Finland-India Business Prospects 2007-2017

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W.P. No.2007-03-01
March 2007

INDIAN INSTITUTE OF MANAGEMENT
AHMEDABAD-380 015
INDIA

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Abstract

Finland-India Economic Relations were researched for the first time in a study that analysed mutual trade and investment potential through the lens of revealed comparative advantage and identified profitably tradable goods at 4-digit and 8-digit disaggregated levels in the standard international trade classification (Mathur, 1998). This study was made freely available on the world wide web for five years through http:// www.uta.fi/kati as part of longitudinal action research to study how small and large players would take advantage of this freebie. This paper provides initial results of a sequel study initiated in 2005 to understand what happened thereafter, whether trade grew, and to analyse how trade could diversify from identification of new opportunities for product-services linkages after the expiry of the transitional period that brought GATS into effect in 2005. Finland's share in Indian imports and exports has grown rapidly and exponentially and the prospects are vast but the potential realised by 2007 remains considerably untapped and far below comparable figures for other EU countries. This study emphasises the need for policy research on institutional barriers to design new gateways beyond an increased frequency of contact between people from the two countries. The conclusion that robust bridges could be built through tripartite fora comprising business, government and academia points to the need for new institutionalities and deepening research studies, some of which initiated as part of the Finland-India Economic Relations project, are at various stages of progress and expected to be completed during 2007-2010.

[1] *The author is the Project Director, Finland-India Economic Relations (FIER) and gratefully acknowledges the support towards expenses on this research project from Liikesivistysrahasto in Finland and Research and Publications Division of Indian Institute of Management Ahmedabad.The author thanks University of Tampere for office facilities availed until March 2006. The interest evinced by the City of Oulu and its Technopolis, the Chamber of Assistance for Finns and Foreigners (CHAFF), and the SALPAUS consortium of the Finnish Ministry of Education was encouraging. The author thanks Sari Joutsimäki of the Tampere University of Technology who collaborated as Project Manager, FIER and participated as a researcher in some of the listening posts designed for this research project in Finland and in India. The assistance of Academic Associate Bibhu Prasad Kar and Research Assistant R. Srinivas Radhakisan in accessing databases is acknowledged. The usual disclaimer applies. Comments and suggestions welcome. Email: anm@iki.fi and anmathur@iimahd.ernet.in*

1. Introduction

Trade between Finland and India stagnated at a low level in real value and volumes and failed to diversify for the fifty years between 1947 and 1997. The first ever study on Indo-Finnish trade and investment potential measured Revealed Comparative Advantage in Standard International Trade Classification (SITC) categories of goods trade which showed up the gap between potential and actual trade and pointed to possible trade-substituting foreign direct investments related to goods trade (Mathur, 1998). Paired country studies of trade and investment potential at a disaggregated level reveal more than sub-national sectoral analysis from 2-digit analysis because boundaries of sectors and clusters have become elastic. This study was made freely available on the world wide web for five years through http:// *www.uta.fi/kati* as part of longitudinal action research to study how small and large players would take advantage of this freebie. This paper provides initial results of a sequel study initiated in 2005 to understand what happened thereafter, whether trade grew, and to analyse how trade could diversify with new opportunities for product-services linkages from 2005 onwards after the transitional period of GATS ended.

During the period 1999-2006, Finland's exports to India trebled and India's exports to Finland doubled in real value. This paper presents initial findings of the sequel study that expands the scope to analyse services trade and investment potential on the basis of product-services linkages in international business conceivable between Finland and India over the next decade 2007-2017. This forms part of ongoing research on Finland-India Economic Relations which has as its specific aim the identification of barriers and gateways for knowledge-intensive services trade flows between Finland and India in GATS entry modes.

The well-being and prosperity of inhabitants of any small open economy like Finland and any large semi-open economy like India with a backlog of development agenda both depend much on the business know-how of managers of enterprises and public systems to seed and harvest technical and social innovations in international value chains. How, at what cost and with what pace firms access missing markets in world trade can make a difference to reaping scale effects from new designs of cross-border value chains. 'Made in Finland' or 'Made in India' thus becomes less relevant than 'Made by Finland' or 'Made by India' as long as benefits from cross-border inflows of factor incomes (wages, profits, interest, rents) exceed private and public costs incurred for production, marketing and delivery. However, very little is known about how, and how much can be globally harvested by Finland and India from trade-substituting investments and collaborative innovations seeded through local, regional, and national initiatives and support mechanisms for players bilaterally in the two territories and through bilateral and plurilateral collaborations in third countries. Firms in both countries have hitherto mainly emphasised boosting their own manufactured exports to the exclusion of other modes of international business. Manufacturing technologies are migrating rapidly and the flexibility inherent in the cross-border dispersal of value chains in a more open environment for trade in goods militates against reliance on manufacturing for sustaining competitiveness except in cases of input-dependent industries located for such reasons.

Services constitute a large segment of national economies compared to manufacturing in both Finland and India (54 per cent in India; 65 per cent in Finland) and the tradable scope of services has expanded. The General Agreement on Trade in

Services (GATS) envisages cross-border supply of services (Mode 1), consumption abroad (Mode 2) , foreign commercial presence (Mode 3) and movement of natural persons (Mode 4) as the four modes of service delivery under equal most-favoured-nation (MFN) treatment among all World Trade Organisation (WTO) member countries. The ten-year transitional period permitting departures from GATS ended on 31.12.2004. Cross-border Supply (Mode 1) is the only mode that belongs to the exclusive EU competence under Common Commercial Policy (Article 133, Maastricht Treaty) according to a judgement of the European Court of Justice. The other three modes require bilateral prospecting between individual EU member countries and non-members like India[2]. The effects on investment, employment, and incomes are thus poised to exhibit asymmetric country effects within the EU. EU's principle of subsidiarity would cause further distress in proximate communities and regions because solutions require actions by firms and policy makers in sub-national spaces to link with distant cross-border locales for product-services linkages in international business.

EU countries that face the twin burden of demographic shock and small domestic markets have the greatest urgency to increase their international flows of goods and services. Finland is the first EU-member State to undergo demographic transition and dependency ratios in more than half of its local communities are beyond sustainable levels in 2007. The stressed sub-national fiscal transfer mechanisms and highly uncertain returns from commercial exploitations of investments in high-technology and knowledge-intensive business services could push Finland into a downward spiral due to a demand-constrained scenario despite trade surpluses for the time being and a

[2] *The High Level Trade Group (HLTG) mandated by the India-EU summit in New Delhi on 7.9.2005 to launch negotiations for a comprehensive trade and investment agreement that could presumably also cover GATS services has not produced anything implementable, to date.*

2-3 percent growth rate per annum in GDP which is considered good by European standards. Due to the limited size of its domestic economy and sluggishness in markets in its neighbourhood (with the exception of Russia), Finland's high-tech investments can be justified only if leveraged by international flows from afar. The problem is aggravated if Finland's created capacities in technologies are treated akin to a sunk cost that cannot be salvaged due to demand constraints instead of being regarded as productive assets to be developed further. On the supply side, the Employers' Federation of Finland is complaining of skill shortages within the country that co-exist alongside chronic unemployment affecting one in every three educated persons below the age of 35, after over half of the adult labour force over the age of 50 has prematurely has exited the labour market[3].

India is not without its problems either despite being one of the top five countries of the world in economic size (as measured by purchasing power parity dollars) and in its rates of growth. The Indian economy grew by 7 per cent per annum during 2002-2007 and the growth rates of gross domestic product (GDP) accelerated to 9 percent during 2005-07 with services contributing 69 per cent to the GDP growth during 2002-2007. The buoyant demand in India for competitively produced industrial goods and knowledge-intensive services has attracted large investments of foreign direct investment that now exceed portfolio funds flows for the first time. The most important constraint to faster growth in India is infrastructure (roads, railways, ports, airports, communications, and power). The need for creation of new supply capacities for transport infrastructure, energy and environment, machine tools, manufactured

[3] *Disguised unemployment in the form of further and higher education, rotational short term half-yearly jobs to continue drawing average earnings from wage-earner funds for another two years, and an unusually high medical invalidation rate among those above 50 in age to draw early pensions are distrurbing signs in a welfare state that provides free education and healthcare.*

consumer goods, and the development of new technologies in ICT, logistics, energy exploration, mining, aerospace, biotechnologies, nanotechnologies, telematics etc. requires productive investments to develop and use new technologies and scale up to compete as a global manufacturing and services hub in a range of industries in a supply constrained scenario.

The obvious complementarities between Finland and India were an important consideration in undertaking this study.

2. The Research Questions

In twinning paired comparisons such as that of Finland and India, four research questions of interest to business firms and policy makers arise:

Q.1 What is the scope for mutual or global harvesting of income flows from innovations seeded through techno-commercial collaborations between Indian and Finnish firms in the technology services sector after taking competitiveness into consideration?

Q.2 How do enterprises in the two countries take into consideration differences in business laws, institutions, organization structures, public systems, and management processes in reaching out to business opportunities in the other territory and for third country markets?

Q.3 How may we measure the flows of services trade and estimate the potential of bilateral services trade in the 12 categories of GATS services. Which of the GATS entry modes are preferable in the different categories and why?

Q.4 Do policies of the two governments and practices of Finnish firms in India and Indian firms in Finland converge or leave voids in bridging institutional differences for structuring business investments abroad ?

This paper provides a preview of some preliminary findings from the larger study that addresses all four questions (Mathur, 2007, forthcoming).

3. The Paradox of Competitiveness and Collaborations

Competitive business circumstances in the world enable players to configure value constellations in numerous alternative ways. An evaluation of the competitive position of existing and potential services businesses requires judgements about the capacities of societies as a whole, because relative competitiveness of nations changes over time.

An intriguing part of the Finnish puzzle is that contrary to competitiveness perception surveys portraying Finland as the most competitive nation in the world, and corruption perception surveys regularly highlighting it as the least corrupt, the net annual inflows of private foreign direct investment into Finland reveal a declining trend according to the Bank of Finland (Suomen Pankki) annual reports since 1995, despite inflows from sales of marketable stock of existing businesses by Finnish firms.

Regions cannot prosper without business growth but businesses thrive bypassing regions. Research into the predicament of Finland's local communities has pointed to the need for restructuring and consolidation of communities at risk, but also that such restructuring, while necessary, would not be sufficient without addressing the internationalization imperative (Mathur, Ryynänen and Nystedt, 2003). The paradox

is that perceptions of Finland being the most competitive nation have not raised foreign investments in Finland, while incentives to globally compete abroad backed by public subsidies have reinforced pride and created a norm among Finnish firms of 'bowling alone' trying to compete, seeking cooperation rather than collaboration[4].

The dearth of collaborations is threefold: between firms and communities at home in Finland, between Finnish firms and foreign firms abroad, and between Finnish firms and communities abroad.

The Finnish welfare state modulates consumption of wealth generated by economic activities. Discussions about the future of the welfare state with an ageing population and the impending demographic shock 2007-2015 have tended to be inward-looking towards creation of jobs in non-traded services for the care of the infirm and the elderly, or in work such as taxi-driving, truck and van driving, kiosk-catering, cleaning services, data-entry, call centres, automation of business and consumer services such as banking and insurance, services for the enjoyment of the arts and aesthetics for the affluent retired, tourism, and coordination services jobs in public healthcare and education. Yet, Finland will import goods (and some services) from abroad which requires attention to collaborative services and foreign direct investments abroad to maintain healthy balance of payments for the future.

Finland's direction of trade has shifted away from Germany, traditionally its biggest trading partner, but the success in geographically diversifying its non-EU trade was modest and achieved at the cost of burgeoning adverse trade imbalances in goods

[4] *The word 'collaborate' reflecting a joint endeavour with a commonly agreed primary task is not much used in the context of international working in Finland. Finns usually speak of 'co-operation' by which it is meant that two parties could agree to singly perform their respective tasks in a coordinated manner to benefit from exchanges made possible by such coordination.*

trade with U.S.A. and China. India's direction of trade has shifted away from Europe towards U.S.A., China, U.A.E. and the Middle East, and East Asia. These developments make it both necessary and worthwhile to analyse the potential synergies between Finland and India in a historical context loaded with many years of mutual disinterest.

Finland and India can be contrasted on four dimensions viz, demographic and economic size, external trade and investment dependency, socio-economic development and per capita income. As a small open economy, Finland adopts export-oriented economic policies that aim to sustain a high proportion of Trade to Gross Domestic Product (GDP) ratio, while preserving the relatively high and egalitarian guaranteed minimum consumption standards of its small population of about five million people. India, with a population of more than a billion people, and extreme social and economic disparities adopts policies that aim to sustain high growth under conditions of economic dualism with unmet development needs for about a quarter of its population below the poverty line. India aims at a healthy trade balance, trade diversification and accelerated infrastructural development. Investments required for infrastructural development during 2007-2012 have been estimated to be € 267 billion and of these 60 percent are being funded by the Government of India.

The sectoral distribution of income and employment of India in 2007 is comparable to the sectoral distribution of Finland in the 1960s. The path taken by Finland resulted in a ten-fold real GDP increase associated with sectoral shares rising to 30 per cent of GDP in manufacturing and to over 65 per cent in services. Manufacturing industries of Finland were the engine of growth and industrial production grew 50 per cent faster than

aggregate output until the end of the 1980s. This is no longer happening in Finland and after recovery from the recession of the 1990s high hopes have been placed on leveraging knowledge-intensive business services in overseas markets.

