Development Research Group

Study
15

EMU, EURO AND INDIA

Ganti Subrahmanyam
S.V.S. Dixit
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Issued for Discussion

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1. THE THREE STAGES OF THE EMU

1.1 **The First Two Stages :** The Delors Report (Committee for the Study of Economic and Monetary Union, 1989) provides a blueprint for the creation of the European Monetary Union (EMU). The blueprint traces out the precise path of progress and its economic contents towards the full realization of the EMU. In February 1992, the European Council of Heads of State and Government signed the Treaty on European Union (EU) which is called the Maastricht Treaty. After its ratification by the individual EU member states, the Treaty came into force in November 1993. It consists of a three-stage approach, the starting point of which is the European Monetary System of 1980s plus the single market of 1992. This starting point is also the beginning of Stage 1 of the EMU which formally began on July 1, 1990. During this stage the single market must have been accompanied by the convertibility of the currencies and free capital movements. In respect of competition policy, structural and regional policies and macroeconomic coordination, however, only partial accomplishments have greeted the EMU. Nevertheless, all exchange controls are removed for enhanced monetary and exchange rate coordination. Realignments of exchange rates are made infrequently and the use of the European Current Unit (ECU) has been extended. All the countries of the European Community, excepting Greece and Portugal, have become members of the Exchange Rate Mechanism (ERM) with narrow bands of plus or minus 2.25 percent. All currencies in the central grid have operated within these narrow bands excepting the UK and Spain which enjoyed a band wider than ± 2.25 percent. Monetary policy coordination is facilitated by a Consultative Committee of the Central Bank Governors. The ERM members are advised to pool 10 percent of their foreign exchange reserves to form a

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European Reserve Fund whose objective is to intervene in the foreign exchange markets. The Council of Economic and Finance Ministers has agreed to conduct mutual voluntary economic surveillance in respect of country-specific adjustments such as convergence towards low inflation, budgetary adjustments and participation in the ERM.

In Stage 2 which officially began on January 1, 1994, the focus is exclusively on institutional development. The Maastricht Treaty envisages transitional arrangements for gradual take over of formulation and implementation of monetary policy during this stage. A European System of Central Banks (ESCB) is established for this purpose with the technical preparation for instituting a EuroFed or European Central Bank (ECB) as the final objective. It involves a transition from an asymmetric system of monetary policy coordination achieved through the exchange markets, to a Community level Institution for setting monetary policy where the exchange markets for individual country currencies lose their functional role. The ERM is further hardened and the exchange rate bands are further conscripted for realignments. Elimination of the scope for member countries to fund their fiscal requirements via the central banks is also targeted. Also targeted are price stability, exchange rate stability, minor interest rate differentials and fiscal discipline, by the member countries in order to qualify for the third stage of the EMU.

1.2 **The Three Phases of the Third Stage :** The third stage of the EMU consists of three distinct phases. The first phase – stage 3a – should be starting at the beginning of 1998 according to expectations. During the next twelve months, decisions will be taken by the European Council on the core participating countries. Further strengthening of policies in respect of competition, regional and structural features of the participating countries needs to be put in place. In addition, definitive budgetary coordination system also needs to be instituted. Preparations are due during 1998 for the ECB to take over, from the European Monetary Institute (EMI), the monetary policy function and introduce the operational systems and procedures for common monetary policy in the proposed new currency EURO.

Stage 3b starts on January 1, 1999 and lasts for a maximum period of three years. At the beginning of this stage, the exchange rates of the participating

countries will be irrevocably pegged to each other. Accordingly, the official foreign exchange markets for these currencies will disappear. Formal currency substitution takes place with one unit of basket of ECU set equal to one unit of EURO. The ECB takes over the functions of actual monetary and exchange rate policies from the national central banks. Both the public and private banking sectors "tip the scales in favour of EURO". The success of this stage depends upon the rapid formation of a EURO "critical mass" interpreted in as broad terms as possible. These terms include monetary and exchange rate policy in EURO. Settlement is sought to be achieved through a system called "Trans-European Automatic Real-Time Gross Settlement Express Transfer" (TARGET) for central bank operations, for public and private debt issuance, interbank money transactions etc. Of course, retail transactions remain executed mostly in national currencies at least upto June 30, 2002. From July 1, 2002 national currencies of the EMU countries are expected to be retired permanently. Stage 3c begins after completion of the EMU by June 30, 2002 at which point EURO becomes the exclusive legal tender. The banking and non-banking sectors also fully switch over to EURO use.

2. IS FULL EMU TAKE-OFF DESIRABLE?

2.1 **No Monetary Union Via Currency Competition :** One school of thought holds that a monetary union should be left to be created by the market forces. Competition among a group of currencies is said to eventually lead to a clear winner that will serve as the single currency of the union (Vaubel, 1990; Brynt, 1981; and Eichengreen, 1993). Competition is said to be equally efficient in producing optimal results in both the goods and the currency markets. Unfortunately, the same currency competition is also said to create several indeterminacies due to presence of money illusion and non-neutrality of money. Similarly, under currency competition seigniorage maximizing behaviour by the money producers will not lead to a finite money stock with a positive value. This result is possible in both perfect competition and also in homogeneous oligopoly of money producers (Girton and Roper, 1981). Reality, however, is different. Currency competition has never created a monetary union in history all by itself. In the EU, member states' currencies are not perfect substitutes anyway. This is in addition to all the practical problems that arise in the market place that work towards imperfect currency

substitution. A highly stable demand for a European monetary aggregate is not necessarily a reflection of a high degree of currency substitution but could be due to a fallacy (Ivo, 1996). At the same time, in many small countries of the EU, monetary aggregation at the national level does not seem appropriate in view of some currency substitution (Spencer, 1997). If Europe is to achieve a monetary union, it has to come up through the political act of Maastricht Treaty.

2.2 **Is Full EMU Economically Feasible? :** The economic feasibility of the full EMU has run into doubts following the ERM crises of 1992 and 1993. All the signatories to the Maastricht Treaty at the end of 1991 are unlikely to enter the Union as of today. Only those countries that satisfy the "convergence criteria" will be able to join the Union. The convergence criteria state : (i) the average inflation rate for the year preceding the convergence test must not be more than 1.5 percentage points above the average of the three countries with the lowest inflation; (ii) the public-sector deficit should not exceed 3 percent of Gross Domestic Product (GDP); (iii) the public-sector debt should not exceed 60 percent of GDP; (iv) the average yield on long-term government bonds for the year preceding the convergence test should not exceed 2 percentage points above the average of the three countries with the lowest inflation; and (v) the currency of the member state must have moved within the ERM standard bands for at least two years before the convergence test. Convergence on inflation and interest rates is easy to satisfy. But reducing public debt to below 60 percent of the GDP and budget deficits to below 3 percent of GDP seems difficult to achieve by January 1, 1999 for several of the Treaty Countries (Winckler, Hochreiter and Brandner, 1996). Inflation convergence between countries positioned at different levels of taxation and with disparate debt-GDP ratios, especially, becomes difficult to achieve (Gros, 1995). The reason is, if a credible disinflationary policy is difficult to pursue – for instance as in case of Italy – to prevent the debt burden from rising, taxes need to increase which in turn necessitates more government borrowing and the consequent interest rates hikes. Several of the European Union (EU) countries with less convincing anti-inflationary policies in place today, actually find it extremely difficult, if not impossible, to converge to the Maastricht criteria (Alesina and Grilli, 1993). The dynamics of the convergence criteria, can create the risk of splitting the EU if it starts with full participation of its 15

members (EU-15). The logic lies in the strength of preferences of the lowest inflation countries. The welfare of the full Union will be lower if average preferences of all the members were adopted for inflation targeting by the ECB. Therefore, the ECB has to adopt the preferences of the lowest inflation countries or else split up (DeGrauwe, 1996). Accordingly, the Union could start up successfully with only core countries that satisfy the convergence criteria (Persson and Tabellini, 1996; Portes, 1996). Even otherwise, the danger of fixing irrevocably inappropriate exchange rates could easily cause misalignments in the presence of free capital flows but disparate levels of convergence parameters (Goodhart, 1996).

2.3 **Does One Market Require One Money? :** The most striking feature of the theory of optimum currency areas (OCA) is that it is singularly silent on any convergence criteria as a prerequisite. The OCA literature stresses the need for factor mobility with particular emphasis on labour mobility which is said to ensure real wage flexibility.

In addition, homogeneity of production structures and fiscal integration or availability of an appropriate set of fiscal instruments to be able to offset the effects of asymmetric shocks in the Union are also stressed. These conditions, however, pose a much stricter criteria than the Maastricht convergence criteria according to Kenen (1969). Mundell's (1961) theory on OCA implicitly assumes a world of rigid wages and prices than actually obtained today in the EMU. McKinnon (1963) and Kenen (1969) stress that if exchange rate changes are used to offset domestic demand shocks, price instability necessarily increases with serious implications for the choice of a peg by small countries in the EU. But, evidence suggests that the higher the intensity of trade within the OCA, the greater would be the benefits than costs of using a single currency in the area (Krugman, 1990).

Some recent studies (Bayoumi and Prasad, 1995; Vinals, 1995) have examined evidence that the degree of asymmetry of shocks is not much more in a wider EMU than, say, in the United States and that country-specific shocks are becoming less important than generally believed. In fact, the evidence shows that the asymmetry is declining and symmetry is growing faster in the EU member countries relative to Germany (Bayoumi and

Table 1
The OCA Framework for a Monetary Union (MU)

1. Are the Regional Shocks Symmetrical? -> Yes -> MU

NO

2. Are the Causes of Asymmetrical Shocks Disappearing? -> Yes -> MU
   a. Factor Immobility
   b. Rigid Wages and prices
   c. Less diversified economies
   d. Less open economies
   e. Asymmetric production structures
   f. Asymmetric monetary policies
   g. Highly volatile real exchange rates

NO

3. Are there Alternative Adjustment Mechanisms Available? -> Yes -> MU
   a. Flexible wages and prices
   b. Factor mobility
   c. Appropriate fiscal instruments

NO

4. NO. MU

Source : Sehmidt and Straubhaar (1995).

Eichengreen, 1997). A single currency, therefore, does strengthen a single market (Goodhart, 1996) since the welfare of a group of countries will be improved by free trade within the group. Single currency areas are internally invariably free trade areas. Moreover, if national production structures are homogeneous, there would be little need for cross-border factor mobility within the group nor the need for fiscal instruments to offset national-specific shocks (De Nardis, Goglio and Malgarini, 1996). Furthermore, to the extent that asymmetric shocks cross national borders, the efficacy of the exchange rate as a policy instrument is limited (De Nardis, Goglio and Malgarini, 1996). In such a case, loss of the exchange rate instrument by each country in favour of a single currency for the union, need not pose an additional cost for those

countries. As a matter of fact, regional shocks within the union could be absorbed by intra-and inter-country labour mobility, wage and price flexibility and by the use of appropriate set of fiscal instruments (Goodhart, 1996). Moreover, in the presence of free labour mobility the prerequisite of homogeneous production structures for countries to satisfy OCA criteria becomes irrelevant. According to the OCA framework, Germany, France and the Benelux (Belgium, Netherlands and Luxemburg) countries (EU-5) could take-off as a successful monetary union by the dead line (DeGrauwe, 1996).

2.4 **Costs due to Loss of a Policy Handle :** A single currency can create certain economic rigidities in the form of short run inflexibility of relative prices. This inflexibility can lead to costly quantity adjustments to shocks and disturbances especially demand disturbances as reflected by the ERM crises of 1992 and 1993. The rise in demand for West German products caused by the German unification has rendered the relative price structures in the EU less flexible to respond sufficiently. In the event of advent of a single currency with the exchange rate instrument being no longer available, the need for flexible wages and prices becomes crucial for efficiency (Youmi and Thomas, 1995). The second cost is loss of seignorage. In the absence of the seignorage tax handle, relatively high inflation countries will be forced either to sell more debt or to reduce their budget deficits with consequent growth slowing prospects due to possible reduced infrastructure investment. The third cost arises with the disappearance of monetary policy as a national policy instrument. If asymmetric shocks occur or if economic agents react differently, a national policy response is needed and the absence of independent monetary policy represents a cost to the member country. Reduced availability of fiscal policy as a national adjustment mechanism would be the last major economic cost. In the absence of an independent national monetary policy, fiscal policy may have to play a more active role as an adjustment mechanism. But the ceilings on budget deficits and debt significantly reduce the efficacy of fiscal policy and its leeway in combating an awkward situation (Pauer, 1996) in favour of substituting receipt of transfer payments from other member countries (Bovenberg, Kremers and Masson, 1996).

2.5 **Jumbo Lift-off or Different Speed EMU :** At present, one has to speculate as to which countries will meet the tough Maastricht criteria to join

EMU on January 1, 1999. Would it be Jumbo (full EU) lift-off or would it be a multi-speed process? The various characteristic features of the EU member countries today reveal a lot about the convergence process and their prospectus for joining EMU on January 1, 1999.

