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INDO-FRENCH ECONOMIC RELATIONS
A Study of Trade and Investment Potential

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Foreword

The analysis in this study addresses the question of why India's economic relations with France have not developed to their potential and formulates a methodology which enables identification of several underdeveloped avenues of mutual trade and investment. The paper also notes certain legal and institutional barriers to trade and investment in both countries. The study further points to the need for deepening this research into understanding product-services linkages for mutual investments in selected sectors.

This study breaks new ground to show how paired comparisons of any two countries in respect of trade and investment potential may be undertaken. I hope this will encourage more such studies of twinning comparisons of India's economic relations with other countries in the future. The study is a welcome addition to policy research on trade and investment potential in Indo-European economic relations.

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INDO-FRENCH ECONOMIC RELATIONS¹

A Study of Trade and Investment Potential

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I Introduction

This paper aims to present an overview of Indo-French Economic Relations with an analysis comparing mutual trade and investment to its potential. The paper identifies the most promising sectors where product-services linkages could be developed together with policy recommendations to mitigate barriers to trade and investment.

Studies of bilateral economic relations can be useful alongside multilateral, plurilateral and regional arrangements in any one of the following situations:

- (a) where trade imbalances persist over time,
- (b) where trade volumes are low or the trade basket remains undiversified,
- (c) where mutual stakes in trade and investment stagnate below a critical minimum threshold that could support the intensity of strategic political partnership desired by the two countries.

In Indo-French Economic Relations, all three of the above reasons exist and bilateral relations further need to take note of:

- i) French participation in market and institutional integration within the EU which limits member countries' capacities to sustain bilateral international

¹ Revised version of the paper presented at the seminar on 'Indo-French Economic Relations' on July 5, 2002 organised by the Indian Council for Research on International Economic Relations (ICRIER).

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initiatives independently, and French commitments on economic assistance to its former colonies,

- ii) the need for both countries to adhere to multilateral regimes of the WTO, and,
- iii) the ongoing strategic dialogue at the political level for potential partnerships in international understanding over world-views.

France and India stand to gain from strengthening mutual economic relations for a number of reasons. India aims to complete its economic reform process, diversify its trade basket, broaden the direction of its foreign trade and leverage for a place in the UN Security Council. EU's share of world trade and in worldwide investment have reduced in the past two decades and continue to decline. The shrinking EU share in Indian trade is consistent with EU's losses in trade shares to the rest of the world as a feature of the long term trend. During the period 1990-2000, the EU-15 countries lost, on average, about 1 % share in world merchandise trade every year according to WTO's World Trade Statistics 2001. The loss would be greater with the inclusion of services trade. This situation is fraught with political consequences for EU member countries, particularly the two P-5 EU countries, France and the United Kingdom, although the loss of French share in world trade was less than EU's loss percentages during the 1990s. These developments point to the need to view Indo-French relations in a way which Pierre Turquet termed "relatedness" rather than relationship.

For reasons noted above, it would not be useful to view Indo-French Economic Relations merely from the perspective of France's problems of adjustment to European integration and internationalisation or from within the limited context of India's trade and investment liberalisation. Today's situation is also different from what France faced in determining its external relations with decolonised African, Caribbean and Pacific Countries under the Yaounde and Lome Conventions when France could focus outside of itself on the reform processes in those countries. Yet, gradual incrementalism pervades Indo-French bilateral interfaces and joint commission interactions (Huwart, 2001). When

there is no incentive to examine potential synergies because of low trade volumes and size of investment, systematic research is also inhibited. Business firms easily spot obvious opportunities as in sub-contracting and procurement or in marketing of a narrow range of capital goods from France to India and India's traditional undiversified export basket of consumer goods to France but that is all. There has never been any systematic study to formulate a methodology and analyse Indo-French trade and investment potential and compare this potential with what has been achieved in actual ground realities with a view to close the gap.

The residues of today's Indo-French economic relations can be traced to the Anglo-French rivalry in pre-independent India during the 18th and 19th Centuries which resulted in a French withdrawal from India and loss of influence. French business activity remained limited to a few firms in the three port cities of Mumbai, Chennai and Kolkata and their proximate French enclaves like Pondicherry and Chandernagar. When India became independent, there were only two French firms operating in India. In post-independent India, business between France and India remained limited to a narrow range of traditional items in trade with negligible investments from either side. The focus has instead been on sales of French aircraft and defence equipment, organised on a government to government and business to government basis intermediated by official and private agencies. As in the case of other developing countries, India had limited outward FDI, and France was never a high priority destination for Indian firms in the same way as U.S.A or the U.K or Germany. Likewise, France had other more attractive trading partners and FDI destinations. There have also not been other compelling reasons that would endear the two countries to look for synergies. It follows that the general approach from either side has tended to remain frozen in seeking what may euphemistically be termed as "windows of opportunities" (Hochraich, 2002). This paper departs from this tradition with an explicit assumption that Indo-French Economic Relations are important enough from an international relations perspective to merit a comprehensive analysis with reference to potential trajectories in mutual economic and political relations.

This introductory section is followed by a critical examination of mutual economic interests on the basis of national profiles and international trade orientations of France and of India in Section II. The methodology and the criteria adopted for trade potential analysis are explained in Section III. The two specific but inter-linked streams of trade and investment are further examined separately in Sections IV and V respectively for France and for India on the basis of the basket of criteria under the methodology adopted in Section III to identify in subsequent sections VI, VII and VIII, untapped trade potential, gains achievable through trade substituting investments, and potential for trade in services including benefits from the bundling of product-service linkages. This entire analysis is done with reference to the total trade and foreign direct investments (inwards and outwards) of the two countries as well as the direction of trade with particular reference to the EU-15. Potential underdeveloped sectors of France and of India in their mutual trade and investment with reference to the basket of criteria adopted and the observed direction of trade are further discussed in Section IX to note certain institutional infirmities and impediments on both sides that may be part of the reason why synergies are not fully availed. The concluding section highlights the main findings and points to the most promising sectors of investment and trade. The study recommends policy measures for the consideration of policymakers, business firms and researchers to construct and implement solutions for the various problems and institutional barriers identified in this study.

II Mutual Economic Interests of France and India

The small size and slow growth in Indo-French trade may be observed from the statistics of past two decades presented in Table 1 (below). In absolute size as well as in relative proportions of trade by each of the two countries, the data point to the lack of developed mutuality of economic interests. During the same period, France and India increased their exports of goods and services to other countries. France trebled its exports and India quadrupled its exports in the corresponding period. In France's case, the export trebling occurred on a large base of USD 120, 259 million of exports in 1981-82 whereas in India's case it was on a more modest base of USD 11,276 million worth of exports in 1981-82.

Table 1
Indo-French Trade

	Indian exports to France (\$ million)	Change (%)	French exports to India (\$ million)	Change (%)
1981-82	53		450	
1982-83	151	184.91%	442	-1.78%
1983-84	150	-0.66%	276	-37.56%
1984-85	153	2.00%	287	3.99%
1985-86	167	9.15%	479	66.90%
1986-87	206	23.35%	522	8.98%
1987-88	293	42.23%	619	18.58%
1988-89	284	-3.07%	539	-12.92%
1989-90	364	28.17%	945	75.32%
1990-91	422	15.93%	722	-23.60%
1991-92	401	-4.98%	587	-18.70%
1992-93	515	28.43%	574	-2.21%
1993-94	535	3.88%	626	9.06%
1994-95	575	7.48%	525	-16.13%
1995-96	770	33.91%	762	45.14%
1996-97	708	-8.05%	671	-11.94%
1997-98	766	8.19%	740	10.28%
1998-99	843	10.05%	842	13.78%
1999-00	893	5.93%	690	-18.05%
2000-01	1020	14.22%	653	-5.36%

Source: Statistics of the Foreign Trade of India By Countries, Volumes 1 and 2, 1980 to 2001
Directorate General of Commercial Intelligence & Statistics, Ministry of Commerce and Industry, Government of India

Notes:

1. India's financial year starts from April 1 till March 31.
2. The export values in \$ million have been rounded to the nearest whole number.

With due regard to the differences in economic structures, it is necessary to take into consideration national profiles and international orientations of France and India with respect to each other.

a) *French Economic Orientation and International Business*

France is the third largest West European economy and trading nation after Germany and the U.K. with an unparalleled record of continuous growth since the end of the Second World War until 1993. She is characterised by a strong central government with a leadership position, along with some other countries, in OECD and EU institutions and as sponsor of the Western European Union. France has the largest land area of any

West European Country with a rich diversity of soil and climatic conditions favourable for a strong food and beverages sector. Besides, France attracts more tourists than any other country and has a highly diversified economy with a broad industrial base. Notable industries include automotives, steel, aluminium, chemicals, pharmaceuticals, telecom equipment, rail transport equipment, nuclear engineering, construction and aerospace. Services account for more than two-thirds of the French Gross Domestic Product (GDP). Much of the country's economic activity is concentrated in five urban agglomerations (Paris, Lyon, Marseille, Lille and Toulouse) which correspondingly bear a disproportionately larger share of cyclical adjustment burdens.

The main features of French economic policy during the 1990s were guided by geopolitical objectives and the urgency of satisfying the convergence criteria for the Economic and Monetary Union (EMU). An artificially high real interest rate kept the French Franc's central rate pegged to the Deutsche Mark as the preferred means of adjustment. In this process, public debt burdens remained higher than what was allowed by the EMU. Economic austerity measures were adopted just before the introduction of the third stage of EMU in 1999 through cuts in public expenditures and increases in tax rates. These measures aggravated the misery of rising unemployment because the burden of adjustment was borne by households and businesses. A statutory 35-hour week was then introduced in February 2000 under Ricardian lump-sum assumptions to spread employment. This turned out to be a controversial measure with little effect on the numbers of unemployed estimated to have remained in the region of three million since 1996 (the official figure is about 2.5 million).

The French financial sector experienced considerable turbulence and underwent significant restructuring during the 1990s when Credit Lyonnais was rescued with heavy infusions of State aid before being privatised. The French stock-market grew in stature during the 1990s to emerge as an alternative and supplementary source of financing in a shift away from the continental European pattern of industrial financing by banks and

trusts. Although larger than Germany's, the French Stock exchange is less than half the size of major bourses like New York, London, Tokyo or Mumbai in listings³.

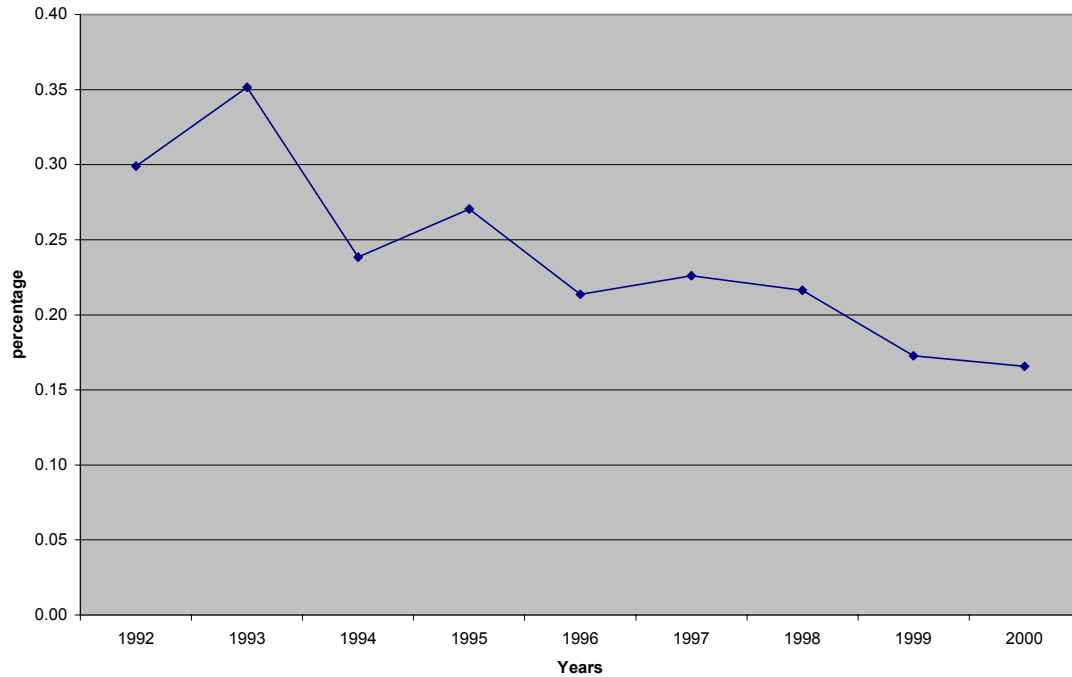
Export demand provided an important impetus to the French economy since 1994, stimulated by sharp depreciations of ERM currencies against the U.S. Dollar and the Pound Sterling after 1997. However, the rate of export growth sharply decelerated in 1999 despite a strong presence of French luxury goods, food and drinks, cars, telecom and aviation in export markets. France remains the world's second largest and European Union's largest exporter of agricultural products but the relative importance of agriculture in terms of income and employment shares is very small (less than 3 %) and highly subsidised under provisions of the Common Agricultural Policy (CAP).

France's direction of trade requires to be analysed in the context of the structure of its preferential trade relations which extend beyond the EU-15 and the wider European Economic Area (EEA) market including Norway, Iceland, Liechtenstein, the remaining European Free Trade Area (EFTA) member, Switzerland and EU's customs union with Turkey. The ambit covers, the preferential trade association agreements with Cyprus and Malta, preferential trade under transition arrangements for Bulgaria, Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Romania, Slovakia and Slovenia, mediterranean agreements with Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestinian Authority, Syria and Tunisia and preferential trade with 71 African, Caribbean and Pacific Countries under the Lome Convention. India belongs outside the privileged set of these 112 countries with which France has preferential trade arrangements. India was never a target destination for French exports in the recent past and French exports to India were limited to a narrow range of capital goods and consumer non-durables.