In India, in a supply-constrained scenario, manufacturing industries continue growing at a rapid pace with high profitability in a large and growing domestic market. It is pertinent to note that less than 5 percent of Indian manufacturing output is targeted to export markets although about 70 percent of India's exports in volume and value are manufactured goods. Six core industries-electricity, coal, steel, crude oil and petroleum refining are all growing at more than 8 per cent per annum (Economic Survey, 2006-07). Manufacturing Industries as a whole and services are projected to continue growing at double digit rates between 10 per cent and 11 per cent per annum during 2007-2012 according to Approach Paper of India's XIth five year plan.

The difference between India and Finland is in the model of growth too. The development and industrialisation process is being telescoped in India over the seventy year period 1950-2020. In pursuing self-reliance to the point of mistaking self-reliance with self-sufficiency, industrialisation of the Indian economy covers a wide range of industry with a presence in every sector. The new economic policies introduced since 1991 involved significant departures from protectionism. Yet, India did not abandon public planning for development of infrastructure, energy, transportation, telecom, and urbanisation. Significant public outlays from national finances are annually allocated for investments in these sectors. This demand translates into investment opportunities and acts like a magnet for foreign investment flows. Since 1991, business opportunities have

been open to the domestic and foreign private sector except in a few defence and strategic sectors.

Finnish models of industrial structures and markets are typically constructed (by policy makers, firms and researchers) on the assumption of vertical clustering with assured linkage effects (that occur with a lag) engineered through subsidies and linkage incentives brokered between the clusters through Finnish banks and para-statal funding institutions. In such a model, there is a high dependence on hand-holding by the state and its para-statal agencies. Paradoxically, pioneering technologies often fail to be exploited because of this since the wait for market signals can be long and uncertain when neither an enterprise waiting for signals from its government nor the officialdom trying to read signals over long geographical and mental distances may know how, when and where to leverage harvestable innovations. For instance, radio-isotopical research was commercialised by Wallac in 1950 but X-Ray apparatuses using the same technology developed only in the 1960s and the first X-Ray apparatus was exported to India in 1997! Another example: Investments in telecom technologies between 1950 and 1980 could be reaped only after bundling all the public investments and proprietary technologies of Televa and Salora and others into the flagship, Nokia in the 1980s invoking a 1939-law that placed restrictions on Ericsson and Siemens in Finland and protected Nokia from international competition until 1994[5] (Ahonen, 1995).

The experience of developed economies in post-industrial societies suggests that while the Porter model of transition from factor-driven to investment-driven to innovation-

[5] *This breathed new life into Nokia when it had no profitable businesses left in its portfolio having sold all major divisions, one by one, during the 1980s in a decade of decline that culminated with its then Chief Executive committing suicide by jumping out of his office window.*

driven to wealth driven portrays the first phase of the transition to a post-industrial society accurately, it is usually punctuated and transformed through a changed pattern of investments in knowledge where knowledge pushes the economy into another cycle of factor-driven investments when knowledge itself becomes a factor. The experience of developing economies like China, Brazil, and India indicates that it is not necessary for a whole economy to become wealth-driven before knowledge intensive investments re-drive a new factor-driven phase (Porter had not considered these countries in his analysis). It is unclear from our state of knowledge whether this occurs because inefficient firms are crowded out, or simply because knowledge investments and their diffusion have become more ubiquitous and linkable due to telematics. Indeed, the persisting unemployment in Finland is partly the result of an insufficient number of competitive firms, with technologists and accountants in abundance and a paucity of management know-how. Technology and Knowledge investments in Finland are difficult to justify from private and social rates of return on these investments. The size of accessible markets, modes of entry, pace of implementation, and managerial productivity have emerged as important factors.

The success of Finnish firms has been built on technological excellence combined with risk aversion and risk syndication in business-to-business deals in niche spectra of industrial products in forestry, metals, energy and techno-electronics including telecom. The small size of the economy resulted in high degrees of concentration in consumer markets with few entrenched players and little incentive to develop international brands.

The success of Indian firms, initially in insular and protected markets under the licensing system, is based on access to a large and growing domestic consumer market and

exports. There is fierce competition among brands and in industrial products. In the historically sheltered industrial product market in India, open to domestic and foreign competition since 1991, enterprise profitability corresponded to development and diffusion of technologies for identified segments of growth sectors in national plans. Further, it was based on investments made for a very wide range of industrial goods and intermediate inputs that sustain consumer products' manufacturing. Limits to technology development and diffusion translated into severe capital and capacity constraints, inhibiting infrastructure development. The enormity of the development agenda, the size of market and the urgent need for technology diffusion and development are closely related.With imports growing faster than exports, India's external balance could make a negative contribution to GDP growth in future years unless exports diversify and returns on outwards foreign direct investment return to India as factor incomes. Another worrisome feature is the decline in organised sector employment in India during the period 1994-2004 which can only be stimulated through services where the employment elasticities with respect to rates of growth are higher than in manufacturing.

Thus, resource bases and opportunity horizons in the two countries differ in stark contrast to the point of potential complementarity. The practise(s) of business and the conceptualization of practices can lead to the establishment of existing traditions as norm or their canonization in doctrinaire forms without space for exploring other promising paths of the possible by removing impediments in the way of policies and practices needed to succeed in crossing into new horizons. Project modalities with soft targets are the *sine qua non* of Finnish internationalization based on advocacy of gradual "incrementalism" in which Finnish firms first delay entry and the entry costs are afforded mainly by large and medium firms able to sustain higher costs of such

gradual incrementalism in what they perceive to be high risk environments. Finnish managers have been slow to grasp that successful firms have to get more out of their entire organization comprising all stakeholders, and in arenas of contestation with institutional contexts different from their own.

The challenges for Indian firms seeking business opportunities in Finland arise from the peculiarity that enterprises in India are able to participate in the world-wide boom in services within the domestic economy. India has became a procurement zone for services enabled by telematic connectivity and a competitive locale for structuring value-adding hubs where products and services can be bundled together not only for the domestic market but also for foreign investors, buyers, and market-making intermediaries. Paradoxically, although incentives for doing business abroad, for instance in Finland, have increased, initiatives are seldom taken by Indian firms, with the notable exception of IT firms. Large Indian industrial houses have mainly looked to countries other than Finland, including to neighbouring Sweden, Denmark, Norway and the Baltics. If the decision not to consider doing business in Finland were the logical outcome of informed evaluations or market forces unhindered by the dynamics of asymmetric information, this study would not be needed. Paradoxically, it is precisely because Indian firms seldom prospect synergies with potential partners in Finland and vice versa that makes it interesting and worthwhile to find out what is being missed.

4. Research Methodologies

An explicit objective of this research study is to continuously disseminate its ongoing findings from results through workshops, seminars and publications among partners

and actors involved with the research, and all stakeholders including the scientific community, business, governments, and society. This paper therefore raises more questions and working hypotheses than conclusions of certitude.

In the first phase, a baseline study of Finland-India trade was completed by extracting complete data for all SITC codes down to 8-digit disaggregation from the databases of the Centre for Monitoring Indian Economy (CMIE) and the Directorate General of Commercial Intelligence and Statistics (DGCIS) for the period 1999-2006. Action research methodologies were used and 'listening posts' convened in Finland and India to share the results of the baseline study to which representatives of business, governments and academia alongside consumers and potential investors were invited to listen to their hopes, wishes, concerns and anxieties expressed.

Concurrently, case studies were researched at enterprise level in the SITC Code 84 that emerges as the most promising category of mutual interest to Finland and India. Among others, a Finnish company based in Lahti that faced an internationalisation imperative and had to choose between China and India was researched as a case study (Joutsimäki and Mathur, 2007, forthcoming) to raise more hypotheses about cost-benefit ratios in Finland's global harvesting of income flows of locally seeded innovations through global techno-commercial exploitation through collaborations in India in the technology services sector. These inquiries were supplemented through questionnaires, checklists and interviews in both countries to understand trade patterns during 1999-2006 in respect of :

(a) Goods that comprise the largest share in exports of Finland to India and India to Finland at 2-digit, 4-digit and 8-digit levels of disaggregation.

(b) Goods with high rates of growth in imports by Finland and India from each other by identifying such goods with the highest inter-temporal increases in the preceding three years (2003-2006) at 4-digit and 8-digit levels of disaggregation.

(c) Goods that comprise the largest shares in the import basket of either country regardless of origin.

(d) Goods imported by Finland which feature in India's exports to the EU, but not to Finland and goods exported by EU to India that feature in Finland's exports but not to India.

A modified version of the Revealed Comparative Advantage (RCA) methodology based on the Balassa Index was initially evolved for undertaking paired country comparisons for trade in goods in 1993 in the context of researching foreign presence of companies from Belgium and India (Veuglers and Mathur, 1993). The methodology was developed further in the context of paired twinning comparisons of trade and investment potential for other countries (Mathur, 1998; Mathur, 2002).

In order to verify whether Finland has a comparative advantage in a sector, a Revealed Comparative Advantage Index (RCAfj) has been conceptualised at the 4-digit and 8-digit level of disaggregation using data for the years 1999-2006 sourced from the Directorate of Commercial Intelligence and Statistics of the Ministry of Commerce, Government of India and cross-checked against data from four other sources, Centre for Monitoring Indian Economy (CMIE), Statistical Centre of Finland, EUROSTAT database of the EU and the Direction of Trade Statistics

published by the International Monetary Fund. The Revealed Comparative Index was conceptualised as follows:

$$RCAfj = \frac{Xfj/Xf}{Xfji/Xeuji}$$

where,

Xfj = Exports of Finland in sector j
Xf = Total Exports of Finland

The numerator, by definition cannot exceed 1

Xfji = Exports of Finland to India in sector j
Xeuji = Total exports of EU to India in sector j

The denominator, by construction, cannot exceed 1

When RCAfj is found to be larger than 1, the Finnish export share of the Indian market for this industry or sector at the appropriate level of disaggregation may be regarded exceptional compared to the expected export share of Finland, which implies that Finland has some unexploited advantage in this industry. Where Xfji= 0 or indeterminate, the item is retained. Items exported to third countries by both countries (for example, gas cylinders for liquified gases, elisa kits etc) have also been taken into consideration for investment analysis. The study does not rely on RCAs alone because RCAs of the above form are useful only for trade in goods. Even in trade of goods, a serious limitation of RCAs is that they can get distorted by intra-firm arrangements involving transfer pricing and inter-firm non-compete contracts, and inter-firm joint product developments and would make more sense if analysed alongside services. This is especially the case after 2005 when GATS services trade liberalisation is triggering trade-substituting investments for innovations in products,

processes, technologies and knowledge-intensive product-services linkages in cross-border value chains.

A preliminary list of knowledge and technology intensive services structurable in Finland or India as trade-substituting investments for mutual trade or for third countries has been prepared for a more detailed investigation in progress.The services trade in the identified areas already occurring cannot be known without another kind of analysis involving income flows.

In services trade, there is nothing visible that crosses borders with a commodity description or a customs tag, and activities in Modes 2, 3 and 4 occur within national jurisdictions. Since only factor incomes flow abroad, it is necessary to use the International Monetary Fund's Extended Balance of Payments System to obtain a measure of flows by including foreign affiliates' trade in services at a subsequent stage. Once actual flows of services are known, a revealed comparative advantage index for services would be designed. For 12 WTO categories of GATS services and the 4 modes of delivery for each, a 12 x 4 matrix for Finland's services trade with India, and India's services trade with Finland will be depicted. A typology would then be constructed in the next phase of this research project based on an analysis of patterns associated with products, services and technologies which reveal how firms respond to diverse institutions, product markets, labour markets, capital markets. Since no known methodology for this previously existed, this problematique of services flows measurment in the context of GATS entry modes between India and the EU was first researched to develop a new methodology. This has been done and the methodology was

presented as a refereed paper at the ANZIBA 2006 international conference in Wellington, New Zealand in November 2006 (Mathur, 2006).

At the time of writing, acquisition of data from Indian databases and its basic analysis, design of 'listening posts' and implementation of action research methodologies through workshops and listening posts in Oulu, Ahmedabad, Hyderabad, Mumbai, Chennai and New Delhi have been convened and a second round of listening posts in India (in Bangalore and Kolkata) and more listening posts in Finland (Helsinki, Tampere and Lahti) are on the anvil. First results from the inter-cultural insights acquired from listening posts have been analysed and presented in other publications (Joutsimäki and Mathur, 2006; Mathur and Joutsimäki, 2007).