2.5.1 **Evidence on Shocks in the EU States :** First, one should examine how different are the country-specific shocks in the EU member countries in comparison to regional shocks in an existing monetary union say, the US. A demand shock is represented by a shift in the demand curve and a supply shock as a shift in the supply curve. In a recent study (Bayoumi and Eichengreen of 1993), it is demonstrated (see Table 2) that the standard deviations of aggregate supply and aggregate demand shocks across the EU countries and across the regions within the US are so much similar that it is reasonable to argue that the EU countries closely approximate a monetary union. This is so because, though the core EU countries exhibit half the size of the supply shocks for the non-core countries, all the standard deviations remain at three percent or less. For the US regions the supply shocks remain at less than 2 percent. On the demand side, the relatively high variability in both tend to reflect greater specialisation of industrial production in the US and the scope for increased specialisation in the EU countries.

2.5.2 **Currency Integration in the EU :** International interest rate differentials persist significantly for several reasons. In a recent study Frenkel, Phillips and Chinn (1993) have reported results to suggest that currency barriers explain significant part of interest differential between each of the EU member states and Germany than country barriers. But both covered interest differentials and currency risk premiums seem to have declined overtime, though they both still remain significant, especially, the latter.

2.5.3 **Inflation Risk and Default Risk of the EU States :** Table 3 below reproduces data on several characteristics of the prospective EMU member countries. One important feature is that real growth (Col.4) is low, and real interest rate (Col.2 minus Col.3) is very high, perhaps, because of a rapid disinflation and insufficient credibility regarding fiscal stringency resulting in high risk premium (Winckler, Flochrciter and Brandner, 1996). Unpleasant monetary arithmetic exists for some countries in the union. It can be interpreted

Table 2 : Standard Deviations (%) of Aggregate Supply and Demand Shocks

EU Countries	*Supply Shocks*	*Demand Shocks*
Germany	0.017	0.014
France	0.012	0.012
Belgium	0.015	0.016
Netherlands	0.017	0.015
Denmark	0.017	0.021
UK	0.026	0.017
Italy	0.022	0.020
Spain	0.022	0.015
Ireland	0.021	0.034
Portugal	0.029	0.028
Greece	0.030	0.016
US Regions		
New England	0.014	0.025
Great Lakes	0.013	0.033
Plains	0.016	0.022
South East	0.011	0.018
South West	0.019	0.018
Rocky Mountains	0.018	0.015
Far West	0.013	0.017
Mid-East	0.012	0.019

Source : Bayoumi and Eichengreen, (1993)

as implying that markets do expect fiscal adjustments in the end because fiscal authorities also care about price stability. From Table 4, it becomes evident that with the exception of Greece and Italy, the potential for default risk looks fairly homogeneous across countries. However, the inflation risk indicator suggests three distinct clusters of countries, i.e., "Core" (C), "Intermediate" (I) and "Peripheral" (P). The lowest inflation risk premium is for Dutch bonds followed by Austria, Belgium and France; these countries belong to the core group. On the other hand, Italy, Spain, Portugal and Spain have to pay much higher premia for higher inflation risk, so they form a

"peripheral" cluster. In between is the "intermediate" cluster of countries. A member country with a high level of real debt relative to the German benchmark level may still be able to join EMU, provided the country's primary surplus (excluding seigniorage revenues) relative to that of Germany is sufficiently high (Winkler, Hochreiter and Brandner, 1996). All the evidence suggests that the UK, Sweden, Finland and Denmark may still converge towards the "criteria" to join the EMU along with Germany, France, and the

Table 3 : Data on the Convergence Process (Percentages)

Country	Debt Ratio	Long Term Interest Rate Average	Inflation Average	Real Growth Rate Average	Primary Deficit Without Seignorage	Seign-orage
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Germany	60.0	7.1	2.1	1.2	-0.3	0.6
Austria	68.0	7.1	2.3	1.7	2.3	1.0
Belgium	135.0	7.8	2.2	1.1	-3.7	0.8
Denmark	74.0	8.1	1.3	2.5	-3.7	1.0
Finland	65.0	9.2	1.6	1.0	0.1	0.0
France	52.0	7.7	1.5	1.4	1.8	0.7
Greece	114.0	24.6	8.3	0.9	-1.1	3.1
Ireland	86.0	8.3	1.7	5.1	-2.1	0.7
Italy	125.0	11.8	3.2	1.2	-2.5	1.1
Luxemburg	6.0	7.8	2.2	2.1	-0.8	0.0
Netherlands	78.0	7.1	1.5	2.0	-2.0	0.7
Portugal	71.0	7.3	4.2	0.9	0.7	0.9
Spain	65.0	10.7	3.2	1.2	-2.8	1.7
Sweden	84.0	9.6	2.3	0.4	0.3	1.1
United Kingdom	53.0	8.3	1.8	2.1	2.2	0.4

Source: Winckler, Hochreiter and Brandner, (May 1996), Table 1.

Notes : Col. 2 numbers refer to debt/GDP ratio in 1995; Col. 3 numbers refer to averages for 1992-95; Col. 4 percentages relate to averages of 1992-95 based on GDP deflator; Col. 5 numbers also refer to 1992-95 averages; Col. 6 refers to 1995 figures; and Col. 7 refers to averages of 1979-91.

Table 4 : Inflation Risk and Default Risk as on January 5, 1996
(Difference in basis points relative to Germany)

Country	3 Years to 1999		4 Years to 2000		5 Years to 2001		6 Years to 2002		Cluster Qualification
	IR	DR	IR	DR	IR	DR	IR	DR	
Austria	35	7	26	10	20	9	19	5	C
Belgium	45	4	49	5	51	4	54	3	C
Denmark	122	na	118	na	113	na	109	na	I
Finland	121	na	118	na	116	na	114	na	I
France	111	9	99	10	78	9	78	7	C
Greece	na	na	na	102	na	na	na	na	
Ireland	208	na	191	28	176	na	163	2	I
Italy	456	25	423	28	394	28	370	28	P
Luxemburg	na	na	na	na	na	na	na	na	
Netherlands	7	3	12	3	10	2	5	2	C
Portugal	505	na	476	na	447	na	421	na	P
Spain	492	11	462	6	434	5	410	na	P
Sweden	371	15	332	13	299	10	275	8	P
United Kingdom	244	3	219	4	197	2	179	-1	I

Source : Winckler, Hochreiter and Brandner, (May 1996), Tables 4 & 5.

Notes : na = not available; IR = Inflation Risk; DR = Default Risk; and 100 basis points = 1.0 percent. The last column Cluster Qualification reads as C = Core, I = Intermediate and P = Peripheral categories indicating the potential for joining the EMU.

Benelux countries in the first wave itself. But Spain, Italy, Greece and Portugal seem to have less chance of making it to the finishing line of January 1, 1999.

The consequences for the excluded countries on January 1, 1999 is that they run the risk of facing unfavourable effects entailed by financial markets on their currencies. There is a danger of unwanted currency depreciations and higher interest risk premia hitting these countries with adverse effects on inflation and budget deficits. These currency disruptions, in turn, are likely to

endanger the functioning of the Single Market itself. In the absence of a sufficiently wider EMU, the Single Market is unlikely to remain durable. Besides, there are some general conditions already largely put in place for a successful start of the full-EMU. First, there is a general consensus on macroeconomic management in the EMU countries; monetary policy is directed to price stability, budgetary policy is directed to long-term fiscal sustainability and structural reforms, especially labour market reform is geared to promoting mobility and flexibility. Second, inflation convergence is now projected at 2.25 percent in 1997 with an unprecedented narrowing in inflation dispersion (IMF, 1997). Excepting Greece, all other members are expected to register below 3 percent inflation during 1997. Third, government deficit is projected to climb down to 3.25 percent of GDP during 1997. Finally, institutional arrangements such as the Statute of the ECB guaranteeing the Bank's independence and the Stability and Growth Pact with its early warning systems and procedures for enforcing an appropriate fiscal adjustment are also being put in place. It is upto the EU member states, now, to put to rest any lingering doubts about the full-speed lift-off of the EMU by finishing the job since it is already close to completion (IMF, 1997).

3. THE TRANSITION TO EURO

3.1 **Decisions Still to Come on EMU :** Despite a socialist party coming into power in France, despite the German government's gold revaluation fiasco and notwithstanding the turbulences surrounding the ratification of the Stability and Growth pact, it appears that EMU is likely to start almost certainly as planned on January 1, 1999. The EC Treaty Article 109 i (4) stipulates that "if by the end of 1997 the date for the beginning of stage three has not been set, the third stage shall start on January 1, 1999. Before July 1, 1998, the Council (of Heads of State or Government) shall, acting by a qualified majority, confirm which member states fulfil the necessary criteria for the adoption of a single currency". A qualified majority of votes in the European Council requires 62 out of 87 votes. The number of votes the EU Countries have according to the EC Treaty Article 148, is as follows : Belgium(5), Denmark(3), Germany(10), Greece(5), Spain(8), France(10), Ireland(3), Italy(10), Luxemburg(2), Netherlands(5), Austria(4), Portugal(5), Finland(3), Sweden(4) and the United Kingdom(10). It is clear from this that unless Italy and UK

also join EMU alongwith France and Germany in the first phase itself for which the convergence criteria need to be satisfied, otherwise obtaining 62 votes out of 87 for the start of the third stage of EMU looks a formidable task. Thus, uncertainty remains with regard to which countries join at the launching of the third stage of EMU. The European Council decides it as early as possible in 1998.

3.2 **Conversion Rates to be Fixed** : A second uncertainty prevails concerning the conversion rates to be fixed among the participating currencies before the EMU launch on January 1, 1999. The Maastricht Treaty stipulates that fixing of the parities between national currencies and vis-a-vis EURO should not result in profit or loss for market participants. Given that the final parities to be adopted on the last trading day before the launch of EURO directly influence a country's competitive position via their impact on terms of trade, theoretical incentive exists for the participant countries to devalue their currencies upon the announcement of EMU. To minimize this scope, the Council will not announce the conversion rates into EURO, even if the EMU participants' bilateral parities are known, ahead of the launch date. In early 1998, when the Council announces its intention to use the bilateral exchange rates - whether they are the central ERM rates obtaining since March 6, 1995, the market rates on December 31, 1998 or some average rates observed over a reference period – the central banks intervene to an unlimited extent to achieve those bilateral target rates such that, the future EURO money supply and, therefore, inflation will not be affected (Buchel, 1997). In the end, the rate for conversion of each currency into EURO will have to be such that the external value of the EURO will be identical to that of the official ECU the preceding day. The EURO will, then, be a new denomination (a change of unit) of the participants' national currencies and it will not affect the external value of the national currencies even if some countries decide to join EMU later than January 1, 1999 (see Appendix 1).

3.3 **Legal Aspects of Changeover to EURO :** There are two regulations at EU level in the legal aspects of changeover to EURO. The first regulation (based on Article 235 of the EC Treaty) that comes into force in 1997 is about the continuity of contracts. All contracts denominated in ECU will be re-denominated in EURO at 1 ECU = 1 EURO. Even if a contract does not

make explicit reference to the official definition of ECU, it is to be presumed that this definition has been agreed upon, unless otherwise stated. The continuity-of-contracts regulation also ensures some of the practical aspects like six-digit conversion rates of the national currencies to the EURO and the division of EURO into 100 "cents". The second regulation deals with EURO's legal status in relation to the national currencies during and after the transition period. Once EMU starts off, EURO will replace national currencies both in legal and economic terms. The national currency units of each participant country will be treated as non-decimal, sub-divisions of EURO and become another expression of the respective EURO amount. This regulation will not be adopted until 1998 after the decision on the participating countries is announced and will come into effect in these countries on January 1, 1999.

3.4 **Changeover of the Markets to EURO :** The changeover to EURO will not mean a currency reform, but a numeraire conversion of monetary assets and liabilities with the value being maintained. EURO takes over all monetary functions and will impact all the markets and all segments of banking business. The changeover to EURO will be in non-cash form from January 1, 1999. Bank accounts will also be converted at the start of EMU and banks will provide appropriate products and services in EUROs. Many international companies intend to change quickly over to EURO and how much of this will trigger a chain reaction among their suppliers and clients cannot be assessed on an a priori-basis. But it seems, the general public will probably changeover to EURO only when the EURO notes and coins are put into circulation (Boeschoten and Stockman, 1996; Stockman and Prast, 1997). Similarly, all public administration will probably convert to EURO completely at the beginning of the year 2002. Production of sufficient quantity of EURO notes and coins for participating countries will not begin until after the ECB has been established.

The foreign exchange markets are set to changeover to EURO early in the first week of January 1999. For example, for France, it is January 4, 1999. All financial institutions' foreign exchange holdings of EURO-area currencies will be converted into and the interbank forex market settlements will be made in EURO only. Of course, some operating rules and guidelines need to be worked out for effecting this and some benchmark exchange rates are to be given by the central bank of each participating country. All interbank money market transactions – outstanding debt securities and the repo market

Table 5 : Changeover Dates for the Markets

Markets	*Transaction & Dates (Flows)*	*Instruments Conversions (Stocks)*
Forex Markets	EURO January 1-7, 1999 Quotes Trading	EURO Immediate Conversion of Outstanding Currency Swaps, Options and Futures
Money Markets	EURO January 1, 1999 Quotes Trading	EURO i. Automatic conversion of ECU-denominated securities into EURO-denominated ones. ii. Rapid conversion of national currency - denominated securities and repos into EURO - denominated ones. iii. New government securities issue in EURO-denomination.
Bond Markets	EURO January 1, 1999 Quotes Trading	EURO/National Currency i. Automatic conversion of ECU-denominated bonds into EURO-denominated ones. ii. Conversion of outstanding government bonds into EURO-denomination at the start itself. iii. New government bonds issued in EURO. iv. Gradual conversion of outstanding private sector bonds.
Equity Markets	EURO January 1, 1999 Quotes Trading	EURO Conversion of par values into EURO on January 1, 2002.