The urgency may be visually noticed from the low and declining Indian share in French exports in Figure 1 below during a decade when India's foreign trade trebled:

³ In market capitalisation, the Paris Stock exchange is estimated to be about \$1200 billion.

Figure 1: Indian share in French Exports



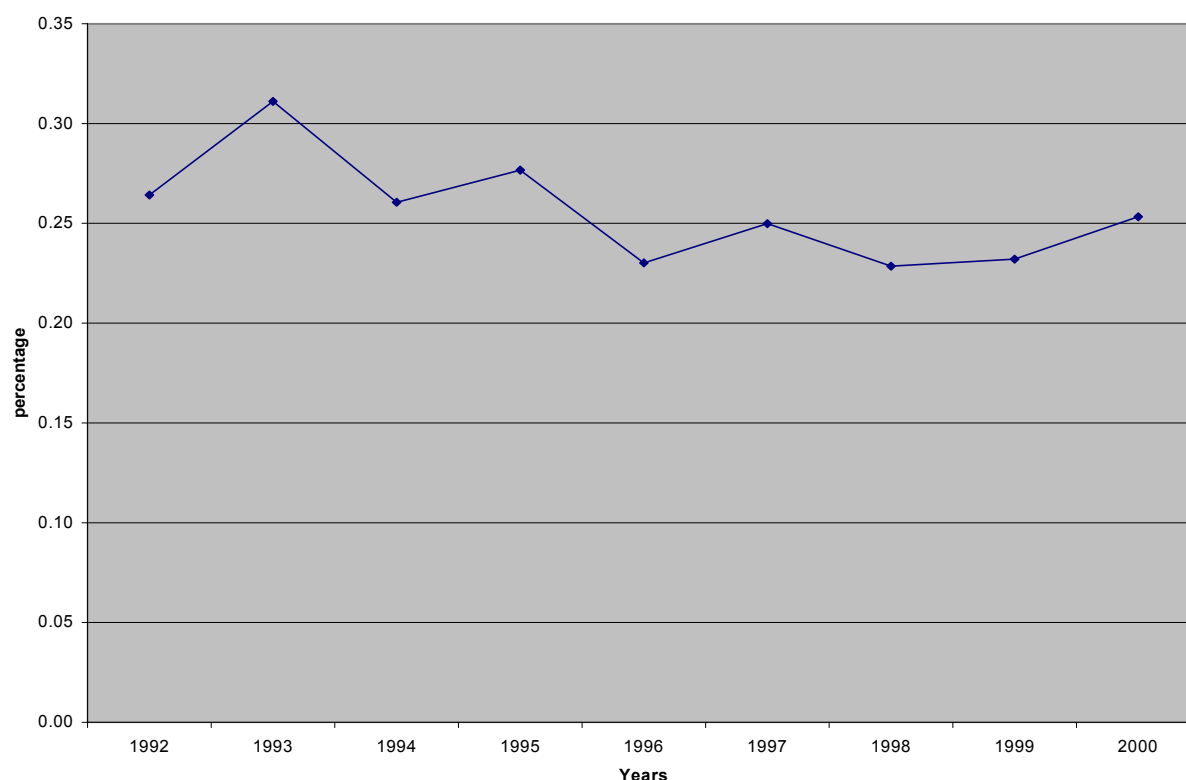
Intra-EU trade in goods and services accounts for more than half of all French trade. The Franco-German axis is its largest segment with over one-sixth of all French trade. Outside Europe, France's strongest trading link has been with the U.S. and it is only in recent years that French businesses have given attention to trading with Japan, South Korea, and developing countries of Asia. Trade in Services is a fast expanding segment of international business for France and represents about 30 % of the value of goods traded, with exports of services greater than imports. Defence equipment is an important traditional export sector with prominent firms such as Aerospatiale, Dassault, GIAT, Matra and Thomson-CSE that make up about 2 % of all merchandise exports of France. France is an important source of Foreign Direct Investments (FDI) with outflows exceeding inflows by about 50 per cent.

Bilateral trade between France and India is estimated to be about \$ 1.65 billion although it is impossible to be sure about this figure because there is no longer any requirement of recording cross-border inflows and outflows of France within the EU. France has a persistent trade deficit with India but the trading volumes are small. Since

France enjoys a high and recurring annual surplus in its overall balance of trade since 1992, the bilateral trade deficit with India is not a matter of much concern to France. The small trading volumes with India are viewed by French authorities as commensurate with the level of French trade with other developing countries in Asia (with the exception of Sino-French trade which is six times the level of Indo-French trade and France's trade with Vietnam). This relegates India to a category of countries where the critical minimum threshold required to ignite political interest or search for economic synergies is absent. Joint Indo-French Working Groups in some key sectors like energy, telecom, mining, IT, agriculture, and insurance exist to cater to a limited set of identified needs.

France needs to stimulate export demand and generate factor incomes from abroad on a much wider scale as a measure against unemployment to harness excess capacities of French firms enjoying competitive advantages. This calls for participation in value chains for greater penetration in populous markets for consumer non-durables and for business-to-business trade in capital goods in sectors such as telecom, energy, aviation, transport, IT and infrastructure in which France is well established. In effective procurement of goods and services under transfer pricing arrangements organised by multinationals, French firms face stiff competition from American firms since twentyfive of the biggest multinationals are of American origin and control nearly half of all international trade. In India, where presence of such multinationals was previously highly regulated, opportunities in contestable markets have now arisen. The Indian share in French imports which have stagnated at a low level of 0.25 % (refer Figure 2 below) is also not commensurate with India's share in EU imports.

Figure 2: Indian Share in French Imports



(b) *Indian Trade and FDI flows during a period of economic restructuring*

India is the world's fifth largest economy on a purchasing power parity basis and ranked among the fastest growing countries of the world during the 1990s. In purchasing power parity terms, India's national income exceeds that of France but per capita income is significantly lower and level of trade is one-sixth of France. However, the poverty ratio has reduced to less than 27 % in 2001, an indicator of rising distributive shares in private consumption. The development strategy of self-reliance relentlessly pursued until 1990 emphasised India's place alongside U.S.A and China as three special cases in the world economy whose trade to GDP ratios are significantly lower than the rest of the world. Indian firms initially developed their international orientation from trading in primary commodities (minerals, spices, tea, rubber etc) and in manufactured textiles as a means to earn foreign exchange to finance imports rather than make profit. Less than 5 per cent of Indian manufacturing output is targeted to export markets although 75 per cent of the value of Indian exports consists of manufactured goods. Self-reliance was mistaken in

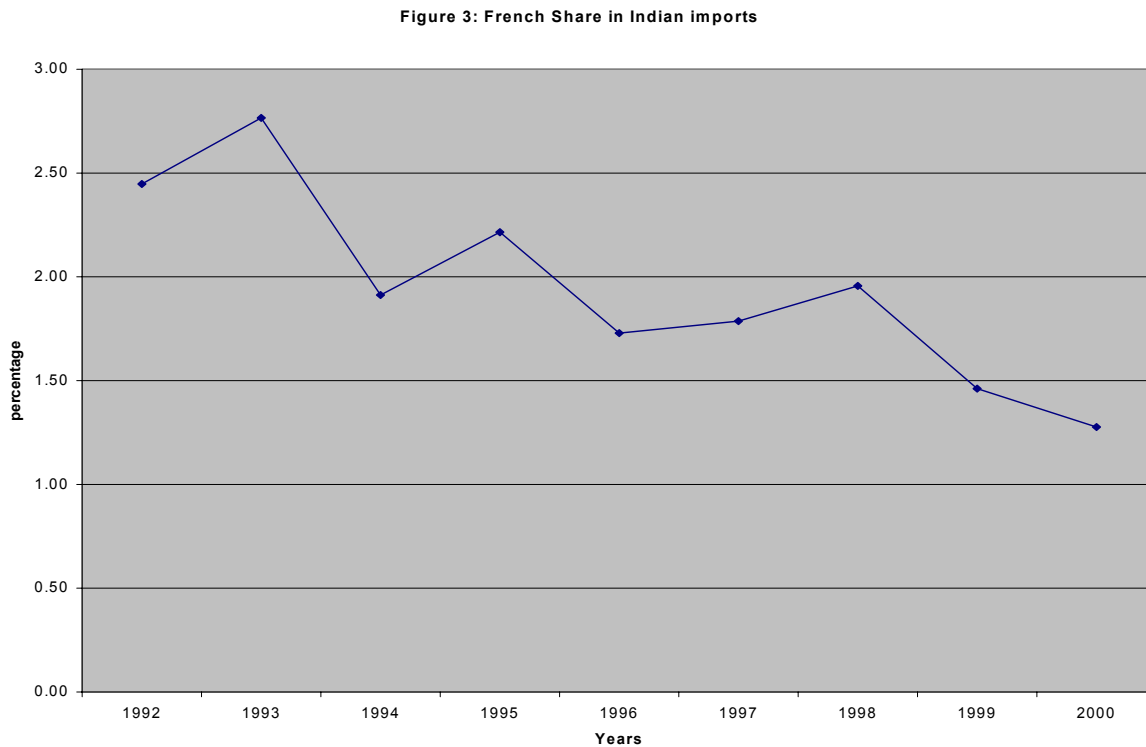
India for self-sufficiency and accounted for a large protected domestic sector, opened to competition for the first time in 1991.

During the first phase of economic reforms of industry, trade, money and capital markets, GDP growth rates accelerated to over 7.5 % per cent per annum for three successive years (1994-97). The macroeconomic situation in India stabilised swiftly with the stabilisation and structural adjustment measures of 1991-93. Manufacturing grew at double-digit rates during 1993/94-1996/97 and export growth in dollar terms averaged 20 % in the three years 1993/94-1995/96 (Acharya, 2001). India's worldwide trade trebled in the 1990s. Although the European Union emerged as India's largest trading partner, Indo-French trade remained modest and Indian exports failed to diversify.

The new economic policies contributed to an increase in the number of foreign collaborations [from 4,196 during 1970-90 to over five times this figure between 1991 and 2001] with commensurate increases in magnitudes of foreign direct investment. The backlog of the development agenda constitutes demand for considerable infrastructure development particularly in energy and transportation sectors and in civil construction. The growing numbers of people emerging above the poverty line comprise a growing segment of consumers with new demand backed by purchasing power for a wide range of consumer durables and non-durable branded goods and services. The supply-constrained Indian economy can be an attractive market for firms in demand-constrained markets that have excess capacity or knowhow and need to seek returns on investments abroad.

However, a dampening influence has been cast by the deceleration set in from 1997 and key reforms in company law, bankruptcy and insolvency procedures, trade and industrial policy, money and capital markets, labour, infrastructure and public administration remain unaccomplished. One of the major causes of lower growth in the past two years 2000-2002 is the decline in exports to almost all major trading partners, failure to diversify export trade, insufficiency of foreign direct investment and loss of competitiveness.

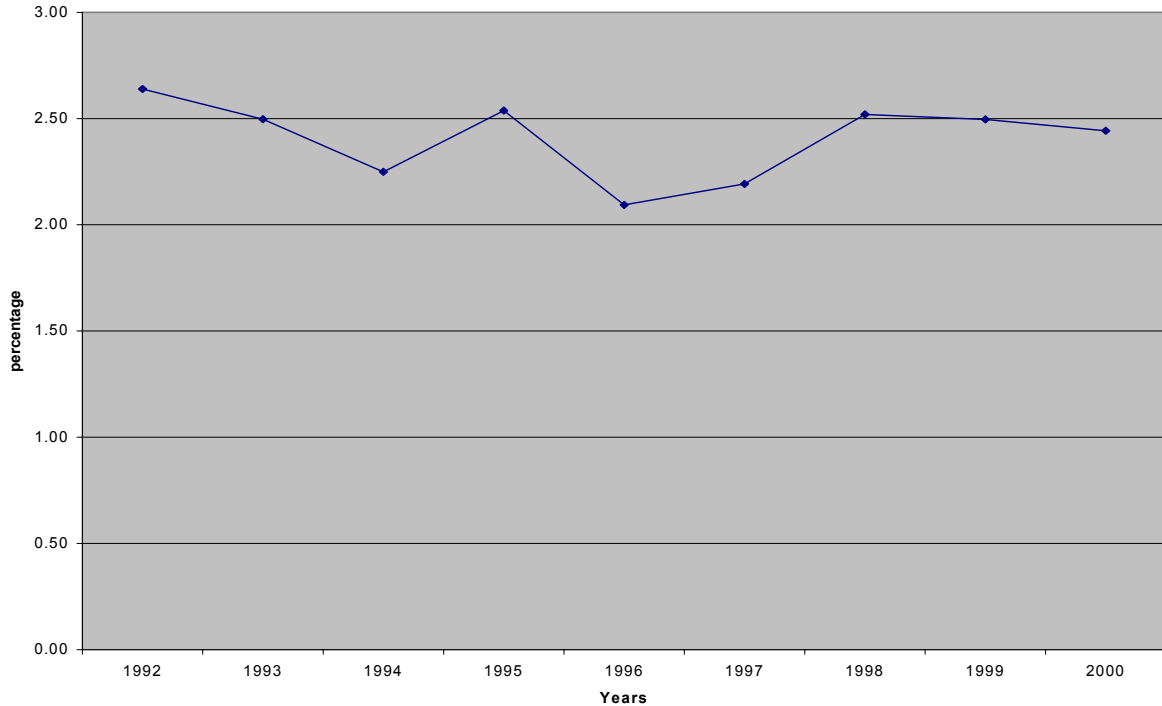
Rejuvenation of foreign trade and investment is essential for restoring and maintaining the high growth rates of the previous decade. Fiscal consolidation requires to be supplemented by systematically targetting sectors and locations and by facilitating the conduct of international business through more transparency, and the promotion of strategic bilateral ties, business to business, government to government and the design of public-private partnerships based on competitive restructuring of Indian industry through increased international contact. In this context, the potential opportunities for India and France to engage with each other should be of great interest to India because the French shares in Indian exports and imports are neither commensurate with the size of France nor with India's share in EU trade. The French share in Indian imports is visually presented in Figure 3 below:



From Figure 3, it may be seen that the French share in Indian imports declined from its all-time high of about 2.8 % in 1993 to a low of 1.2 % in Year 2000 with adverse spillover effects for technology diffusion. This is more damaging in opportunity cost than any gains from a favourable bilateral trade balance accrued on the back of exchange rate adjustments of the rupee with ERM currencies, considering that French share in Indian

exports stagnated also in rupee terms as may be seen from French shares of Indian exports in Figure 4 below:

Figure 4: French Share of Indian Exports



III Analysis of Indo-French Trade in goods

Industrial structures of any two countries in a paired comparison are generally found related to the size of the domestic market and development of their international orientations. However, the mere extrapolation of trends in international trade based on current patterns tends to obscure choices not exercised or visualised. For this reason, a modified version of a methodology especially developed for such twinning studies of trade and investment potential previously conducted for Belgium-India (Veugelers and Mathur, 1993) and Finland- India (Mathur, 1998) was adopted.