5. Finland-India Trade

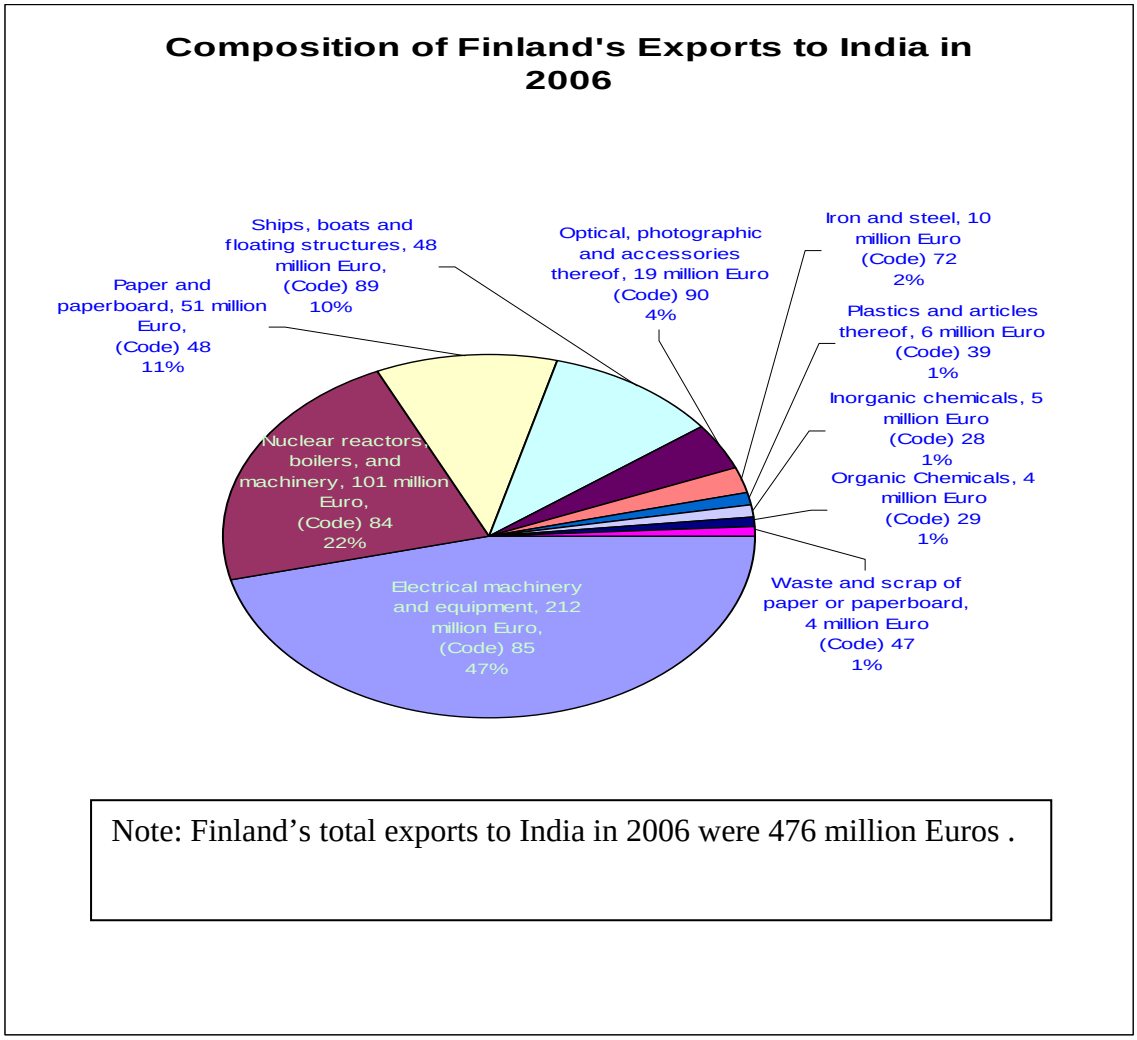
In the trade between Finland and India, Indian exports stagnated in real value and volumes and failed to diversify for the fifty years between 1947 and 1997. Finnish exports also remained modest and the trade balance is in Finland's favour. During the period 1999-2006, Finnish exports to India trebled and India's exports to Finland doubled in real value. Finnish exports to India grew to three times the size of India's exports to Finland, increasing the trade gap (see Figure 1).

Figure 1 Finland India Trade in 1999-2006

Source: CMIE database (All values are in million Euros)

The composition of Finnish exports to India and Indian exports to Finland at 2-digit level of the SITC classification are presented in Figures 2 and 3 respectively. An overwhelmingly large proportion of Finnish exports to India (about three-quarters) consists of electrical machinery, pressure vessel parts, paper and paper board, marine vessels and floating structures, optical and photographic equipment and accessories. India also imports some iron and steel products, synthetic dyes, pigments and plastics from Finland.

Figure 2 Composition of Finland's Exports to India in 2006

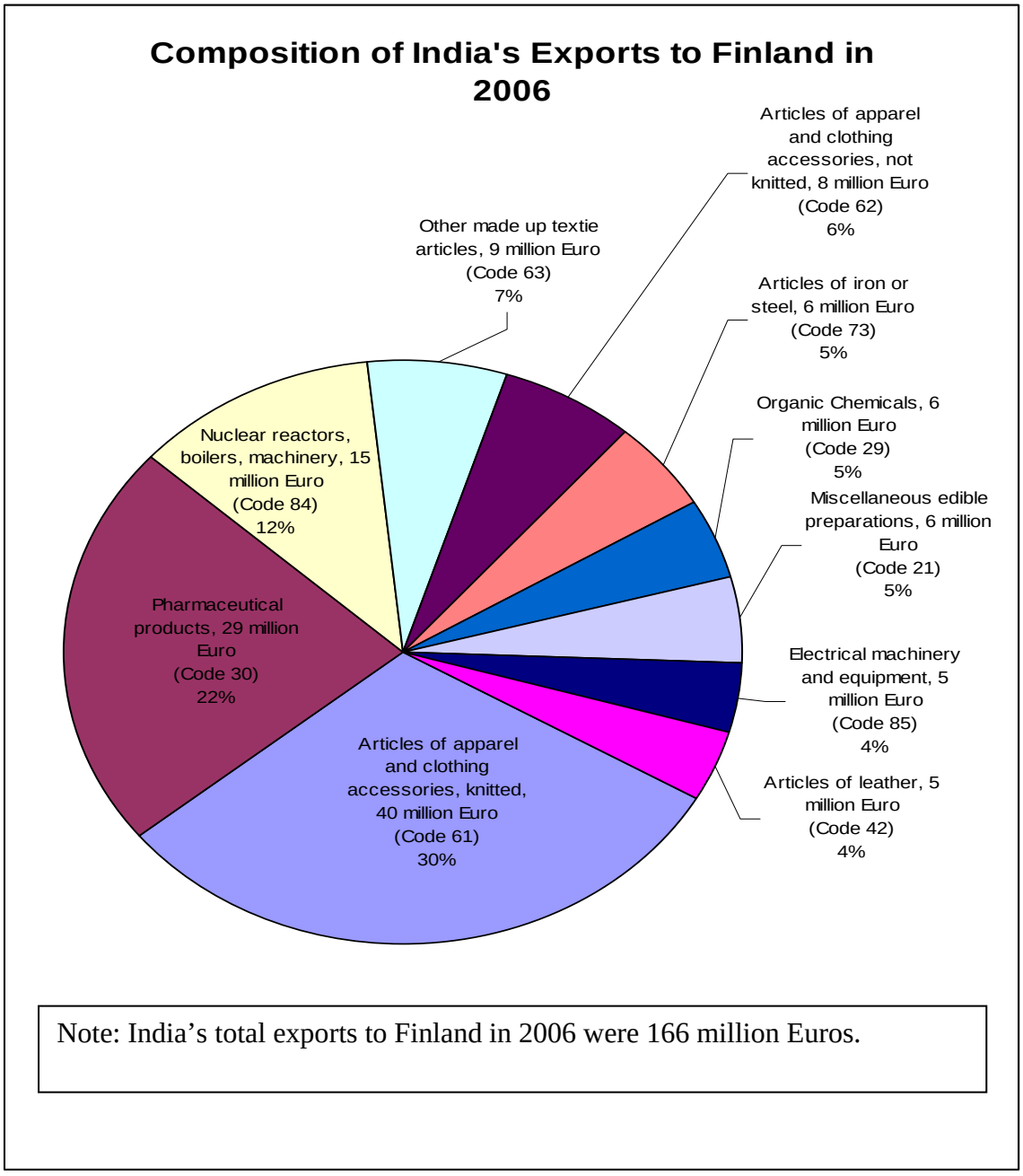


Note: Finland's total exports to India in 2006 were 476 million Euros .

Source: CMIE data base (All values are in million Euros)

India's exports to Finland at 2-digit level mainly consist of textiles and clothing, pharmaceuticals, machinery, edible preparations and chemicals (see Figure 3).

Figure 3 Composition of India's Exports to Finland in 2006



Source: CMIE database (All values are in million Euros)

The value of trade in goods between Finland and India compares poorly to the magnitude of trade of these countries with other partners. Neither Finland nor India has the other country among its top thirtyfive trading partners. Finland accounts for

0.2 per cent of India's worldwide exports and 0.4 per cent of its worldwide imports. India accounts for 0.25 per cent of Finland's worldwide imports and 0.44 percent of its worlwide exports. In the aggregate, the level of trade has not reached a threshold where either country could regard the other as an important source or destination country based on the current strength of economic ties.

An in-depth disaggregated analysis was further undertaken at 4-digit levels and 8-digit levels to look for items and trends that could be missed by limiting the disaggregated analysis only to those products that get highlighted at the 2-digit level of analysis. It is pertinent to note that in Finland's case, more than 90 percent of trade gets covered from disaggregation of the most important 2-digit level codes but less than 70 percent of Indian exports to Finland can be tracked in a similar manner. In both cases, for Finnish trade-substituting investments and for Indian trade-substituting collaborations, some of the most attractive and fast growing synergies and opportunities were discovered only from multi-level analysis taking into consideration much more than trends and Revealed Comparative Advantage. The results from the 4-digit analysis are presented in Annexures I to VIII of this paper and product-services linkages that can arise between Finland and India from the 8-digit analysis are comprehensively analysed and presented in greater detail in another publication (Mathur, 2007, forthcoming).

6. Missed Opportunities in Finland-India Trade in Goods

The exports potential from Finland to India is detailed in Annexure I at the 4-digit level of disaggregation. The items listed here are common to Finland's exports to the world and to India's imports list. The actualised potential based on analysis of the

disaggregated databases underlying Figure 2 for the high value items is detailed in Annexure II. The completely missed opportunities in Finnish exports to India are identified in Table 1 below as the Red List[6]:

Table 1 The Red List of Finnish Exportables to India: Missed Opportunities

Code	Items
2710	*Oils obtained from bituminous minerals, other than crude; preparations not elsewhere specified or included, containing by weight 70% or more of petroleum oils.*
2905	*Acyclic alcohols and their halogenated, sulphonated, nitrated or nitrosated derivatives.*
7108	*Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form.*
7210	*Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, clad, plated or coated*
7403	*Refined copper and copper alloys, unwrought*
7901	*Unwrought zinc.*
8429	*Self-propelled bulldozers, angle dozers, graders, levelers, scrapers, mechanical shovels, excavators, shovel loaders, tamping machines and road rollers.*
8703	*Station wagons and propelled carts*
8802	*Helicopters, spacecraft launch vehicles*

India's exportables to Finland are detailed in Annexure III at the 4-digit level of disaggregation. The items listed here are common to India's exports to the world that feature on Finland's imports list. The actualised potential based on analysis of the disaggregated databases underlying Figure 3 is detailed in Annexure IV and Annexure V. Indian exportables to Finland are identified in Table 2 below as a subset of Annexure III excluding the actualised exports in Annexure V, and highlighting in bold those that India already exports to the European Union and which Finland

[6] Note that Table 1 only lists the completely missed opportunities in Finland's exports to India. On RCA considerations, there is considerable scope to do more business in presently exported items listed in Annexure II also.

imports from countries other than India as completely missed opportunities in Table 2 below as the Blue List[7]:

Table 2 The Blue List of Indian Exportables to Finland: Missed Opportunities

Code	Code Name
2601	**Iron ores and concentrates, including roasted iron pyrites**
3926	Ion-exchange resins
7225	**Flat-rolled products of other alloy steel, of a width of 600 mm or more.**
7601	Unwrought aluminum
8701	Tractors excluding fork lift trucks.
8704	Motor vehicles for the transport of goods.

The gap between Annexure VI (High Value Indian imports from EU from among Finnish exportables) and Annexure VII (the subset of Finland's actualised exports to India) gives us those items that India imports from the EU other than Finland and which are already Finnish exports to countries other than India. These are highlighted in Table 3 below as a grey area of missed opportunities in the Grey List[8]:

Table 3 The Grey List of Missed Opportunities in Finnish Exports to India

Code	Item
2905	Certain Acyclic alcohols and their halogenated, sulphonated, nitrated or nitrosated derivatives.
2907	Phenols; phenol-alcohols.
3004	Coated impregnated dressings for therapeutic or prophylactic uses.
7210	Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, clad, plated or coated
8802	Helicopters, spacecraft launch vehicles

These three lists-the red list, the blue list and the grey list used to be much longer and have been shrinking since 1999. Small quantities of certain items have been exported

[7] Note that Table 2 lists only the opportunities completely missed in India's exports to Finland. On RCA considerations, there could be considerable scope to do more business in presently exported items listed in Annexure V separately.
[8] There is no way of knowing the extent to which trade diversion and brokered intermediation from actors in other EU countries such as UK or Germany may be responsible for the absence of direct Finnish exports to India in this list since intra-EU movements are no longer monitored in the EU customs union.

from India to Finland and Finland to India by traders based on information about profitably tradable goods made available and downloadable freely on the web by the previous study (Mathur, 1998) and also in intra-firm trade by large players. Many 4-digit categories have vanished not because the gaps have been filled by trade saturation but because some small trades were successfully carried out from both sides at 8-digit level which eliminate the corresponding 4-digit categories! There is a lot of this noticeable in DGCIS data for the year ended March 2006 which made it necessary to prune the CMIE lists obtained from annexures. This makes it difficult to know the hot spots without going deeper into the analysis at 8-digit level to examine whether the small trades are evidence of new path breaking forays that are happening or merely the proverbial single swallows that don't make a summer.