Source : Adopted from BIS Review No. 7, (January 29, 1997) p.2 of Hannoun (1997) and similar speeches of Central bank Governors and Deputy Governors of European Banks.

transactions – will be expressed in EUROs as monetary policy transactions will be conducted in EURO. Only in the call money markets the changeover poses a discontinuity. The bond markets and equity markets face only minor technical problems during transition. Contracts in "open basket" ECUs extending beyond January 1, 1999 will be drawn up with the anticipation of the move to EURO. On the other hand, contracts drawn up in "closed basket" ECUs will have to be renegotiated probably.

4. THE ECB AND MONETARY POLICY

4.1 **The Tasks and the Structure of ECB :** The EMI is the precursor of ECB and it started to operate from January 1994. The first task of EMI is to prepare the ground for a single monetary policy operation in stage three and develop adequate instruments. National monetary policies are coordinated by the EMI in the pursuit of price stability as its second task. The third and most important task is to regularly report on the progress of convergence situation for deciding which countries join EMU from the start. Then, ECB will take over the monetary policy responsibilities in stage three. Its decision making authority rests with the governors of the independent central banks of the member states along with its executive board called the governing council operating on a one man one vote basis. The primary task of ECB is to pursue price stability as it is independent of instruction from any national authority. Besides steering the monetary course, the ECB also manages the foreign exchange reserves of the member states and decides on both the exchange rate regime and policy. The governing council of ECB can alone authorize issuance of EURO notes. For the benefit of the not-yet-participating currencies, a new EMS-II will be created for facilitating smooth entry later with EURO as the anchor currency.

4.2 **Convergence of Monetary Framework :** It was one of the tasks of the EMI to suggest harmonisation of monetary policy framework as opposed to the large variation existing in the EU countries today. The EMI has suggested in early 1997 in a research paper that minimum reserve requirements has become an out-dated and crude instrument of monetary regulation. Therefore, if commercial banks maintain minimum deposits with the ECB, they should bear interest at market rates. Then, the core monetary

regulation will be done through provision of liquidity on a regular basis and steering of money market interest rates via open market operations with repos. This harmonisation in monetary instruments is required for effective money-supply or direct inflation targeting by the ECB as opposed to targeting varying intermediate goals as is in vogue at present.

5. BENEFITS AND COSTS OF A SINGLE CURRENCY

5.1 **The Efficiency Gains from One Money :** Benefits of one money are many and varied. They are more than those derived from a common currency such as ECU and can be classified into internal and external (external to EMU) benefits. The internal benefits can be further grouped into micro-efficiency gains of both static and dynamic nature and macroeconomic benefits. Of course, the microeconomic efficiency gains ultimately translate into macroeconomic benefits.

5.1.1 **Savings in Transaction Costs :** A single currency eliminates transaction costs involved in switching from one currency to another even when exchange rates were fixed. The inconvenience and costs of keeping accounts in several currencies disappear. Money is a public good. A single currency as a public good facilitates both economic transactions and obtaining of information by adding price transparency to goods and services across borders. This transparency encourages market integration and strengthens competition. Of course, it cannot be said a priori to what extent the introduction of a single currency will eliminate all exchange related conversion costs because these costs have already declined with exchange rates increasingly becoming fixed in the ERM. But one thing is sure, the bid-ask spread component of these conversion costs will come down (Emerson et. al., 1992). Furthermore, a single currency cuts expenses and delays connected with cross-border bank payments. Above all, it reduces many in-house costs of the non-financial corporate sector concerning treasury and accounting functions, cash management in multiple currencies and the opportunity costs of avoiding rather than managing exchange risk. A larger financial market leads to lower transaction and insurance costs.

5.1.2 **Eliminates Exchange Rate Uncertainty :** The advent of a single currency eliminates exchange rate uncertainty within the monetary union (Musa, 1986). Only the unexpected movements in exchange rates create uncertainty. The benefits of any reduction in exchange rate uncertainty depends mainly on whether movements in exchange rates primarily reflect underlying economic fundamentals including national monetary policy actions or mere movements in market sentiment. To the extent that economic fundamentals are reflected by the exchange rate movements, any smoothing of these changes will be harmful because it leads to distortionary effects on the proper play of market mechanism. On the other hand, only those movements in market sentiment that cause exchange rate misalignment and hence misallocation of resources need to be smoothened. Even here, only those misalignments which cannot easily be insured through futures and forward contracts need to be smoothened which will lead to positive effects on trade and investment (Bean, 1992; Peree and Steinherr, 1989).

5.1.3 **Dynamic Gains from One Money :** The positive effects of reduced exchange rate uncertainty on trade and investment would lead to improved capital productivity and further positive response of national capital stocks to these efficiency gains. These are indirect and dynamic in nature as they are gains from integration obtained through long-run adjustment of capital levels – both physical and human – to new equilibrium levels (Baldwin, 1989). The dynamic effects of a reduction in exchange rate risk through reduction in risk premiums yield higher output growth (Baldwin, 1990). Furthermore, if the advent of one money affects the business climate and expectations favourably, the benefits of a stronger growth and higher output could not be insignificant (Baldwin and Lyons, 1990).

5.2 **Financial Market Gains :** The introduction of one money will eliminate certain still continuing aspects of market imperfections in financial services. These imperfections, especially, relate to both wholesale and retail banking. A single currency obviates the need for keeping open foreign exchange positions by banks in multiple currencies and enhances competition for deposits as well as loans. Margins, of course, come under pressure but profits swell due to larger volumes and turnover. One money will create a much deeper and broader market in financial services as participants can

trade and invest in all the EMU countries without currency risk. For instance, the combined EMU (11 member countries) bond market (6 hard currencies) is said to correspond to about 50 percent of the US dollar market and is considerably larger than the Japanese bond market. Competition between banks within EMU will increase, especially in the large-volume segment of financing, investment banking, asset management, treasury, money and foreign exchange dealings including the cross-border banking. As a result, concentration is likely to intensify in wholesale banking with the advent of a single currency (Kopper, 1996). In the wake of the changeover to a single currency, banks start reaping the advantages of economies of scale. In other words the relative cost burden will be higher for smaller than for larger banks. At the same time, the stable environment of a one-money area coupled with converging interest rates to lower levels might reduce the relative cost advantages of large banks. Also, a bank's efficiency may well be enhanced by the way it implements the change over to a single currency. A well planned changeover accomplished in a short time yields more benefits. Thus, the process and speed of changeover also provide a competitive advantage. Local banks have to face greater competition from larger and international banks. As a result, local customers can expect lower prices for financial services, coupled with improved quality and availability of those services.

The integration of financial markets will boost the supply of new services and investment opportunities. The liquidity of the financial markets will grow substantially due to increased number of participants as well as instruments. Issuers of securities and investors in smaller countries will benefit more from this development. With the introduction of a single currency, currency risk and interest rate risk disappear within the monetary union but the pricing of credit risks assumes more importance. Large banks will probably benefit and expand their corporate analysis activities as these activities increasingly become their competitive capability. Competition for financing of small and medium-sized firms will intensify as large companies access capital markets directly. In retail banking the various bank and non-bank financial intermediaries (mutual funds, insurance companies, etc.) will generate the highest competition pressure in the short-run. With the changeover to a single currency, retail banking could thrive on service-intense products that require physical proximity to the customer. Large and foreign players go after the best-quality customers

of local banks. The risk-weighted capital requirements of banks will also decrease along with the declining exchange rate risks as potential currency mismatches will be reduced. The same applies to contingent liabilities like currency guarantees, letters of credit, derivate products, etc. Table 6 below reports approximate static and dynamic efficiency gains of EMU as percentage of GDP of all the eleven members of the Union (Trinkfass, 1994). In all, the arrival of a single currency will transform life for just about every financial institution, from central banks to futures exchanges. It will create a vast single capital market that is as broad, deep and transparent as that in the US. Europe's national banking systems integrate among themselves with one another at an accelerated pace. Increasing pressure will be brought on banks and other financial institutions to cut costs, rationalize and merge.

5.3 **Losses Due to One Money :** Generally, there is a permanent loss of earnings due to a single currency facing banks. This loss affects banks' long-term earnings prospects much more severely than the transition-to-one-money in the short-run. Lower earnings must be expected in foreign exchange trading – loss of spreads, floats, currency exchange etc. – in bond trading and in foreign payment transactions. Losses will be maximum for instance, with exchange offices in tourist regions etc. Also a single currency leads to a decline in the relatively expensive cross-border payments and to an increase in the relatively cheaper "domestic payments". A large liquid and integrated capital market will lead to a decline in the demand for bank loans. In addition, the demand for credit ratings of firms will grow. This implies that the rating will assume even more important role in determining the cost of money, which may result in an increase of the cost of money. According to some estimates by the Directorate-General for Economic and Financial Affairs of the European Commission the potential losses in banks' income from a single currency are reported in Table 7. The banks who are active in international business have to brace for the heaviest decline in income.

5.4 **Costs of Transition :** For assessing the costs of transition for banks the European Banking Federation conducted a survey of its members and estimated that the European banks could incur additional expenses of ECU 8-10 billion or 2 percent of their current annual operating expenditure for a transition period of three years (Christi, 1996). Some recent studies have

Table 6 : Static and Dynamic Gains of EMU

	As percentage of GDP	
	Range	*Mean Value*
I. Economic Union		
1. Static Efficiency Gains	2.5 – 6.5	4.50
2. Dynamic Efficiency Gains (from economies of scale, stimulation of trade and investment)	0.5 – 9.0	4.75
3. Total Gains	3.0 – 15.5	9.25
II. Monetary Union		
1. Static Effects (Reduction of direct transaction costs)	0.25 – 1.0	0.5
2. Dynamic Effects		
(a) Economies of scale	0 – 0.75	0.5
(b) Capital creation due to the elimination of the risk premium	0 – 28.0	14.0
III. Economic and Monetary Union	3.25 – 45.25	24.25

Source : G Trinkfass, (1994)

reported that these estimates of costs of transition are much exaggerated and actually are far less. Recently, more than 900 firms ranging from global investment banks to smaller securities specialists were interviewed through questionnaire. The International Securities Market Association (ISMA, 1996) reports the finding that "the securities business of the financial industry will be ready on time ...". However, the study reports that the EURO conversion costs amount to an average of minuscule 0.00058 percentage of total operating costs of financial institutions. Also the report claims "that some 95 percent of the securities firms continually upgrade their IT (Information Technology) systems, not because of the imminence of EMU but to respond to the changing needs of the market". Given that choosing a base currency or introducing a new currency into an existing system will be at no extra adaptation cost of software especially when the firms are geared up for

Table 7 : Potential Losses in Banks' Income (in ECU Billion)

Estimated Losses Due to	*Minimum*	*Maximum*
1. Domestic payments	6.4	10.6
2. Foreign banknotes, Eurocheques, Traveller's cheques, credit cards, etc.	1.8	2.5
3. Cross border payments	1.3	1.3
Total Commission and Fee Business	**9.5**	**14.4**

Source : Christi, F, and E Furst, (1992)

continuous conversion, there is no foundation for the wild numbers put forth in past of the conversion costs.

6. INTERNATIONAL ROLE OF EURO

6.1 **The Irrelevance Proposition :** Grassman (1973) found a "fundamental symmetry in international payments patterns" which has come to be known as Grassman's law. It says that exports are generally invoiced in the exporter's currency and for small open economies, two-thirds of the trade contracts tend to be invoiced in the exporters' currency. Therefore, the currency denomination of contracts will be irrelevant if all the parties to the contracts are equally risk averse. The real world practice of invoicing trade contracts, however, tends to disprove this law and the reasons are many. For instance, the importer's preferences for invoicing currency may be different because of his risk preferences. If trade credit is extended as part of a contract then preferences for invoicing currency may not be the same (McKinnon, 1979). In case of trade between developed and developing countries preferences may be to use the developed country's currency for invoicing because of lack of development of developing countries' capital markets or instability of their currencies or other factors. In the absence of forward-market-hedging facilities in the world, the irrelevance law holds good in all probability because the parties will be indifferent to currency denomination of the contracts (Rao and Magee, 1980). "Empirically, Grassman's law does appear to hold for trade in differentiated manufactured goods" (Bilson, 1987).

6.2 **Some Prerequisites :** The international use of a currency comes into being, whenever a national currency performs all the three functions of a unit of account, means of payment (medium of exchange) and store of value (Kenen, 1983). The first function is performed whenever invoicing of merchandise trade takes place in the currency. The latter two functions, and especially the third, are performed when the currency serves as a vehicle currency. Of course, technically the use of a currency as a vehicle for both invoicing and as a medium of exchange are unrelated (Tavlas, 1996). For any currency to serve these functions there are two principal prerequisites : First, there is need to have confidence in the political stability of the issuing country and in the value of the currency as well. Second, the currency should posses financial markets that are broad with large assortment of financial instruments traded and deep with well developed secondary markets that are substantially free of trade restrictions and capital controls (Tavlas and Ozeki, 1992). Then only, the country of the currency can play the role of a world banker, and that country could be borrowing short and lending long in its own currency thereby enhancing the international use of that currency. In other words, the country possesses : (i) a large supply of relatively stable and high-yielding short-term instruments denominated in its own currency; (ii) the access to which is relatively free of controls; and (iii) the nation has a

Table 8 : The Functions of an International Currency

	Sector	
Function	Private	Official
Unit of account	For invoicing foreign trade and denominating international financial instruments	For defining exchange rate relationships
Means of payment (Medium of exchange)	For settling foreign trade and financial obligations	For use as an interventionist currency and financing balance of payments
Store of value	For denominating assets and liabilities	For foreign exchange reserve holdings by monetary authorities

history of low and stable inflation (Tavlas and Ozeki, 1992).