The absolute volume of export or import and relative size of trade shares in a commodity group as a proportion of total trade between a pair of countries may be used as a criteria to enable identification of tradables by their importance. While this has been

used as one criteria in this study, it is not a good indicator of growth potential. Keeping this in mind, a second criteria was additionally used to know those commodities where growth rates are significant, regardless of volume. However, relative growth rates can also give a misleading picture of comparative advantage because high growth rates and small size of exports are undoubtedly less significant than slow trend growth in a large segment of an export market. Cases where both volume and growth rate are significant were selected for more detailed disaggregated analysis.

Independent of the above two criteria, in order to investigate whether France or India has a comparative advantage in a sector, the value of trade and the growth of trade was analysed over the previous ten-year period 1993-2001 with reference to a modified version of Balassa's Revealed Comparative Advantage (RCA) Index. The great merit of the concept of RCA is its convenience. If a country's share of world exports of a commodity is greater than the country's share of world exports of all goods, it points to some comparative advantage for that country in that sector or commodity (Balassa, 1965, 1977). In previous RCA studies of France within the EU, France was found to have a comparative advantage mainly in non-durable consumer goods and their inputs, including perfumes, cosmetics, cotton products, lace, embroidery, leather, rubber tyres, glassware and wines (Balassa, 1977). However, RCA comparisons tend to be specific with reference to the time period and context and so this result can neither be extended nor presumed with reference to countries outside the EEC, after twentyfive years, during which the transformation of the EEC into the EU's *acquis communautaire* with freedom of movement of goods, services, workers and capital in a single market was completed. For this reason, Indo-French RCAs were conceptualised afresh as part of this study.

The conventional form of the Revealed Comparative Advantage (RCA) Index measures either a country's export share in a particular commodity relative to that commodity's export share in the world basket or alternatively, a country's market share relative to the Country's overall presence in the world market. The commodity pattern of trade reflects relative costs as well as differences in non-price factors. Using such a formulation has a disadvantage because the measure cannot be used to rank countries in

order of RCA values but in twinning comparisons of two countries at a time, this problem is not encountered. Another common problem in adopting this approach arises when declining market shares show a higher RCA if a country's export basket relative to the rest of the world were to decline faster but this has never been the case with France and is also not the case with India. If inter-temporal comparisons of RCA, year to year are not made, there is also no problem of wondering whether changing RCA values reflect demand conditions in international markets or competitive supply conditions in national markets. In this study, the methodological problem of accounting for competitiveness of factor-intensity (labour or capital) was side-stepped by choosing a specific region, the European Union, as the reference point, so that free factor mobility of goods, services, workers and capital can be correctly presumed as part of the *acquis communautaire*. In doing so, the complexities from the level and structure of imports sensitivity to national protection are minimised, though not eliminated. The RCA approach is usually adopted to analyse manufactured products because a large number of primary products are subject to subsidies, quotas and special arrangements. However, this limitation does not pose a significant hurdle in a paired comparison of two countries at a time where the effective tariff and non-tariff barriers are explicitly knowable. The Revealed Comparative Advantage Index was thus conceptualised as follows:

$$RCA_{fj} = \frac{X_{fj}/X_f}{X_{fji}/X_{euji}}$$

where,

X_{fj} = Exports of France in sector j

X_f = Total Exports of France

The numerator, by definition cannot exceed 1
and,

X_{fji} = Exports of France to India in sector j

X_{euji} = Total exports of EU to India in sector j

The denominator, by construction, cannot exceed 1.

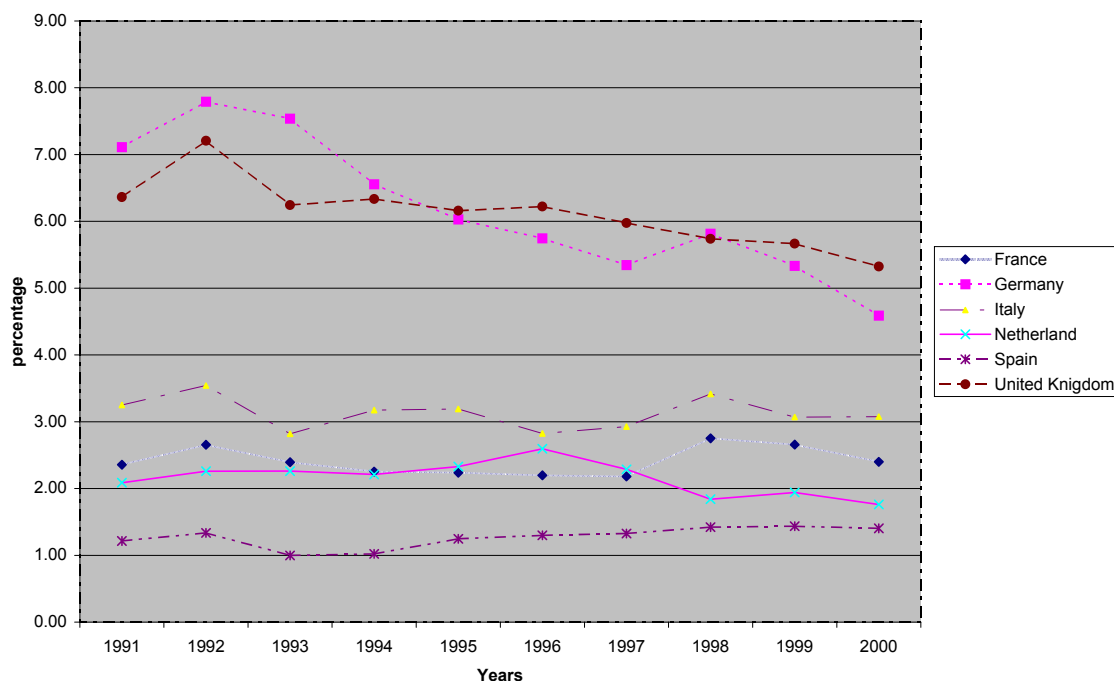
In this study, the RCA index was constructed for all industries at the appropriate ITC (HS) level of disaggregation for data sourced from the Directorate of Commercial Intelligence and Statistics of the Ministry of Commerce, Government of India, supplemented with data from EU's EUROSTAT database and IMF's International Financial Statistics and the Direction of Trade Statistics. When RCA_{ij} was found to be larger than 1, the French export share of the Indian market for this industry or sector at the appropriate level of disaggregation may be regarded as exceptional, implying the presence of some unexploited advantage compared to the reference countries of the EU. Where $X_{fji}=0$ or indeterminate, the item can be retained. Where an item appeared in the export lists of France and India (for instance, category 3006 pregnancy confirmation kits) to third countries, such items were excluded from trade analysis but retained for investment analysis. RCA_{Ij} for India was constructed adopting the same methodology for identifying potential Indian exports to France. Excel spreadsheets enable such analysis to be conducted at 4-digit, 6-digit and 8-digit levels of disaggregation from datasets maintained in dollars, euros and rupees. For the sake of brevity and ease of convenience, the results presented in this paper are limited to the re-aggregation at 2-digit level.

In this study, this modified and simplified form of RCA has been used as a tool to identify the most promising avenues of further investigation at disaggregated levels and not as a basis for deriving claims to definitive conclusions to evaluate all items found in the combined nomenclature. For this reason, it was not considered necessary to develop the application of this technique to respond to technical specifications of the conventional form of the RCA, given the limited aims of this study with reference to the EU.

IV India's Export Potential to France

The country-wise analysis of Indian exports over the period 1991-2000 shows that exports to France have been small compared with Germany and U.K. as may be visually noticed from Figure 5 that follows.

Figure 5: Country wise Indian Exports



The EU and French shares in Indian exports for all commodities at two-digit level are presented in Appendix A. From Column 6 of Appendix A, it may be noticed that the French share in total Indian exports is significant in categories such as animal and vegetable fats, meat and fish preparations, artificial furskins, plaiting material, coated and laminated textiles, base metals and cements, aircraft parts, ships, boats and floating structures, optical and measuring instruments, furniture bedding and allied articles and works of art. Taking \$ 20 million as the minimum threshold level for a commodity category, twelve commodity categories were identified as noteworthy and these are [with category codes shown in parenthesis], animal or vegetable fats and oils (15), organic chemicals (29), leather articles (42), carpets (57), clothing (61, 62), other textiles (63), footwear (64), precious and semi-precious stones and pearls (71), machinery (84-85), aircraft parts (88), and optical and measuring instruments (91).

It is not sufficient to track and confirm the traditional basket above since sharp growth in trade is observed in certain other commodities. The second criteria invoked

enabled identification of items with the most promising growth potential where more than 100 per cent annual growth rates could be observed over the past decade. These are sugar and sugar confectionaries (17), cereal preparations (19), edible preparations (21), beverages and spirits (22), wood and articles of wood (44), ceramic products (69), nickel and articles of nickel (75), clocks and watches (91), and works of Art (97).

From Appendix A, other potentially exportable commodities on France's import list where the French share of Indian exports is significantly smaller than the corresponding figures for EU share in Indian exports were also identified. These include Fish and Crustaceans, Molluscs (03), Dairy Products:natural honey (04), Products of animal origin (05), Live trees, plants, bulbs, roots (06), Edible fruits and nuts (08), Coffee, tea and spices (09), Fruits and Nuts and vegetable preparations (20), Tobacco and Manufactured tobacco(24), salt, sulphur, earth and stones (25), Organic Chemicals(29), Colouring matter and dyes(32), Raw hides and skins (41), wool and animal hair (51) vegetable fibres (53), Man-made staple fibres (55), Knitted or crocheted fabrics (60), Footwear (64), Umbrellas and walking sticks (66), and Articles of stone, plaster, cement, asbestos (68).

Finally, the results of the foregoing analysis were examined together with items for which RCA index values exceed unity as presented in Appendix B.

Commodity trading clearly has limitations in the case of India's exports to France as may be observed from sub-normal RCA values found in most categories. This is in accordance with expectations because France's preferential trading arrangements including tariff quotas with ACP countries militate against commodities common to India's basket. According to this RCA analysis, the most promising sectors for Indian exports to France are: Sugar and sugar confectionaries (17), residues and waste from food (23), cotton (52), pearls, precious and semi-precious stones (71) and ship, boat and floating structures (89). However, RCA values also deserve to be scrutinised further at 4-digit, 6-digit and 8-digit levels for specific items where RCA values at a higher level of disaggregation could reveal some more export potential. Malt extracts (1901), leather

articles (4204), plywood (4412), tableware of wood (4419), garment categories (6104-6111; 6203-6206;6214), furnishings (6303-6304), diamonds (7102), pastels (9701) could be further identified from such 4-digit disaggregated analysis.

While policy attention to quotas and preferential tariffs as contrary to the letter and spirit of WTO rules is necessary, efforts to increase India's merchandise exports to France could be better directed in short and medium term to commodities where trade is not distorted due to quotas and preferential tariffs. In such cases (for example, bicycles) bilateral initiatives could remove irritants such as the requirement to sell assembled bicycles or obtain French "homologation certificates" which cost a packet and cause delays.

V French export potential to India

Of the total imports of India, EU accounts for about 20 per cent and the French share in these EU exports to India is about 6 per cent⁴. Thus, French exports to India are about 1.2 per cent of India's total imports. It may be seen from Column 6 of Appendix D that French share in Indian imports is significant in a limited range of commodities, viz.

33 Essential Oils, Resinoids and Cosmetics

65 Headgear

81 Base metals, cements etc.

None of these commodities satisfies even a reduced threshold volume criteria (\$ 10 million) or growth criteria but some others do. Commodity groups that satisfy different criteria are shown in Appendix D separately by volume criteria, growth criteria and RCA criteria. Some commodities satisfy two out of three criteria including the RCA criteria and may be regarded candidates for further disaggregated analysis. The most promising commodities are: mineral fuels, mineral oils, boilers, non-electrical machinery and mechanical appliances (84), electrical machinery and equipment (85), road vehicles and parts (87), and aircraft, spacecraft and parts (88). Each of these is also

⁴ In contrast, India accounts for only 1.3 % of EU's external trade.

attractive for trade-substituting investments. In this part of the analysis, two commodity categories were ignored: gems and jewellery (71) and ships, boats and floating structures (89) which mainly represent items brought in for working on them or repairs-akin to procurement of cheaper labour services.

From Appendix E, it may also be seen that most commodities do not satisfy the RCA criteria although it should be noted that RCA values deserve to be scrutinised at a more disaggregated level and could point to specific items by tariff code at 4-digit, 6-digit and 8-digit level to expand the knowable universe of export potential. Synthetic rubber (4002), uncoated paper (4802), gold (7108), centrifuge machines (8421), electrical apparatus for telephony (8517), transistors (8541), microassemblies (8542), aircraft parts (8803), medical instruments (9018) and X-ray machines (9022) were indicated at 4-digit level of disaggregation.

