0.42	0.56	0.77
1974	0.78	0.61	0.77
1975	0.40	0.59	0.81
1976	0.43	0.54	0.73
1977	0.45	0.51	0.72
1978	0.48	0.53	0.69
1979	0.45	0.51	0.72
1980	0.48	0.52	0.70
1981	0.47	0.53	0.63
1982	0.47	0.52	0.64
1983	0.49	0.51	0.68
1984	0.49	0.51	0.78
1985	0.49	0.52	0.81
1986	0.48	0.52	0.81
1987	0.47	0.54	0.73
1988	0.48	0.53	0.72
1989	0.47	0.57	0.76
1990	0.46	0.58	0.78
1991	0.46	0.60	0.79
1992	0.51	0.59	0.73
1993	0.51	0.59	0.66
1994	0.54	0.55	0.68
1995	0.57	0.55	0.77
1996	0.54	0.53	0.78
1997	0.62	0.53	0.74
1998	0.57	0.53	0.86
1999	0.52	0.53	0.90
2000	0.55	0.54	0.90
2001	0.53	0.52	0.88
2002	0.54	0.51	0.84

Source: Computed from Balance of Payments Statistics, R.B.I.

Intra Industry Trade (IIT) in Invisibles and Change in IIT Index

Now, a few words about the intra industry trade (IIT) involving invisibles. While there have been many studies on IIT with respect to merchandise trade, there has not been any attempt to measure

$$I = 1 - \frac{\sum \left| \frac{X_i}{X} - \frac{M_i}{M} \right|}{\sum \left| \frac{X_i}{X} - \frac{M_i}{M} \right|} \quad \ldots(3)$$

the magnitude of intra industry trade in case of trade in invisibles. We use the Grubel-Lloyd index (1975) of IIT as per the following formula:

where X and M stand for total exports and imports, respectively and X_i and M_i stand for exports and imports in the i-th category.

When for each traded item, there are only exports or imports – as in the traditional trade models – the value of I, index of IIT, is zero. This index takes the value unity, when total exports are equal to total imports for each item (i.e. total intra industry trade). A moderate IIT is considered to be situation when the index assumes a value in the vicinity of 0.50. For developed economies, having a diversified trade structure, the value of this index is supposed to be close to unity.

Using the data on invisible receipts and payments and the Grubel-Lloyd formula, we have calculated the movement of this index (a value) since 1950-51 (up to 2002-03). Since, as already hinted, non factor services – and, more specifically, the four major items, viz. travel, transportation, insurance and 'miscellaneous' – are considered to be more important in a country's service trade sector, we have computed the IIT index taking these categories only. The long run movement of this index has been furnished in Table – 3. This value

turns out to be always rather high and close to unity. A high value of the index is usually considered as an indicator of a more mature trade structure. Since for developed nations, IIT index is expected to be close to unity, given the values of Grubel index it is possible to argue that even though India's presence in invisibles trade (and trade in general) at global level is negligible, her invisibles trade structure, in a sense, resembles the state of trade structure found in the advanced economies.

Conclusions

In the light of our preceding discussion, we may now list the major findings of our empirical study.

1. We find that transactions involving invisible items have grown faster than transactions involving merchandise articles (this has been true at the global level too).

2. Invisible trade has, however, been characterized by greater degree of volatility than merchandise trade.

3. In the post-1973 era (i.e. after the first oil shock), trade in services (i.e. invisibles) jumped to a higher plateau, thereby marking a structural shift; this phenomenon holds for the international trade scenario as a whole and for India too. In fact, after the mid-1970s, sluggishness in India's service trade scenario disappeared and it suddenly became vibrant.

4. While different components of India's service trade (receipts and payments both) grew impressively from the mid-1970s onwards, commodity composition of invisibles, however, did not undergo significant change (thereby indicating, in a sense, a phenomenon of growth without structural change).

5. As far as India's invisible trade scenario is concerned, the post (first) oil crisis period has been characterized by rising dominance of factor services (especially in case of receipts).

6. India's invisible trade structure – judged in terms of intra-industry trade index – resembles the state of trade structure found in the economically advanced nations.

7. As far as India's over all balance of payments is concerned, service trade has been acting as a sort of shock absorber; surplus on account of invisible trade has always partly offset the deficit on account of merchandise trade.

8. On the receipts side of India's invisible trade, travel and, more importantly, private transfers have always occupied key positions; the other side of the coin – the payments side – has been dominated by investment income and transportation. The most spectacular growth performance, in receipts as well as in payments, has, however, been notched up by the category 'miscellaneous services'.

   Productive activities in tertiary economy give rise to exchanges in services or invisibles. Since the early 1980s, India has witnessed service-led growth and services have come to play increasingly

pro-active role in her international economic relations and transactions. So, tertiary sector activities have not only contributed to the growth of the domestic economy, but have also propelled India's external economy. In a liberalized and globalized regime, this trend is likely to intensify further. We have, in this paper, mostly concentrated on two aspects of India's invisibles trade – notably, its growth and structural change. The two main limitations of this exercise are that due to space constraint we have not been able to: (i) indicate or identify the major determinants of each item of invisibles and (ii) take account of the happenings beyond the year 2002-03 or the latest developments taking place in India's external trade sector. These gaps may, however, be covered subsequently in near future.

ANNEXURE

We have used the following abbreviations, TRV (Travel), TRPN (Transportation), INS (Insurance), INV INC (Investment Income), MISC (Miscellaneous), PVT TRF (Private Transfers), OFF TRF (Official Transfers), FS (Factor Services) and NFS (non Factor Services); Receipts are denoted by R and Payments by P.