6.3 **EURO as a Transaction Currency :** In a multi-polar monetary regime, the share of distributive role of each major currency would be roughly proportional to the economic weight of each region. Deviations from this take place on an incremental basis over a long period of time. Also former dominant currencies, say such as G B pound, tend to retain a large part of their role for quite some time (Alogoskoufis and Portes, 1990). Today the US dollar is the dominant currency for invoicing trade. "The EURO is likely to be used as a unit of account in trade. At the moment the dollar is the only currency where its use exceeds the country of origins' weight in world trade by a wide margin. The use of deutschemark is also somewhat greater than its weight" (OECD, 1997-98). The US dollar is used almost in 50 percent of international commercial invoicing and as such guarantees it a position equivalent to almost three and a half times the USA's share in world trade. Table 9 below reports trade invoicing pattern in recent years. The only other currency of some signficance is the deutschemark whose share of 15.7 percent in trade invoicing exceeds Germany's share of world trade (10 percent) by more than five and half percentage points. The US dollar also remains a dominant transactions currency often being a substitute currency in countries with high inflation. In 1995, 72 percent of all world spot foreign exchange trading volume was in dollars only (Hartmann, 1996). One view is that the American currency is most likely to increase its share as a transactions currency at the time of launch of EMU on January 1, 1999 for one reason. The EMU will transform trade between the member countries into domestic trade in monetary terms as well. This would reduce world trade by about 23 percent (excluding service trade). This pure statistical effect will probably conscript EURO's share as a transaction currency initially at the time of EMU launch than indicated by the sum total of the present shares of EMU currencies that disappear into EURO. It is in this sense that the share of US dollar invoicing will rise perhaps to about 60 percent at the time of the EMU launch.

On the other hand, a substantial portion of the present US dollar invoicing of intra-European trade will, in all probability, be substituted by the EURO invoicing. If it is not going to be a jumbo lift-off for EMU in 1999, then the trade between the EMU participants and the "opt-in" countries of EMU – the EURO-area will be most important for them. Therefore, except in case of

Table 9 : Trade Invoicing in Major Currencies (in %)

	1980	*1992*	*1996*
US dollar	56.4	47.6	47.0
Deutsche Mark	13.6	15.5	15.7
French Franc	4.5	6.3	6.5
Japanese Yen	2.1	4.8	4.9
British Pound	—	5.5	5.7

Source : EU-Commission and Hartmann (1996)

export invoicing by Britain which, perhaps, will continue in the GB pound only, the remaining 'extra regional trade' will be in EURO almost to the extent of 30 percent. Added to this is the Eastern European trade with EU-15 countries vis-a-vis the US. For example, six East European countries (Bulgaria, Czech Republic, Hungary, Poland, Rumania, and Slovakia) and three former Soviet Union states (Estonia, Latvia and Lithuania) have their share of exports plus imports to EU-15 in 1995 ranging from the lowest of 42 percent for Lithuania to 67 percent for Poland. The corresponding figures of trade for these countries with the US are 1.5 percent and 4 percent respectively (IMF, 1996). Strong growth of these trade flows between the EU countries and Eastern Europe is likely to give EURO the dominant invoicing currency role. Also, part of the trade, except in oil, of the African and Middle East countries bordering on or associated with the EU countries could be invoiced in EURO.

In Asia, the US dollar has been the dominant invoicing currency so far and these practices like habits change very slowly. Therefore, it takes time for EURO to gain stronger footage in this part of the world. Also, the relative inflation performance of EURO vis-a-vis the US dollar determines the relative attractiveness of EURO and how it overcomes the gravitational pull of the relative transaction-cost advantages, economies of scale and established habits of invoicing in the American currency. If EURO were to gain invoicing-currency role beyond Europe's borders, the Stability and Growth Pact must impinge very heavily on the role of ECB after the EMU launch. As the markets gain increasing depth, transaction costs decline and with better inflation performance, the medium term share of EURO as an invoicing currency in

Table 10 : Potential Intra-European Trade in EURO

	GDP	*External Trade*	
		Volume	*Ratio*
	(1)	(2)	(3)
U S A	6960	1355	19.5
Japan	5110	780	15.3
EU-15	8420	1485	17.6
EU-10	5715	1500	26.2
Germany	2415	955	39.5
France	1540	560	36.4

Source : 1. OECD Main Economic Indicators, March 1992
2. Directions of Trade Statistics year Book IMF 1996.

Notes : Column (1) is in billions of US dollars in 1995 prices and exchange rates. Column (2) is sum of total imports and exports except in case of the EU countries; in the case of EU countries external trade is the extra regional trade. Column (3) is the ratio of col (2) to col (1) in percentage.

the tri-polar world of the US dollar, Japanese yen and EURO can be put around 35 percent (Deutsche Bank, 1997).

6.4 **EURO as an Investment Currency :** The first effect of a single currency in Europe is to fuse the individual financial markets into a European financial market with possible dramatic increases in volume, liquidity and lower issuance costs. Greater liquidity and depth would increase the international demand for bonds denominated in EURO (like EURO instruments). Private portfolio managers would definitely find the EURO-bond market attractive if it offers diversification benefits better than those available in the constituent currency-bond markets. Large size and diverse investors could provide a philip to the market with some spillovers from the US dollar market. The following table (Table 11) reveals the currency-wise pattern of investment in international bond markets :

Table 11 : Currency-Pattern of International Bonds

Currency-wise Shares of Outstanding International Bonds (%)	*1981*	*1996*
US dollar	53	38
EU currencies	20	35
Yen	7	16
Others	20	11

Source : Bank for International Settlements (May 1997).

The US dollar was and still is the pre-eminent investment currency for international bonds. Nevertheless, the numbers indicate that investors are diversifying their portfolios into European currencies and yen. While 53 percent of all outstanding international bonds were denominated in the US dollar in 1981, the share dropped to a low of 38 percent in 1996 with EU currency bonds closely competing with 35 percent. Both yen and EU-currencies have made significant strides into international bond markets.

The most crucial precondition for the attractiveness of EURO as a new international investment currency will be its stability. The recent history of depreciation of the deutschemark against the US dollar and the British pound has created the fears that EURO is going to be unveiled as a weak inflation-ridden currency. The recent change of government in France has also added strength to these fears. On critical analysis, however, these fears sound unwarranted. Given that during 1996 inflation in the EU countries averaged 2.5 percent and is strongly expected to further come down to 2.0 percent per annum in 1997, there is much to suggest of unveiling a stable EURO. The statute put in place for an independent ECB modeled on the lines of Germany's Bundesbank certainly serves to allay the fears of a weak EURO coming into being and on the contrary it could create a solid foundation for a firm EURO.

6.4.1 **EURO Bond and Equity Markets :** In terms of size, government and private sector bond markets coupled with the equity market in EURO are likely to be the second only next to the US dollar markets. Of course, the European equity markets may not achieve comparable level of integration as the bond markets right from the outset. At the end of 1995, the aggregate

bond market of the EU-15 member countries amounted to around 75 percent of its US counterpart. Even the EU-10 countries (Austria, Belgium, Finland, France, Germany, Ireland, Luxembourg, Netherlands, Spain and Portugal), put together, the volume still amounted to just over 50 percent of the US market. High liquidity, low inflation and low volatility environment on the eve of a single currency will put the European bond markets more sharply into focus for international investors (BIS, 1997). In the absence of exchange risks, a single currency will conscript interest rate differentials to such an extent that the remaining differentials reflect only the issuers' credit risks and liquidity differences. The higher attractiveness of the bond market will, in all likelihood, trigger a disintermediation process. This should result in more issuing activity and less lending business by banks. With interest rates in the EURO-zone not containing risk premiums for possible devaluations, the credit risk will become more pronounced for lending purposes. For banks it means an increase in the cost of money. For the corporates, it means acceleration in the development of corporate bond markets as the typical credit-risk culture of the US and UK takes hold in EMU. The advent of the single currency would also create more competition, consolidation and innovation leading to acceleration of equity markets integration across EMU.

6.4.2 **EURO Derivatives Markets:** The coming of EURO would affect derivatives markets in two ways : (i) the number of contracts will decline by as much as 200 involving 13 currencies, and (ii) competition mounts for the remaining small number of contracts (IMF, 1997). "The implications for bond market futures are less easy to predict, but stable spreads and low risk could lead to the development of a single liquid generic ten-year futures contract" (IMF, 1997). With the arrival of EURO, the size and pattern of capital flows into and out of the EURO-Zone will change alongwith shifts in international capital portfolios. The forces underlying these changes would be the strength and stability of EURO, the role of EURO in the international monetary system and the future depth and liquidity of the EU financial markets. Lower transaction costs, absence of exchange rate risk, fewer barriers to cross-border investment, and possible portfolio diversification opportunities create great incentives for the development of deep and liquid bond markets both within and outside EMU (Prati and Schinasi, 1997).

6.5 **EURO as a Reserve Currency :** Economic theory suggests that reserve currencies must be liquid, fully convertible into other currencies and be able to represent a stable store of value. The official monetary landscape will undergo a significant change with the arrival of EURO. For the member countries, the elimination of intra-EMU exchange rates reduces the need for reserve holdings and for the third countries EURO could increasingly serve as an alternative anchor to become a major reserve asset. The intra-EMU holdings of the currencies to be replaced by EURO would no longer be international reserves. The bulk of reserves outside the EU today are held by East Asian countries which may not shift from the US dollar to EURO for an exchange rate anchor, so substitution of the dollar by EURO immediately need not take place. Table 12 below posits the currency composition of official reserves worldwide. It can be easily seen that EMU's EURO will be the second but not a close second reserve currency to the US dollar.

Table 12 : Official Currency Reserves Worldwide

	1975	*1985*	*1995*
US Dollar	79.0	65.0	61.5
Yen	0.5	8.0	7.5
EU-4	12.0	20.0	20.0
of which;			
Deutschemark	6.2	15.0	14.0
G B Pound	4.0	3.0	3.5
FR Franc	1.2	1.0	2.0
NL Guilder	0.6	1.0	0.5
Swiss Franc	1.5	2.2	0.5

Source : IMF Annual Reports and BIS Quarterly Bulletins

6.5.1. **Interventionist Role :** In the industrialized countries, the monetary authorities maintain currency reserves primarily for the purpose of intervening on the exchange markets in order to stabilize exchange rates. A generally accepted principle here is that for a given exchange rate system the optimum amount of reserves depends on the volume of foreign exchange transactions.

Applying this principle, EMU should reduce its reserve holdings by the same percentage as the share of intra-EMU transactions in total foreign transactions. Accordingly, it is argued that the excess US dollar currency reserve holdings will be sold after the launch of EMU to create a subdued dollar. Another argument is that this inference could be a gross exaggeration. For instance, according to Adler and Chang (1997), the total pre-EMU foreign exchange reserves change composition after EMU into 50 percent becoming intra-EMU domestic assets, about 20 percent into ECB capital and reserves, another 25 percent national central bank reserves and the remaining 5 percent as government working balances (Adler and Chang, 1997). For EMU members, EUROs become a domestic asset on January 1, 1999 and therefore this conversion of reserves automatically decreases foreign exchange reserves by half of current levels in all EU countries. According to the Maastricht Treaty, the ECB capital and reserves of about 5 billion ECU to be contributed by each national central bank was not specific of mentioning any composition. However, reserve contributions to the ECB cannot be in ECU, and also neither in member states' currencies nor in the IMF reserve positions of SDRs. These restrictions imply that the reserve contributions will mainly be in the US dollar. The amount due from each member state is said to be proportional to the country's population in 1998 and its GDP during 1994-98.

6.5.2 **Effect of EMU on the Composition of Reserves :** Analytically there are two modelling strategies in the literature employed for determining the optimal composition of international reserves of central banks. One is the transactions approach expounded by Dooley, Lizondo and Mathieson (1989) and the other is the portfolio balance approach put forth by Dooley (1986), Black (1985), Ben-Basset (1980) and Heller and Knight (1978). The former advocates that the currency composition of central banks should correspond to exchange market activities and the costs of converting or borrowing currencies. The latter approach was found useful during the 1960s and early 1970s because rates of return on reserves did seem to matter to central banks. But, during the middle and late 1970s and during the 1980s portfolio optimization purview became less important as countries came to be concerned about international monetary stability. In fact, the currency composition of a country's reserves has come to be the outcome of the choice of interventionist currency. However, for the developing and semi-

industrialized countries, rates of return considerations also assume some significance even today. Averaging the forecasts of models from both the approaches, Dooley (1994) found that there may be a net decline in the demand for the dollar reserves to the extent of 30 percent of the pre-EMU levels provided the ECB models itself on the lines of the Bundesbank or takes on the median characteristics of the member countries other than Portugal, Spain, Greece and Italy.