VI Untapped Potential in trade of goods between India and France

This study identified commodities where France is a major importer of a commodity in those cases where Indian exports of that commodity to the EU are significant but India's exports to France in that commodity are very low. These commodities are identified in Appendix F from which values of lost trade can be estimated. The French share in Indian exports to EU is sub-normal and underdeveloped in iron and steel (72-73), chemical products (38), automotive accessories (87), tobacco products (24), gems and jewellery (71), fruit and vegetable preparations (20), dyeing, tanning and colouring matter (32), plastics (39), to mention just a few of the most important categories listed in Appendix F. Against total French imports of \$117.6 billion in these items, India's exports to France have stagnated in the region of \$185 million.

Similarly, the study also identified commodities imported by India in substantial volume from the EU where France is a major exporter of that commodity but Indian imports from France in that sector are very low. These commodities are identified in

Appendix G from which values of lost trade can also be further estimated as was done in Appendix F.

In the case of Indian imports from France, lost opportunities worth \$6 billion annually were identified in strong French exporting sectors such as mineral fuels, mineral oils (27), printed books (49), copper articles (74), aluminium articles (76), nuclear reactors, boilers and machinery (84), electrical machinery (85), road vehicles and parts (87), and optical and medical instruments (90).

Finally, sectors with strong RCAs which are underrepresented in Indian exports to France and in French exports to India are identified in Appendices H and I respectively. Significantly, all of these involve manufacturing and are therefore capable of promoting trade in services as well as trade-substituting foreign direct investments. The Indian list of untapped potential in this category includes sugar and sugar confectionary (17), animal feeds (23) and ships, boats and floating structures (89). The French list in this category includes edible fruits and vegetables (07), mineral fuels and oils (27) and road and vehicle parts (87).

VII Potential for trade in services between India and France

In the foregoing discussion, the scope of trade in goods was the focus but many of the goods cannot be traded without being linked with services. The potential for trade in services between India and France is vast and could take many different forms. Two-thirds of the French economy is concerned with services and IT is a driver of those services. India has a special niche in IT. Further, there are a large number of scientific, industrial and infrastructure sectors in which collaborations for trade in services between India and France can be scoped. The potential is so vast that it would be beyond the scope of this study to attempt to go into it here and warrants a separate study for a detailed investigation to go into the complexities of product-services linkages in sectors like biotechnology, fibre-optics, laser technologies, aerospace, environment, energy, telecom, mining, insurance, healthcare, education, IT, and mass communications. The structuring of partnerships and networks that yield factor incomes from abroad to France and to India

could facilitate new forms of mutual investments and synergies. Typical examples of high interest would be service providers in safety assurance, quality inspections, food hygiene, harmonisation of standards and benchmarks, equilibration of technical criteria, mutual recognition of professional qualifications, product development, marketing and distribution services, intermediation in financial markets for sourcing and applying credit and for evaluating credit-worthiness, risk management and the structuring and factoring of risks of shipments and payments, backroom operations in security and maintenance activities, taxation, company law practices, accounting and auditing.

VIII Investment Potential

Foreign Investment in India was highly regulated and quite limited until 1991. The stock as well as annual inward flows grew significantly since 1991. Cumulative FDI approvals upto September 2001 totalled about \$ 73 billion with actual inflows at about \$ 27 billion according to the Secretariat for Industrial Approvals, Government of India⁵. However, FDI stock remains quite small in comparison to Chinese FDI stock which is ten times the size of Indian FDI stock. Energy, Machinery, Mining, Chemicals and Transportation are the five major sectors for EU's trade-substituting investments in India. During the 1990s, the results from studies on Indo-Belgian and Indo-Finnish trade and investment potential made freely available in the public domain contributed to a surge in India's trade and investment with Belgium and Finland, which was partly at the expense of France, Germany and U.K. India's trade with Southern Europe and Nordic Europe grew twice as rapidly as its overall growth in trade which also sparked investment interest in relation to Finland, Denmark, Greece, Portugal and Spain.

France is the second largest foreign direct investor in the world but ranks as the ninth largest investing country in India. French investments in India have been very limited and the actual inflow of France was only \$ 460 million in 434 cases out of a total of 13,498 cases of worldwide FDI into India from all countries between 1991 and September 2001. Two-thirds of French FDI into India is accounted for by 115 cases of

⁵ These figures do not include proposals approved by the Reserve Bank of India or the Foreign Investment Promotion Board for Global Depository Receipts and Foreign Currency Convertible Bonds.

FDI approvals in five main sectors attracting this investment which are fuels (power and oil refinery) 19.58 % (33 cases), chemicals-other than fertilisers 16.76 % (50 cases), cement and gypsum products 16.15 % (4 cases) , glass 7.47 % (12 cases) and telecom 6.07 %.(16 cases). Another 288 technical collaborations without FDI further exist in perfumery and cosmetics, automotive spare parts, drugs and pharmaceuticals and electronics. There are 198 French firms (including collaborations-financial and non-financial) functioning in India. Most of these are representative agencies, liason offices, sales and distribution offices, branches, subsidiaries, technical collaborations, and in a few cases, factories and joint ventures. Corresponding details of Indian firms in France are not documented but the number of such firms is likely to be miniscule because 60 % of Indian investment into the EU flows into the U.K. According to Government of India's published information, the top ten French companies investing in India and the investment amounts approved are shown in Table 2 below:

Table 2
Top Ten French Investments in India

	Name	Sector	State	Amount of FDI approved (in Rs million)
1.	Financiere Lafarge	Cement and Gypsum	Bihar	Rs 6,000
2.	Air Liquide International	Chemicals	Not decided	Rs 5,115
3.	Total Gas & Power India	Oil refining	Maharashtra	Rs 4,250
4.	Usinor Sacilor	Iron and Steel	Gujarat	Rs 2,659
5.	Group Danone	Food	Not known	Rs 2,450
6.	Saint-Gobain	Glass	Tamil Nadu	Rs 2,125
7.	GDF International	Oil Refining	Gujarat/Kerala	Rs 2,090
8.	Compagnie International	Telecom	Karnataka	Rs 1,586
9.	Total SA	Fuels	Tamil Nadu	Rs 1,560
10.	L' Oreal	Cosmetics	Delhi	Rs 1,245

This list is somewhat misleading because several of these investments are new. Saint-Gobain's Kanchi project in floatglass and tinted glass and GDF's LNG projects in Gujarat and Cochin were first conceived in August 2001. In other cases, inflows corresponding to the FDI approved are yet to arise. For these reasons, Appendix J has been prepared to reflect the chronology as well as the sectoral distribution of French investment in India.

Despite the existence of a double taxation avoidance treaty and a bilateral agreement on investment promotion and protection, actual business contacts among SMEs of the two countries remain negligible and negative perceptions prevail on both sides⁶. Much remains to be done to allay apprehensions of firms and their constituents on both sides for Indo-French business to develop to its potential.

IX Institutional Barriers impeding Indo-French Trade and Investment

This study identified a number of institutional barriers impeding Indo-French trade and investment which require to be addressed urgently to allay the accumulating negative perceptions on both sides. Some of these concern sensitising business professionals to the differences between France and India in their political, social, legal, institutional, economic and cultural milieu, despite a common feature of democratic governance and functioning markets populated by people who value the spirit of free enterprise in both countries. Yet others concern problems to which solutions have to be found or made by creatively introducing changes in policies, practices, customs and traditions through increased bilateral engagement within the context of multilateral, regional and plurilateral initiatives.

French Company Law and French Tax Laws are two branches of law that would require to be transparently disseminated to Indian firms. Indian Company Law and Indian direct and indirect tax laws would also similarly require to be understood by French counterparts. For example, French hand-set manufacturers of cellular telephones have been keen to produce in India but are unable to figure out their tax liabilities. Moët & Hennessey faces customs duty slabs between 267 % and 400 % for its wines imported into India and is unable to commit itself to struggling for a 0.1 % share of the market on these terms. The sudden increase in customs duties on apples to 56 % from April 2001 completely upset the calculations of French apple exporters. The import of French ducks and turkeys into India has not been possible because the Indian authorities do not recognise European health certification after the BSE scandal. The leading French mineral

⁶ Two French firms recently withdrew from energy investments in India and the Confederation of Indian Industry faced many difficulties and delays in setting up its office in France.

water producer, Evian, was unable to satisfy Indian quality standards for drinking water for a long time and was informed that the content of nickel, silver, magnesium, cadmium and lead is excessive. Similar problems were faced by Perrier and Ferrarelle. The sanitary standards for carbonated natural mineral water in India are stricter than those stipulated in the FAO/WHO codex alimentarius norms.

Indian exporters also face high tariff and non-tariff barriers in France. Textile and Chemical exporters have been thwarted by barriers to market access and anti-dumping duties unlawfully imposed even after being struck down by the WTO dispute panel which ruled in favour of India and against the EU. Delays in visas and work-permits have adversely impacted Indian IT firms trying to enter France and service providers like Voltas that won contracts to execute major airconditioning projects on French cruise liners like Queen Mary II. Some of these difficulties were raised by firms at the Indo-French Joint Committee deliberations in December, 2001.

The success or failure of pioneering firms is likely to have considerable impact on future investments structured. All 198 Indo-French collaborations listed in Appendix J could be systematically surveyed to make a comprehensive inventory of problems faced. Only 22 of these 198 firms were operating in India before 1990 and the rest are new entrants of the 1990s.

French firms find it difficult to estimate entry costs for India. Unlike in France, the Central Government in India is constitutionally unable to make commitments on behalf of States in matters that come under State jurisdiction or concurrent jurisdiction. India's bureaucratic maze lends itself to exercise a wide span of discretion on matters big and small and lacks transparency of the order to which French firms are accustomed to operate in the EU. The rules underpinning laws involve many contractual and customary obligations in India and differences between common law and code law features in both countries is a frequent source of confusion. Bureaucratic delays and corruption are experienced in both countries but are widely believed to be more severe in India than in France.

There are several problems encountered by Indians doing business in France that have to do with transparency, non-tariff barriers, market access, barriers to establishment of business, high costs, discriminatory treatment, delays with visas and work permits and the necessity to operate in French, a foreign language not widely known among Indian businesspersons. There are severe infrastructural constraints in organising to do business in India because of the poor quality of urban management, unreliability of stable contractual arrangements for factor inputs, low productivity, weak intellectual property rights protection, relative disregard of data protection and privacy, and an oppressive and corrupt tax administration.

X Conclusions

This study identified more than \$124.5 billion worth of commodities for mutual trade as the gap between the potential and the actual but not all of it can be reaped without dismantling tariff quotas, preferential trade and removing barriers to market access. In the commodity codes identified as promising in this study, small and medium sized trading enterprises could examine what more they may do beyond what they already do at a greater level of disaggregation. This business segment typically trades in unbranded goods without much involvement of high profile multinational players. Commercial representatives and facilitators in India and France are normally more involved with the bigger firms that have ready access to cross-border representation, lobby groups and internationally affiliated chambers of commerce in niche branded products.

Trade-substituting French investments in India grew rapidly after India began opening up its economy in the 1990s but the potential here is vast and still largely untapped. The expansion of Indo-French services trade is a promising area because it does not involve France being constrained by EU-wide sanitary and phyto-sanitary measures, quotas or ACP preferential tariffs against Indian exports as in food and clothing, nor Indian sanitary and phyto-sanitary measures against French produce. Manufactured goods trade can also be the starting point for trade-substituting investments in manufacturing and services.

Of the four modes of supply of services (cross-border trade, consumption abroad, foreign commercial presence and supply of services by movement of natural persons), commercial presence is the most attractive one at present if equal national treatment can be reciprocally ensured. Consumption abroad has limited potential in a few businesses like tourism and only IT services and IT-enabled services could be supplied in a cross-border form where a language barrier would need to be surmounted. Given the improbability of dispensing with economic needs tests for professionals, lack of portability of social security and the absence of harmonisation in standards, educational curricula, and in immigration and work-permit procedures, the movement of natural persons between France and India to render services in the other territory is not presently feasible for practical reasons.

The most promising French sectors for investment in India are aerospace and aviation, bridge building, infrastructure projects like roads, railways and railway equipment, ports, airports, industrial construction, urban water supply and sewerage, medical diagnostics, chemicals, food and beverages and agro-industries. There are some sectors where due to structural problems French investments are less likely to succeed. These include French investments in India in retail banking, insurance, financial services, pharmaceuticals, and leather goods. Indian investment in France has been miniscule but there are good prospects in IT, healthcare and design services.

India and France have much to gain from mutual trade and investment in goods and in services. As noted in this study, the potential is vast. Past patterns of trade and investment indicate that synergies present were not reaped in trade nor designed in value chains of mutual investments. Trading in commodities where comparative advantages are noticeable would benefit both countries. The neglect in developing Indo-French Economic Relations cannot be overcome through political dialogue. Rather, a higher mutual economic engagement threshold through systematic removal of institutional impediments could pave the way for actualisation of Indo-French trade and investment potential, which in turn, may ignite political interest.

Gateways need to be designed to facilitate and foster confidence at both ends. Bilateral aid is not the only form of economic assistance. Many Indo-French investments could qualify for project-based concessional financing in France and in India. Businesses, industry representatives, researchers in academia and policy-makers need to work on further, possibly together, to solve some of the problems identified in this study and to conduct deeper investigations at sectoral level, for services trade and for product-services linkages to design and evaluate the viability of many more profitable avenues of potential trade and investment. The magnitude of this challenging task is inviting but daunting. The vast scope and potential for the under-developed Indo-French Economic Relations calls for new initiatives and new horizons.