Annexure -1 : India's Invisible Trade Receipts (in US $ mn.)

Year	TRV	TRPN	INS	MISC	GNIE	INV INC	PVT TRF	OFF TRF	TOTAL
1951	10	63	17	57	41	15	86	4	293
1952	19	85	21	65	53	22	100	11	376
1953	19	71	20	70	56	40	109	23	408
1954	15	69	18	64	52	43	100	40	401
1955	19	75	17	59	56	51	107	46	430
1956	25	80	20	71	48	63	121	109	537
1957	31	97	22	78	50	69	134	78	559
1958	28	100	19	77	51	49	131	69	524
1959	26	95	21	78	82	34	122	75	533
1960	29	95	17	63	104	29	118	80	535
1961	32	94	17	77	107	30	94	95	546
1962	32	100	16	75	62	26	87	96	494
1963	33	104	16	70	105	23	84	162	597
1964	35	121	17	68	146	23	100	175	685
1965	37	119	15	49	202	24	89	320	855
1966	32	113	25	54	96	23	165	218	726
1967	28	128	18	79	128	29	115	196	721
1968	34	125	17	57	107	27	96	118	581
1969	36	132	17	79	58	34	122	164	642
1970	49	136	18	58	36	45	130	113	585
1971	49	145	16	42	40	66	134	171	663
1972	44	149	18	64	39	49	156	212	731
1973	50	156	21	61	40	40	143	153	664
1974	83	185	26	62	42	56	201	2247	2902
1975	129	273	33	104	94	122	295	186	1236

Year	TRV	TRPN	INS	MISC	GNIE	INV INC	PVT TRF	OFF TRF	TOTAL
1976	241	296	41	175	121	138	524	561	2097
1977	308	330	35	209	93	197	853	441	2466
1978	436	328	41	322	91	259	1295	461	3233
1979	516	342	44	460	110	404	1352	654	3882
1980	724	398	57	655	107	680	2182	628	5431
1981	1221	457	64	951	111	917	2707	755	7183
1982	1192	445	61	916	146	745	2333	505	6343
1983	1174	423	60	1119	111	483	2525	401	6296
1984	1043	426	110	1566	135	449	2568	387	6684
1985	756	542	75	1987	88	493	2509	486	6936
1986	972	494	64	1686	95	547	2219	360	6437
1987	1257	538	65	1254	104	501	2339	415	6473
1988	1431	680	81	1286	93	446	2724	413	7154
1989	1418	898	94	1462	81	416	2669	506	7544
1990	1433	907	119	1756	31	413	2297	542	7498
1991	1456	983	111	1987	15	368	2083	462	7465
1992	1977	939	108	1981	17	221	3798	461	9502
1993	2098	982	158	1417	75	376	3864	364	9334
1994	2222	1433	124	1455	30	395	5287	373	11319
1995	2365	1696	152	1912	10	886	8112	421	15554
1996	2713	2011	179	2430	13	1429	8539	351	2713
1997	2878	1953	217	2354	72	1073	12435	423	2878
1998	2914	1836	240	4163	276	1561	11875	379	2914
1999	2993	1925	224	7447	597	1893	10341	307	2993
2000	3036	1707	231	10153	582	1783	12290	382	3036
2001	3497	2046	270	9804	651	2554	13065	252	3497
2002	3137	2161	288	11036	518	3254	15760	458	3137

Source: Computed from Balance of Payments Statistics, *RBI*

Annexure -2 : Shares (in %) of Different Components in India's Invisible Receipts

Year	TRV	TRPN	INS	MISC	GNIE	INV INC	PVT TRF	OFF TRF
1951	3.41	21.50	5.80	19.45	13.99	5.12	29.35	1.37
1952	5.05	22.61	5.59	17.29	14.10	5.85	26.60	2.93
1953	4.66	17.40	4.90	17.16	13.73	9.80	26.72	5.64
1954	3.74	17.21	4.49	15.96	12.97	10.72	24.94	9.98
1955	4.42	17.44	3.95	13.72	13.02	11.86	24.88	10.70
1956	4.66	14.90	3.72	13.22	8.94	11.73	22.53	20.30
1957	5.55	17.35	3.94	13.95	8.94	12.34	23.97	13.95
1958	5.34	19.08	3.63	14.69	9.73	9.35	25.00	13.17
1959	4.88	17.82	3.94	14.63	15.38	6.38	22.89	14.07
1960	5.42	17.76	3.18	11.78	19.44	5.42	22.06	14.95
1961	5.86	17.22	3.11	14.10	19.60	5.49	17.22	17.40
1962	6.48	20.24	3.24	15.18	12.55	5.26	17.61	19.43
1963	5.53	17.42	2.68	11.73	17.59	3.85	14.07	27.14
1964	5.11	17.66	2.48	9.93	21.31	3.36	14.60	25.55
1965	4.33	13.92	1.75	5.73	23.63	2.81	10.41	37.43