6.5.3 **No Excess Reserves a la EMU :** There is, however, an enticement rule that may tempt national central banks to sell reserves before EMU starts. "All income from reserves is to be distributed among member countries according to their capital share. Countries that potentially lose revenue according to this distribution scheme may have an incentive to sell reserves prior to the start of EMU. The sale proceeds may usefully act to reduce debts and deficits. As a result, the proceeds could be used to squeeze into the Maastricht criteria" (Adler and Chang, 1997). However, the truth is that central banks in the EMU-area are unlikely to sell reserves on a significantly large scale as such sales may upset exchange markets and the monetary and foreign exchange policies of these countries. Moreover, Articles 51, 104 and 107 of the Maastricht Treaty seem to contain provisions that tend to dampen the incentive and enthusiasm to sell reserves. Then, there is the other school of thought that argues that national central banks of EMU countries could end up holding excess reserves over and above the need to settle trade and accommodate current account shocks. The precautionary motive of these central banks may become more cautionary during transition from the pre-EMU to the launching date of EMU. However, there is some skepticism unveiled recently on the reliability of workings of these optimal reserve models (Adler and Chang, 1996).

6.6 **EURO and the International Monetary System :** The fact that EURO is going to be the second dominant currency next only to the US dollar, will be a central factor that developing countries have to reckon with in designing their exchange rate policies and reserve policies. EURO also poses problems to IMF's procedures in dealing with the individual EMU member countries in respect of SDR quotas and their rights and obligations. Should SDR be redefined and if so how the EURO would be used in IMF operations? On the

other hand, there is the issue of international policy coordination in a tri-polar world of US dollar, EURO and yen that concerns the international monetary system in the future.

6.6.1 **Weak or Strong EURO :** Early in the launch of EMU, uncertainty may prevail due to changing transactions habits, portfolio adjustment, etc., which might cause erratic fluctuations in the demand for EURO relative to the earlier constituent currencies thus leading to unpredictable interest rate and exchange rate effects. The ECB will have to act and mitigate the excessive fluctuations in the interest and exchange rates in the interest of a stable EURO. A weak EURO is conceivable in the event of a major change contemplated in US economic policy before the birth of EMU and EURO. This change in policy coupled with expansive fiscal policy could lead to massive capital inflows into US as it happened during early 1980s. And this could cause the US dollar to rise sharply against EURO and other currencies of the world as well. As a product of such policy changes, a weak EURO,may unveil itself despite ECB's efforts to bring forth a stable EURO. On the other hand, there is also the possibility of a weak EURO coming into being in the hope of stimulating the economy via enhanced exports and reduced imports. During 1996-97 a definite weakening of the prospective EMU currencies against the dollar has taken place to the extent of 15 percent on average and this seems to provide support to the suspicion that a weak EURO might come into being. However, the IMF calls for and also expects the EURO to be neither weak nor strong but stable and well managed. Hopefully, a devaluation strategy of the European currencies vis-a-vis the US dollar can be ruled out in the running-up to EMU.

6.6.2 **Policy Coordination Among the Currency Blocs :** A EURO that is neither too weak nor too strong will have positive effects on the trade with the neighbouring countries. This would improve economic integration between EMU and its neighbouring countries which can only be built and sustained on exchange rate stability of EURO. "In particular, countries of Central and Eastern Europe and the Mediterranean might limit their exchange rate fluctuations against EURO as part of a transition to membership in the EU (in future)" (IMF, 1997). The economic sentiments of pursuing a low and stable inflation, a stable external value of the currency, etc., not only become imperative for EMU but also help guide the policies of the United States and Japan as well. Thus, "there would seem to be no reason to assume that the

European authorities would on average be either more or less attached to the strength of their currency than their colleagues in the United States and Japan" (Polak, 1997). The chances of an inward-looking EMU, and an EMU that is less interested in international policy coordination are minimal. However, there are some grey areas as to the EU representation in international forums, EMU's responsibilities for international economic and monetary policies, formal exchange rate arrangements, etc. The ECB should not remain reluctant to venture into agreements whenever and wherever necessary to enhance international policy coordination. It should not remain indifferent to its international responsibilities even if its jurisdiction looks unclear. In fact, with EMU and EURO in place, if the G-7 were replaced by the G-3 it would be positive for economic and monetary policy coordination. But then, this requires EMU to put in place counterparts of ECB for fiscal policy and for other economic policies. As EURO evolves slowly but surely as the second largest international currency, it will also, in all faith, shoulder its changing responsibilities while discharging its new international policy coordination role.

6.6.3 **EURO Effects on the IMF:** The advent of EMU will not affect the rights and obligations of members of the IMF under the Articles of Agreement. However, the transfer of monetary policy responsibilities to the ECB and EURO will raise a number of issues to the IMF and the SDR basket. For instance, it is most likely that the EMU member nations will remain as individual members of the IMF at least for some time if not forever. In an ultimate reality, the EMU might opt for a joint membership of the IMF with a common quota and common accessibility. But until then how does the IMF decide "whether to sell in its transactions EUROs from the account of Germany or Italy?" Also "how does it focus on the balance of payments strength of individual EMU members or on that of the EMU as a whole?" (Polak, 1997). What would be the consequences of a prospective partial or large scale merger of the policies of majority of EMU members on the structure and governance of the IMF? These questions do not have immediate answers but at the same time, they do not seem to pose any fundamental problems to the structure and governance of the IMF (Polak, 1997).

6.6.4 **EURO and the SDR :** The advent of EURO leads to a slimming down of the SDR to a four currencied-basket (as the GB pound will not join the

first round of EMU) and ultimately to a basket of three only. But, it appears, the EURO does not create any serious systemic problems for the SDR operations. In contrast, could the creation of EURO brighten the outlook for a third IMF decision to allocate SDRs in view of the global need to supplement present reserves since its last (and second) allocation in 1978. The expert opinion is that the introduction of EURO is not likely to brighten the outlook for such an allocation (Polak, 1997). Similarly, even the outlook for the creation of an "SDR Substitution Account" which was considered necessary to deal with the "overhang" of excessive dollars during the late 1970s may not receive support even today also (Polak, 1997).

6.6.5 **EURO and Exchange Rate Arrangements of the Developing Countries :** EURO may act as an anchor for several world currencies, primarily for those countries whose trade with EMU is large and particularly for those EU members who will join EMU later. For the latter countries EURO becomes an intervention currency within the framework of ERM II. This also holds good for the countries of the European Free Trade Association (EFTA). Table 13 below displays the current exchange rate arrangements in the world. These arrangements vary from a flexible and managed float through a basket or a single currency-peg to currency boards. There is nothing like a universally optimal exchange rate arrangement. The need for an exchange rate arrangement is most felt in developing countries where the trade considerations, inflation performances or geographic proximity dictate the need for a particular exchange rate arrangement. For example, a single currency-peg is considered more effective for its transparency than a basket-peg which is considered opaque in its implications for exchange rate management. For countries with high rates of inflation, a low but stable – inflation – key – currency - peg might help stabilize these economies. Much of the appeal of basket pegging stems from the stability of the basket of currencies that are significant partners in trade for the country contemplating its currency peg. It also avoids importing of the direct influence of any political and institutional factor changes (or upheavals) inherent in a single currency-peg (Lipschitz and Sundararajan, 1980 and 1982). It is reasonable to argue that many developing countries have found managed floating to be not only feasible but also gainful for liberalizing their financial and economic systems, for combating

Table 13 : World Exchange Rate Arrangements

Type of Arrangement	Number of Currency Arrangements	
	Mid 1990	March 1997
Pegging to :	48	44
US Dollar	29	21
French Franc	14	15
Other Currency	5	8
Currency Basket :	37	21
SDR Basket	7	2
Other Baskets	30	19
More Flexible Arrangements :	40	88
Managed Floating	20	45
Independently Floating	17	43
Based on Indicators	3	0
Total	**125**	**153**

Source : (i) J J Polak (1997)
(ii) IMF, International Financial Statistics (April 1997)

domestic inflation and forwarding off the ill effects of excessive capital inflows. Assuming that the IMF takes on the responsibilities for organizing collective consultations among the three currency blocs for achieving a triangle of acceptable exchange rates, the developing countries do benefit from a managed float where the interventionist currency could be EURO. Having gained experience with exchange rate regimes over the last 20 and odd years, the developing countries need to acknowledge that in the management of their exchange rates and reserves they have tried to avoid or minimize risk instability in their external sectors. Then, the preponderant role that EURO is going to play next only to the US dollar will be a central factor these developing countries can easily take into account in managing their exchange rate and reserve policies into the 21st century.

7. EURO AND INDIA

7.1 **India's Structural Reforms :** Six years ago, India has decided to change course of its economic policy towards liberalizing and globalizing the economy to become part of the mainstream of the world economy. Major structural reforms have been introduced to make a structural break with the past Hindu growth rate syndrome and lift the economy up on to a sustainable 6-7 percent growth path. The reforms have focussed on liberalizing the product markets by first removing the price distortions for improving efficiency of resource allocation. Soon followed liberalisation of trade, foreign private investment and domestic investment. Simultaneously, the market mechanism has been given a free play to displace the administered structure of the financial markets. Alongside this deregulation, exchange rate reforms have been put in place towards achieving capital account convertibility (Chopra, et.al. 1995; Rangarajan, 1994; 1993). Of course, the reforms are not complete yet and further reforms are essential for achieving sustained rapid growth. It is at this juncture in the reform process a big-bang is going to occur in the international monetary skies; a new currency EURO is going to be born on January 1, 1999. To study and assess the implications of this big-bang for India, we organize the analysis below into five broad areas, namely, trade, investment, exchange rate, official flow of funds and external debt (Vasudevan, 1997).

7.2 **India's Trade with the EU :** Accelerated growth of the Indian economy is contingent on policies to promote larger export growth. These policies seem to include, inter alia, exchange rate reforms and reduced import duties and export subsidies. Reduction in import tariffs and phasing out of export subsidies do not seem to adversely affect trade deficit if appropriate exchange rate adjustments accompany them (Krishnamurty and Pandit, 1996).

7.2.1 **Trends in Exports and Imports :** The European Union (EU) has been an important and growing trade partner for India. India's exports to the EU constituted about 26 percent in 1994-95 compared with almost 22 percent in 1980-81 and 18 percent in 1985-86. Annual fluctuations are visible, but there is also visible an upward trend in EU's imports from India. Nevertheless, the fact is that India remains a marginal player in world trade and in EU trade as

well. India's share in EU imports from the world ranged from a 0.32 percent in 1980 to about 0.40 percent in 1994. In between it dipped to a low of 0.30 percent in 1986. On the exports side, EU's share of exports to India in EU exports to the world, the numbers varied between 0.48 percent and 0.47 percent respectively during the same years. In between the share fluctuated so much, it reached a low of 0.22 percent in 1985 and a high of 0.7 percent in 1986. Table 14 below reveals these fluctuations in an otherwise minuscule share of India's trade with EU in EU's trade with the world.

7.2.2 **Relative Price, Income and Exchange Rate Effects :** India's exports to EU can be classified into four categories, namely, dominant, promising, explorable and residual class according to their growth and share characteristics (Sarma, Fabes and Mehta, 1997). The first two classes account for approximately 59 percent and 37 percent respectively of India's exports to EU. The explorable and residual categories together account for the

Table 14 : India's Trade with EU

Year	*India's Share in EU imports from the World (%)*	*EU's Share of exports to India in EU exports to world (%)*	*India's Share in extra-EU imports (%)*	*India's trade balance with EU (Million ECU)*
1980	0.35	0.48	0.67	- 503
1985	0.32	0.22	0.67	- 1069
1986	0.30	0.71	0.71	- 3311
1987	0.33	0.68	0.81	- 2917
1988	0.35	0.62	0.84	- 2381
1989	0.39	0.68	0.94	- 2903
1990	0.40	0.33	0.98	972
1991	0.40	0.47	0.96	- 463
1992	0.40	0.46	1.00	- 367
1993	0.41	0.45	1.21	- 348
1994	0.40	0.46	1.22	- 350
1995	0.41	0.46	1.25	- 370

Source : Sarma, Faber and Mehta (1997) for 1980-1992 and our estimates for the remaining years.

Table 15 : India's Exports to EU

Category	*Items of Exports*
Dominant	Textiles, Leather and Pearls.
Promising	Chemicals, Footwear, Machinery, Base Metals, Minerals, Vehicles, Animal Products, Vegetable Products, Foodstuff and Miscellaneous manufactured goods.
Explorable	Plastics, Articles of stone and Opticals
Residual	Art and art pieces, Wood pulp, Arms, Fats and Oils and Wood articles.