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Appendix A

France/EU share of Indian Exports

(value in Rs hundreds of million)

Two-digit level codes	Nomenclature	(1) Indian Exports to France	(2) Indian Exports to EU	(3) Total Indian Exports	(4) French share in Indian exports to EU (1/2) %	(5) EU share in Indian Exports (2/3) %	(6) French share in Total Indian Exports % (1/3)
01	live animals	0.000	0.031	0.527	0.00	5.90	0.00
02	meat and edible meat offal	0.000	0.000	100.473	#DIV/0!	0.00	0.00
03	fish and crustaceans, molluscs	6.370	69.668	433.641	9.14	16.07	1.47
04	dairy produced; birds eggs, honey	0.031	1.106	14.356	2.84	7.70	0.22
05	products of animal origin	0.426	4.456	13.493	9.55	33.02	3.15
06	live trees and other plants; bulbs	0.226	5.029	9.156	4.49	54.93	2.47
07	edible vegetables and certain roots	2.008	10.002	83.489	20.07	11.98	2.40
08	edible fruit and nuts; peel of fruit	4.410	64.697	188.808	6.82	34.27	2.34
09	coffee, tea, mate and spices	4.235	100.930	270.190	4.20	37.36	1.57
10	cereals	5.250	28.536	234.306	18.40	12.18	2.24
11	products of the milling industry	0.005	0.137	12.378	3.35	1.11	0.04
12	oil seeds and oleaginous fruits	1.274	20.437	105.048	6.23	19.45	1.21
13	lac; gums, resins and other vege	1.985	22.166	74.131	8.95	29.90	2.68
14	vegetable plaiting materials; vege	0.559	4.421	5.790	12.65	76.34	9.66
15	animal or vegetable fats and oils	18.841	38.571	73.073	48.85	52.78	25.78
16	preparations of meat, of fish etc	0.208	1.631	n.a	12.75	n.a	n.a
17	sugars and sugar confectionery	0.420	6.746	37.610	6.22	17.94	1.12
18	cocoa and cocoa preparations	0.000	0.002	0.943	0.00	0.18	0.00
19	preparations of cereals, flour etc	0.004	0.449	12.341	0.90	3.64	0.03
20	preparations of vegetables, fruit	0.544	12.622	21.343	4.31	59.14	2.55
21	miscellaneous edible preparations	0.299	3.447	39.061	8.68	8.83	0.77
22	beverages, spirits and vinegar	0.101	0.319	11.698	31.65	2.73	0.86
23	waste from the food industries	2.772	3.365	145.572	82.36	2.31	1.90
24	tobacco&manuf. tobacco subst	0.614	19.571	60.068	3.14	32.58	1.02

25	salt; sulphur; earths and stone;	2.276	61.478	140.410	3.70	43.78	1.62
26	ores, slag and ash	0.565	11.215	145.021	5.03	7.73	0.39
27	mineral fuels, mineral oils and pdts	2.827	10.389	608.389	27.21	1.71	0.46
28	inorganic chemicals; compounds	1.522	11.899	74.219	12.79	16.03	2.05
29	organic chemicals	17.581	172.514	544.987	10.19	31.65	3.23
30	pharmaceutical products	0.074	13.853	297.770	0.54	4.65	0.02
31	fertilizers	0.000	0.286	2.889	0.00	9.89	0.00
32	dyeing, tanning&colouring matter	2.333	50.837	163.046	4.59	31.18	1.43
33	essential oils&resinoids; cosmetic	4.976	14.264	67.162	34.89	21.24	7.41
34	soap and other similar preparations	0.038	1.326	11.322	2.84	11.71	0.33
35	albuminoidal substances etc	0.189	2.476	16.685	7.64	14.84	1.13
36	explosives; matches; etc	0.001	0.404	4.137	0.21	9.76	0.02
37	photographic goods	0.060	0.331	12.969	18.14	2.56	0.46
38	miscellaneous chemical products	0.341	13.386	140.587	2.55	9.52	0.24
39	plastics and articles thereof	2.215	38.890	220.831	5.69	17.61	1.00
40	rubber articles thereof	1.835	22.254	114.389	8.25	19.45	1.60
41	raw hides&skins and leather	4.058	50.291	120.384	8.07	41.78	3.37
42	articles of leather,etc	16.949	207.408	320.175	8.17	64.78	5.29
43	furskins and artificial fur,	0.032	0.621	n.a	5.10	n.a.	n.a
44	wood and articles of wood	1.396	9.941	n.a	14.04	n.a	n.a
45	cork and articles of cork	0.001	0.009	0.480	16.67	1.80	0.30
46	manufactures of plaiting material;	0.229	1.620	n.a	14.16	n.a	n.a
47	pulp of wood or of other material	0.000	0.095	0.473	0.00	20.01	0.00
48	paper and paperboard;etc	0.322	5.072	56.351	6.35	9.00	0.57
49	printed books and other products of printing industry	0.243	4.515	19.121	5.38	23.61	1.27
50	silk	3.654	26.781	89.005	13.64	30.09	4.11
51	wool, fine or coarse animal hair	0.319	10.870	17.650	2.93	61.59	1.81
52	cotton	5.159	118.491	758.752	4.35	15.62	0.68
53	other vegetable textile fibers	0.586	21.802	45.231	2.69	48.20	1.29
54	man-made filaments	3.082	37.047	161.639	8.32	22.92	1.91
55	man-made staple fibers	1.234	64.658	152.047	1.91	42.53	0.81
56	wadding, felt and naonwovens;	0.335	2.269	16.032	14.76	14.15	2.09
57	carpets and other floor coverings	8.381	93.744	201.010	8.94	46.64	4.17
58	special woven fabrics tufted textile fabrics; lace; tapestries; trimmings; embroidery	2.297	17.347	62.006	13.24	27.98	3.70
59	impregnated and laminated textile	1.558	3.892	13.040	40.03	29.85	11.95
60	knitted or crocheted fabrics	0.231	9.997	10.544	2.31	94.81	2.19

61	articles of apparel and clothing acc	46.205	248.841	562.983	18.57	44.20	8.21
62	articles of apparel and clothing acc	60.989	326.534	1194.250	18.68	27.34	5.11
63	other made up textile articles; sets	19.101	160.063	362.421	11.93	44.16	5.27
64	footwear, gaiters and the like	11.940	138.482	202.101	8.62	68.52	5.91
65	headgear and parts thereof	0.152	1.054	1.626	14.44	64.84	9.36
66	umbrellas, walking and seat sticks	0.004	0.128	0.179	3.14	71.85	2.26
67	prepared feathers,articles of human hair	0.026	0.866	13.289	2.99	6.52	0.19
68	articles of stone, plaster, cement, asbestos	1.196	34.613	99.588	3.46	34.76	1.20
69	ceramic products	0.201	3.592	22.574	5.59	15.91	0.89
70	glass and glassware	0.903	10.877	43.050	8.30	25.27	2.10
71	pearls, precious or semi-precious stones/metals and articles thereof; imitation jewellery and coin	11.951	434.817	2340.143	2.75	18.58	0.51
72	iron and steel	1.863	70.131	356.862	2.66	19.65	0.52
73	articles of iron and steel	3.213	51.921	320.848	6.19	16.18	1.00
74	copper and articles thereof	0.929	9.535	51.670	9.75	18.45	1.80
75	nickel and articles thereof	0.062	0.320	0.789	19.41	40.59	7.88
76	aluminium and articles thereof	0.483	9.676	106.246	4.99	9.11	0.45
78	lead and articles thereof	0.005	0.017	0.359	26.67	4.81	1.28
79	zinc and articles thereof	0.006	0.418	1.986	1.38	21.07	0.29
80	tin and articles thereof	0.045	0.150	5.003	30.08	3.00	0.90
81	other base metals; cements	0.444	0.953	1.581	46.57	60.31	28.09
82	tools, their parts of base metal	2.081	23.221	70.342	8.96	33.01	2.96
83	misc articles of base metal	2.170	35.496	37.717	6.11	94.11	5.75
84	nuclear reactors, boilers,machinery	11.038	131.336	450.005	8.40	29.19	2.45
85	electrical machinery and equipment	14.228	114.232	407.212	12.46	28.05	3.49
86	railway/tramway locomotives	0.018	0.311	3.379	5.92	9.21	0.55
87	road vehicles and parts	2.555	64.404	293.879	3.97	21.92	0.87
88	aircraft, spacecraft and parts	10.275	21.765	n.a	47.21	n.a	n.a
89	ship, boat and floating structure	3.497	3.622	16.474	96.58	21.98	21.23
90	optical, measuring, instruments	11.434	30.840	84.928	37.07	36.31	13.46
91	clocks and watches and their parts	0.253	1.539	15.931	16.46	9.66	1.59
92	musical instruments; parts	0.147	1.401	2.307	10.48	60.72	6.36
93	arms and ammunition; parts	0.018	0.295	0.637	6.24	46.28	2.89
94	furniture, bedding articles	7.341	47.341	n.a	15.51	n.a	n.a
95	toys, games and sports requisites	1.049	14.065	19.136	7.45	73.50	5.48
96	misc manufacture articles	0.954	12.972	36.089	7.36	35.95	2.64
97	works of art, collectors	0.127	0.799	n.a	15.84	n.a	n.a

	places						
98	Project goods; some special uses			8.505		0.00	0.00
99	Miscellaneous goods	0.012	9.715	299.942	0.12	3.24	0.00
Total		364.396	3546.954	14039.380	10.27	25.26	2.60

Source:

1. Figures in columns (1) and (2) are derived from EUROSTAT database of EU, and pertain to calendar year 2000, ECU values have been converted to Indian rupee.
2. Figures in column (3) above are from Monthly Statistics of the Foreign Trade of India By Countries, Vol 1, 2001, Directorate General of Commercial Intelligence & Statistics, Ministry of Commerce and Industry, Government of India and pertain to the financial year, 2000-2001

Notes:

1. The Commodity Classification based on Harmonised Commodity Description and Coding System has been adopted in this present annexure.
2. All nominal figures were deflated by the Consumer Price Index (India) series (1995=100) on financial year basis to reflect real values.
3. n.a. = In a few categories, the methodology adopted indicated EU shares of Indian export to exceed 100%; this result is due to a decline in EU shares of Indian exports on a year to year when January-March figures included in column (3) were lower than the corresponding period's figure for the preceding year, included in calendar year total from EUROSTAT data base shown in column(2).
4. A discrepancy was also found in goods Category 99 where the volume criterion on the basis of Directorate General of Commercial Intelligence & Statistics data points to this category being significant for Indian exports whereas the corresponding values in Eurostat data base are near-zero.

Appendix B

Revealed Comparative Advantage Index of India 2000-2001

Two-digit level code	Nomenclature	RCAij
01	live animals	n.c
02	meat and edible meat offal	n.c
03	fish and crustaceans, molluscs and other aquatic invertebrates	0.41
04	dairy produced; birds eggs : natural honey; edible products of animal origin	0.16
05	products of animal origin, n.e.s. or included	0.01
06	live trees and other plants; bulbs, roots and the like; cut flowers	0.02
07	edible vegetables and certain roots and tubers	0.05
08	edible fruit and nuts ; peel of citrus fruit or mellons	0.18
09	coffee, tea, mate and spices	0.95
10	cereals	0.12
11	products of the milling industry; malt; starches; inulin; wheat gluten	0.03
12	oil seeds and oleaginous fruits; misc, grains, seeds and fruits;	0.17
13	lac; gums, resins and other vegetable saps and extracts	0.07
14	vegetable plaiting materials; vegetable products not elsewhere specified included	0.03
15	animal or vegetable fats and oils and their cleavage products; animal or vegetable waxes	0.01
16	preparations of meat, of fish or of crustaceans, molluscs	n.c
17	sugars and sugar confectionery	48.29
18	cocoa and cocoa preparations	n.c
19	preparations of cereals, flour, starch or milk; pastry cooks' products	0.00
20	preparations of vegetables, fruit, nuts or other parts of plants	0.03
21	miscellaneous edible preparations	0.02
22	beverages, spirits and vinegar	0.00
23	residues and waste from the food industries; prepared animal fodder	2.53
24	tobacco and manufactured tobacco substitutes	0.07
25	salt; sulphur; earths and stone; plastering materials, lime and cement	0.65
26	ores, slag and ash	n.c
27	mineral fuels, mineral oils and products; bituminous substances; mineral waxes	0.50
28	inorganic chemicals; compounds of precious metals, of rare-earth metals,	0.07
29	organic chemicals	0.70
30	pharmaceutical products	0.11
31	fertilizers	0.02
32	dyeing, tanning and colouring matter	0.27
33	essential oils and resinoids; cosmetic and other similar preparations	0.02
34	soap and other similar preparations; polishes and creams; candles and the like,	0.05
35	albuminoidal substances; modified straches; glues; enzymes	0.01
36	explosives; matches; certain combustible preparations	n.c
37	photographic or cinematography goods	0.01
38	miscellaneous chemical products	0.02
39	plastics and articles thereof	0.25

40	rubber articles thereof	0.17
41	raw hides and skins (other than furskins) and leather	0.10
42	articles of leather, saddlery harness and animal gut	0.29
43	furskins and artificial fur, manufactures thereof	n.c
44	wood and articles of wood; wood charcoal	0.03
45	cork and articles of cork	n.c
46	manufactures of plaiting material; basketware and wickerwork	0.00
47	pulp of wood or of other material; waste and scrap of paper of paperboard	n.c
48	paper and paperboard; articles of paper pulp, of paper and paperboard	0.11
49	printed books and other products of printing industry	0.03
50	silk	0.05
51	wool, fine or coarse animal hair	0.09
52	cotton	1.71
53	other vegetable textile fibers; paper yarn and fabrics	0.24
54	man-made filaments	0.14
55	man-made staple fibers	0.76
56	wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables	0.01
57	carpets and other textile floor coverings	0.21
58	special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery	0.03
59	impregnated, coated and laminated textile fabrics; textile articles for industrial use	0.00
60	knitted or crocheted fabrics	0.02
61	articles of apparel and clothing accessories, knitted or crocheted	0.25
62	articles of apparel and clothing accessories, not knitted or crocheted	0.39
63	other made up textile articles; sets; worn textile articles; rags	0.21
64	footwear, gaiters and the like; parts of such articles	0.21
65	headgear and parts thereof	0.00
66	umbrellas, walking and seat sticks; whips, riding crops and parts thereof	0.01
67	prepared feathers and down with articles, artificial flowers; articles of human hair	0.19
68	articles of stone, plaster, cement, asbestos, mica or similar material	0.25
69	ceramic products	0.05
70	glass and glassware	0.12
71	pearls, precious or semi-precious stones/metals and articles thereof	6.86
72	iron and steel	0.77
73	articles of iron and steel	0.38
74	copper and articles thereof	0.07
75	nickel and articles thereof	n.c
76	aluminium and articles thereof	0.32
78	lead and articles thereof	n.c
79	zinc and articles thereof	0.01
80	tin and articles thereof	0.06
81	other base metals; cements; articles thereof	0.00
82	tools and their parts of base metal	0.07
83	miscellaneous articles of base metal	0.13
84	nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	0.68
85	electrical machinery and equipment and parts thereof; sound and TV recorders	0.35
86	railway/tramway locomotives, truck etc.; equipment and parts thereof	0.00