Year	TRV	TRPN	INS	MISC	GNIE	INV INC	PVT TRF	OFF TRF
1966	4.41	15.56	3.44	7.44	13.22	3.17	22.73	30.03
1967	3.88	17.75	2.50	10.96	17.75	4.02	15.95	27.18
1968	5.85	21.51	2.93	9.81	18.42	4.65	16.52	20.31
1969	5.61	20.56	2.65	12.31	9.03	5.30	19.00	25.55
1970	8.38	23.25	3.08	9.91	6.15	7.69	22.22	19.32
1971	7.39	21.87	2.41	6.33	6.03	9.95	20.21	25.79
1972	6.02	20.38	2.46	8.76	5.34	6.70	21.34	29.00
1973	7.53	23.49	3.16	9.19	6.02	6.02	21.54	23.04
1974	2.86	6.37	0.90	2.14	1.45	1.93	6.93	77.43
1975	10.44	22.09	2.67	8.41	7.61	9.87	23.87	15.05
1976	11.49	14.12	1.96	8.35	5.77	6.58	24.99	26.75
1977	12.49	13.38	1.42	8.48	3.77	7.99	34.59	17.88
1978	13.49	10.15	1.27	9.96	2.81	8.01	40.06	14.26
1979	13.29	8.81	1.13	11.85	2.83	10.41	34.83	16.85
1980	13.33	7.33	1.05	12.06	1.97	12.52	40.18	11.56
1981	17.00	6.36	0.89	13.24	1.55	12.77	37.69	10.51
1982	18.79	7.02	0.96	14.44	2.30	11.75	36.78	7.96
1983	18.65	6.72	0.95	17.77	1.76	7.67	40.10	6.37
1984	15.60	6.37	1.65	23.43	2.02	6.72	38.42	5.79
1985	10.90	7.81	1.08	28.65	1.27	7.11	36.17	7.01
1986	15.10	7.67	0.99	26.19	1.48	8.50	34.47	5.59
1987	19.42	8.31	1.00	19.37	1.61	7.74	36.13	6.41
1988	20.00	9.51	1.13	17.98	1.30	6.23	38.08	5.77
1989	18.80	11.90	1.25	19.38	1.07	5.51	35.38	6.71
1990	19.11	12.10	1.59	23.42	0.41	5.51	30.63	7.23
1991	19.50	13.17	1.49	26.62	0.20	4.93	27.90	6.19
1992	20.81	9.88	1.14	20.85	0.18	2.33	39.97	4.85
1993	22.48	10.52	1.69	15.18	0.80	4.03	41.40	3.90
1994	19.63	12.66	1.10	12.85	0.27	3.49	46.71	3.30
1995	15.21	10.90	0.98	12.29	0.06	5.70	52.15	2.71
1996	15.30	11.34	1.01	13.70	0.07	8.06	48.14	1.98
1997	13.47	9.14	1.02	11.02	0.34	5.02	58.21	1.98
1998	12.58	7.92	1.04	17.97	1.19	6.74	51.25	1.64
1999	11.60	7.46	0.87	28.86	2.31	7.34	40.08	1.19
2000	10.11	5.68	0.77	33.81	1.94	5.94	40.92	1.27
2001	10.81	6.33	0.83	30.31	2.01	7.90	40.39	0.78
2002	8.57	5.90	0.79	30.15	1.42	8.89	43.05	1.25

Source: Computed from Balance of Payments Statistics, R.B.I

Annexure - 3 : India's Invisible Trade Payments (in US $ mn.)

Year	TRV	TRPN	INS	MISC	GNIE	INV INC	PVT TRF	OFF TRF	TOTAL
1951	36	18	6	33	33	66	12	0	204
1952	46	28	6	35	38	60	12	0	225
1953	22	45	8	32	39	58	12	0	216
1954	28	25	8	31	34	50	15	0	191
1955	26	24	8	32	35	62	35	0	222
1956	25	32	11	44	27	53	43	0	235

Year	TRV	TRPN	INS	MISC	GNIE	INV INC	PVT TRF	OFF TRF	TOTAL
1957	26	34	15	50	27	50	33	0	235
1958	15	40	12	53	29	60	35	0	244
1959	16	38	11	60	30	76	35	0	266
1960	20	45	11	60	26	99	34	0	295
1961	25	52	12	73	45	130	35	0	372
1962	24	56	12	81	51	169	34	0	427
1963	25	58	10	93	53	198	29	0	466
1964	22	61	12	98	51	216	28	0	488
1965	22	68	10	96	31	251	35	22	535
1966	23	59	13	104	33	284	33	24	573
1967	23	73	8	97	36	332	32	27	628
1968	20	80	9	90	33	307	25	24	588
1969	19	87	12	90	28	344	22	22	624
1970	20	96	18	89	32	373	19	23	670
1971	24	105	16	105	31	404	18	9	712
1972	26	92	26	106	33	410	16	56	765
1973	25	92	16	105	30	426	15	142	851
1974	22	129	17	116	28	461	15	22	810
1975	19	166	18	126	38	434	8	13	822
1976	25	226	28	198	38	396	15	9	935
1977	43	277	33	282	55	408	8	12	1118
1978	52	252	36	302	52	506	8	14	1222
1979	79	287	45	397	82	559	20	6	1475
1980	109	313	35	696	109	570	10	16	1858
1981	114	450	43	840	60	592	15	5	2119
1982	161	540	45	883	66	532	19	3	2249
1983	192	726	72	829	66	818	15	7	2725
1984	234	694	72	1076	115	976	10	7	3184
1985	344	772	71	1092	71	1331	13	3	3697
1986	336	667	68	951	101	1323	12	10	3468
1987	290	585	80	1162	106	1478	12	4	3717
1988	376	870	82	1558	140	1783	26	3	4838
1989	405	1027	66	1579	147	2935	17	6	6182
1990	403	1115	84	1794	127	3341	16	3	6883
1991	392	1093	88	1825	173	4121	15	1	7708
1992	465	1289	126	1816	119	4051	15	1	7882
1993	385	1485	146	1485	100	3799	12	1	7413
1994	497	1765	195	2119	153	3665	22	5	8421
1995	818	1863	181	2506	165	4317	19	5	9874
1996	1167	2169	143	3846	218	4634	33	6	12216
1997	858	2394	153	3165	178	4380	68	13	11209
1998	1437	2522	183	3808	160	5020	45	0	13175
1999	1743	2680	112	6161	325	5462	61	1	16545
2000	2139	2411	122	6704	270	5478	34	0	17158
2001	2804	3558	223	7672	319	7218	211	0	22005
2002	3014	3467	280	6772	283	7098	362	0	21276