Although the detailed analysis is available elsewhere (Mathur, 2007), let me mention a few of the most attractive trade items that are particularly noteworthy for Finnish Exports to India and Indian Exports to Finland and they have implications also for new trade-substituting investment opportunities discussed in the following section.

6.1 Potential Finnish Exports to India (2007-2017)

The demand for Finnish branded consumer products in food and beverages has arisen in India with rapidly growing sales of Finnish crisp bread, chocolates, cheese, confectionaries, wines, vodka, enzyme preparations and animal feeds and the supply side for these can be expanded. Consumer durables like glassware and intermediaries like belt buckles, machines for working glass, rare earth metals Scandium, Yttrium, Mercury, Cobalt, Tungsten have been exported from Finland to India in small quantities and these and other radioactive minerals could increase trade volumes

considerably. The Finnish Chemical Industry has been exporting colours, dyes and pigments for white paint like Titanium Dioxide and also a wide range of inorganic chemicals. Small quantities of pharmaceutical products and intermediate formulations, and growing volumes of LDPE polyethylene and cellulose derivatives belong to the promising items. Tableware, kitchenware, hot and cold taps, toilet articles, floor coverings, bovine hides and skins, pinewood, special purpose tyres, casks, barrels, tubs, vats, pressure containers for compressed gases, glass chimneys, and steel structurals for the construction industry, rudders for boats and ships, threaded nuts and washers, padlocks, rockdrills, industrial scissors and blades, handtools used by artisans, mechanics and semi-skilled labour in plumbing, carpentry, electrical works, masonry are among the new items in the Finnish export basket to India.

The most noticeable changes have occurred in Category 48 (Paper and Paperboard) and Category 84 (Boilers, Pistons, Pumps and Engines). New export items in Category 48 (such as electro-sensitive paper, vellum and parchment papers, braille paper) bear testimony to the growing sophistication of the Indian market to need new sub-categories never previously exported from Finland to India. In Category 84, machine tools, punching, shearing and turret machines, industrial burners, gas generators, piston engines, marine propulsion engines, outboard motors, aircraft engine parts, piston rings, gas turbine parts, high pressure hydraulic pumps for gases and liquids, industrial fans, heat exchange units, centrifuges for chemical industry, hoists, pulleys and tackles, boring machinery, cranes, paper machinery, glass machinery, gears and shafts, electric inverters, machinery for power generation, transmission and distribution, arc welding machines, soil heaters, telephony and

telegraphy equipment, signalling and traffic control equipment, photo-sensitive transistors audio-visual equipment for the film industry, and security surveillance equipment including inobtrusive metal detectors, optical instruments, geophysical instruments, metereological instruments, thermometers, flowmeters, spectrometers and spectrophotometers, medical, dental, veterinary furniture and barbers' chairs, prefabricated buildings and furniture are the most promising items that indicate large and rapidly growing volumes to be expected over the next decade. Metal scrap (from Copper, Zinc, Aluminium, Iron) and wastes that cannot economically be reprocessed in Finland also exhibit high annual growth rates of exports to India.

6.2 Potential Indian Exports to Finland (2007-2017)

With non-tariff barriers such as phytosanitary barriers getting removed due to initiatives at WTO, a wide range of products such as flower buds, cut flowers, bouquets, foliage, ornamental fish, preserved vegetables, dried vegetables, dried onion powder, pepper, spices like cardamom, cinnamon, nutmeg (that Finland imports from England and the Caribean), coconuts, cashew nuts, walnuts, dates, figs, pineapples, avocados, guavas, mangoes, bananas, oranges, papaya and fruit pulp could be exported in large volumes. This would be constrained only by the oligopsonistic nature of the Finnish consumer market which is dominated by three players, Stockmann, the S-Group and the K-Group.

Traditional Indian exports like tea, coffee, basmati rice, textiles and clothing, and pharmaceutical products may also grow in volume and value but their scope to grow is limited due to the size of the Finnish domestic market unless the importers in Finland and exporters from India target the whole of Nordic Europe, the Baltics and

Germany through Finland. There could be logistical advantages in doing so for the new items mentioned in the preceding paragraph and for these traditional items. This aspect requires more detailed studies specific to businesses at enterprise level, keeping in mind the advantages that are available to firms in Finland.

In textiles and clothing, Indian exports to Finland that have high potential on the basis of past trends, and growth rates of recent years, include mulberry raw silk, silk embroidery threads, woven silk and wool fabrics, cotton grey yarns, cotton shirtings, cotton fabrics, bed linen, furnishing fabrics, handloom fabrics, dyed woven cotton fabrics, denim, coir mattresses, textured polyester yarns, dyed parachute fabrics, polyester and mixed fabrics, spun yarn, cotton twine, carpets of sik, wool, laminated fabrics, rugs (of kelem, schmks, karamanie and smlr varieties), druggets, cotton corduroy pieces, velvet fabrics, quilted wadding, duvets, overcoats, anoraks, cloaks, ski-jackets, readymade garments (trousers, shorts,bibs,suits, jackets, blazers, ensembles, dresses, skirts, kurtas, kurtis, blouses, innerwear, bathrobes, T-shirts, jerseys, pullovers, cardigans, sweaters, tracksuits, swimwear, hosiery, shawls, raincoats, umbrellas, handkerchiefs, scarves, caps, ties and cravats, curtain fabrics, pillowcases, napkins, mosquito nets, cushion covers, and footwear.

Small quantities of certain items have been newly exported from India to Finland by traders and in inter-firm trade. Some of these that have high potential to grow to large volumes include: olegnus fruits and oil seeds, camphor oil, mustard oil, garlic oil, spices oil, clove oil, plant extracts used in perfumes and cosmetics, hairdyes, xanthium gums and oleoresins (fennugreek, turmeric, celery, nutmeg, clove, capsicum), belladona extracts used in medicated dressings, pasta, jams, jelly,

marmalades, edible preparations from fruits and nuts, sauces and condiments, bentonite clays, heat-treated emery, garnets, granites and building stones, mica flakes, titanium ores and concentrates, unprocessed ilmenite, chemicals such as manganese sulphate, cyclic hydrocarbons like toulene, nitrogenated hydrocarbons, menthol, benzyl alcohol, methyl and ethyl ketones, ketone alcohols and ketone aldehydes, phosphoric esters, amino sulphonic anilines, and folic acid and pigments such as reactive blues, vat yellows, acid browns, solvent orange, solvent reds, azoic blacks, optical whiteners and printing inks.

Pharmaceutical products such as penicillins, ampicillins, amoxycillines, erythromycins, cephalexins, streptomycins, cefoxitins, cephalosporins, ofloxacins, macrolides, corticosteroid hormones, cefadroxil, diloxanide furoates, cimetidines, famotidines, liver extracts, ayurvedic medicines (more than 80 tonnes in 2006), menthol crystals, gonadotrophins, luteinising hormones, antifungal, antiamoebic, antihelminitic and antiprotozoal drugs, omeprazole, lansoprazole, analgin, paracetamol, ibuprofen, tenoxicam, meloxicam, captopril, enalapril, lisinopril, perindopril, ramipril, verapamil, nifedipine, amlodipine, lacidipine, bandage gauzes, surgical dressings, dental cements and filings, dentrifices are traditional Indian exports to Finland that indicate such high growth rates that it seems likely that these exports are intended for EU markets other than Finland also.

Unconventional items that have an export potential from India to Finland include toys, candles, cinefilm, fungicides, mosquito repellants, textile reagents, paint solvents and thinners, prepared culture media for microorganisms, laboratory diagnostic reagents, ethylene, propylene and styrene polymers, urea resins, silicons,

rubber and plastic tubes, pipes and hoses, linoxyn floor coverings, vinyl chloride bags, cassette tapes and floppy disks (blank and music), plastic tableware and kitchenware, gloves and mittens of different types and for various uses ranging from housecleaning, gardening, industrial uses to surgery in hospitals; radial summer tyres for cars, bicycle inner tubes, rubber contraceptives, surgical drapes, leather and skins of goat, sheep, lamb, harness and saddlery for horses and dog-coats, bags of leather including travel bags, purses, wallets, vanity cases and satchels, jute bags, other articles of jute and coir, jewellery boxes, belts and bandoliers, clothes hangers, mosquito nets, neem and sandalwood based toothpastes, soaps, creams etc. and neutraceuticals.

It is remarkable that even in Category 48 (Paper, Paperboard and Printing) , traditionally a well established Finnish export goods category, there are certain specific niches where India exports to Finland and these exports are likely to increase. These are: handmade paper for gift-wrapping, letter-writing, and other uses; duplicator stencils, envelopes and other paper stationery, corrugated paper and paperboard boxes, paper bags and paper board sacks, accounts book registers, paper tags, bobbin spools used in paper plants, wrapping paper, decorative laminates, greeting cards, printed wall and desk calendars, diaries and pocket calendars, and printed posters.

Gems and Jewellery are among India's strong export sectors worldwide. Exports to Finland indicate a trend towards increased flow of diamonds, topaz, aquamarines and jewellery. It is remarkable that some of the so-called 'Kalevala collection' of Finnish

gold, silver and bronze jewellery that Finns buy in Finland out of patriotic reasons and cultural heritage is actually made in India.

The market in Finland for Indian manufactured products from mechanical, electrical and optical engineering industries is poised to grow during the next ten years as firms in Finland begin to procure more and more of their intermediary requirements outside the EU. The goods of particular interest would be steel plates, sheets and strips, chromium bars and rods; angles, shapes and sections of various alloys of nickel, iron,chromium; electrode quality stainless steel wires, pipes used in oil and gas pipelines, galvanised iron and stainless steel flanges, couplings, elbows, sleeves; fencing wires, wiremeshes, threaded nuts, lifting and hoisting chains, needles, pins, stainless steel utensils, parts for earth-moving equipment, steering and rudder equipment for ships and boats, aluminium sheets and strips, aluminium foils, door and window frames, gas clinders for liquefied cases, pliers, pincers, tweezers, spanners, wrenches, vices, clamps, industrial cutting knives, tungsten carbide tips, hinges, sign plates, marine propulsion turbines, industrial boilers, steam turbines, parts of mechanical appliances, grinding and polishing machines, non-electric braille typewriters, pneumatic tools, industrial valves, ballasts for fluorescent lamps, static convertors, microwave ovens, lamps, sound amplifiers, capacitors and semi-conductor devices, optical fibre cables, insulation fittings, shock absorbers, integrated circuits, motorcycles, bicycles and their parts, contact lenses, spectacle lenses, hydrographic instruments, catheters, syringes, surgical knives, cannulae, pantographs and drawing instruments, X-ray (Roentgen) machines, musical instruments, office furniture, watches, sports equipment like golf clubs, golf balls, footballs, gymnasium and

athletics equipment, sports nets, tennis and badminton rackets, and fishing rods, hooks and tackles.

Industrial production indices indicate that global competitiveness has been achieved by India in generic pharmaceuticals, speciality chemicals, automotive components and textiles. The states of Gujarat, Tamil Nadu and Maharashtra reflect these industries strongly in their industrial profiles. The inflow of foreign investment at the Vibrant Gujarat Summit in a single week in January 2007 was so large that it caused the Government of India to revise its projections of foreign direct investments upwards. It is expected that investments in petrochemicals, gas pipelines, power, port development, marine technologies and development of special economic zones as science parks in Gujarat are benchmarked competitively to international standards.

7. New Opportunities for Finland-India Trade

There are five different kinds of new opportunities in Finland-India Trade:

(a) Completely missed opportunities in goods trade for reasons not clear or simply neglect (the red, blue and grey lists of the previous section)

(b) Goods trade Opportunities relevant to Finnish and Indian markets tested as viable during 1999-2006 and growing but far from saturated.

(c) Trade-substituting investments in goods trade for buyback arrangements that would increase volumes, value and profitability for players involved.

(d) Product-Services Linkages to leverage technology and knowledge intensive investments on a scale that would transform directions of trade for one or both countries for high value items in which trade exists.

(e) Product-Services Linkages to leverage technology and knowledge intensive investments by techno-commercial engineering of new options unrelated to bilateral trade on a scale that would justify collaborations for third country markets.

In Section 6, the first two kinds of opportunities were analysed on the basis of trends, RCAs, demand and supply projections, and insights from 'listening posts'. An intriguing aspect of Indo-Finnish trade that has not so far been discussed is the occurrence of the same or similar items in both lists-the list of Finnish exports to India and that of Indian exports to Finland. At one level, there is nothing unnatural in this because firms in the same line of branded manufactured goods compete for consumers with differentiated products in each other's territories. However, in the case of Finland and India, most of the trade consists of unbranded commodities or industrial goods. Actually, in certain items, the direction of trade is changing. In a preceding section, I discussed the example of X-Ray machines that Wallac began exporting from Finland to India in 1997 as an illustration of late internationalisation. In 2006, X-Ray machines (called Roentgen machines in Finland) were exported from India to Finland and they were not made by Wallac. The window of opportunity to internationally exploit an innovation in a competitive mode is indeed finite and the time span is reducing all the time. This creates incentives for enterprises with pioneering technologies to collaborate for manufacturing in ways that their presence in foreign markets (and in this case in their own domestic market) does not get jeopardised in a world where governments committed to open world trade can no longer erect tariff and non-tariff barriers to keep out competition. The same situation also presents opportunities to create new product services linkages through trade-

substituting investments for mutual markets or of a scale even larger for worldwide markets.