87	road vehicles and parts	0.46
88	aircraft, spacecraft and parts	0.01
89	ship, boar and floating structure	7.70
90	optical, messuring, medical and similar instruments and parts thereof	0.05
91	clocks and watches and their parts	0.03
92	musical instruments; parts and accessories	0.01
93	arms and ammunition; parts and accessories thereof	0.00
94	furniture, bedding and allied articles, lighting fittings nes; illuminated articles	0.07
95	toys, games and sports requisites; parts and accessories thereof	0.02
96	miscellaneous manufacture articles	0.06
97	works of art, collectors places and antiques	0.01
98	project goods; some special uses	n.c
99	miscellaneous goods	0.02

Source:

1. Figures for Xij,Xi and Xifj have been collected from Monthly Statistics of the Foreign Trade of India By Countries, Vol 1,2001,Directorate General of Commercial Intelligence &Statistics, Ministry of Commerce and Industry, Government of India and pertains to the financial year,2000-2001.
2. Figures for Xieuj have been derived from EUROSTAT database of EU,figures in ECU have been converted to Indian rupee, pertains to calender year 2000. n.c. = not computed

Notes:

1. Revealed Comparative index of India has been calculated as follows:

$$RCA_{ij} = (X_{ij}/X_i)/(X_{ifj}/X_{ieuj})$$

Where:

X_{ij} = Exports of India in sector j
 X_i = Total exports of India
 X_{ifj} = Exports of India to France in sector j
 X_{ieuj} = Total exports of India to EU in sector j

2. Commodity Classification based on Harmonised Commodity Description and Coding System has been adopted.
3. The nominal figures were deflated by the Consumer Price Index (India) series (1995=100) on financial year basis to reflect real values.
4. All RCA_{ij} values >1 point to the presence of significant export potential.
5. RCA_{ij} values between 0.75 and 1 also require to be scrutinized at a dissaggregated level for the presence of export potential

Appendix C

France/EU share of Indian Imports

(value in Rs hundreds of million)

Two-digit level codes	Nomenclature	(1) French Exports to India	(2) EU Exports to India	(3) Total Indian Imports	(4) French Share in Indian imports from EU(1/2) %	(5) EU share in Indian Imports (2/3) %	(6) French share in Total Indian Imports (1/3) %
01	live animals	0.000	0.152	n.a	0.00	n.a.	n.a.
02	meat and edible meat offal	0.000	0.059	n.a	0.00	n.a	n.a.
03	fish and crustaceans, molluscs	0.000	0.106	2.121	0.30	5.01	0.02
04	dairy produced; birds eggs, honey	0.088	1.276	3.695	6.89	34.53	2.38
05	products of animal origin	0.002	0.381	4.160	0.44	9.15	0.04
06	live trees and other plants; bulbs	0.021	0.454	n.a.	4.59	n.a.	n.a.
07	edible vegetables and certain roots	0.001	0.288	35.743	0.27	0.81	0.00
08	edible fruit and nuts; peel of fruit	0.030	0.207	121.619	14.45	0.17	0.02
09	coffee, tea, mate and spices	0.001	0.276	17.930	0.30	1.54	0.00
10	cereals	0.000	0.004	2.497	0.00	0.17	0.00
11	Products of the milling industry	0.035	0.469	3.626	7.51	12.93	0.97
12	oil seeds and oleaginous fruits	0.127	2.265	8.210	5.63	27.59	1.55
13	lac; gums, resins and other vege	0.215	0.705	7.806	30.51	9.03	2.75
14	vegetable plaiting materials; vege	0.000	0.036	0.447	0.00	7.98	0.00
15	animal or vegetable fats and oils	0.654	10.556	446.010	6.19	2.37	0.15
16	preparations of meat, of fish etc	0.000	0.062	n.a.	0.10	n.a.	n.a.
17	sugars and sugar confectionery	0.040	1.158	5.057	3.42	22.90	0.78
18	cocoa and cocoa preparations	0.024	0.653	2.984	3.74	21.87	0.82
19	preparations of cereals, flour etc	0.029	0.811	3.578	3.58	22.68	0.81
20	preparations of vegetables, fruit etc	0.004	0.342	2.734	1.10	12.50	0.14
21	miscellaneous edible preparations	0.075	0.765	16.577	9.85	4.61	0.45
22	beverages, spirits and vinegar	0.805	5.973	n.a.	13.48	n.a.	n.a.
23	waste from the food industries	0.552	1.889	8.742	29.23	21.61	6.32
24	tobacco&manuf. tobacco subst	0.001	1.102	1.446	0.10	76.20	0.07
25	salt; sulphur; earths and stone;	0.104	9.388	138.483	1.11	6.78	0.07
26	ores, slag and ash	0.004	1.766	90.946	0.23	1.94	0.00
27	mineral fuels, mineral oils and products	0.175	121.435	5527.856	0.14	2.20	0.00
28	inorganic chemicals; compounds of precious metals, of rare-earth metals, of radio-active elements or of isotopes	2.272	22.150	342.224	10.26	6.47	0.66
29	organic chemicals	14.582	139.886	503.997	10.42	27.76	2.89
30	pharmaceutical products	4.634	46.608	47.441	9.94	98.24	9.77
31	fertilizers	0.024	4.948	140.170	0.49	3.53	0.02
32	dyeing, tanning&colouring matter	2.166	24.265	60.607	8.93	40.04	3.57

33	essential oils&resinoids; cosmetic	5.681	10.286	24.921	55.23	41.27	22.80
34	soap and other similar preparations	0.526	11.016	32.479	4.78	33.92	1.62
35	albuminoidal substances etc	0.178	5.350	10.226	3.33	52.32	n.a.
36	explosives; matches; etc	0.032	1.544	n.a.	2.07	n.a.	3.50
37	photographic goods	3.471	11.765	61.701	29.50	19.07	5.62
38	miscellaneous chemical products	4.986	49.339	123.982	10.11	39.79	4.02
39	plastics and articles thereof	5.858	72.173	207.129	8.12	34.84	2.83
40	rubber articles thereof	6.195	22.665	89.310	27.33	25.38	6.94
41	raw hides&skins and leather	0.785	29.249	60.211	2.68	48.58	1.30
42	articles of leather,etc	0.027	0.946	2.480	2.85	38.13	1.09
43	furskins and artificial fur,	0.005	0.359	0.312	1.25	115.20	1.45
44	wood and articles of wood	1.707	5.830	154.716	29.27	3.77	1.10
45	cork and articles of cork	0.025	0.391	0.590	6.44	66.24	4.26
46	manufactures of plaiting material;	0	0.000	0.083	0.00	0.35	0.00
47	pulp of wood or of other material	0.326	15.302	88.937	2.13	17.21	0.37
48	paper and paperboard;etc	5.694	55.563	139.949	10.25	39.70	4.07
49	printed books and other products of printing industry	0.379	14.464	60.774	2.62	23.80	0.62
50	silk	0.002	0.114	39.170	2.03	0.29	0.01
51	wool, fine or coarse animal hair	0.102	8.313	34.720	1.23	23.94	0.29
52	cotton	0.275	3.942	91.420	6.99	4.31	0.30
53	other vegetable textile fibers	0.318	6.567	11.218	4.84	58.54	2.83
54	man-made filaments	0.087	4.269	59.793	2.04	7.14	0.15
55	man-made staple fibers	1.006	6.974	28.695	14.42	24.30	3.51
56	wadding, felt and naonwovens;	0.208	2.655	8.338	7.84	31.84	2.49
57	carpets and other floor coverings	0.003	1.491	2.890	0.19	51.60	0.10
58	special woven fabrics tufted textile fabrics; lace; tapestries; trimmings; embroidery	0.092	1.921	6.720	4.81	28.59	1.38
59	impregnated and laminated textile	0.343	6.171	38.961	5.56	15.84	0.88
60	knitted or crocheted fabrics	0.006	0.891	15.733	0.68	5.67	0.04
61	articles of apparel and clothing acc	0.010	0.570	2.122	1.79	26.85	0.48
62	articles of apparel and clothing acc	0.057	4.808	n.a.	1.19	n.a.	n.a.
63	other made up textile articles; sets	0.674	3.835	24.297	17.57	15.78	2.77
64	footwear, gaiters and the like	0.204	5.241	7.857	3.89	66.71	2.60
65	headgear and parts thereof	0.013	0.034	0.119	37.54	28.62	10.75
66	umbrellas, walking and seat sticks	0.000	0.017	2.574	2.08	0.66	0.01
67	prepared feathers,articles of human hair	0.000	0.027	0.472	1.44	5.73	0.08
68	articles of stone, plaster, cement, asbestos, mica or similar material	0.403	6.666	11.040	6.04	60.38	3.65
69	ceramic products	0.761	7.605	14.521	10.00	52.37	5.24
70	glass and glassware	1.593	15.534	33.015	10.25	47.05	4.82
71	pearls, precious or semi-precious stones/metals and articles thereof; imitation jewellery and coin	6.880	1451.112	3058.454	0.47	47.45	0.22
72	iron and steel	5.837	92.032	301.345	6.34	30.54	1.94
73	articles of iron and steel	4.321	42.447	96.441	10.18	44.01	4.48

74	copper and articles thereof	0.526	25.479	72.939	2.06	34.93	0.72
75	nickel and articles thereof	0.132	5.427	39.599	2.42	13.70	0.33
76	aluminium and articles thereof	1.005	21.663	72.456	4.64	29.90	1.39
78	lead and articles thereof	0.023	0.565	12.349	4.07	4.58	0.19
79	zinc and articles thereof	0.418	8.794	29.703	4.76	29.61	1.41
80	tin and articles thereof	0.031	1.147	6.708	2.73	17.10	0.47
81	other base metals; cements	1.440	5.720	13.991	25.18	40.88	10.29
82	tools, their parts of base metal	0.755	13.890	34.311	5.43	40.48	2.20
83	misc articles of base metal	0.208	6.486	12.443	3.21	52.12	1.67
84	nuclear reactors, boilers,machinery	33.652	639.293	1334.883	5.26	47.89	2.52
85	electrical machinery and equipment	30.796	329.462	843.626	9.35	39.05	3.65
86	railway/tramway locomotives	0.030	11.196	12.137	0.27	92.25	0.25
87	road vehicles and parts	1.659	40.413	101.753	4.10	39.72	1.63
88	aircraft, spacecraft and parts	5.269	82.422	n.a.	6.39	n.a.	n.a.
89	ship, boat and floating structure	0.036	8.978	105.622	0.40	8.50	0.03
90	optical, measuring, instruments	12.838	157.740	301.845	8.14	52.26	4.25
91	clocks and watches and their parts	0.085	0.673	9.997	12.61	6.73	0.85
92	musical instruments; parts	0.000	0.186	0.817	0.07	22.71	0.02
93	arms and ammunition; parts	0.047	4.142	n.a.	1.14	n.a.	n.a.
94	furniture, bedding articles	0.352	6.287	13.250	5.59	47.45	2.65
95	toys, games and sports requisites	0.215	0.922	11.928	23.33	7.73	1.80
96	misc manufacture articles	2.074	5.554	18.390	37.35	30.20	11.28
97	works of art, collectors places	0.000	0.385	n.a.	n.a.		n.a.
98	project goods; some special uses	27.201	n.a.	239.191	n.a.	n.a.	11.37
99	Miscellaneous goods	1.255	11.311	48.130	11.10	23.50	2.61
Total		205.782	3768.05	15922.259	5.46	23.67	1.29

Source:

1. Figures in column (1) and (3) above have been collected from Monthly Statistics of the Foreign Trade of India By Countries, Vol 2,2001, Directorate General of Commercial Intelligence & Statistics, Ministry of Commerce and Industry, Government of India and pertains to the financial year,2000-2001
2. Figures in column (2) have been derived from EUROSTAT database of EU,pertains to calender year 2000, ECU figures have been converted to Indian rupee.

Notes:

1. The Commodity Classification based on Harmonised Commodity Description and Coding System has been adopted.
2. All nominal figures were deflated by the Consumer Price Index (India) series (1995=100) on financial year basis to reflect real values.
3. In a few commodity groups like arms and ammunitions, wines and spirits, animal furs and explosives, data could not be reliably verified and has been shown as n.a. = not accurate. Data for these commodity groups as available is included only in the total at the end.