Source: Computed from Balance of Payments Statistics, R.B.I

Annexure - 4 : Shares (in %) of Different Components in India's Invisible Payments

Year	TRV	TRPN	INS	MISC	GNIE	INV INC	PVT TRF	OFF TRF
1951	17.65	8.82	2.94	16.18	16.18	32.35	5.88	0.00
1952	20.44	12.44	2.67	15.56	16.89	26.67	5.33	0.00
1953	10.19	20.83	3.70	14.81	18.06	26.85	5.56	0.00
1954	14.66	13.09	4.19	16.23	17.80	26.18	7.85	0.00
1955	11.71	10.81	3.60	14.41	15.77	27.93	15.77	0.00
1956	10.64	13.62	4.68	18.72	11.49	22.55	18.30	0.00
1957	11.06	14.47	6.38	21.28	11.49	21.28	14.04	0.00
1958	6.15	16.39	4.92	21.72	11.89	24.59	14.34	0.00
1959	6.02	14.29	4.14	22.56	11.28	28.57	13.16	0.00
1960	6.78	15.25	3.73	20.34	8.81	33.56	11.53	0.00
1961	6.72	13.98	3.23	19.62	12.10	34.95	9.41	0.00
1962	5.62	13.11	2.81	18.97	11.94	39.58	7.96	0.00
1963	5.36	12.45	2.15	19.96	11.37	42.49	6.22	0.00
1964	4.51	12.50	2.46	20.08	10.45	44.26	5.74	0.00
1965	4.11	12.71	1.87	17.94	5.79	46.92	6.54	4.11
1966	4.01	10.30	2.27	18.15	5.76	49.56	5.76	4.19
1967	3.66	11.62	1.27	15.45	5.73	52.87	5.10	4.30
1968	3.40	13.61	1.53	15.31	5.61	52.21	4.25	4.08
1969	3.04	13.94	1.92	14.42	4.49	55.13	3.53	3.53
1970	2.99	14.33	2.69	13.28	4.78	55.67	2.84	3.43
1971	3.37	14.75	2.25	14.75	4.35	56.74	2.53	1.26
1972	3.40	12.03	3.40	13.86	4.31	53.59	2.09	7.32
1973	2.94	10.81	1.88	12.34	3.53	50.06	1.76	16.69
1974	2.72	15.93	2.10	14.32	3.46	56.91	1.85	2.72
1975	2.31	20.19	2.19	15.33	4.62	52.80	0.97	1.58
1976	2.67	24.17	2.99	21.18	4.06	42.35	1.60	0.96
1977	3.85	24.78	2.95	25.22	4.92	36.49	0.72	1.07
1978	4.26	20.62	2.95	24.71	4.26	41.41	0.65	1.15
1979	5.36	19.46	3.05	26.92	5.56	37.90	1.36	0.41
1980	5.87	16.85	1.88	37.46	5.87	30.68	0.54	0.86
1981	5.38	21.24	2.03	39.64	2.83	27.94	0.71	0.24
1982	7.16	24.01	2.00	39.26	2.93	23.65	0.84	0.13
1983	7.05	26.64	2.64	30.42	2.42	30.02	0.55	0.26
1984	7.35	21.80	2.26	33.79	3.61	30.65	0.31	0.22
1985	9.30	20.88	1.92	29.54	1.92	36.00	0.35	0.08
1986	9.69	19.23	1.96	27.42	2.91	38.15	0.35	0.29
1987	7.80	15.74	2.15	31.26	2.85	39.76	0.32	0.11
1988	7.77	17.98	1.69	32.20	2.89	36.85	0.54	0.06
1989	6.55	16.61	1.07	25.54	2.38	47.48	0.27	0.10
1990	5.86	16.20	1.22	26.06	1.85	48.54	0.23	0.04
1991	5.09	14.18	1.14	23.68	2.24	53.46	0.19	0.01
1992	5.90	16.35	1.60	23.04	1.51	51.40	0.19	0.01
1993	5.19	20.03	1.97	20.03	1.35	51.25	0.16	0.01
1994	5.90	20.96	2.32	25.16	1.82	43.52	0.26	0.06
1995	8.28	18.87	1.83	25.38	1.67	43.72	0.19	0.05

Year	TRV	TRPN	INS	MISC	GNIE	INV INC	PVT TRF	OFF TRF
1996	9.55	17.76	1.17	31.48	1.78	37.93	0.27	0.05
1997	7.65	21.36	1.36	28.24	1.59	39.08	0.61	0.12
1998	10.91	19.14	1.39	28.90	1.21	38.10	0.34	0.00
1999	10.53	16.20	0.68	37.24	1.96	33.01	0.37	0.01
2000	12.47	14.05	0.71	39.07	1.57	31.93	0.20	0.00
2001	12.74	16.17	1.01	34.86	1.45	32.80	0.96	0.00
2002	14.17	16.30	1.32	31.83	1.33	33.36	1.70	0.00

Source: Computed from Balance of Payments Statistics, R.B.I.

Annexure - 5 Summary of Invisible Transactions and ForexReserves (in US $ mn.)