Enterprises exporting manufactured goods (in contrast with those that export commodities sourced on the basis of unique geographical considerations like soil, climate etc.) need to consider whether they would be better off by undertaking trade-substituting investments in the other territory. In many cases, it might make sense to continue exporting on cost and profit considerations whereas in other cases, investments and joint ventures could be the preferred choice. The supply side incentives for scaling up to trade-substituting investments are greater when directions of exports are wide or when the domestic demand is large in volume and value and sensitive to price.

New product-services linkages may be created for trade-substituting investments or for supply-led initiatives in knowledge intensive business services that would affect demand patterns by introducing new products, offering new services, marketing new product-service bundles, and by concentrating on marketing and providing high-value services and not competing on unbranded commodities at all. The last of these cannot be analysed from past trends. It requires foresight and courage to design new initiatives capable of credibly creating new alternatives for decision-makers to accept new supply chains and new ways of doing business.

One of the important enabling ingredients for reconfiguring product-services linkages is GATS-enabled services trade without which many business opportunities would not be possible at all. The development and diffusion of new technologies, new products,

new management processes, new organisational systems and new logistical structures require services before products can be made and delivered and certain services to people's minds and bodies and to things cannot be organised unless they can be delivered in real time. A related aspect is that the same service may be possible, in some but not all cases, to be deliverable in alternative modes of services supply and the efficacy with which its delivery is organised with regard to cost, quality and reliability could make a difference to the design and sustainability of value-chains. The table below indicates the empty white spaces available for the twelve categories of GATS services under the four modes of services supply:

Table 4 THE 'WHITE SPACES' OF GATS ENABLED SERVICES TRADE

	Mode 1 Crossborder Supply (CBS)	Mode 2 Consumption Abroad (CA)	Mode 3 Foreign Commercial Presence (FCP)	Mode 4 Movement of Natural Persons (MNP)
1.Business Services				
2.Communication Services				
3.Construction and Related Engineering Services				
4.Distribution Services				
5.Educational Services				
6.Environmental Services				
7.Financial Services				
8.Health Related and Social Services				
9.Tourism and Travel Related Services				
10.Recreational, Cultural and Sporting Services				
11.Transport Services				
12. Other Services Not Included Elsewhere				

The 'white spaces' can be business-to-business (B2B) services or business-to-consumer (B2C) services or government-to-government services (G2G). The last mentioned is especially important for innovations related to science and technology in fields where the major initiatives are usually from governments supported by public-private patnerships as in healthcare, public hygeine, sanitation, sewerage, waste management, water management and other fields of public systems management. Certain attractive business opportunities related to infrastructure development (highways, ports, airports) in India are only available on a Build-Operate-Transfer(BOT) or Build-Own-Operate (BOO) basis. The capabilities to create and manage services become an important part of such endeavours. There are competitive bids coming up for 35 new airports, 300 million of new cargo handling capacity in deep sea ports and 46,000 kms of highways during 2007-2012. India is adding 5 million new telephone subscribers every month. Also, projects involve participating in global tenders and building capabilities for them[9].

Among items belonging to the list of promising Finnish exports to India in Section 6 (some of which belong to the red list) included tableware, kitchenware, hot and cold taps, toilet articles, floor coverings, special purpose tyres, casks, barrels, tubs, vats, glass chimneys, and steel structurals for the construction industry, rudders for boats and ships, threaded nuts and washers, padlocks, rockdrills, industrial scissors and

[9] When Nokia entered India in 1994, it had the opportunity to create a large footprint in 28 states and 7 union territories. However, it lost all competitive bids for the first two years until it finally won Chennai.

blades. In each of these, a trade-substituting investment involving services (of types 1,3,4,6,7 in Table 4) in India that enables factor incomes to flow back to Finland may be more profitable than manufacturing the item in Finland at a much higher cost and exporting the item to India until the day when the competitive edge of the item in price and quality is completely lost.

Take another example. In the blue list of Indian exportables to Finland, tractors were identified as an item completely missed. Before anyone begins to ship out tractors or even to scout out for customers in Finland for Indian tractors, it would be necessary to do homework related to operational regulations in Finland for tractors, whether the idle capacity of tractor manufacturing in Finland has any next best use or would continue to compete with imports on the back of domestic subsidies, and the possibility of entering the EU single market through a sales and dsitribution agency capable of locating prospective customers beyond Finland. Each of these activities would cut across services (of types 1,4,6,11 in Table 4) to be performed before the first tractor is exported or a trade-substituting investment activated.

A third kind of example would be 'pressure containers for compressed gases' that feature in both lists-Finland to India and India to Finland. If skills are available at both ends and needed to be shared, the item could be made with the better of the two technologies in a socio-technical system that makes techno-commercial sense. Such an item points to the opportunity for collaboration at enterprise level.

This FIER research study goes into details at 8-digit level of disaggregation in relation to services in the matrix of Table 4 to explore which kinds of product-services

linkages could radically transform the shape of Finland-India Economic Relations over the next decade (Mathur, 2007).

8. Finnish priorities: too few or too many?

Finland invests about 3.5 percent of its GDP in research and development. This is mostly technology seeding and it calls for aggressive international harvesting. Does Finland have too few priorities being actioned in India or too many? From Finland's absence in many arenas of action in India such as infrastructure development, creative services, healthcare, and education, it would seem that there are too few priorities with much left outside its radar. Yet, from the way business delegations go around in India, be it Finpro Chief casually inviting Bollywood to film in Lapland (for the nth time with little result to show for it), or Finnfund Chief urging Pune to be declared as a twin city of Tampere (with zero incremental investment in either direction to show for it after two years of such bonhomie and considerable reception fatigue at the local chamber of commerce in Pune that graciously hosted several delegations), it also appears that there are too many actors tripping over each other and chasing too many priorities.

The declared sectors of Finnish interest in India are telecom, electronics, IT-enabled services, offshoring and outsourcing, infrastructure and logistics (business from new roads, ports and airports), food processing in mega food parks, a Nokia park for its flagship company, medical devices, environmental technologies and carbon credits, forestry, paper machinery, construction and project goods.

Since 2005, there has been much drumming up of interest about India in Finland by Finnish parastatals like SITRA (Finnish National Fund for Research and Development), FINNFUND (Finnish Fund for Industrial Cooperation Limited) and also by Finland's export promotion agency, FINPRO, in India. From the periodic reports released about Finland and India, it would seem as if a lot has happened or is happening and that there are many Finnish and Indian firms functioning in the two countries.The frequency of contact and travel between the two countries has increased since Autumn 2006 with introduction of direct flights by Finnair between India and Finland for the first time.

According to the Finland-India Business Guide, there were more than 50 Finnish firms present in India in 2005 "*through subsidiaries or joint ventures with local companies*" and that "*about a hundred Finnish firms export to India or operate on the market through local representatives*" (Embassy of Finland, 2006, p.43). The Finland-India Business Guide names 40 Finnish Companies in India, of which some, like ABB (of Sweden), Andritz (of Austria), Ahlström Asia Pte. Ltd (China), Perkin Elmer Inc. (U.S.A.) and GE are not Finnish companies[10]. The revised count of Finnish companies in India having subsidiaries or joint ventures or branches based on verification of this Finnish official list is only 18 (excluding those with only representative agents or liason offices to scout for business). This list includes Nokia

[10] *Consistency requires that 'traders of the bag' be distinguished from 'traders of the tent'. It is one of the travesties of globalisation that multinational firms operate in foreign countries under flags of convenience different from their true identities. Is a Swedish or Austrian or American firm to be counted as Finnish in India just because it also has some business in Finland? Does a Finnish firm's investment in China become Finnish simply because it partly carries a Finnish name (like Alhström Pte of Shanghai) and is such a Chinese company's presence in India to be regarded as Chinese or Finnish? For the sake of bilateral clarity in Indo-Finnish Economic Relations that would govern reciprocity in 'national treatment' for GATS, a limited liability company must be regarded as an artificial juridical person of a particular territory and it would be misleading to consider a Company as 'Finnish' in India if it did not exist in India as a Finnish subsidiary or joint venture or if its branch in India did not have some direct ownership or control from a company in Finland.*

which established a mobile set assembly plant in Sriperumbudur, near Chennai and commenced production in March 2006. The pre-existing prominent Finnish players included Kone in elevators (with a 30 per cent share of the market), Wärtsilä in diesel generator sets (with 70 percent share of the market), Huhtamäki and Eltete in paper and packaging. Elcoteq is a recent entrant in electronics and plans to establish a hub in Bangalore while Thermo Electron Oy has established a branch office in Mumbai. Projects have attracted Metso Minerals for marketing its road-building equipment and mining drills. The Finnish IT services company, TietoEnator has also established a wholly owned subsidiary in India.

The Finnish trade site in India (http://www.finland.org.in/trade.htm) notes Finland's interest in outsourcing and offshoring IT services to India. This comes across as quite a compelling reason for Finland because heavy ICT investments were made in Finland during 2000-2005 on the assumption that Finland would lead the way in the EU as a model ICT hub from where value added services could be structured for the whole world. This myth lies shattered. The importance of ICT arises from evidence that international trade in intermediate goods facilitates access to key inputs for domestic production processes and contributes to the competitiveness of individual industries. In ICT produced manufacturing (ICTPM), the EU average consumption of ICTPM inputs to produce one monetary unit of ICTPM goods is 0.262, while for Finland this coefficient takes up the value 0.366 (European Commission, 2005, pp 54-55). The Eurostat NewCronos input-output tables reveal that productivity of highly skilled value-added ICT in Finland is the lowest in the European Union (European Commission, 2005, p.62, Table IV.21). Further, only Greece and Portugal rank lower than Finland in overall terms of GDP contribution per hour worked (O'Mahony and

van Ark, 2003, p.20, Table 1.2) and the labour productivity growth in Finland is negligible despite severe job cuts[11]. Yet, Finland's value added shares of ICTPM and ICT producing services (ICTPS) are above the average of the EU-15 which suggests that Finland's ICT sector, despite lacking competitiveness, was somehow supported[12]. One important dimension of the ICT crisis is the movement away from high cost software development in Finland presciently noted by researchers conscious of the role ICT expansion played in economic recovery in regions like Tampere during the 1990s (Kasvio, 2005, p.11).

There has been discussion of developing locations as science parks for biotech and life sciences in Finland to link into international knowledge business opportunities from intellectual properties created. A government-to-government approach has been made by Finland to India for joint research and development in science and technology. If these produce results, there could be fresh impetus for joint collaborations in public-private partnerships for biotechnology and nanotechnology applications. Finland's growing businesses are mostly technologies that can be leveraged internationally and regional hubs have specialised towards these. Examples are hubs for molecular biology and biocenters in Oulu, functional food technologies, biotechnologies and pharmaceuticals, maritime technologies, media and culture in Turku, wellness technologies, paper machinery technologies and energy and environmental technologies in Jyvaskylä etc. Small and medium enterprises with

[11] *During 1995-2001, Finland's annual growth rates of labour productivity exhibit a skewed distribution. The highest growth rates were in electronic valves and tubes (60%), office machinery (43.6 %) communications (12%) and financial intermediation (8.7%), whereas labour productivity declined in education, healthcare, research and development, scientific instrument-making, transport equipment, construction, mining, radio and television receivers, hotels and catering, ship-building & repairs, insurance and other business activities (O'Mahoney and van Ark, 2003, pp 126-127).*

[12] *Nokia accounted for one-third of Finland's annual GDP growth during the 1990s. From 2001 onwards, Nokia expanded its activities abroad rather than in Finland. However, its draft on national assets, public outlays and community resources of Finland is still considerable.*

niche technologies from Finland would have tremendous prospects of raising capital and organising commercial production in India if they only knew how to collaborate and structure their international business opportunities in India where the constraints are supply-led whereas in Finland, it is demand that inhibits their sustainability. Of Finland's top 30 companies, only five have their own offices or subsidiaries or joint ventures in India. There is scope for large players to make bigger moves too.

9. Indian priorities: lethargy or red tape?

As a business destination in Europe, Finland was historically crowded out by other European locations where English, French or German is spoken. Indian firms didn't need to do business with Russia through Finland because they had direct links. Finland always had very few foreigners and it was never easy to obtain even a tourist visa for Finland. No large Indian business firm ever established a subsidiary or branch in Finland until the IT boom. Trade was also intermediated through Germany (the largest trading partner of both Finland and India until as recently as Year 2000) and the U.K. Finland was regarded as a high cost country from where only industrial goods' requirements needed to be sourced and the mental distance was so great that very few traders developed Finland as a destination for traditional Indian exports.

During 2005-07, at least six firms from the Indian IT industry, Wipro, Tooltech, TCS, Zensar, Blue Star Infotech Limited and Sasken established offices in Finland where they were already doing bodyshopping for Nokia and a few other clients. However, the number of Indian companies having foreign commercial presence in Finland has remained small. While no one knows the exact number, the number of Indian firms with branches or subsidiaries in Finland is unlikely to be more than 12. This count

does not include clearing and forwarding agents acting on behalf of Indian traders or counterparts or projects of a temporary nature (like Siemens India executing a civil contract) or a small number of private proprietory Finnish firms established as small family businesses by Indians living in Finland.