Appendix D

Criteria Analysis for French Exports to India

Criteria 1: By volume in years 2000- 2001

Two-digit level codes	Nomenclature	(1) French Share in Indian imports from EU %	(2) EU share in Indian Imports %	(3) French share in Indian Imports %
29	organic chemicals	10.42	27.76	2.89
33	essential oils and resinoids; cosmetic	55.23	41.27	22.80
39	plastics and articles thereof	8.12	34.84	2.83
40	rubber articles thereof	27.33	25.38	6.94
48	paper & paperboard; articles of paper pulp	10.25	39.70	4.07
71	pearls, precious or semi-precious stones	0.47	47.45	0.22
84	nuclear reactors, boilers, machinery	5.26	47.89	2.52
85	electrical machinery and equipment	9.35	39.05	3.65
88	aircraft, spacecraft and parts	6.39	n.a.	n.a.
90	optical, medical and similar instruments	8.14	52.26	4.25
98	project goods; some special uses		0.00	11.37

Criteria 2: By growth rate 2000-2001

Two-digit level codes	Nomenclature	(1) French Share of Indian imports from EU %	(2) EU share of Indian Imports %	(3) French share of Indian Imports %
06	live trees and other plants; bulbs, roots	4.59	n.a.	n.a.
15	animal or vegetable fats and oils s	6.19	2.37	0.15
17	sugars and sugar confectionery	3.42	22.90	0.78
19	preparations of cereals, flour, starch	3.58	22.68	0.81
26	ores, slag and ash	0.23	1.94	0.00
27	mineral fuels, mineral oils and products	0.14	2.20	~ 0
71	pearls, precious or semi-precious stones	0.47	47.45	0.22
80	tin and articles thereof	2.73	17.10	0.47
94	furniture, bedding and allied articles	5.59	47.45	2.65

Criteria 3: By RCA 2000-2001

Two-digit level codes	Nomenclature	(1) French Share of Indian imports from EU %	(2) EU share of Indian Imports %	(3) French share of Indian Imports %
07	edible vegetables and certain roots and tubers	0.27	0.81	0.00
16	preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates	0.10	n.a.	n.a.
24	tobacco and manufactured tobacco substitutes	0.10	76.20	0.07
27	mineral fuels, mineral oils and products; bituminous substances; mineral waxes	0.14	2.20	0.00
71	pearls, precious or semi-precious stones/metals and articles thereof; imitation jewellery and coin	0.47	47.45	0.22
84	nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	5.26	47.89	2.52
85	electrical machinery and equipment and parts thereof; sound and TV recorders and reproducers and parts thereof	9.35	39.05	3.65
87	road vehicles and parts	4.10	39.72	1.63
88	aircraft, spacecraft and parts	6.39	n.a.	n.a.
89	ship, boat and floating structure	0.40	8.50	0.03

Source:

1. Figures for French exports to India and Total Imports of India by commodities have been collected from Monthly Statistics of the Foreign Trade of India By Countries, Vol 2, 2001, Directorate General of Commercial Intelligence & Statistics, Ministry of Commerce and Industry, Government of India and pertains to the financial year, 2000-2001
2. Figures for EU exports of India have been derived from EUROSTAT database of EU, figures in ECU have been converted to Indian rupee, pertains to calendar year, 2000.
3. Notes: n.a. = not accurately available.

Appendix E

Revealed Comparative Advantage Index of France

Two-digit level code	Nomenclature	RCAfj
01	live animals	n.c
02	meat and edible meat offal	n.c
03	fish and crustaceans, molluscs and other aquatic invertebrates	0.81
04	dairy produced; birds eggs : natural honey; edible products of animal origin	0.16
05	products of animal origin, n.e.s. or included	0.09
06	live trees and other plants; bulbs, roots and the like; cut flowers	0.01
07	edible vegetables and certain roots and tubers	1.26
08	edible fruit and nuts ; peel of citrus fruit or mellons	0.03
09	coffee, tea, mate and spices	0.17
10	Cereals	n.c
11	products of the milling industry; malt; starches; inulin; wheat gluten	0.03
12	oil seeds and oleaginous fruits; misc, grains, seeds and fruits;	0.05
13	lac; gums, resins and other vegetable saps and extracts	0.00
14	vegetable plaiting materials; vegetable products not elsewhere specified included	n.c
15	animal or vegetable fats and oils and their cleavage products; animal or vegetable waxes	0.02
16	preparations of meat, of fish or of crustaceans, molluscs	2.40
17	sugars and sugar confectionery	0.15
18	cocoa and cocoa preparations	0.07
19	preparations of cereals, flour, starch or milk; pastry cooks' products	0.11
20	preparations of vegetables, fruit, nuts or other parts of plants	0.25
21	miscellaneous edible preparations	0.04
22	beverages, spirits and vinegar	0.19
23	residues and waste from the food industries; prepared animal fodder	0.01
24	tobacco and manufactured tobacco substitutes	1.16
25	salt; sulphur; earths and stone; plastering materials, lime and cement	0.20
26	ores, slag and ash	0.14
27	mineral fuels, mineral oils and products; bituminous substances; mineral waxes	17.55
28	inorganic chemicals; compounds of precious metals, of rare-earth metals,	0.08
29	organic chemicals	0.29
30	pharmaceutical products	0.29
31	Fertilizers	0.12
32	dyeing, tanning and colouring matter	0.07
33	essential oils and resinoids; cosmetic and other similar preparations	0.04
34	soap and other similar preparations; polishes and creams; candles and the like,	0.08
35	albuminoidal substances; modified straches; glues; enzymes	0.07
36	explosives; matches; certain combustible preparations	0.01
37	photographic or cinematography goods	0.01
38	miscellaneous chemical products	0.14
39	plastics and articles thereof	0.40

40	rubber articles thereof	0.05
41	raw hides and skins (other than furskins) and leather)	0.08
42	articles of leather, saddlery harness and animal gut	0.18
43	furskins and artificial fur, manufactures thereof	0.01
44	wood and articles of wood; wood charcoal	0.02
45	cork and articles of cork	0.00
46	manufactures of plaiting material; basketware and wickerwork	n.c
47	pulp of wood or of other material; waste and scrap of paper of paperboard	0.05
48	paper and paperboard; articles of paper pulp, of paper and paperboard	0.17
49	printed books and other products of printing industry	0.19
50	Silk	0.01
51	wool, fine or coarse animal hair	0.12
52	Cotton	0.05
53	other vegetable textile fibers; paper yarn and fabrics	0.02
54	man-made filaments	0.17
55	man-made staple fibers	0.02
56	wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables	0.02
57	carpets and other textile floor coverings	0.50
58	special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery	0.03
59	impregnated, coated and laminated textile fabrics; textile articles for industrial use	0.03
60	knitted or crocheted fabrics	0.27
61	articles of apparel and clothing accessories, knitted or crocheted	0.35
62	articles of apparel and clothing accessories, not knitted or crocheted	0.77
63	other made up textile articles; sets; worn textile articles; rags	0.01
64	footwear, gaiters and the like; parts of such articles	0.07
65	headgear and parts thereof	0.00
66	umbrellas, walking and seat sticks; whips, riding crops and parts thereof	0.00
67	prepared feathers and down with articles, artificial flowers; articles of human hair	0.00
68	articles of stone, plaster, cement, asbestos, mica or similar material	0.04
69	ceramic products	0.03
70	glass and glassware	0.08
71	pearls, precious or semi-precious stones/metals and articles thereof	1.05
72	iron and steel	0.40
73	articles of iron and steel	0.15
74	copper and articles thereof	0.26
75	nickel and articles thereof	0.04
76	aluminium and articles thereof	0.18
78	lead and articles thereof	0.00
79	zinc and articles thereof	0.02
80	tin and articles thereof	0.00
81	other base metals; cements; articles thereof	0.00
82	tools and their parts of base metal	0.05
83	miscellaneous articles of base metal	0.12
84	nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	2.50

85	electrical machinery and equipment and parts thereof; sound and TV recorders	1.27
86	railway/tramway locomotives, truck etc.; equipment and parts thereof	0.86
87	road vehicles and parts	2.79
88	aircraft, spacecraft and parts	1.72
89	ship, boat and floating structure	2.93
90	optical, measuring, medical and similar instruments and parts thereof	0.31
91	clocks and watches and their parts	0.01
92	musical instruments; parts and accessories	0.43
93	arms and ammunition; parts and accessories thereof	0.07
94	furniture, bedding and allied articles, lighting fittings nes; illuminated articles	0.17
95	toys, games and sports requisites; parts and accessories thereof	0.01
96	miscellaneous manufacture articles	0.01
97	works of art, collectors pieces and antiques	n.c
98	project goods; some special uses	n.c
99	miscellaneous goods	0.08

Source:

- Figures for X_{fj} have been collected from Monthly Statistics of the Foreign Trade of India By Countries, Vol 2,2001, Directorate General of Commercial Intelligence & Statistics, Ministry of Commerce and Industry, Government of India and pertain to the financial year 2000-2001.
- Figures for X_{fj}, X_i, X_{eu} have been derived from EUROSTAT database of EU. Figures in ECU have been converted to Indian rupee and pertain to calendar year, 2000.

Notes:

- Revealed Comparative index of France has been calculated as follows:

$$RCA_{fj} = (X_{fj}/X_f) / (X_{fj}/X_{eu})$$

Where

X_{fj}= Exports of France in sector j

X_i= Total exports of France

X_{fj}= Exports of France to India in sector j

X_{eu}= Total exports of EU to India in sector j

- Commodity Classification based on Harmonised Commodity Description and Coding System has been adopted.

- The nominal figures were deflated by the Consumer Price Index series (1995=100) to reflect real values.

- All RCA_{fj} values >1 point to the presence of significant export potential.

- RCA_{fj} values between 0.75 and 1 also require to be scrutinized at a disaggregated level for the presence of export potential

Appendix F

UNTAPPED POTENTIAL IN INDIAN EXPORTS TO FRANCE BY DIRECTION OF TRADE ANALYSIS

(value in Rs hundreds of million)

Two-digit level code	Nomenclature	(1) Indian export to France	(2) Indian Exports to EU	(3) Total French imports	(4) French share in Indian exports to EU (1/2) %
03	fish and crustaceans, molluscs	6.370	69.668	988.494	9.14
08	edible fruit and nuts ; peel of fruit	4.410	64.697	899.572	6.82
20	preparations of vegetables, fruit	0.544	12.622	711.337	4.31
24	tobacco& its substitutes	0.614	19.571	603.623	3.14
32	dyeing, tanning and colouring matter	2.333	50.837	867.557	4.59
38	miscellaneous chemical products	0.341	13.386	1623.367	2.55
39	plastics and articles thereof	2.215	38.890	4705.969	5.69
40	rubber articles thereof	1.835	22.254	1264.920	8.25
41	raw hides and skins and leather	4.058	50.291	220.413	8.07
42	articles of leather, saddlery harness	16.949	207.408	549.700	8.17
54	man-made filaments	3.082	37.047	562.982	8.32
64	footwear, gaiters and the like	11.940	138.482	1168.649	8.62
70	glass and glassware	0.903	10.877	839.830	8.30
71	pearls, precious or semi-precious stones	11.951	434.817	1058.939	2.75
72	iron and steel	1.863	70.131	3248.438	2.66
73	articles of iron and steel	3.213	51.921	1996.821	6.19
82	tools and their parts of base metal	2.081	23.221	537.348	8.96
84	nuclear reactors, boilers, machinery	11.038	131.336	20718.285	8.40
87	road vehicles and parts	2.555	64.404	12897.994	3.97
95	toys, games and sports requisites	1.049	14.065	998.310	7.45
Total		89.344	1525.926	56462.547	

Source:

- Figures in column (1) ,(2) and (3) have been derived from EUROSTAT database of EU and pertain to calender year. Figures in ECU have been converted to Indian rupee.

Notes:

- Commodity Classification based on Harmonised Commodity Description and Coding System has been adopted.
- The nominal figures of column (1) and (2) were deflated by the Consumer Price Index (India) series (1995=100) and column (3) figures were deflated by consumer price index of France (1995=100) to reflect real values

Appendix G

UNTAPPED POTENTIAL IN FRENCH EXPORTS TO INDIA BY DIRECTION OF TRADE ANALYSIS

(value in Rs hundreds of million)

Two-digit level code	Nomenclature	(1) EU's Export to India	(2) Total French Exports	(3) Indian Imports From France	(4) French Share in Indian imports from EU % (3/1)
27	mineral fuels, mineral oils and products	121.435	3473.02	0.175	0.14
30	pharmaceutical products	46.608	3986.31	4.634	9.94
32	dyeing, tanning & colouring matter	24.265	847.66	2.166	8.93
39	plastics and articles thereof	72.173	4415.19	5.858	8.12
49	printed books and other products	14.464	674.04	0.379	2.62
71	pearls, precious or semi-precious stones	1451.112	685.25	6.880	0.47
74	copper and articles thereof	25.479	739.36	0.526	2.06
76	aluminium and articles thereof	21.663	1135.77	1.005	4.64
84	nuclear reactors, boilers, machinery	639.293	18055.95	33.652	5.26
85	electrical machinery and equipment	329.462	16238.39	30.796	9.35
87	road vehicles and parts	40.413	15690.77	1.659	4.10
88	aircraft, spacecraft and parts	82.422	15090.01	5.269	6.39
90	optical, measuring, medical instruments	157.740	3491.96	12.838	8.14
Total		3026.530	84523.68	105.84	

Source:

- Figures in column (1) and (2) have been derived from EUROSTAT database of EU and pertain to calendar year. Figures in ECU have been converted to Indian rupee
- Figures in column (3) above have been collected from Monthly Statistics of the Foreign Trade of India By Countries, Vol 2,2001, Directorate General of Commercial Intelligence & Statistics, Ministry of Commerce and Industry, Government of India and pertains to the financial year

Notes:

- Commodity Classification based on Harmonised Commodity Description and Coding System has been adopted.
- The nominal figures of column (1) and (3) were deflated by the Consumer Price Index (India) series (1995=100) and column (2) figures were deflated by consumer price index of France (1995=100) to reflect real values

Appendix H

UNTAPPED POTENTIAL IN INDIAN EXPORTS TO FRANCE BY RCA CRITERIA

(value in Rs million)

Two-digit level codes	Nomenclature	(1) Indian Exports to France	(2) Indian Exports to EU	(3) Total Indian Exports	(4) Total French imports	(5) French share of Indian exports to EU (1/2) %	(6) EU share of Indian Exports(2/3) %	(7) French share of Indian Exports(1/3) %
17	sugars and sugar confectionery	0.420	6.746	37.610	218.798	6.22	17.94	1.12
23	waste from the food industries	2.772	3.365	145.572	597.386	82.36	2.31	1.90
89	ship, boat and floating structure	3.497	3.622	16.474	940.215	96.58	21.98	21.23
Total		6.689	13.733	199.655	1756.399			

Source:

- Figures in columns (1) ,(2)and (4) are derived from EUROSTAT database of EU,and pertain to calender year 2000,ECU values have been converted to Indian rupee.
- Figures in column (3) above are from Monthly Statistics of the Foreign Trade of India By Countries, Vol 1,2001,Directorate General of Commercial Intelligence &Statistics, Ministry of Commerce and Industry, Government of India and pertain to the financial year,2000-2001

Notes:

- The Commodity Classification based on Harmonised Commodity Description and Coding System has been adopted.
- All nominal figures were deflated by the Consumer Price Index series (1995=100) to reflect real values.