Source : Adopted from Sarma, Faber and Mehta (1997).

remaining 4 percent. Indian exports to EU have received favourable demand in EU supported by the domestic exchange rate reforms. Of course, for these effects to be of significant consequence, the income and price elasticities of demand should be large and exchange rate devaluation and/or depreciation also should have a favourable effect. For this to be realized, the market share of the country needs to be of some consequence and competitor response to our rupee devaluation should also be minimal. Numbers in Table 16 clearly bring out these facts regarding India's exports to the EU. In terms of price effects, 15 products of the exports exhibit relative price elasticity of more than unity indicating that a one percent price reduction relative to our competitors' would lead to equal to or more than one percent increase in Indian exports to the EU. Overall, Indian exports to the EU were relative price elastic implying that any cost reduction and quality improvement in the production of these products would invoke significant positive quantity response. However, income effect of the EU income growth for Indian exports was less encouraging. Only four out of 21 products showed unitary and/or more than unitary income elasticity. For the rest of the items and overall, the income elasticity was significantly less than unity. On the exchange rate front, rupee depreciation revealed a significant positive effect on Indian exports to the EU but not commensurate to the degree of depreciation effected. The overall exchange rate elasticity also was significantly less than unity. Sarma, Faber and Mehta (1997) have reported that Indian exports to the EU might pick up high growth in future because trade liberalization will take some time

before it makes its impact on the growth of exports. A shift-share analysis of India's exports to the EU in terms of the world-trade effect, commodity-composition effect, market effect and competitiveness suggested that world trade effect was dominant in the pre-liberalization period, but competitive strength followed by world trade effect mostly explained export growth in the post-liberalization period. The attraction of within EC trade due to lower transactions costs can lead to trade diversion – from India – effects. Further trade diversion may take place due to the growing preferences of developed nations to trade more with countries at similar levels of development than with less developed countries of the world (Murpry, 1997). Nevertheless the potential for expanding exports into the EU countries seems to be bright (see Appendix 2). For instance, India can increase its textile exports "by setting off unutilised quotas against one country with that of the other". Secondly, "increased investment would result in higher imports by the member countries after Union comes into being". (Vasudevan, 1997).

7.2.3 A. **Commercial Policy Constraints : From the EU-Side :** Some commercial policy constraints act as the main impediments to trade between India and the EU even in the post-liberalization period. These hurdles may be classified into four categories, namely, tariffs, quantitative restrictions (QRs) and technical barriers including product standards and anti-dumping investigations. From the EU side, many Indian products enjoy the most favoured nation (MFN) status and yet the average tariffs on Indian exports to the EU are 5 to 10 percentage points above average for the MFN status. Under the new generalized scheme of preferences (GSP) more transparency is created but tariff reduction on Indian exports to the EU has been slowed. Quantitative restrictions in the form of quotas face many Indian exports. Member states' quotas are abolished as part of completing the single market, but EU-wide quotas for sensitive products remain. Technical barriers in the form of product standards, standards of product hygiene, certification requirements, etc., are some of the non-tariff barriers that face Indian exports, especially marine products and foodstuffs to the EU even today. Not being able to stick to timely delivery also takes the form of a self-imposed technical barrier on the part of Indian exports. Finally, suspicious investigations of anti-dumping nature some times face the Indian exports in case of any aggressive stance taken by the exporters in the form of increased competitiveness and upgrading of the products.

7.2.3 B. **From India Side :** On the side of India's imports from the EU the Union was upset over India's announcement on phased lifting of QRs. The EU is looking at a two to three year frame for complete removal, whereas India is planning to do the same over a six-year frame. India is planning to free 140 (24 percent) out of 536 items of priority for the EU during 1997-2000 and the remaining 396 items (74 percent) during 2000-2003. During 2000-2002, 290 items and from 2002 to 2003 another 106 items are set to be phased out (Viswanath, 1997). In all this, India's argument was based on the potential negative effects, the lifting of QRs might create by way of unemployment. It is feared that the lifting of QRs on agriculture might hit over 180 million work force in agriculture and about 40 million in the textile sector. Both India and the EU are gearing up for the settlement under the auspices of the World Trade Organization (WTO) which may take less than two weeks to come to a solution (Viswanath, 1997). Besides, several infrastructure bottlenecks like inadequate and uncertain power supply, ill-equipped port facilities, archaic procedures of a sluggish bureaucracy for extending credit facilities, etc., add to the exporters woes in expanding India's exports. A survey of European importers' perception of Indian exports and exporters (Sarma, Faber and Mehta, 1997) reveals some of the subjective perceptions of the EU importers about Indian exports and exporters. It seems that the Indian exporters fail to stick to the quality standards, delivery time and compliance with contracts. All these infrastructural and perceptional impediments cannot be captured adequately in any quantitative evaluation but if removed certainly go a long way in boosting India's exports in a big way.

7.3 **Exchange Rate Risk on Indo-EU Trade :** Exchange rate volatility creates negative influence on trade. It can reduce the volume of trade by creating uncertainty about profits to firms. If covered by a risk premium, prices rise by the risk premiums and depress trade. Even otherwise, forward contracts cannot completely eliminate exchange risk due to the short-term nature of the contracts not being able to be reliable beyond a certain period and that firms can cover risk only for contract amounts known with certainty. If future foreign currency-denominated receipts and expenditures are uncertain, forward markets may not be of much help in dealing with this uncertainty. Therefore, exchange rate volatility creates risk. Both in the expected and unexpected

Table 16 : Relative Price, Income and Exchange Rate Elasticities of India's Exports to the EU (1976-93)

I. Price Effects :	
i. Relative price elastic : (Elasticity ≥ 1)	Foodstuffs, Fats and Oils, Plastics, Wood articles, Textiles, Articles of Stone, Chemicals, Base metals, Vehicles, Art and art pieces, Vegetable products, Wood pulp, Pearls and Miscellaneous manufactured articles.
ii. Relative price inelastic (0 ≤ Elasticity < 1)	Leather, Footwear, Machinery, Minerals, Opticals, and Arms
II. Income Effects :	
i. Income elastic (Elasticity ≥ 1)	Minerals and Vehicles
ii. Income in elastic (Elasticity < 1)	Textiles, Chemicals, Footwear, Animal products, Base metals, Plastics, Fats and Oils and Wood articles.
iii. Income elasticity zero or perverse	Leather, Pearls, Miscellaneous manufactured products, Machinery,Vegetable products, Foodstuffs, Articles of stone, Opticals, Art and art pieces, Wood pulp and Arms.
III. Exchange Rate Effects :	
i. Exchange rate elastic (Elasticity ≥ 1)	Base metals,Articles of stone, Chemicals, Vehicles, Plastics, Pearls, Miscellaneous manufactured products, Machinery and Wood pulp.
ii. Exchange rate inelastic (0 < Elasticity ≤ 1)	Textiles, Leather, Footwear, Minerals, Animal Products, Vegetable products, Foodstuffs, Opticals, Fats and Oils, Arms, Wood articles and Art and art pieces.
IV. i. Price effects	Total exports are price elastic
ii. Income effects	Total exports are income inelastic
iii. Exchange rate effects	Total exports are exchange rate inelastic

Source : Sarma, Faber and Mehta (1997) Tables 3.10 and 3.11.

components it implies additional cost to both the importer and the exporter. How the risk is divided between the two depends on the invoicing currency. If exports are invoiced in exporters currency, then the exporter shares zero exchange risk and the importer bears the entire risk. Instead, if exports are invoiced in importer's currency, then the importer is completely free from exchange risk. Only if markets are efficient the cost of hedging risk should be small and as a result the choice of invoice currency would become irrelevant (Raw and Magee, 1980). In the real world, however, price/exchange rate correlations and business risk/exchange rate correlations create volatility in business profits to the exporters and importers.

Suppose the Indian exporter invoices exports in rupees. Then, from the profit relation to revenue and cost one can see that the variance of profit will be equal to the variance of revenue only because rupee cost is known. If the cost is, however, allowed to vary with the exchange rate, as in the case of foreign currency invoicing, then the variance of profit also depends more or less on the covariance term. If the EU demand for Indian exports were, say, price elastic and if the exchange rate valuation (INR/EURO) effects were immediately passed through into domestic rupee prices, then the importer would minimise risk by invoicing in EURO. Under EURO invoicing, the covariance of revenue and cost for the exporter is likely to be greater than for the importer.

At the economy level, the response of exports from and imports into a country will be subject to both a quantity risk and price risk from the exchange rate volatility. Given that India's exports to and imports from the EU (Belgium, France, Germany, Italy and netherlands excluding UK) account for about 20 percent and 21.5 percent respectively in 1995-96 (RBI, 1995-96), to this extent Indian exports and imports could be invoiced in EURO respectively to minimise the INR / EURO exchange rate risk.

7.3.1 **Exchange Risk Costs of Exports :** A few facts before the cost estimates are in order (Joseph, 1992). For exports denominated in the GBP to countries other than UK the exchange risk for India's trade is distributed equally between exporters and importers; for exports invoiced in the US dollar and any other non-rupee currency, the entire risk is borne by the Indian

exporters. An analysis of the currency-invoicing pattern of India's exports until close to the 1990s showed that nearly one-third of the currency risk of India's exports fell on the Indian exporter and the remaining two-thirds risk on the importer. It appears that the importers of Indian products depress demand for our exports and force a cut in their prices. The exchange risk effects on the volume and price of Indian exports varied depending on whether they were invoiced in importers' currency or in the domestic currency. In the former case, the supply curve of Indian exports shifted backwards much larger than the similar shift in the demand curve. In the latter, the opposite happened. The incidence of exchange risk would be proportionately more on the exporter than on the importer in the former case which tended to cause a decrease in the export volume and an increase in the export price. In the latter case the importer bore a larger proportion of the exchange risk. The result showed a decrease in the price along with a decrease in the volume of exports.

Quantification of the exchange risk cost requires estimation of a robust export supply specification with appropriate scale, cost and exchange risk variables. Experimenting with several separate proxies for the exchange risk variable - standard deviation (E_1) of percentage changes and absolute deviation (E_2) of percentage changes in the real effective exchange rate for India - it is reproduced below that for manufactured and primary products, the average exchange risk costs varied over the years. Two separate cost estimates were reported; cost 1 was estimated based on the assumption that exchange risk can be reduced one hundred percent which is unreasonable and cost 2 was evaluated on the assumption that there was always a minimum risk which could not be removed and the actual risk over and above the minimum could only be reduced. Adding the corresponding cost estimates for quantity and volume would yield the cost to value. Accordingly, the workings, on average, suggested that exports value would have increased by about 12 percent for manufactured exports if the exchange risk were to be reduced to the minimum. For the primary products, the volume effect was negligible and whatever was there was to be absorbed by the prices of these products only. And this cost was to the extent of almost 18 percent. These results, thus, suggested that the cost of exchange risk to the value of manufactured product exports was not negligible. However, for purposes of this study it was reasonable to argue that in view of the somewhat remoteness of the period of the above results

Table 17 : Average Exchange Risk Costs (%), 1968-86

Risk Measure	*Volume*		*Price*		*Value*	
	Cost 1	*Cost 2*	*Cost 1*	*Cost 2*	*Cost 1*	*Cost 2*
1. Manufactured Products						
E_1	30.2	14.8	- 5.4	- 2.6	24.8	12.2
E_2	30.7	15.2	-14.4	- 7.0	16.6	8.2
2. Primary Products						
E_1	—	—	36.7	17.9	36.7	17.9
E_2	—	—	30.9	15.3	30.9	15.3

Source : Joseph (1992), Tables 18.5 and 18.6.

(Joseph, 1992) the magnitude of risk applicable today and in future could be substantially less. Also from the view point of considerable liberalisation of the rupee exchange rate and the forex markets in India during the 1990s (Rangarajan, 1994) the exchange risk exposure of the Indian exports in general and to the EU in particular would be quite modest. The currency denomination of India's exports and imports today stays at more than 80 percent in the US dollar alone and about 3 to 4 percent in the British Pound. Therefore, the above conjecture was reasonable and was also, somewhat, supported by the results of a recent study of India's exports to and imports from Germany (Rani, 1993).

7.4 **Interbank Forex Market and Loss of Revenue:** The transaction costs in the interbank forex market show up in the form of bid-offer spreads. Banks deal in foreign exchange both among themselves and also for their customers. Non-bank customers, perhaps, account for about ten percent in the total forex dealings by banks and the remaining ninety percent constitutes interbank dealings. The bank trader tries to maximize trading profits subject to a tolerable exposure in any one currency. The fact that banks continually trade also creates unbalanced positions for the squaring up of which they generate additional trading volume in the market. There is a close connection between the vehicle use of a currency and the transactions cost. A simple model of transactions costs in the interbank forex market can be derived to express a direct relationship between the bid-ask spread, the volume of transactions in

the market and the variability of the exchange rate. The relationship reads as follows (Black, 1996):

$$s = k (\sigma^2/Q)$$

where s= bid-ask price spread, σ^2 = variability (Variance) of the actual price of foreign exchange around the average of the bid and ask prices, Q = expected (average) volume of transactions in the market and 'k' contains the sum of demand and supply slopes of the currency concerned. On the assumption of competitive risk-neutral dealers behaving to force expected profits to such a level just sufficient to cover dealer costs, the bid-ask price spread obviously varies inversely with the trade volume but positively with the rate volatility. In the absence of time-series observations on these variables, it was necessary to resort to information from the dealing rooms for those currencies that are going to disappear into EURO on January 1, 1999. Informal discussions with several dealers in the dealing rooms revealed that in India's interbank market the annual volume of forex dealings vary anywhere between one to two trillion US dollars. So, the average could be around 1.5 trillion dollars. Out of this, in a tri-currency - US dollar, deutschemark and Japanese yen - dominated market, the share of deutschemark accounts for about 30 percent of the interbank currency transactions volume (Q). Following the above discussed relationship, it is obvious that if the volume of transactions is smaller, for any currency given k and σ^2, the larger will be the spread 's'. Similarly, for a given Q and 'k' if the volatility (σ^2) were high the larger will be the spread. However, monetary policy regime changes, through the economic and other market news, might not only change the risk premia but also alter the spreads (Ott and Veugelers, 1986).