The Indian orientation to Finland does not need to be governed by Indian household consumption statistics or manufacturing output growth statistics or by concentrating mainly on primary commodity exports simply because conventional RCAs are highest in primary products, as a recent NCAER study for SITRA (Bhide, Mukhopadhyay and Singh, 2006) suggests.

The past trade pattern is a poor predictor of future trade and trade-substituting investments due to the explosion in services, intra-firm trade and new modes of entry including foreign commercial presence. In the case of Indian exports to Finland, the conventional method of calculating RCAs does not provide a meaningful result at 2-digit level because RCAs are less than 1 for seven of the top 20 export items, all of which are manufactured goods.The interpretation by Bhide, Mukhopadhyay and Singh (2006) that Finland may represent a kind of lead market for items where RCAs are yet to develop sounds naive because the conventional RCAs as conceived by them may never increase to more than 1 if the pattern of trade has developed by a different logic such as specialisations by certain Finnish firms as suppliers of other manufactured goods where value-adding may require such imports due to technical specifications or due to contracts concerning joint product development and marketing as seem to be the case for boilers, aircraft parts, auto components and electronics or due to the differences in price ratios such as those of oil to electricity.

For these reasons, Finland-India synergies are better explored at 4-digit and 8-digit levels of disaggregation in order not to get swayed by superficialities observed from the data at 2-digit level.

The SITRA-NCAER study is quite optimistic in imagining that Finland could be a source for actual marketing and brand creation of Indian textiles globally. Finland has not been able to market and create a global demand for its own Marimekko products. In fact, Finland is not known for development of any consumer brands abroad with a few exceptions like *Nokia* and *Finlandia Vodka*. Rather, it is known for its outstanding industrial technologies and high-technology products. Similarly, the perception that Finland can buy carbon credits is correct but its capacity to provide environmental solutions for water purification and waste water treatment are overestimated. There are a number of lakes in Southern and Eastern Finland which are industrially polluted and Finland has not cleaned them yet[13].

10. Further Research Envisaged and Expected Results

The detailed analysis of services trade between Finland and India and of potential product-services linkages is in progress. The results from this research will reveal what patterns to expect in the production and consumption of value-addition in cross-border value chains involving Finland and India with policy implications for regional policies and foreign economic policies of the two countries.

The local-global dialectic in local communities and regions can be further investigated to understand the new emerging economic geography of contacts

[13] Low cost solutions from India or joint Indo-Finnish solutions may have potential here.

between Finland and India. This would be useful from the perspective of how business know-how influences cost-benefit analysis for global harvesting of locally seeded innovations in both territories. The status of business knowhow with regard to international business development will be specifically addressed with regard to entry-modes for the structuring of investments in services for Finland, India and third country markets. The research methodologies employed would also expand the future horizons of research practices because measuring services flows in a paired comparison of two countries has never previously been done.

The prerequisites for feasibility of services internationalization will be better understood with the exploration of links between local-regional, regional-national, regional-global, and national-global to identify business knowhow as it exists and the gaps to be addressed. Reciprocity in 'equal national treatment' could affect the choice of how partnerships are structured. This paper has consciously avoided a discussion of barriers to bilateral trade and investments because it was important not to be curtailed in first exploring the realms of all that is possible before trying to understand why what seems possible may be difficult or impossible without policy interventions or other initiatives and incentives.

Action research methodologies used are likely to trigger processes that may lead to the design of new institutionalities by all stakeholders. The emphasis on services could lead to innovations in pedagogic designs for sharing of business knowledge in sustainable networks of the future, including public-private partnerships involving universities, business schools, chambers of commerce, consortia of small and medium enterprises, and governments at national, regional and local level in both countries to share knowledge creation to mutual advantage.

References

Ahonen, Pertti (1995) — Restructuring Finland, Administrative Science, 1995 C 1, Working Paper Series, University of Tampere.

Bhide, Shashanka, Mukhopadhyay, Dripto and Singh, Divjot (2006) — Prospects for India-Finland Cooperation, SITRA Report 62, Helsinki.

Centre for Monitoring Indian Economy (CMIE) — Monthly Reviews (1999-2006), CMIE, Mumbai.

Directorate General of Commercial Intelligence and Statistics, India — Monthly Statistics of the Foreign Trade of India, 1999-2006, Kolkata.

European Commission (2005) — EU Sectoral Competitiveness Indicators, Brussels.

Government of India (2007) — Economic Survey 2006-2007, New Delhi.

Joutsimäki, Sari and Mathur, Ajeet (2006) — 'Managing International Cultural Differences, Or Doing As the Romans (or Finns or Indians Do?' Review of Professional Management, Volume 4, Issue 2 (July-December 2006), 1-9.

Joutsimäki, Sari and Mathur, Ajeet (2007) — OILON, A Case Study, Case Bank, Indian Institute of Management Ahmedabad, forthcoming.

Kasvio, Antti (2005) — "Future Challenges of Information Society Development" in Ari-Veikko Anttiroiko and Antti Kasvio (eds.) From Industrial City to Informational City: Analysing the Dynamics of Local Economic and Social Regeneration with a Special Emphasis on the City of Tampere, Tampere University Press.

Mathur, Ajeet (1998) — Finland-India Economic Relations:A twinning study of trade and investment potential, ETLA, Helsinki. Reprinted 2002.

Mathur, Ajeet (2002) — Indo-French Economic Relations: A Study of Trade and Investment Potential, Indian Council for Research on International Economic Relations, New Delhi.

Mathur, Ajeet (2005) 'The Future of International Business in the Tampere Region' in Antti Kasvio and Ari-Veikko Anttiroiko (eds.), eCity: Analysing the efforts to generate local dynamism in the city of Tampere to meet the challenge of changing global economy, Tampere University Press, Tampere.

Mathur, Ajeet (2006) 'Institutional factors governing choice of GATS modes for services supply' ANZIBA 2006, Conference Proceedings, University of Wellington, New Zealand 16-18.11.2006.

Mathur, Ajeet (2007) Finland-India Business: Context, Trends, Prospects and Challenges, forthcoming.

Mathur, Ajeet and Joutsimäki, Sari (2007) 'Intercultural Learning from 'listening posts: Embeddedness, Diffusion and Evolution of subnational and supranational metacultures in Finland and India' in S. Manikutty ed., Learning, Teaching and Research in a borderless world, Macmillan, New Delhi.

O'Mahony, Mary, and Van Ark, Bart (2003) EU productivity and competitiveness: An industry perspective: Can Europe resume the catching-up process ? European Commission, Brussels.

Suomen Pankki (1995-2006) Annual Reports 1995-2006, Central Bank of Finland, Helsinki.

Veuglers, Reinhilde and Mathur, Ajeet (1993) Foreign Presence of Belgian Companies, Onderzoeksrapport 9327, K.U. Leuven.

ANNEXURES[14]

Annexure I

Finnish RCA-led Exports to the World Importable by India

Code	Item
2710	Oils obtained from tar and bituminous minerals, other than crude; preparations not elsewhere specified or included, containing by weight 70% or more of petroleum oils.
2905	Acyclic alcohols and their halogenated, sulphonated, nitrated or nitrosated derivatives.
2907	Phenols; phenol-alcohols.
3004	Medicaments excluding serum preparations, vaccines and microorganismic cultures; coated impregnated dressings for therapeutic or prophylactic uses.
3105	Mineral or chemical fertilizers containing two or three of the fertilizing elements nitrogen, phosphorus and potassium; other fertilizers; goods of this classification in packaged forms
3206	Dyes and coloring matter; excluding dyes of vegetable or animal origin, synthetic organic preparations, inorganic products of a kind used as luminophores.
3901	Polymers of ethylene, in primary forms.
3902	Polymers of propylene or of other olefins, in primary forms.
3920	Other plates, sheets, film, foil and strip, of plastics, non-cellular and not reinforced, laminated, supported or similarly combined with other materials.
3926	Polymers of ethylene, propylene, styrene, halogenated olefins, amino resins, phenolic resins, silicon(s), cellulose derivations and petroleum resins.
4403	Wood in the rough, whether or not stripped of bark or sapwood, or roughly squared.
4703	Chemical wood pulp, soda or sulphate, other than dissolving grades.
4801	Newsprint, in rolls or sheets.
4810	Paper and paperboard, coated on one or both sides with kaolin (China clay) or other inorganic substances, with or without a binder, and with no other coating, whether or not surface-colored.
4901	Printed books, brochures, leaflets and similar printed matter, whether or not in single sheets.
4911	Other printed matter, including printed pictures and photographs.
7108	Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form.
7204	Ferrous waste and scrap; remelting scrap ingots of iron or steel.
7208	Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated
7210	Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, clad, plated or coated
7219	Flat-rolled products of stainless steel, of a width of 600 mm or more.
7225	Flat-rolled products of other alloy steel, of a width of 600 mm or more.
7326	Other articles of iron or steel.
7403	Refined copper and copper alloys, unwrought
7502	Unwrought nickel
7901	Unwrought zinc.

[14] Annexures I to VIII have been appended only to share first indications based on CMIE data and are subject to revisions when DGCIS data is analysed further.

Code	Item
8408	Compression-ignition internal combustion piston engines (diesel or semi-diesel engines).
8409	Parts suitable for use solely or principally with spark ignition reciprocating or rotary internal combustion piston engines.
8413	Pumps for liquids, whether or not fitted with a measuring device; liquid elevators.
8414	Air or vacuum pumps, air or others gas compressors and fans, ventilating or recycling hoods incorporating a fan, whether or not fitted with filters.
8418	Refrigerators, freezers and other refrigerating or freezing equipment, electric or other; heat pumps other than air conditioning machines (compressor based and vapor absorption cooling).
8419	Machinery, plant or laboratory equipment, whether or not electrically heated, for the treatment of materials by a process involving a change of temperature such as heating, cooking, roasting.
8421	Centrifuges, including centrifugal dryers; filtering or purifying machinery and apparatus, for liquids or gases.
8426	Ships derricks; cranes, including cable cranes; mobile lifting frames, straddle carriers and works trucks fitted with a crane.
8429	Self-propelled bulldozers, angle dozers, graders, levelers, scrapers, mechanical shovels, excavators, shovel loaders, tamping machines and road rollers.
8430	Other moving, grading, leveling, scraping, excavating, tamping, compacting, extracting or ores; pile-drivers and pile-extravators; snow-ploughs and snow-blowers.
8431	Parts suitable for use solely or principally with pulley tackle, hoist and jacks etc.
8462	Machine-tools (including presses) for working metal by forging, hammering or die-stamping; machine-tools (including presses) for working metal by bending, folding, straightening, flattering, shearing.
8471	Automatic data processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data.
8473	Parts and accessories (other than covers, carrying cases and the like) suitable for use solely or principally with typewriters, word processing machines, calculating machines, accounting machines, postage franking machines, ticket issuing machines, cash registers, magnetic or optical readers, transcription machines, bank note dispensers, coin sorting machines, wrapping machines.
8474	Machinery for sorting, screening, separating, washing, crushing, grinding, mixing or kneading earth, stone, ores or other mineral substances, in solid (including poweder or paste) form.
8479	Machines and mechanical appliances having specific functions for consumers, individual and B2B.
8481	Taps, cocks, valves and similar appliances for pipes, boiler shells, tanks, vats or the like, including pressure-reducing valves and thermostatically controlled valves.
8483	Transmission shafts (including and crank shafts) and cranks; bearing housings and plan shaft bearings; gears and gearing; ball screws; gear boxes and other speed changers, including torque converters.
8501	Electric motors and generators (excluding generating sets)
8502	Electric generating sets and rotary converters
8503	Parts suitable for use solely or principally with electric motors and gensets.
8504	Electrical transformers, static converters (for example, rectifiers) and inductors
8517	Electrical apparatus for line telephony or line telegraphy, including such apparatus for carrier-current line systems or for digital line systems, videophones
8525	Transmission apparatus for radio-telephony, radio-telegraphy, radio-broadcasting or television, whether or not incorporating reception apparatus or sound recording or reproducing apparatus; televisions.