Year	Receipts		Payments		Invisibles (Net)	FOREX Reserves
	FS	NFS	FS	NFS		
1951	105	188	78	126	89	2161
1952	133	243	72	153	151	1815
1953	172	236	70	146	192	1850
1954	183	218	65	126	210	1911
1955	204	226	97	125	208	1873
1956	293	244	96	139	302	1895
1957	281	278	83	152	324	1431
1958	249	275	95	149	280	884
1959	231	302	111	155	267	795
1960	227	308	133	162	240	762
1961	219	327	165	207	174	637
1962	209	285	203	224	67	624
1963	269	328	227	239	131	619
1964	298	387	244	244	197	642
1965	433	422	308	227	320	524
1966	406	320	341	232	153	626
1967	340	381	391	237	93	638
1968	241	340	356	232	-7	718
1969	320	322	388	236	18	769
1970	288	297	415	255	-85	1094
1971	371	292	431	281	-49	975
1972	417	314	482	283	-34	1194
1973	336	328	583	268	-187	1219
1974	2504	398	498	312	2092	1325
1975	603	633	455	367	414	1379
1976	1223	874	420	515	1162	2172
1977	1491	975	428	690	1348	3747
1978	2015	1218	528	694	2011	5824
1979	2410	1472	585	890	2407	7268
1980	3490	1941	596	1262	3573	7361
1981	4379	2804	612	1507	5064	6823
1982	3583	2760	554	1695	4094	4390
1983	3409	2887	840	1885	3571	4896
1984	3404	3280	993	2191	3500	5649
1985	3488	3448	1347	2350	3239	5952
1986	3126	3311	1345	2123	2969	6520
1987	3255	3218	1494	2223	2756	6574

Year	Receipts		Payments		Invisibles (Net)	FOREX Reserves
	FS	NFS	FS	NFS		
1988	3583	3571	1812	3026	2316	6223
1989	3591	3953	2958	3224	1362	4802
1990	3252	4246	3360	3523	615	3962
1991	2913	4552	4137	3571	-243	5834
1992	4480	5022	4067	3815	1620	9220
1993	4604	4730	3812	3601	1921	9832
1994	6055	5264	3692	4729	2898	19254
1995	9419	6065	4341	5533	5680	25186
1996	10319	7418	4673	7543	5449	21687
1997	13931	7430	4461	6748	10196	26423
1998	13815	9357	5065	8110	10007	29367
1999	12541	13261	5524	11021	9208	32490
2000	14455	15579	5512	11646	13143	38036
2001	15871	16474	7429	14576	9794	42281
2002	19472	17133	7460	13816	14974	54106

Source: Computed from Balance of Payments Statistics, R.B.I.

Annexure - 6 : Parameter Estimates of Equation (1)

Dependent Variable	a	b	c	d	R^2	DW
Ln(INVBR)	5.7040 (33.6860)	0.0550 (5.2187)	xxx	0.0330 (4.4264)	0.92	1.9915
Ln(INVBP)	5.0463 (44.3549)	0.0733 (11.1622)	-1.0762 (-4.7293)	1.0737 (4.9398)	0.98	1.6733
Ln(TRVR)	2.655 (25.7050)	0.0626 (9.013)	1.284 (4.979)	0.0212 (2.330)	0.98	1.142
Ln(TRPNR)	4.0867 29.0025)	0.0489 (5.9211)	-0.8426 (-2.9446)	0.0389 (3.5110)	0.94	1.7744
Ln(INSR)	1.7622 (4.8961)	0.0740 (7.3641)	xxx	xxx	0.51	2.0289
Ln(TRPNP)	3.0534 (37.6817)	0.0746 (14.0263)	xxx	0.0232 (6.0578)	0.98	1.7866
Ln(INSP)	2.0296 (11.7266)	0.0335 (3.1132)	-0.7223 (-1.9282*)	0.0475 (3.3691)	0.91	1.8527
Ln(MISCP)	3.4174 (12.1680)	0.0652 (4.2080)	-1.2473 (-2.3404)	0.0660 (3.1546)	0.92	1.8758
Ln(NFSR/ FSR)	1.527 (17.141)	-0.0307 (-5.726)	-2.343 (-4.640)	0.0803 (5.455)	0.52	1.454

Notes: (a) Figures within parentheses indicate significant 't' scores at 95 % level;
(b) * indicates significant 't' score at 10 % level;
(c) For INSR, the standard semi-log growth equation holds;
(d) xxx indicates the coefficients do not fit into the equation.

Annexure - 7 : Parameter Estimates of Growth Equation for Different Components of Invisibles Receipts During the Period 1975-76 – 2002-03

Item	CARG	R^2	t	DW
Invisibles (Total)	9.34 %	0.47	4.9814	1.2710
Factor Services	9.01 %	0.28	3.4726	1.4855
Non Factor Services	9.97 %	0.64	6.8937	1.1682
Travel	6.43 %	0.54	5.6677	1.0885
Transportation	9.04 %	0.82	11.0331	1.5928
Insurance	8.42 %	0.92	17.1926	1.8747
Miscellaneous Services	12.16 %	0.32	8.8073	1.0047
Investment Income	Does not fit			

Annexure - 8 : Parameter Estimates of Growth Equation for Different Components of Invisibles Payments During the Period 1975-76 – 2002-03

Item	CARG	R^2	t	DW
Invisibles (Total)	12.09 %	0.95	21.6324	1.6231
Factor Services	12.67 %	0.71	8.0216	1.7564
Non Factor Services	11.60 %	0.90	15.1099	1.5235
Travel	15.29 %	0.76	9.2180	1.5104
Transportation	10.79 %	0.93	18.1943	1.7174
Insurance	7.69 %	0.75	8.8904	1.5834
Miscellaneous Services	11.73 %	0.80	10.3527	1.4382
Investment Income	12.64 %	0.67	7.4799	1.7689