7.4.1 **The Spreads and the Potential Revenue Loss :** In the Indian inter-bank market, deutschemark is traded actively against the US dollar, Japanese yen and the British pound. The trading in French franc, Dutch guilder, Italian lira etc., of the rest of the EU currencies, is very thin, almost minuscule compared with the trade in the other currencies. Also, the volatility in the exchange rates of these EU currencies, other than deutschemark and the British pound, has been reported to be relatively high. Thus, the spread 's' on deutschemark trading appeared to vary between 10 to 20 percent but only occasionally going up to 30 percent. On account of thin volumes of trading in such currencies as Italian lira, the realised spread 's' mostly showed

30 percent and upwards. When EURO unveils itself, except the British pound, trading in many EU currencies, alongwith deutschemark, is going to disappear. According to some approximations, the annual income of brokers from forex dealings in India would stand at around Rs.1.5 to Rs.2.0 crores. And they might lose about 20 percent of this income i.e. about 30 to 40 lakh rupees annually due to the disappearance of many of the EU currencies and EURO almost retaining the position of the deutschemark (Chandrasekhar, 1997). In contrast, the banks might not lose much but only ranging between five to ten percent of their income from the forex dealings. In the rest of the world, however, the loss of income could be very large and significant unemployment also might be created as a result. In India, of course, unemployment creation on account of this would be negligible as, on average, dealing room operations are generally handled by a couple of officers only in majority of the public sector and private sector banks.

7.4.2 **Banks' Costs of Transition :** The costs of making the transition to EURO for Indian banks depends on the extent of use of products like ATMs, credit cards, payment systems and services, deposits, loans, forex dealings, capital markets dealings etc., in the present EU currencies. The nature of such costs relates mostly to the need for staff training, upgradation of information technology, marketing and legal issues, audit and security, stationery etc., in dealing with the above products. For the Indian banks, these transitional costs would be minuscule as the dealing rooms dealing in any of the EU currencies today will be dealing in fewer currencies than earlier. Also, a bank's efficiency in effecting this transition depends on the way it implements the changeover. A well planned changeover carried out without problems for the customers and accomplished in the shortest time possible will always be efficiency-enhancing than a reactionary and wait-and-see approach of a bank.

7.5 **Central Bank Management of Reserves :** There are no agreed upon thumb rules to guide how foreign exchange managers should manage their portfolio risk. Notwithstanding the fact that our forex reserves today are at a very high and comfortable level and despite gainful experience in managing the market-driven rupee, India remains still at a considerable distance to applying the expected-return-avoidance-of-portfolio-risk models to the

management of its forex reserves. The dominant determinant in the choice of reserves management for India even today would be hedging rather than expected-return maximization even if the expected rates of return on different currencies do not converge due to market imperfections and speculators' activity. Hedging currency risk, therefore, cannot take a second place until our reserves grow still higher and until the options markets develop to offer better opportunities to hedge risks. In addition, there are two other primary concerns that should govern reserves management by the Central Bank. They are: (i) the precautionary motive of providing a cushion against the current and capital account shocks on the balance of payments of the country and (ii) building a safe and liquid external assets portfolio to enhance India's sovereign rating and credit worthiness. Recently, in an attempt to apply the portfolio selection approach for management of foreign exchange reserves, Mohan, et.al. (1997) empirically arrived at the evidence that "the minimum risk configuration is one with overwhelming share of the US dollar with only a very small presence of Pound Sterling in the portfolio". In other words, the numeraire currency itself dominates the currency composition of reserves at lowest risk. At present, both the macromanagement considerations and portfolio concerns pointed to the same numeraire currency - the US dollar - as the lowest risk optimal (dominant) currency in the forex reserves management by the Reserve Bank. The introduction of EURO, therefore, is not going to alter the configuration of the dominant currency position of the dollar in the near future. However, in the medium and long-runs as EURO gains a strong position as the second largest invoicing currency in the world, the dominance of the US dollar would climb down and that of EURO would rise.

7.6 Capital Flows from the EU Countries

7.6.1 **Official Loans and Grants:** The EU has maintained all along a steady and sympathetic posture towards South Asia in general and India in particular if with minimal involvement in terms of economic assistance. India, for example, was given a duty free entry for handloom fabrics and handicrafts as also bulk tea some time ago. However, by and large, these and similar other concessions were never significant. Aid had been a substantive component of the cooperative policy but it never became a very important factor till the end of 1980s. During 1981-85 India received ECU 52.5 million

annually when South Asia as a whole including India received only 90.5 million. Similar aid figures for India and South Asia respectively were ECU 66.5 million and 108 million per annum during 1986-89 (Grilli, 1993). However, the commercial and economic cooperation agreements of the EU states with the largest countries like India remained a little more than good intentions only during the 1980s. During the 1990s there has been a significant improvement in the flow of both official loans and grants from the EU countries. Table 18 tends to corroborate this conjecture. However, this trend is likely to reverse due to the long-term adjustment tasks facing the EU countries. For instance, on the fiscal side, the need to accommodate periods of sluggish growth within the EU is likely to lead to cyclically adjusted near zero budget deficits. Moreover, the need to reduce labour market rigidities, their own internal capital demands will increase for public spending in social programs. Therefore, EURO-era is likely to forebode discouraging trends.

7.6.2 **Private Capital Flows:** The destinations of future private capital flows from the EU countries, as from any developed country, will depend on three factors : prior capital flows, expected future economic growth and the socio-politico-legal environment in the prospective recipient countries. The experience with prior capital flows typically entails a learning process that adds to the available fund of information about future investment. The effect of this learning is to lower transactions costs of both foreign direct investment (FDI) and portfolio investment for future investors. The countervailing influence of diminishing returns from the investment can be overwhelmed in most cases by the positive benefits of experience and learning from prior capital flows. Viewed from this angle, more private capital inflows especially FDI, can be expected to flow from the EU countries. Trends in numbers of Table 19 tend to support this conjecture. Even Germany's lions share in the EU FDI in India also seems to sanctify this sentiment. The future economic growth prospects in India as perceived by the World Bank and IMF are bright and attractive for FDI flows into India. Where FDI flows, portfolio capital seems to follow significantly (Tatom, 1996). Socio-political and legal environment factors, however, seem to be somewhat less encouraging for India. Notwithstanding these nagging aspects, the basic characteristics of the Indian economy have been favourable. The ongoing structural reforms, liberalisation of trade, foreign investment, financial and stock markets allowing Indian companies access

international markets, etc., have improved the prospects of an investor-friendly environment in India. Therefore, the prospects of a dynamic growth performance of the Indian economy attracting more private capital inflows are certainly bright.

7.7. External Commercial Borrowing and Debt

7.7.1 **External Commercial Borrowings (ECBs):** The primary purpose of letting Indian business to access ECBs is to expand the sources of finance for Indian Corporates especially for meeting foreign exchange costs of capital goods. These borrowings include syndicated loans, funds raised through securitised instruments such as fixed rate bonds, floating rate notes, commercial bank loans, buyers' credit, suppliers' credits etc. Of course, loans from the multilateral financial institutions such as the Asian Development Bank, International Finance Corporation, also come under ECBs. Government policy on ECBs aims at attracting and channeling more investment into infrastructure sector projects. Indian corporates are most likely to increase their borrowings in Euro-denominated debt as a broader, deeper and more liquid Euro-financial markets are going to offer cheaper finances. Borrowings through equity issues in GDRs becomes more attractive tomorrow than today. Also, additional scope for increased Euro-denominated borrowings exists to cover existing exposures.

Table 18: EU Loans and Advances to India (Rs. crores)

Year	*Loans*	*Grants*
1990-91	607593	44626
1991-92	1062772	48318
1992-93	1012700	26297
1993-94	1088233	52570
1994-95	999433	63415

Source : Reserve Bank of India

Note : 1. Loans are from Denmark, France, Germany, Netherlands, Italy, Luxemburg, Spain & Sweden.

2. Grants are from Denmark, Netherlands, Sweden & EEC.

Table 19: EU Direct Investment (FDI) Stock in India (Rs. Crores)

	1970	*1980*	*1990*	*1995*	*1996*	*1997*
Amount in Rs. crores	37	98	611	1553	2273	3194
Share of Germany (%)	55.3	66.3	43.7	51.1	49.6	53.8

Source : Reserve Bank of India.

Note : The investment is from France, Germany, Italy, Luxemburg, Netherlands and Sweden.

There is, however, an urgent need for the corporates to learn and get familiar with some of the technical aspects of Euro-conversions, securities settlements systems, accounting for forward-dated transactions, TARGET and SWIFT message standards, legal issues, etc.

From time to time changes in ECB guidelines are being implemented by the Government both to make it easier and smoother for the corporates to access larger amounts of cheaper funds and yet keep a ceiling on growth of such debt. Maturity-wise ceilings such as 100 million dollars on 10-year debt and 200 million dollars on 20-year debt keep a watch on the maturity composition of the debt. Option (call or put) contracts are not allowed on these Euro-debt instruments lest they should tinker with the effective maturity of the debt. Even the interest rate limits on ECBs for project financing have been relaxed recently. Notwithstanding all this encouragement, for Euro-denominated borrowing as for any ECB, there is a need to keep the external debt within prudent and sustainable limits according to the debt-dynamics equation:

$$d_t = d_{t-1} (r-g) + c_t$$

Where d = debt/GDP ratio, r = real rate of interest, g = real GDP growth c = current account deficit plus external borrowings/GDP ratio and t and t-1 are current and lagged time in years. The relevant rate of interest 'r' here is the weighted average across all kinds of debt, creditors and currency denominations. Equity-related inflows can be incorporated by imputing the dividend yield in place of 'r'. For keeping prudent limits on the debt, the recommendation of the Tarapore Committee (RBI, 1997) may be kept in View.

7.7.2 **External Debt:** India's external debt today is close to 100 billion US dollars out of which about 13 percent is denominated in the EU currencies. The effect of EURO on the debt depends on whether a strong or a weak EURO comes into being. One scenario is that "if US dollar depreciates because of unleash of US dollar assets by the Union countries, India's external debt in terms of dollar would move up" (Vasudevan 1997). On the contrary if EURO comes with congenital weakness, the debt in dollar terms would move down. A third conjecture is that the dollar may appreciate against EURO as part of a planned policy change by the US before launch of EMU. Then also, a weak EURO leads to a debt decline in dollar terms.

8. SUMMARY AND SOME POLICY CONCLUSIONS

8.1 In the three stages of the European Monetary Union (EMU), the first and the second stages have commenced on July 1, 1990 and January 1, 1994 respectively with the completion of the Single Market of 1992 in between. The three phases of the third stage consist of January 1-December 3, 1998, January 1, 1999-June 30, 2002 and from July 1, 2002 onwards. Single currency EURO comes into being on January 1, 1999 but circulates alongside the EU currencies until June 30, 2002 after which EURO becomes the single legal tender of the EMU.

8.2 No monetary union was ever created by currency competition among contiguous countries in the world. The optimum currency area (OCA) literature was also singularly silent on any convergence criteria which the Maastricht Treaty laid down for the EMU to become economically feasible. A single currency does strengthen a single market with all the benefits of a public good. At the same time a single currency for all the EU countries creates several costs in the form of (i) loss of exchange rate as a policy instrument, (ii) loss of seignorage (inflation tax revenue) and (iii) loss of monetary policy as a national policy instrument and the consequent reduced flexibility of fiscal policy.

8.3 Empirical evidence on supply and demand shocks in the EU countries in comparison with that in the regions of the US showed significant similarities for an OCA with more scope for increased specialisation in the EU countries.

8.4 Covered interest rate differentials and currency risk premiums, though persistent, have declined substantially in recent years to suggest a strong

move towards currency integration across the EU countries. But, the inflation and default risk potential of each EU country relative to those of Germany suggests a strong clustering of the EU countries into a core cluster (Austria, Belgium, France and Netherlands), an intermediate cluster (Denmark, Finland, Ireland and UK) and a peripheral cluster (Italy, Portugal, Spain and Sweden). Data on Greece and Luxembourg were not available. Nevertheless, the general consensus on macroeconomic management for price stability, deficit reduction and institutional arrangements of the Stability and Growth Pact put to rest any lingering doubts about full-speed jumbo lift-off of the EMU on January 1, 1999.

8.5 There are still several decisions to be taken on EMU in the transition to EURO by a qualified majority requiring 62 out of 87 votes. These decisions concern: (i) the conversion rates to be fixed among the currencies before the EMU launch – whether to choose the central ERM rates, the rates on December 31, 1998 or some average rates over a reference period; (ii) the legal aspects of changeover to EURO regarding continuity of contracts and legal status of the national currencies during and after the transition period. Then, there is the decision to be taken on changeover of the markets to EURO by the banking business, the financial markets, the general public and all public administration.