Code	Item
8528	Reception apparatus for television, whether or not incorporating radio-broadcast receivers or sound or video recording or reproducing apparatus, video monitors and video projectors
8529	Parts suitable for use solely or principally with communication devices in 8525 and 8528 above.
8536	Electrical apparatus for switching or protecting electrical circuits, or for making connections to or in electrical circuits (for example, switches, relays, fuses, surge suppressors, plugs, and sockets.
8537	Boards, panels (including numerical control panels), consoles, desks, cabinets and other bases, equipped with two or more apparatus, for electric control or the distribution unit.
8538	Parts suitable for use solely or principally with electrical circuits
8542	Electronic integrated circuits and micro assemblies
8544	Insulated (including enameled or anodized) wire, cable (including co-axial cable) and other insulated electric conductors, whether or not fitted with connectors; optical fiber cables.
8703	Motor cars and other motor vehicles principally designed for the transport of persons (excluding tractors), including station wagons and racing cars
8708	Parts and accessories of buses, coaches, cars, special purpose motor vehicles.
8802	Other aircraft (for example, helicopters, aero planes); spacecraft (including satellites) and spacecraft launch vehicles
8901	Cruise ships, excursion boats, ferry-boats, cargo ships, barges and similar vessels for the transport of persons or goods
9018	Instrument and appliances used in medical, surgical, dental or veterinary sciences, including scientific apparatus, other electro-medical apparatus and sight-testing instruments.
9022	Apparatus based on the use of X-rays or of alpha, beta or gamma radiations, whether or not for medical, surgical, dental or veterinary uses, including radiography or radiotherapy apparatus, X-ray tubes.
9027	Instrument and apparatus for physical or chemical analysis (for example, polari meters, refracto meters, spectrometers, gas or smoke analysis apparatus); instruments and apparatus for measuring or checking
9030	Oscilloscopes, spectrum analyzers and other instruments and apparatus for measuring or checking electrical quantities, (excluding gas liquid and electricity supply or production meters) instruments and apparatus for measuring.
9031	Measuring or checking instruments, appliances and machines, profile projectors.
9032	Automatic regulating or controlling instruments and apparatus.
9403	Furniture and furniture parts

Annexure II

High Value Items Exported from Finland to India

Code	Item
3206	Dyes and coloring matter; excluding dyes of vegetable or animal origin, synthetic organic preparations, inorganic products of a kind used as luminophores.
4703	Chemical wood pulp soda or sulphate other than dissolving grades.
4801	Newsprint in rolls or sheets.
4810	Paper/paper board coated on one/both sides with potassium alkaline/other inorganic substances & no other coating w/n surface colored/decorated/printed in rolls/sheets.
7219	Flat-rolled products of stainless steel, of a width of 600 mm or more.
7502	Unwrought nickel.
8408	Compression-ignition, internal combustion piston engines (diesel/semi-diesel)
8409	Parts suitable for use solely or principally with spark ignition reciprocating or rotary internal combustion piston engines.
8413	Pumps for liquids; w/n fitted with a measuring device; liquid elevators
8421	Centrifugals, incl Centrifugals dryers; filtering or purifying machinery & apparatus, for liquids/gases
8430	Other moving, grinding, leveling, scrapping, excavating, tampering, compacting, extracting /boring machinery, from earth, minerals/ores; pile-drvr; snow-plough etc
8431	Parts suitable for use solely or principally with pulley tackle, hoist and jacks etc.
8471	Automatic data processing machines & units; magnetic/optical readers, machines for transcribing data onto data media in coded form.
8474	Machinery for sorting, screening, separating, washing, crushing etc of mineral substances, in solid form machines for shaping mineral fuel & forming molds of.
8479	Machines & mechanical appliances having individual functions.
8481	Taps, cocks, valves & similar appliances for pipes, boiler shells, tanks, vats/the like, including pressure-reducing valves & thermo statistically controlled valves
8483	Transmission shafts & cranks; gears; ball screws; bearing housing & other plain shaft bearings speed changers including torque converters of flywheels;
8501	Electric motors & generators(excluding generating sets)
8502	Electric generating sets & rotary converters
8503	Parts suitable for use solely or principally with electric motors and gensets.
8504	Electrical transformers, static converters (for example, rectifiers) & inductors
8517	Electrical apparatus for line telephony/telegraphy, including telephone sets with cordless handset carrier-current line system; videophone.
8525	Transmission apparatus for radio, telephony etc incorporating reception apparatus /sound recording/reproducing apparatus; TV cameras etc
8529	Parts suitable for use solely or principally with communication devices in 8525 and 8528.
8536	Electrical apparatus for switching /protecting electrical circuits etc.(e.g. switches relays etc.) for a voltage not excluding 1000 volts
8544	Insulated(incl enameled /anodized)wire etc. optical fiber cables w/n fitted with connectors/ assembled with electric conductors
9018	Instruments & appliances used in medical, surgical, dental/ veterinary sciences, incl scant graphic apparatus elctro-mdcl apparatus & sight-testing instruments
9031	Measuring/checking instruments, appliances & machines, n.e.s. profile projectors
9032	Automatic regulating / controlling instruments & apparatus

Annexure III

High Value RCA-led Indian Exports to the World Importable by Finland

Code	Item
901	Coffee, whether or not roasted or decaffeinated; coffee husks and skins; coffee substitutes containing coffee in any proportion.
2601	Iron ores and concentrates, including roasted iron pyrites
2710	Petroleum oils and oils obtained from bituminous minerals, other than crude; preparations not elsewhere specified or included, containing by weight 70% or more of petroleum oils.
2902	Cyclic hydrocarbons.
2905	Acyclic alcohols and their halogenated, sulphonated, nitrated or nitrosated derivatives.
3004	Pharmaceutical products for therapeutic or prophylactic uses, put up in measured doses or in forms or packing.
3204	Synthetic organic coloring matter, whether or not chemically defined; preparations based on synthetic organic coloring matter; synthetic organic products.
3808	Insecticides, fungicides, herbicides, anti-sprouting products and plant-growth regulators, disinfectants and similar products, put up in forms or packings for retail sale.
3901	Polymers of ethylene, in primary forms.
3902	Polymers of propylene or of other olefins, in primary forms.
3907	Polyacetals, other polyethers and expoxide resins, in primary forms; polycarbonates, alkyd resins, polyallyl esters and other polyesters, in primary forms.
3920	Other plates, sheets, film, foil and strip, of plastics, non-cellular and not reinforced, laminated, supported or similarly combined with other materials.
3923	Articles for the conveyance or packing of goods, of plastics; stoppers, lids, caps and other closures, of plastics.
3926	Natural polymers (e.g.: alginic acid and modified natural polymers (e.g.: hardened materials, chemical derivatives of natured rubber) ion-exchange resins
4011	New pneumatic tyres, of rubber.
4901	Printed books, broachers, leaflets and similar printed matter, whether or not in single sheets.
6109	T-shirts, singlets & other vests, knitted or crocheted
6110	Jerseys, pullovers, cardigans, waistcoats and similar articles, knitted or crocheted.
6203	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear).
6204	Women's or girls' suits, ensembles, jackets, blazers, dresses, skirts, divided skirts, trousers, bib and brace overalls, breeches and shorts (other than swimwear).
6302	Bed linen, table linen, toilet linen and kitchen linen
6403	Footwear with outer soles of rubber, plastics, leather or composition leather and uppers of leather.
7202	Ferro-alloys
7210	Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, clad, plated or coated
7219	Flat-rolled products of stainless steel, of a width of 600 mm or more.
7225	Flat-rolled products of other alloy steel, of a width of 600 mm or more.
7304	Tubes, pipes and hollow profiles, seamless, of iron (other than cast iron) or steel.
7306	Other tubes, pipes and hollow profiles (for example, open seam or welded, riveted or similarly closed), of iron or steel

Code	Item
7307	Tube or pipe fittings (for example, couplings, elbows, sleeves), of iron or steel.
7308	Structures (excluding prefabricated buildings) and parts of structures (for example, bridges and bridge-sections, lock-gates, towers, lattice masts, roofs, roofing frameworks, doors.
7318	Screws, bolts, nuts coach-screws, screw hooks, rivets, cotters, cotter-pins, washers (including spring washers) and similar articles, or iron or steel.
7326	Other articles of iron or steel.
7408	Copper wire
7601	Unwrought aluminum
8302	Base metal mountings, fittings and similar articles suitable for furniture, doors, staircases, windows, blinds, coachwork, saddlery, trunks, chests, caskets, or the like; base metal hat-racks, hat-peg.
8409	Parts suitable for use solely or principally with compression ignition internal combustion piston engines (diesel or semi diesel engines)
8413	Pumps for liquids, whether or not fitted with a measuring device; liquid elevators.
8414	Air or vacuum pumps, air or others gas compressors and fans, ventilating or recycling hoods incorporating a fan, whether or not fitted with filters.
8419	Machinery, plant or laboratory equipment, whether or not electrically heated, for the treatment of materials by a process involving a change of temperature such as heating, cooking, roasting.
8421	Centrifuges, including centrifugal dryers; filtering or purifying machinery and apparatus, for liquids or gases.
8471	Automatic data processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data.
8473	Parts and accessories (other than covers, carrying cases and the like) suitable for use solely or principally with typewriters, word processing machines, calculating machines, accounting machines, postage franking machines, ticket issuing machines, cash registers, magnetic or optical readers, transcription machines, bank note dispensers, coin sorting machines, wrapping machines.
8479	Machines and mechanical appliances having specific functions for consumers, individual and B2B.
8481	Taps, cocks, valves and similar appliances for pipes, boiler shells, tanks, vats or the like, including pressure-reducing valves and thermostatically controlled valves.
8482	Ball or roller bearings.
8483	Transmission shafts (including and crank shafts) and cranks; bearing housings and plan shaft bearings; gears and gearing; ball screws; gear boxes and other speed changers, including torque converters.
8501	Electric motors and generators (excluding generating sets)
8504	Electrical transformers, static converters (for example, rectifiers) and inductors
8524	Records, tapes and other recorded media for sound or other similarly recorded phenomena, including matrices and masters for the production of records, but excluding photographic equipment, paper, film rolls, cinematographic film, and chemical preparations for photographic uses.
8528	Reception apparatus for television, whether or not incorporating radio-broadcast receivers or sound or video recording or reproducing apparatus, video monitors and video projectors
8536	Electrical apparatus for switching or protecting electrical circuits, or for making connections to or in electrical circuits (for example, switches, relays, fuses, surge suppressors, plugs, and sockets.

Code	Item
8541	Diodes, transistors and similar semi-conductors devices; photosensitive semi-conductor devices, including photovoltaic cells whether or not assembled in modules or made up into panels; light emitting units.
8544	Insulated (including enameled or anodized) wire, cable (including co-axial cable) and other insulated electric conductors, whether or not fitted with connectors; optical fiber cables.
8701	Tractors excluding fork lift trucks.
8703	Motor cars and other motor vehicles principally designed for the transport of persons (but not buses), including station wagons and racing cars.
8704	Motor vehicles for the transport of goods.
8708	Parts and accessories of the special purpose motor vehicles, cars, tractors.
8711	Motorcycles (including mopeds) and cycles fitted with an auxiliary motor, with or without side-cars; side-cars.
8901	Cruise ships, excursion boats, ferry-boats, cargo ships, barges and similar vessels for the transport of persons or goods
9018	Instrument and appliances used in medical, surgical, dental or veterinary sciences, including scintigraphic apparatus, other electro-medical apparatus and sight-testing instruments.
9403	Furniture and furniture parts
9506	Articles and equipment for general physical exercise gymnastics, athletics, other sports (including table-tennis) or outdoor games, not specified or included elsewhere, swimming pools, paddle pools etc.

Annexure IV

High Value RCA-led Indian Exports to EU importable by Finland

Code	Item
901	Coffee, whether or not roasted or decaffeinated; coffee husks and skins; coffee substitutes containing coffee in any proportion.
2601	Iron ores & concentrates incl roasted iron pyrites.
2710	Petroleum oils & oils obtained from bituminous mineral other than crude prpn nes; containing 70% or more by weight of these oils.
3004	Medicaments excluding serum preparations, vaccines and microorganismic cultures coated impregnated dressings for therapeutic or prophylactic uses.
3808	Insecticides, fungicides, herbicides, anti-sprouting products and plant-growth regulators, disinfectants and similar products.
3901	Polymers of ethylene in primary forms.
3920	Other plates, sheets, film, foil & strip, of plastics, non-cellular & not reinforced laminated supported/similarly combined with other materials.
3923	Articles for the conveyance or packing of goods, of plastics; stoppers, lids, caps and other closures, of plastics.
4011	New pneumatic tyres of rubber.
6109	T-shirts, singlets & other vests, knitted or crocheted.
6110	Jerseys, pullovers, cardigans, waistcoats & similar articles, knitted/crocheted.
6203	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib & brace overalls breeches & shorts (other than swimwear).
6204	Women's/girls' suits, ensembles, jackets, dresses, skirts, trousers, bib & brace overalls, breeches & shorts etc (except swimwear).
6302	Bed linen, table linen, toilet linen and kitchen linen.
6403	Footwear with outer soles of rubber, plastics, leather /composition leather & uppers of leather.
7202	Ferro-alloys.
7210	Flat-rolled products of iron/non-alloy steel of width >=600 mm, clad, plated/coated.
7225	Flat-rolled products of other alloy steel of width 600 mm or more.
7307	Tube or pipe fittings (e.g. couplings, elbows, sleeves), of iron or steel.
7318	Screws, bolts, nuts, coach screws, screw hooks rivets, cotters, cotter-pins, washers(incl spring washers) & similar articles of iron/steel.
7326	Other articles of iron or steel.
8302	Base metal mountings, fittings & similar articles for furniture, doors etc; base metal hatrckts, brackets etc, castrs automatic door closers of base metal.
8409	Parts suitable for use solely or principally with compression ignition internal combustion piston engines (diesel or semi diesel engines).
8413	Pumps for liquids; w/n fitted with a measuring device; liquid elevators.
8473	Parts and accessories (other than covers, carrying cases and the like) suitable for use solely or principally with typewriters, word processing machines, calculating machines, accounting machines, postage franking machines, ticket issuing machines, cash registers, magnetic or optical readers, transcription machines, bank note dispensers, coin sorting machines, wrapping machines.
8479	Machines & mechanical appliances having individual functions.
8481	Taps, cocks, valves & similar appliances for pipes, boiler shells, tanks, vats/the like, including pressure-reducing valves & thermo statically controlled valves.
8482	Ball or roller bearings of certain types.
8483	Transmission shafts & cranks; gears; ball screws; bearing housing & other plain shaft bearings speed changers incl torque converters of flywheels.