Annexure - 9 : Coefficient of Variation (CV) [in%] in Different Items of India's International Transactions During the Period 1974-75 – 2002-03

Receipts / Exports

Invisibles	Merchandise	Factor Services	Non Factor Services
94.67	71.05	84.70	88.83

Travel	Transportation	Insurance	Miscellaneous Services	Investment Income
60.14	67.71	68.25	123.03	96.19

Payments / Imports

Invisibles	Merchandise	Factor Services	Non Factor Services
87.03	64.47	78.09	94.45

Travel	Transportation	Insurance	Miscellaneous Services	Investment Income
121.35	76.87	71.37	102.13	76.87

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The Indian Enigma on Child Under – nutrition

*Mousumi Das**

Food security programs in India aim to equalize per capita availability of food grains across different states, regions and sections of the population. Public distribution scheme (PDS) is a major initiative in the country to ensure food security for the poor. Despite such large scale food distribution programs existing in the country, stark differences in nutritional status of children prevails among the states. For example while 23 percent of children in the age group of 0-5 years were underweight in Kerala, it was 56 percent in Bihar in 2005-06. Food intake is important for better health outcomes but the latter depends on other factors as well such as biological requirement, preferences and environment (Suryanarayana, 2013).

The first 1000 days of conception is a "critical window of opportunity" for ensuring the child's growth and development not only in the short but also in the long run (Arabi et al., 2012). Damage done by poor health and nutrition during this period is mostly irreversible. Thus ensuring good health of both the mother and child is very important. Health status of mother and care practices adopted

(pre and post natal[1]) are crucial for the child's health and nutritional status (Haddad, 1999; Shroff et al., 2011). Early marriage, maternal under nutrition are other factors, which indirectly affect the nutritional status of the child. Decision making powers, education, awareness, age at marriage are some indicators of women empowerment. If the women is not empowered then she will neither be able to take of care of herself and nor of the child. Impact of diet quality, socio-economic factors, and household environment determined by availability of electricity, media exposure, etc. are other factors.

Developing countries in Asia and Africa are burdened with high proportions of malnourished children. For example despite higher GDP growth rates; proportion of children suffering from malnutrition in India is almost double of that in Sub-Saharan Africa (Klasen, 2003; Smith et al., 2003). The percentage of malnourished children in India is 46 as compared to 23 percent in Sub-Saharan Africa. Studies have tried to explain this puzzle, called the "South Asian Enigma". The difference has been attributed to women's status level or empowerment, poor hygiene and child feeding practices (Ramalingaswami et al., 1996). A recent paper by Smith and Haddad(2014) find that difference in stunting rates across countires can

The author would like to sincerely thank her advisor Prof. M. H. Suryanarayana for conceptualizing the issue and coining the term "Indian Enigma".

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be explained by access to safe water and improved sanitation,which are the other two most important factors. High rates of stunting in India can be explained by widespread open defacation (Spears,2013). So it needs to be verified if such a paradox prevails among the states à la the Asian Enigma. What needs to be examined is whether differences in nutritional status can be explained in terms of factors, which explain the South Asian Enigma across states in India.

Note:

[1]Pre natal practices include intake of a proper diet by the mother, cleanliness maintained, and immunization. Post natal practices involve timely initiation of breast feeding, immunization, and colostrums feeding.

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Overview on Project Finance Structuring and Negotiating Project Agreements

Vaibhav Shukla and Dnyanraj Desai *

Overview on Project Finance Structuring and Negotiating Project Agreements

This article provides an overview of project financing with a focus on the structuring and legal documentation.

The project finance structure revolves around the creation of a Project Company commonly referred to as the Special Purpose Vehicle ("SPV") that holds all of the project assets including all of its contractual rights and obligations. The SPV is a limited liability company formed under the Companies Act.

Generally, the equity shareholding in the SPV is held by atleast one intermediate holding company, created for the purpose of pledging the SPV's equity shares to the lenders who part finance the project cost. The purpose of creating an intermediate holding company is to limit the risk of project failure to the project assets of the SPV so that the balance sheet of the sponsor does not get adversely affected in case of any failure to implement the Project. However in India, the lenders demand a variety of securities in the form of sponsor's undertakings and corporate guarantees, which make the sponsors liable in case of any failure of the SPV to implement the project. The risk of project failure is highest till the time commercial operations date ("COD"). The sponsor's who enjoy a good credit standing and reputation in the banking fraternity are able to limit sponsor support/ undertakings and guarantees till the time COD is achieved.

All contracts related to development, construction, ownership, operation of the project will be entered into by the SPV and are commonly referred to as Project Agreements. If development stage contracts have been executed by the sponsor or one of its affiliates, it is important that the contracts allow for their assignment to the SPV once the SPV has been established for the purpose of implementation of the project.

The SPV enters into agreements, inter alia, (i) Supply Agreement; (ii) Engineering Procurement and Construction (EPC) Agreement; (iii) Operation and Maintenance Agreement; (iv) Lease or Sale Deeds for Land required; (v) Concession Agreements; etc. for implementation of the project.

While negotiating the project agreements, it is necessary to consider the key project finance principles to

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prevent having to revisit contractual terms at the behest of the lenders in the course of tying up of finance for the project. One concept is that lenders will own and likely to immediately transfer the SPV in case of an event of default. To this end, the lenders require consents to assignment for their benefit with few of the counterparties if not all. Therefore, provisions which prevent assignment without counterparty consent should be omitted from the project agreements. Including a contractual language that obligates the counterparty to cooperate with the SPV and its lenders in the course of financing process will expedite the process of negotiating consents to assignment as well as reduce the chances of the counterparty refusing to cooperate in context to the project financing.