8.6 The European Monetary Institute (EMI) as the precursor of the European Central Bank (ECB) is preparing the ground for a single monetary policy operation in stage 3 of the EMU. The primary task of the ECB is to pursue price stability as the single focus of its monetary policy responsibilities. The ECB also manages the foreign exchange reserves of the Union and decides on both the exchange rate regimes and policy. The ECB will be independent of instruction from any national authority. The EMI is currently working on the convergence of monetary framework for the Union in terms of monetary instruments and policy regulation. The proposal is to directly target inflation employing open market operations with repos. Minimum reserve requirements is considered a crude and out-dated instrument and if necessary to maintain, the ECB should pay interest on those balances at market rates.

8.7 The benefits of a single currency are both internal and external in nature. There are micro-efficiency gains of both static and dynamic nature internal to

the EMU. There are savings of transaction costs because there is no need to convert one currency into another. Elimination of exchange rate uncertainty is another cost saving. Derived from it are those savings arising out of the disappearance of exchange rate misalignments and the consequent misallocation of resources. Besides, there are the positive (static) effects on trade and investment and the consequent long-run (dynamic) positive response of productivity and efficiency gains due to the absence of exchange rate risk. The sum of static and dynamic efficiency gains from the single currency is estimated by some to be around 15 percent of the GDP.

8.8 There are gains from a much larger, deeper and more liquid financial markets in terms of economies of scale, lower interest rates and a stable financial environment of a single currency. The integration of financial markets will boost the supply of new services and new investment opportunities.

8.9 There are several costs, however, in moving to one money. There is the loss of earnings due to loss of spreads, floats, currency exchange, cross-border payments etc. Total loss of commission and fee income according to one estimate ranges between 9.5 to 14.4 billion ECUs.

8.10 Then there are costs of transition for banks and other financial institutions to be incurred on staff training, upgradation of information technology, marketing and public relations, auditing, stationery, legal issues etc. These costs are estimated to be around ECU 8-10 billion or 2 percent of their annual operating expenditures for a transition period of three years.

8.11 The international use of a currency comes into being whenever a national currency performs all the three functions of a unit of account, means of payment and store of value. For serving as an international currency a national currency should possess two principal prerequisites: (i) people should have confidence in the political stability of the issuing country and in the value of the currency; and (ii) the currency should possess financial markets that are broad (availability of large assortment of financial instruments traded) and deep (existence of well developed secondary markets that are substantially free of trade restrictions and capital controls).

8.12 Despite the irrelevance proposition of a currency, currently being applicable still for trade in manufactured goods, the trade invoicing pattern of

major currencies in the world suggests a larger role for EURO next only to the US dollar. EURO as an investment currency also seems to have strong points in its favour from the view point of the currency pattern of international bond transactions and transactions in the equity and derivatives markets currently conducted in the Union currencies.

8.13 *As a potential reserve currency, EURO will have a second dominant position next only to the US dollar,* given that the currency is going to be neither weak nor strong but stable and well managed. Despite speculation to the contrary, no excess dollar reserves are going to be unleashed within the Maastricht criteria framework. Developing countries' reserves in the Union currencies will be replaced by the EURO and there it may take a higher share at the expense of the US dollar.

8.14 EURO's role in the international monetary system assumes profound significance. Unless clear-cut jobs are assigned to EURO in the tripolar currency system so as to minimize the chances of ECB adapting an inward-looking attitude, problems might crop up for the IMF at least in the long run. Of course, the SDR basket will be trimmed with some logical implications for a possible third round of SDR allocations.

8.15 India's exports to and imports from the EU constituted about 20 percent and 21.5 percent respectively in 1995-96. *However, India remains a marginal player in both the world trade and in trade with the EU.* India's share in the EU imports from the world was about 0.40 percent and EU's share of exports to India in its exports to the world was about 0.47 percent in 1994. Classified into dominant, promising, explorable and residual classes according to their growth and share characteristics, the first two categories of exports account for approximately 59 percent and 37 percent respectively of India's exports to the EU. In the dominant class of exports fall textiles, leather and pearls, while the promissing class includes chemicals, machinery, footwear, base metals, vehicles, miscellaneous manufactured products, besides animal and vegetable products. In the post-liberalisation period, competitiveness and world trade effects gave some boost to India's exports to the EU. Although, the relative price elasticities for majority of India's exports to the EU were large, the income elasticities were quite low. This perhaps, explains the sluggish growth despite the supportive stance of the rupee depreciation.

8.16 There are several commercial policy constraints to trade between India and the EU. India enjoys the most favoured nation status with the EU for many of its exports but the average tariffs are always 5 to 10 percentage points above average. Quantitative restrictions (QRs) such as quotas face many Indian exports to the EU. Though member states abolished quotas, the EU-wide quotas remain for some sensitive products exported from India. Technical barriers in the form of product standards, certification requirements etc., greet many marine product exports to the EU. Finally, any attempts to upgrading of products by the Indian exporters invites suspicious investigations of antidumping complaints from the EU. On the Indian side, plans are afoot to the complete removal of QRs in about six years whereas the EU wants that to be done within a three-year period. India's fears that lifting of QRs may hit about 180 million agricultural work force and 40 million in textile products industry, justify the six-years time frame. European importers, however, perceive that Indian exporters fail to stick to quality standards, delivery time and compliance of contracts.

8.17 Exchange rate volatility creates negative influence on trade. How the risk is divided between the exporter and the importer depends on the invoicing currency. If the EU demand for Indian exports were, say, price elastic and if the exchange rate devaluation (INR/EURO) effects were immediately passed-through into the rupee prices, then the importer would minimise risk by invoicing in EURO. Until the beginning of 1990s, one-third of the currency risk of India's exports fell on the Indian exporter and the remaining two-thirds risk on the importer. The cost of exchange risk to India's manufactured exports was not negligible. However, this risk is going to be quite modest in view of the engisaged large scale liberalisation of trade between India and the EU. Anyway, more than 80 percent of India's exports and imports are invoiced in the dollar and not the EU currencies today.

8.18 Deutschemark is actively traded in the Indian market against the US dollar, Japanese yen and the British pound. The volatility of the EU currencies is generally high excepting deutschemark and the British pound. Accordingly, the spreads (which vary inversely with volume of transactions and directly with exchange rate volatility) on deutschemark are thinner ranging between 10 to 20 percent. Forex brokers' annual income from forex dealings is

estimated to be Rs.1.5 to Rs.2.0 crores. They might lose about 20 percent of this annual income, that is, about 30 to 40 lakhs due to the unveiling of EURO. But banks might lose only about 5 to 10 percent of their annual income from forex dealings. Unemployment creation in Indian banks on account of disappearance of the EU currencies will be negligible as the dealing room operations in many public and private sector banks in India are handled by a couple of officers only.

8.19 There are some transition costs that Indian banks, perhaps, need to incur for making the transition to EURO. These costs depend on the extent of use of products like ATMs Credit Cards, payments system and services, deposits, loans, forex dealings, etc., in the EU currencies in the overseas branches of Indian banks. The nature of such costs relates mostly to the training of staff, upgradation of information technology, marketing and legal issues, audit and security, stationery etc. For the Indian banks these costs would be minuscule. Also, a well planned changeover accomplished in the shortest possible time without causing customer inconvenience will gain over a wait-and-see approach by a bank.

8.20 The dominant determinant in the choice of forex reserves management for India even today would be the safety of hedging currency risk rather than expected-return maximization even if the expected rates of return on different currencies in the market do not converge due to market imperfections and speculators' activity. In addition, there are two primary concerns: (i) the precautionary motive of providing safe cushion against the current and capital account shocks on the balance of payments of the country and (ii) building a safe and liquid external assets portfolio to enhance India's sovereign rating and credit worthiness. Minimum risk considerations in the Indian context today, do indicate to the US dollar as the dominant currency. But in the medium and long-runs EURO gains a strong position as the second largest currency in the reserves portfolio for India.

8.21 India used to receive almost half of what South Asia received by way of official capital inflows from the EU countries. Nevertheless, the commercial and economic cooperation agreements of the EU countries with India had remained a little more than good intentions only until the end of 1980s. During

the 1990s, there has been a significant improvement in the flow of official loans and grants from the EU countries. However, this trend is going to reverse in future after the transition to EURO. The need to maintain a cyclically adjusted near zero budget deficits and the EU countries' own increased internal capital demands for public spending in social programs with a view to reducing labour market rigidities tend to forebode discouraging trends for India also. Nevertheless, on the side of private capital inflows, the scenario is different altogether. Though socio-political and legal environmental factors in India are somewhat less attractive, the strength of structural reforms already set in motion had significantly improved the investor- friendly environment in India. Given that private capital flows in where there were prior capital flows, where economic growth prospects are bright and investor-friendly environment exists, Indian economy stands to gain by attracting more private capital from the EU countries in the years to come.

8.22 Indian corporates are most likely to increase their borrowings in EURO-denominated instruments as a broader, deeper and more liquid EURO-financial markets are going to offer cheaper finances. Borrowings through equity issues in GDRs also becomes more attractive tomorrow than today. Indian corporates will have improved access to external commercial borrowings (ECBs) for meeting foreign exchange costs of capital goods both through syndicated loans and fixed and floating rate notes, besides buyers' and suppliers' credits. Today the regulations do not permit options (call or put) contracts on ECBs as such contracts tinker with the effective maturity of debt which is a prime concern in the external debt management for the country. At the time of EURO-unveiling, if dollar were to depreciate, then India's external debt would increase. If, on the other hand, a weak EURO comes into being either due to some economic problems or because of a deliberate change of policy stance to let the dollar appreciate, in both cases external debt in dollar terms would decline.

Appendix 1

Without loss of generality, let us assume that the ECU basket comprises only three currencies X, Y and Z. Let us also denote the amounts of these currencies in ECU as m_x, m_y and m_z and the currencies' exchange rates vis-a-vis the US dollar(USD) as e_x, e_y and e_z respectively. Then, the ECU-USD parity on December 31, 1998 can be written as

$$m_x e_x + m_y e_y + m_z e_z = \text{ECU/USD} = m \qquad (1)$$

On January 1, 1999 1 ECU = 1 EURO, and accordingly, (1) implies m = EURO/USD. Then, the conversion rates of the currencies against EURO are given by m_x/m, m_y/m and m_z/m respectively.

Now, let us say currency X depreciates against USD by 'd' percentage points the day before entering stage 3. Then relation (1) become :

$$m_x e_x + m_y e_y + m_z e_z = \text{ECU/USD} = m^1 \qquad (2)$$

On January 1, 1999, if this becomes EURO - USD parity, the individual currency conversion rates of Y and Z vis-a-vis EURO become m_y/m^1 and m_z/m^1 respectively. These rates, when compared with m_y/m and m_z/m, differ only by a change of unit and hence their external values get unaffected. Similarly, if a readjustment of parities were effected before adopting the market rates that rule on December 31, 1998, the external value of the ECU can still be maintained provided the conversion rates of Y and Z vis-a-vis EURO are set at $m_y(1 - k)/m$ and m_z/m, where 'k' denotes the planned percentage depreciation of currency X against Y before entering stage 3.

Appendix 2

Implications of Single European Market Policies for Developing countries in Asia

EC Policies	*Food*	*Textiles*	*Footwear*	*Chemicals*	*Steel*	*Electronics*
Techology Policy						
Opportunities	+ +	+ + +	+ +	+ +	+ +	+ + +
Problems	– –	– – – –	– –	– – –	– – –	– – – –
Net Implications	neutral	slightly neg.	neutral	slightly neg.	slightly neg.	slightly neg.
Trade Policy						
Opportunities	+ + +	+ + +	+ + + +	+ + +	+ + +	+ + + + +
Problems	–	– – – – –	–	– –	– – – –	– – – –
Net Implications	positive	strongly neg.	strongly pos.	slightly pos.	slightly neg.	slightly pos.
Investment Policy						
Opportunities	+	+ +	+ + +	+ + + +	+ + +	+ + + +
Problems	–	– – –	–	– – – –	– –	– – – –
Net Implications	neutral	negative	positive	neutral	slightly pos.	neutral
Competition Policy						
Opportunities	+	+	+ + +	+	+	+ +
Problems	– – –	– –	–	– – –	– –	– –
Net Implications	negative	slightly neg.	positive	negative	negative	neutral
Standard Setting Policy						
Opportunities	+ +	+ +	+ +	+ + +	+ + +	+ + + +
Problems	– – – –	– – –	– – –	– – –	– – –	– –
Net Implications	negative	slightly neg.	slightly neg.	neutral	neutral	positive
Environmental Policy						
Opportunities	+ + +	+ + +	+ +	+ + + +	+ + +	+
Problems	– –	–	–	– –	– –	–
Net Implications	slightly pos.	positive	slightly pos.	positive	slightly pos.	neutral
Regional Policy						
Opportunities	+	+	+	+	+ + +	+ + +
Problems	–	– – –	–	– –	– – –	– – –
Net Implications	neutral	negative	neutral	slightly neg.	neutral	neutral
Human Resource Development Policy						
Opportunities	+ +	+	+	+	+	+ +
Problems	– –	–	–	– –	–	– – – –
Net Implications	neutral	neutral	neutral	slightly neg.	neutral	negative
Overall Assumption of Single European Market						
Opportunities	+ + +	+ + + +	+ + + +	+ + + +	+ + + +	+ + + + +
Problems	–	– – – –	– –	– – –	– – –	– – –
Net Implications	positive	neutral	positive	slightly pos.	slightly pos.	positive

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