Code	Item
8504	Electrical transformers, static converters (for example, rectifiers)& inductors.
8536	Electrical apparatus for switching /protecting electrical circuits etc. (e.g switches relays etc.) for a voltage not excluding 1000 volts.
8541	Diodes, transistors & similar semi-conductors devices etc. w/n assembled in modules/made up into panels etc mounted piezo-electric crystals.
8703	Motor cars and other motor vehicles principally designed for the transport of persons (but not buses), including station wagons and racing cars.
8708	Parts and accessories of the special purpose motor vehicles, cars, tractors.
9403	Furniture and furniture parts.
9506	Articles & equipment for gymnastics, athletics, other sports (incl table tennis)/outdoor games, n.e.s.; swimming pools & paddling pools

Annexure V

Top ten Indian High Value Exports to Finland according to CMIE data

Code	Item
3004	Pharmaceutical products (generics) and ayurvedic medicines
3808	Insecticides, fungicides, herbicides, anti-sprouting products and plant-growth regulators, disinfectants and similar products
6109	T-shirts, singlets & other vests, knitted or crocheted
6110	Jerseys, pullovers, cardigans, waistcoats &similar articles, knitted/ crocheted
6204	Women's/girls' suits, ensembles, jackets, dresses, skirts, trousers, bib & brace overalls, breeches & shorts etc (except swimwear)
6403	Footwear with outer soles of rubber, plastics, leather /composition leather & uppers of leather.
8481	Taps, cocks, valves & similar appliances for pipes, boiler shells, tanks, vats/the like, including pressure-reducing valves & thermo statically controlled valves
8517	Electrical apparatus for line telephony/ telegraphy, incl telephone sets with cordless handset carrier- current line system; videophone
8528	Reception apparatus, with/not incorporating radio broadcast receivers /sound/video recording /reproducing apparatus, video monitors etc
8803	Gliders, hang gliders, balloons and dirigibles and other non – powered air craft; parts of aero planes, helicopters, satellites, spacecrafts, and spacecraft launch vehicles.

Annexure VI

Indian Imports from EU that Finland Exports Worldwide

Code	Item
2905	Acyclic alcohols and their halogenated, sulphonated, nitrated or nitrosated derivatives.
2907	Phenols; phenol-alcohols.
3004	Medicaments excluding serum preparations, vaccines and microorganismic cultures coated impregnated dressings for therapeutic or prophylactic uses.
3901	Polymers of ethylene, in primary forms.
3926	Polymers of ethylene, propylene, styrene, halogenated olefins, amino resins, phenolic resins, silicon(s), cellulose derivations and petroleum resins.
4801	Newsprint, in rolls or sheets.
4802	Uncoated paper and paperboard, of a kind used for writing, printing or other graphic purposes, and punch card stock and punch tape paper, in rolls or sheets, other than newsprint.
4810	Paper and paperboard, coated on one or both sides with kaolin (China clay) or other inorganic substances, with or without a binder, and with no other coating, whether or not surface-colored.
4901	Printed books, brochures, leaflets and similar printed matter, whether or not in single sheets.
7108	Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form.
7204	Ferrous waste and scrap; remelting scrap ingots of iron or steel.
7208	Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated
7210	Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, clad, plated or coated
7219	Flat-rolled products of stainless steel, of a width of 600 mm or more.
7225	Flat-rolled products of other alloy steel, of a width of 600 mm or more.
7326	Other articles of iron or steel.
8408	Compression-ignition internal combustion piston engines (diesel or semi-diesel engines).
8409	Parts suitable for use solely or principally with spark ignition reciprocating or rotary internal combustion piston engines.
8412	Other engines and motors.
8413	Pumps for liquids, whether or not fitted with a measuring device; liquid elevators.
8414	Air or vacuum pumps, air or others gas compressors and fans, ventilating or recycling hoods incorporating a fan, whether or not fitted with filters.
8419	Machinery, plant or laboratory equipment, whether or not electrically heated, for the treatment of materials by a process involving a change of temperature such as heating, cooking, roasting.
8421	Centrifuges, including centrifugal dryers; filtering or purifying machinery and apparatus, for liquids or gases.
8426	Ships derricks; cranes, including cable cranes; mobile lifting frames, straddle carriers and works trucks fitted with a crane.
8430	Other moving, grading, leveling, scraping, excavating, tamping, compacting, extracting or ores; pile-drivers and pile-extravators; snow-ploughs and snow-blowers.

Code	Item
8431	Parts suitable for use solely or principally with pulley tackles, heists, winches and capstans, jacks, ships' derricks, cranes, cable cranes, mobile lifting frames, straddle and works' trucks, fork-lift trucks, escalators, conveyers, teleferics, bulldozers, angle dozers graders, levelers, scrapples, mechanical shovels, excavators, road rollers, pile drivers, snow ploughs and snow blowers.
8462	Machine-tools (including presses) for working metal by forging, hammering or die-stamping; machine-tools (including presses) for working metal by bending, folding, straightening, flattering, shearing.
8471	Automatic data processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data.
8473	Parts and accessories (other than covers, carrying cases and the like) suitable for use solely or principally with typewriters, word processing machines, calculating machines, accounting machines, postage franking machines, ticket issuing machines, cash registers, magnetic or optical readers, transcription machines, bank note dispensers, coin sorting machines, wrapping machines.
8474	Machinery for sorting, screening, separating, washing, crushing, grinding, mixing or kneading earth, stone, ores or other mineral substances, in solid (including powder or paste) form.
8479	Machines and mechanical appliances having specific functions for consumers, individual and B2B.
8481	Taps, cocks, valves and similar appliances for pipes, boiler shells, tanks, vats or the like, including pressure-reducing valves and thermostatically controlled valves.
8483	Transmission shafts (including and crank shafts) and cranks; bearing housings and plan shaft bearings; gears and gearing; ball screws; gear boxes and other speed changers, including torque converters.
8501	Electric motors and generators (excluding generating sets)
8502	Electric generating sets and rotary converters
8503	Electric motors, generators, rotary converters.
8504	Electrical transformers, static converters (for example, rectifiers) and inductors
8517	Electrical apparatus for line telephony or line telegraphy, including such apparatus for carrier-current line systems or for digital line systems, videophones
8525	Transmission apparatus for radio-telephony, radio-telegraphy, radio-broadcasting or television, whether or not incorporating reception apparatus or sound recording or reproducing apparatus; televisions.
8529	Parts suitable for use solely or principally with radar apparatus, radio telephony, navigational aids sound and image recording devices, remote control devices, television sets, video monitors, and video projections.
8536	Electrical apparatus for switching or protecting electrical circuits, or for making connections to or in electrical circuits (for example, switches, relays, fuses, surge suppressors, plugs, and sockets.
8538	Parts suitable for use solely or principally with electrical switching, electrical circuits, relays, fuses, consolers, desks, cabinets.
8542	Electronic integrated circuits and micro assemblies
8544	Insulated (including enameled or anodized) wire, cable (including co-axial cable) and other insulated electric conductors, whether or not fitted with connectors; optical fiber cables made up of individual units.
8708	Parts and accessories of the special purpose motor vehicles, cars, tractors.
8802	Other aircraft (for example, helicopters, aeroplanes); spacecraft (including satellites) and spacecraft launch vehicles
9018	Instrument and appliances used in medical, surgical, dental or veterinary sciences, including scientific and graphic apparatus, other electro-medical apparatus and sight-testing instruments.

Code	Item
9022	Apparatus based on the use of X-rays or of alpha, beta or gamma radiations, whether or not for medical, surgical, dental or veterinary uses, including radiography or radiotherapy apparatus, X-ray tubes.
9027	Instrument and apparatus for physical or chemical analysis (for example, polari meters, refracto meters, spectrometers, gas or smoke analysis apparatus); instruments and apparatus for measuring or checking.
9030	Oscilloscopes, spectrum analyzers and other instruments and apparatus for measuring or checking electrical quantities, excluding calibrating meters and meter for checking gas, liquid or electric supply.
9031	Measuring or checking instruments, appliances and machines, not specified or included elsewhere in this Chapter; profile projectors.
9032	Automatic regulating or controlling instruments and apparatus.

Annexure VII

High Value Indian Imports from EU that Finland Exports to India

Code	Item
4801	Newsprint, in rolls or sheets.
4810	Paper and paperboard, coated on one or both sides with kaolin (China clay) or other inorganic substances, with or without a binder, and with no other coating, whether or not surface-colored, surfaces.
7219	Flat-rolled products of stainless steel, of a width of 600 mm or more.
8408	Compression-ignition internal combustion piston engines (diesel or semi-diesel engines).
8409	Parts suitable for use solely or principally with compression ignition internal combustion piston engines (diesel or semi diesel engines)
8413	Pumps for liquids, whether or not fitted with a measuring device; liquid elevators.
8421	Centrifuges, including centrifugal dryers; filtering or purifying machinery and apparatus, for liquids or gases.
8430	Other moving, grading, leveling, scraping, excavating, tamping, compacting, extracting or ores; pile-drivers and pile-extravators; snow-ploughs and snow-blowers.
8431	Parts suitable for use solely or principally with pulley tackles, heists, winches and capstans, jacks, ships' derricks, cranes, cable cranes, mobile lifting frames, straddle and works' trucks, fork-lift trucks, escalators, conveyers, teleferics, bulldozers, angle dozers graders, levelers, scrapples, mechanical shovels, excavators, road rollers, pile drivers, snow ploughs and snow blowers
8471	Automatic data processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data.
8474	Machinery for sorting, screening, separating, washing, crushing, grinding, mixing or kneading earth, stone, ores or other mineral substances, in solid (including poweder or paste) form.
8479	Machines and mechanical appliances having specific functions for consumers and B2B.
8481	Taps, cocks, valves and similar appliances for pipes, boiler shells, tanks, vats or the like, including pressure-reducing valves and thermostatically controlled valves.
8483	Transmission shafts (including and crank shafts) and cranks; bearing housings and plan shaft bearings; gears and gearing; ball screws; gear boxes and other speed changers, including torque converters.
8501	Electric motors and generators (excluding generating sets)
8502	Electric generating sets and rotary converters
8503	Electric motors, generators, rotary converters.
8504	Electrical transformers, static converters (for example, rectifiers) and inductors
8517	Electrical apparatus for line telephony or line telegraphy, including such apparatus for carrier-current line systems or for digital line systems, and videophones .
8525	Transmission apparatus for radio-telephony, radio-telegraphy, radio-broadcasting or television; TVs
8529	Parts suitable for use solely or principally with radar apparatus, radio telephony, navigational aids sound and image recording devices, remote control devices, television sets, video monitors, and video projections.
8536	Electrical apparatus for switching or protecting electrical circuits, or for making connections to or in electrical circuits (for example, switches, relays, fuses, surge suppressors, plugs, and sockets.
8544	Insulated (including enameled or anodized) wire, cable (including co-axial cable) and other insulated electric conductors, whether or not fitted with connectors; optical fiber cables.

Code	Item
9018	Instrument and appliances used in medical, surgical, dental or veterinary sciences, including scintigraphic apparatus, other electro-medical apparatus and sight-testing instruments.
9031	Measuring or checking instruments, appliances and machines not categorised above; profile projectors.

Annexure VIII

High Value Indian Exports to European Union imported from India by Finland

Code	Commodity Name
2933	Heterocyclic compounds with nitrogen hetero atoms(s) only; nucleic acids and their salts
2942	Other organic compounds
3003	Medicaments consisting of two/more constituents mixed together for bulk pharmaceutical supplies to hospitals and wholesales.
3004	Pharmaceutical products for retail sales
3808	Insecticides, fungicides, herbicides, anti-sprouting products and plant-growth regulators, disinfectants and similar products
4202	Trunks, suit cases, and other cases holster & traveling bags, hand bags and other similar containers, bags, wallets, boxes, purses.
4203	Articles of apparel and clothing accessories of leather or of composition leather
5702	Carpets and other textile floor coverings, woven, not tufted or flocked, whether or not made up, including 'Kelem', 'Schumacks', 'Karamanie' and similar hand-woven rugs.
5705	Othr carpets & textile floor coverings, w/n made up
6104	Women's/girls' suits, ensembles, jackets dresses, skirts & divided skirts, trousers, bib, brace overalls etc, knitted/crocheted
6105	Men's/boys' shirts, knitted/crocheted
6109	T-shirts, singlet & other vests, knitted or crocheted
6110	Jerseys, pullovers, cardigans, waistcoats &similar articles, knitted/crocheted
6204	Women's/girls' suits, ensembles, jackets, dresses, skirts, trousers, bib & brace overalls, breeches & shorts etc(except swimwear)
6205	Men's or boy's shirts.
6304	Furnishing articles excluding mattresses, quilts, eiderdowns, cushions, pillows.
6307	Other made up articles including dress patterns
6403	Footwear with outer soles of rubber, plastics, leather / composed leather and uppers of leather
7102	Diamonds, whether or not worked, but not mounted or set.
7113	Articles of jewellery and parts thereof, of precious metal or of metal clad with precious metal.
7325	Other cast articles of iron or steel.
8481	Taps, cocks, valves & similar appliances for pipes, boiler shells, tanks, vats/the like, including pressure-reducing valves & thermo statically controlled valves.