EPC Agreements are an integral part of the financing analysis and pricing at the time of financing is sought, to the extent a project is not fully constructed. Large developers may be able to finance an entire project on balance sheet, and subsequently refinance the development to free up invested capital, however, most developers seek to leverage their equity and bring down their cost of capital by using project finance to construct and operate their projects. Where construction risk is present, lenders seek a corporate guarantee or undertaking from the sponsor to ensure that the performance of the SPV is as close to the base case business model that was agreed upon between the lenders and the borrower at the time of sanction of the facility. Warranties of appropriate substance and duration as well as maintenance measures regarding EPC work and the equipment purchased is required to satisfy the lenders that significant unbudgeted expenses will not be incurred. Lenders prefer a full Wrap agreement because such an agreement provides a single point of contact with regard to the various risks such an agreement might contain such as warranties and performance guarantees. The lenders decide the percentage of the project cost that will be funded by them on the basis of how much of the risk an EPC contractor accepts for cost overrun and design or installation defects. The lenders in most cases will ask the sponsor to provide a cost overrun undertaking that will make the sponsor liable for any cost overrun.

Negotiating the project agreements properly before the financing stage will help in saving costs for renegotiation and valuable time that can be used towards implementation of the project.

Currently the majority of the infrastructure projects are financed through syndicated loans. Syndicated loans are loans in which a group of banks form a consortium and each bank takes a portion of the entire loan amount to minimise the risk that any one individual lender making the same loan would otherwise have.

Security Structure in Project Finance Transaction:

All assets of the SPV owned at the time of closing, in addition to those acquired post closing will be charged

to the lenders by way of mortgage, hypothecation, pledge etc. until the loans are fully repaid. The cash flows, receivables, contractual rights and intellectual property will also be charged in favour and for the benefit of the lenders. Majority of the equity shares held by the sponsor in the SPV are often asked to be pledged in favour of the lenders.

Distribution of Project Revenues:

All project finance transactions have a 'waterfall' mechanism. All the revenues received by the SPV are placed in a Trust and Retention Account. As money flows down the waterfall it is appropriated into segregated sub-accounts at each different level as described in the Trust and Retention Account Agreement, with any funds remaining at the bottom of the waterfall being paid, assuming there are no defaults and that certain financial covenants are met, to the equity shareholders of the SPV.

The project waterfall is structured in a manner as described below, with most withdrawals from the waterfall happen on a monthly or quarterly basis as appropriate:

- The first level of payment would be in an amount necessary to pay costs incurred by the Project Company pertaining to construction and operations;
- The second level of payment would be to the lenders to pay loans expenses, interest and principal amount;
- The third level of payment will be used to fill an account segregated for the purposes of paying future debt service in times of lower project revenues. This is referred to the Debt Service Reserve Account and once this account is full, no amounts will be taken out at this level;
- The fourth level of payment is often referred to as a cash sweep in which the lenders are repaid outstanding principal with a certain percentage of the excess cash (normally one-third or half, which increases in a default scenario) remaining after the operation of the three waterfall levels above;
- The fifth level of the waterfall may operate to fill one or more reserve accounts, often designated for future major maintenance or other purposes, but once the reserve account is filled with the required amount, no amounts will be taken out at this level;
- The sixth level of waterfall may be used to repay the holders of subordinated debt, if applicable;
- The seventh level of the waterfall allows for cash remaining after the amounts have been removed at the higher levels to be paid to the equity holders of the project company in the form of an equity distribution, assuming there are no defaults and that financial covenants are met.

While every project waterfall will operate somewhat differently and many will have features unique to specific

project and financing arrangements, the waterfall mechanism given above is generally standard in project financing arrangements.

Operating Restrictions placed by the Lenders on the Project Company:

Project finance lenders place restrictions and affirmative obligations on the Project Company that significantly impact its day to day operation.

While many of the affirmative obligations in particular may seem like ordinary course of business operations, and the affirmative obligations and restrictions taken individually may not seem particularly onerous, on a collective basis compliance with these obligations and restrictions requires time and effort from the Sponsor's/ Promoters. It is worth noting in connection with the time consuming nature of complying with the covenants set forth in project financing documentation that there may be certain economies of scale, particularly where the individual projects are smaller, to arranging project financing on a portfolio basis.

More specifically, project finance lenders will require that the Project Company:

- comply with all laws and regulations, including permits,
- construct and operate the project in accordance with industry standards,
- pay its debts and obligations as they become due,
- use proceeds received and cash flow as set forth in the financing documentation (including operation of the waterfall),
- maintain pre-determined insurance coverage,
- maintain books and records in accordance with GAAP,
- adopt and update budgets,
- permit independent verification by the lenders' representatives of performance tests,
- maintain in effect all Project Agreements,
- preserve title to all assets,
- update the financial model,
- maintain the liens granted under the security documentation,

This list is only indicative. In addition, comprehensive reporting requirements will be set out in the Loan Agreement that obligates the Project Company to provide the lenders with copies of everything from construction status reports to auditor's letters to notices of certain adverse events.