Appendix I

UNTAPPED POTENTIAL IN FRENCH EXPORTS TO INDIA BY RCA CRITERIA

(value in Rs hundreds of million)

Two-digit level codes	Nomenclature	(1) French Exports to India	(2) EU Exports to India	(3) Total Indian imports	(4) French Share in Indian imports from EU(1/2) %	(5) EU share in Indian Imports (2/3) %	(6) French share in Indian Imports (1/3) %
07	Edible vegetables and certain roots and tubers	0.001	0.288	35.743	0.27	0.81	0.00
16	Preparations of meat, of fish etc	0.000	0.062	n.a.	0.10	n.a.	n.a.
24	Tobacco & manufactured tobacco substitutes	0.001	1.102	1.446	0.10	76.20	0.07
27	Mineral fuels, mineral oils and products	0.175	121.435	5527.856	0.14	2.20	0.00
87	road vehicles and parts	1.659	40.413	101.753	4.10	39.72	1.63
89	ship, boat and floating structure	0.036	8.978	105.622	0.40	8.50	0.03
Total		1.871	172.278	5772.474			

Source:

- Figures in column (1) and (3) above have been collected from Monthly Statistics of the Foreign Trade of India By Countries, Vol 2, 2001, Directorate General of Commercial Intelligence & Statistics, Ministry of Commerce and Industry, Government of India and pertain to the financial year, 2000-2001
- Figures in column (2) have been derived from EUROSTAT database of EU and pertain to calendar year 2000, ECU figures have been converted to Indian rupee.

Notes:

- The Commodity Classification based on Harmonised Commodity Description and Coding System has been adopted.
- All nominal figures were deflated by the Consumer Price Index (India) series (1995=100) on financial year basis to reflect real values. In a few instances, data could not be reliably verified. n.a = not accurately available.
- French exports to India in commodity codes 16 and 24 were not taken up for further analysis since these involve re-exports of France.

FRENCH COMPANIES IN INDIA

SECTOR	< 1947	1947-1990	> 1991	UNDATED
TRADING		<p>TRANSOFT INTERNATIOANL PVT. LTD</p>	<p>ACCOR RADHAKRISHNA CORP SERVICES PVT. LTD.</p> <p>BCEOM-INDE</p> <p>CINCH CONNECTORS INDIA PVT. LTD.</p> <p>COFLEXIP STENA OFFSHORE ASIA PACIFIC</p> <p>DABON INTERNATIONAL LTD.</p> <p>DECATHLON PRODUCTION INDIA</p> <p>GEMPLUS INDIA PVT. LTD.</p> <p>IMV INDIA (P) LTD.</p> <p>SAJ TEST PLANT PVT. LTD.</p> <p>SIBRANE NEWAGE</p> <p>TRAC REPRESENTATIONS (INDIA) PVT. LTD.</p> <p>THE UNITED AGENCIES LTD.</p>	<p>TECHNIP</p>
AVIATION & AERO SPACE		<p>AIRBUS INDUSTRIE</p> <p>AIR FRANCE</p> <p>SNECMA INDIA</p> <p>SOFEMA</p> <p>DASSAULT INTERNATIONAL</p> <p>EADS INDIA</p>	<p>AIRBUS INDUSTRIE</p> <p>UNITED AERONAUTICAL SERVICES PVT. LTD.</p> <p>ENPRO SECAN INDIA PVT. LTD.</p> <p>SEXTANT INDIA</p>	

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ENGINEERING		FRAMATOME CONNECTORS OEN LTD.	AIR LIQUIDE ENGINEERING INDIA LTD. HEF INDIA PVT. LTD. LTG AIR ENGINEERING PVT. LTD. SYSTRA TECHNIP INDIA LTD. VSL INDIA PTE LTD.	SAFEGE
GASES & INDUSTRIAL GASES			AIR LIQUIDE INDIA HOLDINGS ELF GAS INDIA LTD. INDIGAS	
TELECOM		ALCATEL TRADE INTERNATIONAL LTD.	ALCATEL BUSINESS SYSTEMS LTD. ALCATEL DEVELOPMENT CENTRE ALCATEL INDIA LTD. SAGEM-INDIA THOMSON BROADCAST SYSTEMS	SCHLUMBERGE R TEST AND TRANSACTION
ENERGY		ALSTOM LTD.	ALSTOM STEAM TURBINE LTD. CRISTOPIA ENERGY INDIA PVT. LTD. TRANSMISSION & DISTRIBUTION LTD. ELECTRICITY SERVICES INDIA EDF HPP ENERGY (INDIA) PVT. LTD. WARTSILA DIESEL INDIA LTD.	ALSTOM ENERGY LTD. ALSTOM INDIA LTD. ALSTOM POWER BOILER SERVICES LTD. ALSTOM POWER BOILERS LTD. ALSTOM POWER INDIA LTD.

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TRANSPORT			ALSTOM TRANSPORT LTD. COFACE-INDIA LIAISON OFFICE GEODIS OVERSEAS INDIA PVT. LTD.	AVIONS DE TRANSPORT REGIONAL
AUTOMOTIVE & AUTOMOTIVE SPARES			AMALGAMATIONS VALEO CLUTCH LTD. AMTEK SICCARDI INDIA LTD. SONALIKA INTERNATIONAL TRACTORS LTD. SYLEA AUTOMOTIVE INDIA LTD. VALEO FRICTION MATERIALS INDIA (P) LTD.	FAURECIA AUTOMOTIVE SEATING INDIA PVT. LTD. GRINDWELL NORTON LTD. SUPREME TREVES LTD.
CONSTRUCTIONS & INDUSTRIAL CONSTRUCTION		SPIE BATIGNOLLES	AQUAZUR INDIA LTD. BHP LEROUX & LOTZ PVT. LTD. FCB-KCP LTD. MALCOM INDIA LTD. STEIN HEURTEY INDIA PROJECTS PVT. LTD.	SEBIM VALVES INDIA PVT. LTD.
INSTRUMENTATION	SCHLUMBERGER WIRELINE & TESTING-DELHI	PETROLE SERVICE INDIA PVT. LTD.	ATEQ INDIA BICRON PRODUCTS PVT. LTD. CFM INTERNATIONAL POUYET COMMUNICATION INDIA PVT. LTD. SCHLUMBERGER INDUSTRIES INDIA LTD.	PAM SYSTEMS LTD.

Continuation Appendix J

CHEMICALS			<p>ATOFINA CATALYST INDIA LTD.</p> <p>ATOFINA INDIA LIAISON OFFICE</p> <p>ATOFINA PEROXYDES INDIA LTD.</p> <p>COMPASS GROUP PLC-MIDDLE EAST & ASIA</p> <p>GAZ DE FRANCE LIAISON OFFICE</p> <p>HINDUSTAN COLAS LTD.</p> <p>NOBLE SYNTHETICS LTD.</p> <p>NORTON CHEM. PROCESS PRODUCTS INDIA PVT. LTD.</p> <p>RHONE POULENC AGROCHEMICALS (INDIA) LTD.</p> <p>RHONE POULENC (INDIA) LTD.</p> <p>RHODIA CHEMICALS (INDIA) LTD.</p>	<p>HINDUSTAN GUM & CHEMICALS LTD.-BHIWANI</p>
PHARMACEUTICALS			<p>AVENTIS PASTEUR INDIA LTD.</p> <p>ETHYPHARM PVT. LTD.</p> <p>GALDERMA INDIA PVT. LTD.</p> <p>RHONE POULENC RORER (INDIA) LTD.</p> <p>SANOFI TORRENT</p> <p>SATELEC INDIA PVT. LTD.</p>	<p>SERDIA PHARMACEUTICALS (INDIA) LTD.</p>

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PETROLEUM, OIL & LUBRICANTS		GEOENPRO PETROLEUM LTD.	AVI-OIL INDIA LTD. ELF LUBRICANTS LTD. PRIDE FORAMER INDIA TOTAL FINA ELF TOTAL PETROLEUM INDIA PVT. LTD.	
IT			AXA BUSINESS SERVICES PVT. LTD. PSI DATA SYSTEMS LTD. SEMA GROUP SOFTWARE INDIA PVT. LTD.	INCOTEC SOFTWARE INDIA PVT. LTD. ORIGIN INFORMATION TECHNOLOGY INDIA LTD.
KNITTING			BANGALORE KNITTING PVT. LTD.	
MEDICAL EQUIPMENT			BIOMERIEUX INDIA PVT. LTD. RANAL SOPHA MEDICAL VYGON INDIA PVT. LTD.	
BANKING & FINANCIAL SERVICES	BNP-PARIBAS	CREDIT AGRICOLE INDOSUEZ CREDIT COMMERCIAL DE FRANCE BOMBAY CREDIT LYONNAIS (BOMBAY) SOCIETE GENERALE LAZARD INDIA LTD.	BNP PARIBAS EQUITIES INDIA PVT. LTD. CRAY VALLEY RESINS INDIA LTD. NATEXIS BANQUES POPULAIRES	BANQUE CIC

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FOOD & BEVERAGES		BRITANIA INDUSTRIES LTD. SAF YEAST COMPANY LTD.	GROVER VINEYARDS LTD. MEILLAND STAR ROSE INDIA SHREE MILK & FOOD INDUSTRIES LTD. SODEXHO PASS SERVICES (INDIA) LTD. SRGP FOCO INDIA PVT. LTD. LOUIS DREYFUS INDIA PVT. LTD.	DANONE INTERNATIONA L BRANDS PARIS MOET HENNESSY ASIA SIDEL INDIA PVT. LTD.
QUALITY INSPECTION		BUREAU VERITAS		
TOURISM			CARBONE LORRAINE INDIA PVT. LTD.	
ELECTRICAL ENGINEERING		CGG PAN INDIA LTD.	SCHNEIDER ELECTRIC INDIA LTD. SOMFY INDIA PVT. LTD.	
WATER TREATMENT		DEGREMONT INDIA LTD.	HYDROPLUS INTERNATIONAL – DELHI THERMAX CULLIGAN WATER TECHNOLOGIES LTD. VIVENDI WATER UK	SUEZ LYONNAISE DES EAUX
SHOES			DELTAL SAFETY SHOES LTD.	
OPTICS			ESSILOR SRF OPTICS LTD. OLMIL	
ADVERTISING			EURO RSCG ADVERTISING LTD.	
REFRIGERATION			GEI HAMON INDUSTRIES LTD.	
PHOTOGRAPHY			GODREJ PHOTO-ME LTD.	

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MACHINES			GRAVS APPLIANCES VEE SLOT FILTER PVT. LTD. USHA INTERCONTINENTAL	CARLSON WAGONLIT TRAVEL (INDTRAVEL)
FILTERS		HITEMP FILTEX PVT. LTD.		
ELECTIRCAL MACHINERY			HPL-SOCOMECH PVT. LTD. MDS LEGRAND	
PRINTING			IMAJE INDIA PVT. LTD. KOMORI CHAMBON INDIA	
FURNITURE			INDIAN FURNITURE PRODUCTS	
COSMETICS			L'OREAL INDELOR INDIA PVT. LTD. PARIS ELYSEES INDIA PVT. LTD.	
CEMENT			LAFARGE INDIA LTD.	
HOTEL & TOURISM			MERIS INTERNATIONAL HOTELS PIERRE IER INCOMING	
TYRES			MICHELIN INDIA PVT. LTD.	
BEARINGS		NRB BEARINGS LTD.		
ANIMAL FEEDS & ANIMAL HUSBANDRY			NUTECH FEEDS PVT. LTD.	RESEARCH & BREEDING FARM LTD.
ELECTRONICS		THALES ELECTRON DEVICES THALES LIAISON	RADIAL PROTECTRON (P) , THOMSON CONSUMER ELECTRONICS LTD.	
PENS			REYNOLDS PENS INDIA PVT. LTD.	

Continuation Appendix J

GLASS			SAINT GOBIN GLASS INDIA LTD. SAINT GOBAIN INDIA LTD.	
GLASS FIBRES			SAINT GOBAIN VETROTEX INDIA LTD. VETROTEX INDUSTRIES INDIA	
RETAILING			SIPLEC INTERNATIONAL LTD.	
SPORTS GOODS			SPORTS & LEISURE APPAREL LTD.	ERMONT APOLLO PVT. LTD. SCETAURROUTE INTERNATIONAL
PLASTICS			TECHPACK INTERNATIONAL INDIA	
MECHANICAL ENGINEERING			TRIBOOGY INDIA LTD.	
MEDIA				AGENCE FRANCE PRESSE
CONSULTANCY				SITECH CONSULTANTS STUP CONSULTANTS LTD. TRANSEARCH INDIA PVT. LTD.
STEEL				USINOR, UGINE INDIA LIASON OFFICE
METALLURGICAL				BROCHOT INDIA
PAPER				PAPETERIES CANSON MONTGOLFIER S.A.
HOME APPLIANCES			TEFAL INDIA HOUSEHOLD APPLIANCE PVT. LTD.	