Restrictions placed on the Project Company by the financing documentation will likely include:

- incurring indebtedness subject to certain exceptions,
- incurring liens subject to certain exceptions,
- making investments subject to certain exceptions,
- changing the nature of the business,

- issuing equity securities,
- disposing of assets outside of the ordinary course of business,
- consolidating or merging,
- transacting with affiliates subject to certain exceptions,
- opening bank accounts other than those secured under the financing documentation,
- creating subsidiaries, partnerships, or joint ventures,
- amending Project Agreements (including EPC change orders) subject to certain exceptions,
- entering into additional Project Agreements,
- suspending or abandoning the project,

The aforesaid list is only indicative and the lenders will generally tend to be sensitive to the financial interests of the project and will put more restrictions depending on the project's expected construction and operation characteristics. It should also be noted that project finance lenders will often entertain requests for waivers of obligations set forth in the financing documentation after the closing of the loans, as they are incentivized to keep the loans performing and out of default.

Events of Default:

"Event of Default" is the legal term for the circumstance that allows project finance lenders to exercise their remedies under the financing documentation, including acceleration of the outstanding debt enforcing the security. Events of Default may include:

- nonpayment of fees, interest, or principal due under the financing documentation (usually with a very short grace period with respect to fees and interest only),
- breach of representation or warranty made in the financing documentation (usually with a grace period if capable of being cured),
- non-performance of certain covenants or obligations under the financing documentation (usually with a grace period if capable of being cured),
- cross-defaults to other debt instruments,
- non-appealable legal judgments rendered against the Project Company,
- bankruptcy or insolvency,
- default under or termination of Project Agreements,
- significant delays in construction schedule,
- failure to obtain or maintain a necessary permit or government approval,
- unenforceability of financing documentation,
- loss of or damage to collateral,
- abandonment of the project, and

- a change of control.

Many Events of Default have cure periods, which allow the Sponsor or Project Company to take action over the course of a certain period (usually 30 days but may be less or more) to remedy the non-compliance if the Event of Default is capable of being cured; for example, a "default" under another debt instrument may be cured by paying the amount due but a final, non-appealable legal judgment against the Project Company would be incurable. In addition, during the course of negotiating the Loan Agreement it will be important for the Project Company's representatives to qualify as many of the Event of Default provisions with materiality and "Material Adverse Effect" standards as possible, providing the Project Company more leeway to avoid an Event of Default and the potential loss of the project.

Conditions Precedent to Financial Closing

Project financing lenders will require that a lengthy list of conditions be satisfied in order to "close" the financing and disburse the loan. While many of the precedent conditions and required documents are shared with other forms of financing, it is worth mentioning certain of the conditions that constitute particularly long lead time items that must be commenced months prior to the close of the financing. Specifically, project finance lenders will generally stipulate the following as conditions precedent to Financial Close:

- a report of an independent engineer that confirms the technology employed by the project is commercially viable, the reasonableness of budgetary assumptions, the absence of serious environmental issues, compliance with all necessary permits or approvals, and that financial projections are realistic;
- an insurance report from the lenders' insurance consultant;
- land surveys and site descriptions;
- evidence that the required equity component of the project has been contributed or will otherwise be available when required;
- copies of all third-party and government approvals and permits.

Depending on the project's funding requirements and the size of the equity contribution and project finance commitments, it may be possible to include subordinated debt in the financing package. As a general rule, subordinated debt will be more expensive than senior debt due to the subordinated lenders' higher risk of non-payment. In almost all circumstances, the subordinated debt will need to be in place prior to finalization of the senior project debt to avoid the substantial costs that would be incurred to re-document the senior loan. If subordinated debt is employed, an intercreditor agreement will be negotiated between the agent for the senior lenders and the trustee or agent for the subordinated debt holders,

pursuant to which the senior lenders will obtain standard terms of subordination to ensure their senior lien and payment positions vis-a-vis the subordinated lenders and any unsecured creditors in the case of any Event of Default by the Project Company or its bankruptcy or insolvency.

Conclusion

Companies that are in the business of developing infrastructure projects confront a host of complex and inter-related commercial and legal issues that must be successfully navigated to ensure a project's success and realize potential investor returns.

Use of project financing in the course of developing infrastructure projects will dictate the legal and contractual structure of the projects, place certain operational limitations on how the projects operate, and limit the developer's discretion regarding the use of much of the cash flow from the project. In order to take full advantage of project financing opportunities, it is vital that companies understand commercial terms in the agreements which serve as the foundation for successful project financing.

Bombay Chamber of Commerce and Industry Trust for Economic and Management Studies

The Bombay Chamber of Commerce and Industry Trust for Economic and Management Studies was constituted in 1996 by the Bombay Chamber of Commerce and Industry to undertake independent research activities on various economic and management issues and for providing analytical views on macro-economic scenario, industrial performance and other issues of topical interest.

The Trust started publishing the quarterly magazine 'AnalytiQue' for the quarter October-December in the year of 1999 to serve as an effective vehicle of communication between the government, industry, economists, thinkers, management consultants and scholars. In its short journey the magazine had some trying spells and after the issue of January-March, 2006 there has been no issue. However, after four years, the Trust published the next issue as Journal in March, 2010. While retaining its basic purpose and character, AnalytiQue now continues to serve members, who are drawn mainly from the world of business and commerce and deals with contemporary economic issues while documenting some of the important developments of the Indian economy.

Bombay Chamber of Commerce and Industry

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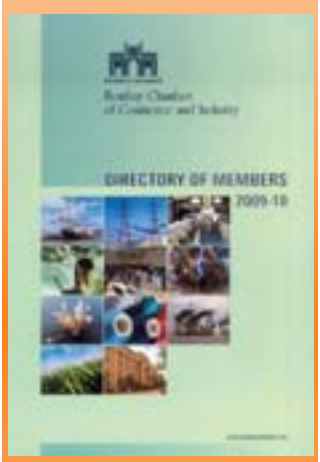

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